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Emotional state of women during pregnancy[1]

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Abstract: *Introduction:* Stress is described as feelings of worry, unease and mild anxiety. Subjective emotions and mood during pregnancy affect the psychological state of pregnant women. *Aim of the work:* To investigate the emotional state that characterises women during pregnancy and what determines it. *Material and method:* The study group consisted of 588 pregnant women. The study was conducted between November 2023 and January 2024 in women's counselling centres and birthing schools in the Lublin Province. A diagnostic survey method was used, with the author's survey questionnaire, the General Mood Scale (authors Wojciszke, Baryła) and the Emotions Questionnaire (authors Wojciszke, Baryła). *Results of the study:* Women between 26 and 35 years of age constituted the largest group (n = 417; 71%; 70.92%). One in five subjects (n = 118; 20.07%) was between 18 and 25 years of age, while pregnant women over 40 years of age accounted for approximately 1% of the subjects (n = 6). The subjects were divided into three groups, depending on the trimester of pregnancy: 1st trimester of pregnancy accounted for 8.33% of the subjects, 2nd trimester of pregnancy 48.64% (n = 286) and 3rd trimester of pregnancy 43.03% (n = 253). Statistical analysis showed no statistically significant differences ($p>0.05$) in the negative and positive mood scores of women in the different trimesters of pregnancy. High levels of negative emotions were found among women who felt a lack of support from relatives (M = 58) and among women who felt insufficient support from relatives (M = 51). In contrast, low levels of negative emotions were found among subjects who declared that they were coping well on their own (M = 39), as well as those who had high support from their partner/relatives (M = 39). The highest intensity of positive emotions was observed among women who had lost one pregnancy (M = 40), while the rate of positive emotions was slightly lower in subjects who had been pregnant for the first time or had no obstetric failures (M = 38). *Conclusions:* The stage of pregnancy does not significantly affect women's mood, but a slight increase in the intensity of positive mood is observed in the 3rd trimester of pregnancy and a higher intensity of negative mood in the 1st trimester of pregnancy. In addition, a higher intensity of negative emotions is observed for women of low material status, less educated, under 25 years of age and living in rural areas. Support from a partner/relative has a significant impact on the emotions felt and expressed during pregnancy. Negative emotions during pregnancy are mainly experienced by women who have lost three or more babies due to miscarriage, premature birth or stillbirth. It seems reasonable to conduct further research to identify stressors in pregnant women, which will allow to individualise professional care for this group of women.

Keywords: pregnancy, mood, emotions, stress

Introduction

Pregnancy and waiting for the birth of a child are recognised as a unique period in a woman's life marked by numerous physical, psychological and social changes. Whether it is planned and anticipated or a surprise, it is often considered as a stressful situation. Many women experience a deterioration

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[1] Article in polish language: https://www.stowarzyszeniefidesetratio.pl/fer/59P_Stad.pdf

of their mental state during pregnancy, manifested by mood swings, fatigue, reduced vigour, anxiety, and restlessness (Arnal-Remón, Moreno-Rosset, Ramírez-Uclés et al., 2015; Carpinelli, Savarese, 2022; Postępska, Kanadys, Kęsik et al., 2023).

The psychological state of a pregnant woman is influenced by many factors, including: the length of the pregnancy and the associated hormonal changes taking place in the woman's body, as well as the physical changes resulting from the development of the pregnancy, partner relationships, the maternal-fetal bond, the course of previous pregnancies, or diseases complicating the pregnancy. It should also be emphasised that, nowadays, the course of pregnancy is less and less physiological, which is related to infertility treatment, late motherhood and, consequently, a higher incidence of co-morbidities. The above physiological, social and emotional factors have a significant impact on the mental health status of pregnant women (Agostini, Neri, Salvatori et al., 2015; Fisher, Tran, Duc Tran et al., 2013; McNamara, Townsend, Herbert et al., 2019; Verreault, Da Costa, Marchand et al., 2014).

When analysing the factors that determine a woman's psychological well-being during pregnancy, Navon-Eyal, Taubman-Ben-Ari (2023) highlighted the importance of the concepts of 'stress' and 'distress'. The definition of stress shows that it is an indispensable part of life and affects every pregnant woman in different aspects. Factors causing stress can be emotional, physiological, anatomical or physical (Kaczmarska, Curyło-Sikora, 2016). Stress can have a positive effect, contributing to health and mobilising action, or a negative effect, destructively leading to health problems. In contrast, in the literature, the term 'distress' describes a type of negative stress that is associated with a feeling of being 'stressed'. This type of reaction causes feelings of overwhelm, anxiety as well as physical and psychological symptoms such as headaches, tension, insomnia, impaired concentration or irritability. In contrast, stress in the perinatal literature is described as feelings of worry, unease and mild anxiety. Meanwhile, anxiety compromises psychological well-being and sometimes leads to mental health disorders (Arnal-Remón et al., 2015; Wojciszke, Baryła, 2004). Women who are exposed to severe stress and anxiety during pregnancy have an increased risk of miscarriage, premature birth, and giving birth to a low birth weight baby. It is also important to remember that the reactions in the mother's body triggered by a stressful situation have a multidirectional effect on the foetus, negatively affecting its development and the functioning of the hypothalamic-pituitary system. This is due to the secretion of large amounts of adrenaline and cortisol into the bloodstream of the pregnant woman, which cross the placenta to the fetus and negatively affect its development (Carpinelli et al., 2022; Noval-Eyal et al., 2023; Yildiz, Ayers, Phillips, 2017; Szczygieł, 2014). The subjective experience of different situations during pregnancy, whether in the form of non-specific mood or specific emotions, is part of psychological life. Subjective emotions and mood during pregnancy affect the quality of one's life.

The aim of the study was to investigate the emotional state that characterises women during pregnancy and what determines it.

1. Material and method

The study group consisted of 588 pregnant women, who were divided into three subgroups: Group 1 consisted of women in the 1st trimester of pregnancy (n = 49; 8.33%), Group 2 – pregnant women in the 2nd trimester of pregnancy – (n = 286; 48.64%) and Group 3 – pregnant women in the 3rd trimester of pregnancy (n = 253; 43.03%).

The study was conducted between November 2023 and January 2024 in women's counselling centres and birthing schools in the Lublin Province. A diagnostic survey method was used in the study. The tools used during the study were: the authors' survey questionnaire, General Mood Scale, Emotions Questionnaire. The author's survey questionnaire included: socio-demographic data (age, marital status, occupation, place of residence, education, material situation), data on the course of pregnancy and the occurrence of chronic diseases and interpersonal relations.

The General Mood Scale (Wojciszke, Baryła, 2004) contains 10 statements, which consist of claims formulated in such a way as to express a general positive or negative mood. The respondent can mark the answer that is appropriate for her in the form of a number from 1 to 5 on a Likert scale, where 1 means 'I disagree' and 5 means 'I agree'. In addition, the scale contains 20 adjectives that describe a specific positive or negative mood. The respondent was asked to tick the relevant adjectives describing her mood in the 7 days prior to the survey. The result is the average number of positive and negative sequences indicated. The overall mood score is the sum of the obtained scores (ibidem).

The Emotion Questionnaire (Wojciszke, Baryła, 2004) consists of 6 main emotions (joy, love, fear, anger, guilt and sadness), contained in 24 adjectives, denoting the names of discrete emotions, four for each main emotion. The respondent was asked to indicate on a Likert scale from 1 to 7 how often she had felt the emotion in question in the seven days preceding the survey, where 1 means 'never' and 7 means 'always'. The result is the sum of the scores for positive and negative emotions (ibidem).

The following criteria were used to qualify women for the study:

- live pregnancy,
- any length of pregnancy,
- no history of diagnosed mental illness,
- at least 18 years of age,
- consent to participate in the study.

The statistical package Statistica version 13.3 was used for statistical analyses. A level of ($p < 0.05$) was considered statistically significant. The following were taken as independent variables: age, marital status, education, place of residence, financial situation, employment, trimester of pregnancy, obstetric failure, support received. The dependent variables were: the score from the General Mood Scale and the score from the Emotions Questionnaire. The average, standard deviation, minimum, maximum, median, upper and lower quartiles were used in the statistical description of the results obtained from the General Mood Scale and the Emotions Questionnaire. The differences between groups were assessed using the Kruskal-Wallis test.

2. Results of the study

Among the women surveyed, the largest group was between 26 and 35 years of age (n = 417; 71%; 70.92%). One-fifth of the subjects were aged between 18 and 25 years (n = 118; 20.07%), while pregnant women over 40 years of age accounted for approximately 1% of the subjects (n = 6). Most of the subjects lived in a city: a large city with more than 50,000 inhabitants (n = 248; 42.18%) and a small town with less than 50,000 inhabitants (n = 155; 26.36%). Rural residents accounted for 31.96% (n = 188). Approximately three quarters (n = 437; 74.32%) of the female respondents declared their marital status as married. The remaining respondents were single (single – n = 128; 21.77%, divorced – n = 23; 3.91%). The vast majority of the subjects had a university degree (n = 398; 67.69%). More than 90% (n = 538; 91.15%) of the respondents were economically active before pregnancy, while those studying/learning (n = 10; 1.70%) and unemployed (n = 40; 6.81%) represented only a small percentage. More than three quarters of the respondents described their financial situation as good/satisfactory (n = 444; 75.51%), 120 (20.41%) female respondents described their financial situation as very good and 4.08% of the respondents (n = 24) as bad. It was the first pregnancy for more than three-quarters of the respondents (n = 445; 77.38%). Approximately one fifth of the respondents (n = 112; 19.05%) had experienced pregnancy loss once, the remaining respondents twice (n = 23; 3.91%) or more (n = 8; 1.36%). Approximately 15% of women (n = 90) had been treated for infertility. More than half of the respondents (n = 383; 65.14%) were expecting their first child, almost one third of the women surveyed (27.55%) had given birth only once, the remaining women (n = 43; 7.31) had given birth 2 or more times. Approximately half of the respondents (n = 282; 47.56%) said that their 'life energy' decreased significantly during pregnancy. A group of 116 women (19.72%) indicated that pregnancy had a positive impact on their overall well-being, while 15, 31% (n = 90) of the respondents stated that pregnancy had affected them negatively. The remaining respondents (n = 100; 17.01%) stated that the pregnancy had no impact on their well-being.

Comorbidities coexisting with and complicating pregnancy (thyroid disease, diabetes, hypertension, urinary and vaginal tract infections, allergies and others) were declared by more than two-fifths of the respondents (n = 255; 43.36%). Almost three quarters of the respondents (n = 409; 69.56%) indicated that they had a lot of support from their husband/partner in a difficult situation, a quarter of the respondents (n = 150; n = 25.51%) declared that they could rely on such support from their immediate family, but it was not sufficient, the remaining respondents (n = 29; 4.93%) felt there was a lack of support from their closest relatives.

The next part of the presentation of the study results analysed the influence of sociodemographic factors on the differentiation of emotions in pregnant women. The independent variable described on an interval scale consisted of factors such as age, marital status, education, place of residence, financial situation and employment. The dependent variable was the sum of scores indicating negative emotions obtained from the Emotion Questionnaire. The results in the form of median, standard deviation, minimum and maximum scores obtained in the study group are presented in Table 1.

The statistical analysis presented in Table 1 using the Kruskal-Wallis test showed statistically significant differences in the variables i.e. age, education, financial situation and marital status while proving that they have an impact on the intensity of negative emotions experienced during pregnancy. The analysis of the other variables did not show statistically significant differences. In contrast, the group of women surveyed with the highest mean level regarding negative emotions was composed of single women (M = 45.5), women with primary education

Table 1. Socio-demographic factors characterising the women surveyed and their negative emotions during pregnancy

Socio-demographic data		Negative emotions					Kruskal-Wallis test	
		N	SD	Min	Max	M	H	P
Age	18-25	120	17.96	16	100	45.00	13.050	0.0045
	26-35	415	16.34	16	96	42.00		
	36-40	47	13.42	16	79	34.00		
	>40	6	27.50	19	84	39.00		
Marital status	married	437	16.23	16	96	41.00	8.691	0.0130
	single	128	18.54	16	100	45.50		
	divorced	23	13.03	20	66	36.00		
Education	Primary	9	20.16	31	94	65.00	15.873	0.0012
	basic vocational	19	19.17	19	83	39.00		
	secondary	162	17.68	16	89	45.00		
	higher	398	15.79	16	100	41.00		
Place of residence	village	185	17.23	16	89	45.00	0.436	0.8039
	town with less than 50,000 inhabitants	155	15.15	16	91	42.00		
	provincial city	248	17.41	16	100	41.00		
Financial situation	very good	120	15.58	16	84	40.00	9.023	0.0290
	good/average	444	16.69	16	100	42.00		
	bad	24	20.78	17	85	58.00		
Employed	yes	538	16.33	16	100	42.00	1.465	0.4806
	no	40	21.22	16	94	47.00		
	student	10	19.25	31	83	41.50		

N – number of subjects; SD – standard deviation; Min – Minimum; Max – Maximum; M – median; H – test result; p – significance level.

(M = 65), rural residents (M = 45), unemployed respondents (M = 47%) and respondents in the age range of 18 to 25 years (M = 45).

The emotional state of the women surveyed during each trimester of pregnancy was assessed with the General Mood Scale. Table 2 and Table 3 present a statistical analysis of the results of the study indicating positive and negative moods declared by the study women in each trimester of pregnancy.

Statistical analysis with the Kruskal-Wallis test showed no statistically significant difference in women's mood scores depending on the trimester of pregnancy. A slightly higher intensity of mean positive mood is observed in women in the 3rd trimester of pregnancy (M = 17).

An analysis of negative mood obtained using the General Mood Scale from respondents in different trimesters of pregnancy shows no statistically significant differences between groups ($p > 0.05$). The highest mean intensity of negative mood was found among women who were in the 1st trimester of pregnancy (M = 11) (Table 3).

Analysis of variance was used to assess the impact of the support perceived by the study women on their emotions. The independent variable described on the interval scale was women with different levels of support from a loved one. The first group consisted of women who claimed to be very supported by a relative/partner, the second group consisted of women who had some support, but in their opinion it was not insufficient, the third group consisted of women who indicated that they had no support from relatives, the fourth group included women who claimed that they had no support, but were doing well on their own. The sum of the scores obtained from the Emotions Questionnaire indicating positive and negative mood was used as the dependent variable (Table 4 and Table 5).

The perceived extent of support from the partner/relatives significantly influenced the positive emotions felt by the women surveyed. Statistical analysis showed statistically significant differences between the groups ($p<0.001$) divided according to the support received. The highest mean intensity of

Table 2. Positive mood declared by pregnant women in each trimester of pregnancy

Trimester of pregnancy	N	SD	Min	Max	Q25	M	Q75
First (1-12 weeks' gestation)	49	5.469	5	25	11.00	15.00	20.00
Second (13-27 weeks' gestation)	286	5.069	5	25	13.00	16.00	20.00
Third (28 weeks' gestation and more)	253	5.117	5	25	13.00	17.00	20.00
Total	588	5.129	5	25	_	_	_
Kruskal-Wallis test result	H= 1.226; p = 0.5418						

N – number of subjects; SD – standard deviation; Min – Minimum; Max – Maximum; Q25 – upper quartile; M – median; Q75 – lower quartile; H – test result; p – significance level

Table 3. Negative mood declared by pregnant women in each trimester of pregnancy

Trimester of pregnancy	N	SD	Min	Max	Q25	M	Q75
First (1-12 weeks' gestation)	49	5.948	5	25	5.00	11.00	15.00
Second (13-27 weeks' gestation)	286	4.983	5	25	6.00	10.00	15.00
Third (28 weeks' gestation and more)	253	5.101	5	25	6.00	10.00	15.00
Total	588	5.116	5	25	_	_	_
Kruskal-Wallis test result	H = 2.486; p = 0.2885						

N – number of subjects; SD – standard deviation; Min – Minimum; Max – Maximum; Q25 – upper quartile; M – median; Q75 – lower quartile; H – test result; p – significance level positive emotions was among women who had great support from a partner/close relative (M = 41), while the lowest scores were obtained by those women who had no support from loved ones (M = 29) (Table 4).

In contrast, the highest mean score for intensity of negative emotions was among women who felt a lack of support from loved ones (M = 58). Women who felt insufficient support from loved ones also had a high mean score (M = 51). On the other hand, low intensity of negative emotions was found among respondents who declared that they were doing well on their own (M = 39), as well as those who had high support from their partner/relatives (M = 39) (Table 5)

The impact of obstetric failures in previous pregnancies (miscarriages, stillbirths) on the differentiation of emotions in the current pregnancy of the respondents is presented in Tables 6 & 7. The women surveyed were divided into four groups based on the number of obstetric failures. The first group consisted of women who had not been pregnant before or had no pregnancy loss, the second group consisted of respondents with one obstetric failure, the third group consisted of respondents who had lost a pregnancy twice and the fourth group consisted of women who replied that they had lost a pregnancy 3 or more times. The sum of positive and negative mood scores obtained from the Emotions Questionnaire was used as the dependent variable.

In the groups of women with different numbers of obstetric failures in previous pregnancies, statistical analysis showed no significant differences in feeling positive emotions during the current pregnancy. The highest intensity of positive emotions was observed among women who had lost one pregnancy (M = 40), while the intensity of positive emotions was slightly lower (M = 38) in respondents who were pregnant for the first time or had no obstetric failures (Table 7).

The negative emotions experienced by the women surveyed during pregnancy were not significantly dependent on the number of obstetric failures. The high-

Table 4. Positive emotions and perceived support during pregnancy

Perceived support during pregnancy	N	SD	Min	Max	Q25	M	Q75
I have great support from my partner/relatives	409	7.682	8	56	35.00	41.00	46.00
I have some support but I think it is not sufficient	150	7.649	13	55	29.00	34.00	37.00
I have no support from relatives	13	11.781	14	51	22.00	29.00	37.50
I have no support, but I cope well on my own	16	9.501	22	53	28.50	33.00	39.50
Total	588	8.441	8	56	32.00	38.00	45.00
Kruskal-Wallis test result	H=85.127; p<0.001						

N – number of subjects; SD – standard deviation; Min – Minimum; Max – Maximum; Q25 – upper quartile; M – median; Q75 – lower quartile; H – test result; p – significance level

Table 5. Positive emotions and perceived support during pregnancy

Perceived support during pregnancy	N	SD	Min	Max	Q25	M	Q75
I have great support from my partner/relatives	409	15.084	16	96	30.00	39.00	50.00
I have some support but I think it is not sufficient	150	16.958	16	100	40.00	51.00	65.00
I have no support from relatives	13	18.787	27	84	42.00	58.00	72.50
I have no support, but I cope well on my own	16	19.759	16	91	32.00	39.00	58.50
Total	588	16.766	16	100	32.00	42.00	55.00
Kruskal-Wallis test result	H=66.790; p<0.001						

N – number of subjects; SD – standard deviation; Min – Minimum; Max – Maximum; Q25 – upper quartile; M – median; Q75 – lower quartile; H – test result; p – significance level

Table 6. Positive emotions related to pregnancy loss

Pregnancy loss	N	SD	Min	Max	Q25	M	Q75
No	445	8.332	8	56	32.00	38.00	44.00
Yes, 1 time	112	8.602	17	56	34.00	40.00	47.00
Yes, 2 times	23	8.796	21	53	33.00	37.00	45.00
Yes, 3 or more times	8	11.134	19	48	28.50	36.50	48.00
Total	588	8.441	8	56	32.00	38.00	45.00
Kruskal-Wallis test result	H=3.672; p<0.299						

N – number of subjects; SD – standard deviation; Min – Minimum; Max – Maximum; Q25 – upper quartile; M – median; Q75 – lower quartile; H – test result; p – significance level

Table 7. Negative emotions related to pregnancy loss

Pregnancy loss	N	SD	Min	Max	Q25	M	Q75
No	445	16.568	6	100	32.00	42.00	56.00
Yes, 1 time	112	16.290	6	94	30.50	40.00	51.00
Yes, 2 times	23	18.304	9	80	30.00	44.00	56.00
Yes, 3 or more times	8	23.856	1	84	34.50	70.50	81.50
Total	588	16.766	6	100	32.00	42.00	55.00
Kruskal-Wallis test result	H=4.4194; p=0.2196						

N – number of subjects; SD – standard deviation; Min – Minimum; Max – Maximum; Q25 – upper quartile; M – median; Q75 – lower quartile; H – test result; p – significance level

est intensity of negative emotions was observed in the group of women who lost 3 or more pregnancies (M = 70), while significantly less negative emotions were found in the other study groups.

3. Discussion

A woman's emotional state during pregnancy has a significant impact on the course of pregnancy. It is shaped by physical, social and psychological factors. It could be hypothesised that maintaining a positive mood and a positive emotional state in pregnant women has an impact on the prevention of pregnancy complications. An analysis of studies conducted by Cai, Busch, Wang et al. (2022) and Andhavarapu, Orwa, Temmerman et al. (2021) shows that stress triggers during pregnancy manifested by increased anxiety and fear correlate with the incidence of pregnancy complications such as preterm delivery, depression during pregnancy or after delivery, poorer psycho-physical development of the child. Similar conclusions were reached by Grigoriadis, Graves, Peer et al. (2018), who observed low fetal birth weight in addition to the above-mentioned complications.

Therefore, the authors of the present study attempted to determine the mood and emotions experienced by pregnant women, depending on the influence of selected factors such as length of pregnancy, loss of previous pregnancies, support from partner/relatives and certain socio-demographic factors. In our study, the most common positive emotions experienced by respondents were joy (n = 227; 38.61%;), a sense of security (179; 30.44%) and optimism (n = 170; 28.91%), while the negative emotions experienced by pregnant women were anxiety (n = 286; 48.63%) and worry (n = 274; 46.59%). A similar study among pregnant women was conducted in Sweden by Zheng, Naurin, Markstedt et al. (2022). The results of that study indicate that pregnancy mainly evokes positive emotions such as joy, feelings of security and strength, but is also largely a cause for worry, but rarely a cause for anger or shame.

The available literature (Alves, Cecatti, Souza, 2021; Postępska et al., 2023; Andhavarapu et al., 2021; Kanadys, Tyrańska, Lewicka et al., 2018; McLeod, Ebeling, Baatz et al., 2021) contains many reports assessing the influence of socio-demographic factors on shaping mood and evoking specific emotions in pregnant women. When analysing our own study, we found that higher levels of negative emotions were found in women who were young (18-25 years), unmarried and had primary/vocational education. The place of residence and low material status were also influential. The relationship between low social status and high prevalence of negative emotions was presented in an analysis of a study by Lamgretse van den Berg, Lucassen, Kuipers-Nap (2013). In the same study, it was shown that younger mothers were more critical towards each other, while older women were more emotionally involved in terms of helping each other, which generated positive emotions. Similarly, the results of our own study showed that women between the ages of 36 and 40 were characterised by the highest levels of positive emotions. Married (M = 96) and single (M = 100) respondents also achieved a high median level, while divorced women had a low average level of positive emotions (M = 66).

In our study, positive and negative moods were compared across different trimesters of pregnancy. Statistical analysis did not show a statistically significant difference in the assessment of positive as well as negative mood by women in different trimesters of pregnancy. However, negative mood was found to be highest among women in the 1st trimester of pregnancy (M = 11), while positive mood was only slightly higher among respondents in the 3rd trimester of pregnancy (M = 17) compared to the other respondents. This varied similarly in a study by Alderdice, Lynn, Lobel (2012), where women in the 1st trimester of pregnancy were more likely to report negative emotions, such as shock, anxiety, depression, which were most commonly associated with anxiety about pregnancy loss. As the pregnancy progressed, frustration, uncertainty, and guilt appeared in some subjects. In this study, the authors also assessed the type of support provided to women. The results of the study suggest that the support received was negligible, and many of the subjects faced negative judgement from relatives and medical staff. Respondents said they were stressed by situations arising from everyday life. Women felt stigmatised, misunderstood and mentioned a lack of support from those around them. Other results were obtained in our study, where the vast majority of the respondents indicated that they had great support from loved ones during pregnancy (n = 409; 69.56%), which translated into high rates of their positive emotions. In contrast, women who had no support or felt there was insufficient support were characterised by elevated rates of negative emotions. There was a statistically significant difference in the experience of positive as well as negative emotions depending on the support received. Based on a study by Lahdepuro, Lahti-Pulkinen, Tuovinen et al. (2020) pregnant women experiencing higher levels of positive emotions during pregnancy and social support had a lower risk of psychiatric disorders. Partner support also correlates with a woman's positive feelings during pregnancy, and protects against the development of psychiatric disorders especially in women at increased risk of depression. Social support of pregnant women increases their resilience to stress and reduces the incidence of stress-related complications (Alves et al. 2021; Al-Mutawtah, Campbell, Kubis, Erjavec, 2023).

Another element analysed in the study was the emotional response of women after pregnancy loss. A study by Fernandez-Basanta et al. (2023) showed that miscarriage or stillbirth is a traumatic event, causing some women to take a cautious approach to the next pregnancy: they constantly monitor the condition of the fetus and try to eliminate any risky behaviour. Other authors have found that the severity of negative emotions after pregnancy loss was higher in a group of women who lacked social support, had difficulties in their relationship and did not have children, and especially in women after pregnancy termination due to fetal defects (Dembińska, Wichary, 2016; Battulga, Benjamin, Chen et al., 2021; Lamgretse van den Berg et al. 2013; Paz, Otaño, Gadow et al., 1992). In contrast, a study by Shen, Zhong, Wang et al. (2024) found an increase in psychiatric disorders in female patients after pregnancy loss. The risk of psychiatric disorders in women increases significantly after the loss of two or more pregnancies. A study by Paz et al. (1992) showed that the occurrence of defects such as anencephaly, Down's syndrome, multiple malformations, spina bifida, congenital hip dislocation, low birth weight or clubfoot are associated with early pregnancy loss and should be taken into account when assessing the risk of defects in a subsequent pregnancy. The results of a study conducted in Scotland by Bhattacharya, Townend, Shetty et al. (2008) found a higher risk of pre-eclampsia, threatened miscarriage, preterm birth and postpartum haemorrhage in women who had previously lost a pregnancy. In the study, the impact of pregnancy loss on the emotional state of the respondents was assessed. In the study group, the highest level of positive emotions was observed in women who had lost a pregnancy once. The highest level of negative emotions was displayed by the group of women who had lost a pregnancy (miscarriage) three or more times.

Over the years, a number of studies have attempted to identify factors that reduce stress levels and determinants of well-being in pregnant women (Agostini et al., 2015; Fisher et al., 2013; McNamara et al., 2019; Verreault et al., 2014; Savory, Hannigan, Sanders, 2022; Noval-Eyal et al., 2023). When analysing the literature, it can be concluded that, regardless of the number of stressors occurring during pregnancy, a very important protective role is played by the maternal-fetal bond, which determines maternal well-being. Studies indicate that the stronger the mother's bond with the prenatal child, the fewer symptoms of anxiety and depression reported and observed during pregnancy and after delivery (Goecke, Voigt, Faschingbauer et al., 2012; Matthies, Müller, Doster, Sohn et al., 2020; Petri, Palagini, Bacci et al., 2017, Noval-Eyal et al., 2023). In theory, assuming that a mother's bond with her prenatal child may have protective properties against stress allows one to see the mother-child dyad differently, which is most often viewed from the perspective of the child's well-being. In practice, creating a good prenatal bond between a mother and her unborn baby, among many other benefits, can help the pregnant woman cope with stress. A second important factor that has a positive impact on the psychological state of pregnant women is a good relationship with the partner/husband and the support received mainly from the family. It is also important to take into account that pregnant women experience stress that stems from the pregnancy itself (Ibrahim, Lobel, 2020; Penner, Rutherford, 2022) and relates to the physical symptoms of pregnancy, changes in the body, changes in interpersonal relationships, the health of the fetus or the mother, the impending birth or caring for the baby (Alderdice et al. 2012; Ibrahim et al. 2020). Therefore, pregnant women should be offered individual and holistic care, diagnosing factors that trigger negative emotions and offsetting them by enhancing factors that positively influence mood and emotions.

4. Study limitations

The first limitation of the study may be due to the fact that the study group represented only the eastern part of Poland and therefore may not be representative of the entire population of pregnant women in Poland. The second limitation of the study may be due to the convenient sampling method of selecting participants due to their convenient accessibility and proximity. This does not allow us to generalise the results of the study. The results of our study indicate the need for further research in this area.

Conclusions

1. The stage of pregnancy does not significantly alter women's mood, however, a slight increase in positive mood is observed in the 3rd trimester of pregnancy and higher intensity of negative mood is observed in the 1st trimester of pregnancy.
2. A higher intensity of negative emotions applies to women of low material status, less educated, who are under 25 years of age and who live in rural areas.
3. Support from a partner/relative has a significant impact on the emotions felt and expressed during pregnancy. Negative emotions during pregnancy are mainly experienced by women who have lost three or more babies due to miscarriage, premature birth or stillbirth.
4. Further research to identify stressors in pregnant women seems warranted in order to individualise professional care for this group of women.

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Polish medical students' awareness about reproductive physiology

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Abstract: *Introduction:* Falling fertility rates and prevalence of infertility become serious problems of public health that affect families all over the world. Both men and women are delaying parenthood for several reasons, such as undertaking further education, pursuing careers, travelling, finding a partner later in life and facing the challenges of establishing secure finances and housing. Unfortunately their fertility declines with age and this awareness may influence the prioritization of life plans. Medical students are specially dedicated to promote health literacy in their future practice as well as in they private life. Aim of the study and methodology Aim of this study was to examine polish medical students' awareness about the basic reproductive physiology. It was based on on-line authors' own questionnaire among 445 female and 97 male medical students of a mean age 22.3 years from 13 polish medical universities. Results It showed that awareness of basic fertility physiology is on relatively high level what can be promising. Students who plan to start a family in the future have the highest overall mean score of correct answers (83%). Statistically lower levels of knowledge about fertility is presented by the students that have no decision about the future family or do not want to raise a family (80% and 72% respectively). The results seem to be similar irrespective of the participants' gender, year of study, sexual activity and potential pregnancy prevention method. Conclusions It is still essential to introduce modern knowledge about fertility care and prophylaxis issue among future medical staff, so that they will properly take care of their health and educate their patients.

Keywords: fertility awareness, infertility, natural family planning, reproductive physiology

Introduction

Falling fertility rates and prevalence of infertility become serious problems of public health that affect people all over the world. According to the most recent WHO report, around 17.5% of the adult population – 1 in 6 worldwide – experience infertility (World Health Organization, 2023) The age of the first conception is rising globally, in Poland it is getting close to 30 years old, while in many countries it is even higher (World Population Review, n.d.). Delaying the parenthood might have several reasons. Among updated literature they are mentioned sociological reasons like: difficulty in establishing stable relationships, long education process, economical reasons: demanding labour condition and instability, medical ones: use of contraception and decreasing male fertility as well as lack of health literacy especially concerning fertility awareness. (Babakhanzadeh, 2020; Nazaré, 2022). In addition, it is the health problems that force couples to postpone family planning regardless of their will. Many people are unaware of their own fertility potential, the limitations on their fertility as well as of the symptoms or preventable causes of fertility problems (Harper et al., 2017). Understanding the basics of the reproductive cycles and fertility are essential not only for family planning, but also for observation of female body and its health. Enhancing health literacy can facilitate its application in diagnosing and treating gynecological issues, such as infertility. Great tools for improving fertility knowledge are Fertility Awareness-based Methods (FAMs), based on self-observation of natural signs and symptoms of the cycle as well as on new technology monitors which help to distinguish whether the woman's cycle phase is fertile or not. It can also assist women in recognizing signs of any health issues in their bodies (Smoley, Robinson, 2012). Unfortunately, according to our study, the knowledge about FAMs among future medical professionals is incomplete. Even though most of the medical students in the study agree with the value of FAMs, the reaserch showed they barely use these tools. What is more, students presented incomplete knowledge about modern FAMs, with a possible reason of residual information about them in the medical textbooks or lectures (Zgodzińska et al., 2023). This knowledge is insufficient not only among users but also among clinicians themselves (Ibeziako, 2022). In our study we examined if polish medical students' show adequate awareness about basic reproductive physiology and the factors that might influence it. It seems essential for future professionals to know basics of these topics in order to properly take care of their patients, and help them prevent decrease in fertility and postponing pregnancy at least from the medical perspective.

1. Materials and methods

To check the students' knowledge about fertility, a diagnostic survey was created, using online authors' own questionnaire. It contained closed-ended questions of single or multiple choice. From March to May 2022 445 female and 97 male medical students participated in the study. The mean of age of respondents was 22.3 years ± 2.11 SD with the range of 19-39 years. Among the participants, 361 (66.7%) students came from the urban areas while 181 (33.3%) from the rural areas. Majority of students were unmarried (518; 95.4%) and sexually active (331; 61.0%). Our study reached medical students from 13 polish cities: Lublin (221), Wrocław (91), Łódź (60), Warszawa (55), Białystok (37), Poznań (19), Kraków (18), Zabrze (14), Olsztyn (12), Katowice (9), Rzeszów (2), Szczecin (1) and Gdańsk (1). Two students did not state the city of their studies. One person replied not to be a student, so the questionnaire was rejected and this person was not included to our statistics.

The questionnarie was widespread through the online student groups to reach the participants. The questions were divided into three groups — "Physiology of the Menstrual Cycle and Fertility", "Reproductive Health" and "Fertility Awareness-based Methods and Family Planning". The part analyzed in this study – „Reproductive health" – included seven basic questions related to the topic.

The participants' characteristics underwent a descriptive analysis. Continuous variables were presented as means ± standard deviations (SD), and categorical variables were presented as the numbers and percentages of individuals. A two proportion Z-test was used to compare the answers of the groups of participants. Differences with a p-value less than 0.05 were considered significant. The data was analyzed using the RStudio ver. 1.1.463 software (Boston, MA, USA).

2. Results

The total of correct answers on the questions is presented on Figure 1. 93% (n = 503) of the students correctly recognized the first day of female cycle and 90% (n = 488) the correct length of it. Almost every participant (over 99%, n = 541) knew the meaning of the term „ovulation", while 84% (457) properly indicated when it occurs within a cycle. 69% (n = 375) of respondents were aware of the time during which the egg cell is alive and capable of being fertilized, while 50% (n = 273) knew how long sperm retains their ability to fertilize in the reproductive tract of a woman.

Table 1. shows the differences in the knowledge between students of different family plans. The most accurate answers for questions about the length of the cycle, time of ovulation and length of life of an egg cell were given by family-planning students (90%, 86% and 70% respectively). At the question of the length of the life of a sperm, non-family-planning students had the most correct answers (55%). Non-family planning students had more correct answers than students with no decision about their future family life at the question about when ovulation occurs (79%, 75% respectively). However, students with no

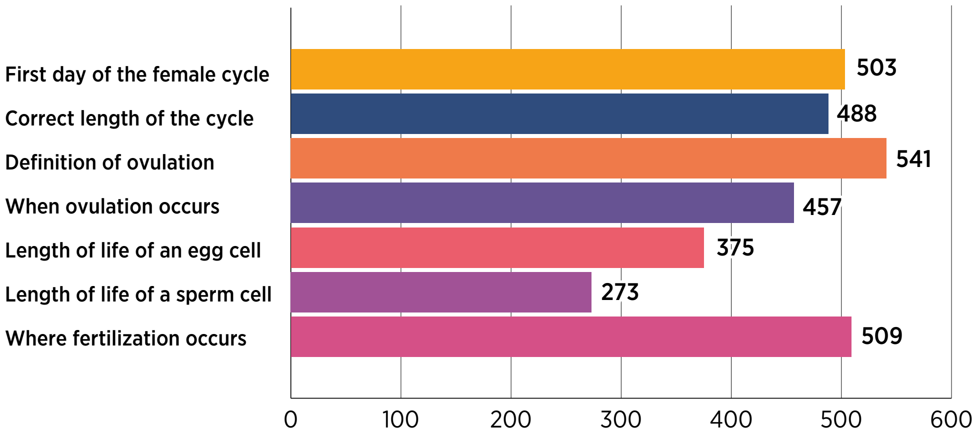

Figure 1. Correct answers in total.

family decision were more accurate than no-family students in the questions about the length of the cycle (85%, 69%) and the length of the life of the egg cell (65%, 64% respectively).

To summarize, students who plan to start a family in the future have the overall mean score of 83% correct answers. Lower levels of knowledge about fertility is presented by the students that have no decision about the future family or do not want to raise a family (80% and 72% respectively). All of the correct answers in our questionnaire stands for about 78%.

Table 1. Correct answers between students of different family plans

Question	Family-planning students (n=421)	Non-family planning students (n=42)	Students with no decision (n=79)	p
First day of the female cycle	392	33	75	0.901
Correct length of the cycle	380 (90%)	29 (69%)	67 (85%)	0.002
Definition of ovulation	420	34	79	0.3897
When ovulation occurs	361 (86%)	33 (79%)	59 (75%)	0.00068
Length of life of an egg cell	296 (70%)	27 (64%)	51 (65%)	<0.0001
Length of life of a sperm cell	213 (51%)	23 (55%)	38 (48%)	<0.0001
Where fertilization occurs	397	32	73	0.0793

Differences between males and females' correct answers are presented in the Table 2. Female participants were significantly more accurate than male participants in choosing the factual first day of female cycle having respectively 97% (n = 430) and 75% (n = 73) correct answers. Women were also correct about the length of life of an egg cell more often than men, having 73% (n = 324) and 53% (n = 51) proper answers respectively. The results seem to be irrespective of the participants' year of study, sexual activity and potential pregnancy prevention method.

Discussion

The aim of this study was to examine the polish medical students' awareness about basic reproductive physiology.

In a systematic review on fertility awareness of Pedro et al. seventy one articles were included in the analysis and they showed low (<40% of correct answers) to moderate fertility awareness (40-60%) in general population (Pedro et al., 2018). In the study of Chawłowska et al., where polish female students were examined, 55,8% answers were correct and students of medicine reached the highest score (Chawłowska et al. 2020). Our research showed the level of knowledge of polish medical students at about 78%. This might indicate that medical studies help to increase the knowledge about fertility. The dominance of medical students' results over non-medical students is also showed by some other studies (Nouri et al., 2014).

Table 2. Correct answers between women and men

Question	Females n = 445	Males n = 97	p
First day of the female cycle	430 (97%)	73 (75%)	<0.0001
Correct length of the cycle	398	90	0.4181
Definition of ovulation	445	96	0.4019
When ovulation occurs	382	75	0.05267
Length of life of an egg cell	324 (73%)	51 (53%)	0.0001512
Length of life of a sperm cell	229	44	0.3287
Where fertilization occurs	421	88	0.2241

According to Pedro et al. in general population higher levels of fertility awareness were shown by women (Pedro et al., 2018). In a systematic review of Yue Ren et al, female medical students showed higher levels of FA than other student groups (Ren et al., 2023). Our research showed that the level on fertility knowledge was similar in male and female medical students, but women were more accurate than men in some areas. They chose the first day of the female cycle better as well as the total length of a life of an egg cell. Such results can be based on the fact that women actually menstruate, so they have some knowledge from their reality in comparison to men.

In the study of Warzecha et al. twenty thousand polish women were examined in terms of sexual education. The level of knowledge about fertility among polish women was found to be quite satisfying, as 62.2% of the women gave correct answers to at least 5 of 7 questions about the physiology of the menstrual cycle. Three factors had a significant impact on the women's number of correct answers: higher education, more frequent gynecological appointments, and living in a larger city (Warzecha et al. 2019). Although the level of knowledge of polish women seems satisfying, there is still a need to share high quality medical knowledge, especially to smaller centers. Usually the topics of fertility and sexuality seems to still be a taboo in such places (Warzecha et al., 2019). In the study of Kazem et al. gender did not affect estimated knowledge independently. The correlation, though, was found between healthy lifestyle and female gender with higher fertility awareness (Nouri et al. 2014).

Along with Pedro et al. study having or desiring to have children was not related to fertility awareness level. However, people who planned their pregnancies showed better fertility awareness (Pedro et al., 2018). In our study different family plans affected the answers of the participants. Statistically, the questions about the length of a female cycle, time of the ovulation and the length of the life of an egg cell were more correct in the group of participants who plan to have children in the future. Interestingly, non-family-planning students gave the most accurate answers in comparison to other groups on the question about the length of life of a sperm cell (55%). It seems that either desire or avoidance of pregnancy leads the medical students to broaden their knowledge about fertility. In the study of Rachel Okine et al on students of different fields, majority participants planned to delay childbearing. Yet, participants demonstrated limited knowledge regarding age-related decline in fertility and underestimated the risk of miscarriage in older women. The study found that along with delay plans particularly female medical students declare anxiety about their future fertility and show will of receiving the information about fertility. These discordant conclusions underline a crucial need for education in the field of fertility during studies (Okine et al., 2023).

In the general population higher fertility awareness was reported to relate to people with difficulties with conceiving in the past (Pedro et al., 2018). According to our research, sexual activity and potential pregnancy prevention method did not affect the answers of the participants. Our study showed, though, that students have poor knowledge about modern Fertility Awareness Based Methods, which are based on human physiology and help not only to plan pregnancy but also rise awareness about ones own body and overall health. Among the declared well-known Natural Family Planning methods were the ones of historical importance, like the Calendar Method, or their modern equivalents for instance phone applications, on the contrary to the modern methods (ex. The Billings Method, Creighton Model

System, Multi Index Method) (Zgodzińska et al., 2023). It can be predicted that the raise of knowledge about fertility might encourage medical students and future doctors to use and recommend FABM.

In Pedro et al. study an inconsistent association between participant age and fertility awareness was observed, with some studies showing that older participants had better knowledge, but other found an opposite result or no association. As far as the year of study is concerned, higher levels of fertility awareness were shown by highly educated individuals (Pedro et al., 2018). In our research results seem to be irrespective of the participants' year of study. This can be explained by the fact that gynecological topics come up on different years of medical studies. Our study showed that the most popular source of knowledge about fertility is the Internet and medical textbooks (Zgodzińska et al., 2023). Results were similar in the study of Halczuk et al, in which most participants had also expressed the opinion that the parents should be the most appropriate source of knowledge about human sexuality (Halczuk et al., 2019). This means that not only medical staff should be more aware to share the knowledge to the patients, but also encourage parents to talk with their children about fertility related topics.

According to the study of Grace et. al. in UK, healthcare professionals were ranked as the most trusted source for seeking fertility information. However, they did not show better fertility knowledge than lay participants in the study. That is why medical staff should improve their knowledge about fertility to help raise patient's fertility awareness (Grace et al., 2023).

Conclusions

The findings of our study shed light on the awareness of Polish medical students regarding reproductive physiology, an essential aspect of public health and medical practice. Health literacy must include fertility awareness which creates special milieu for health education, also or especially among medical staff. Our study reveals a relatively high level of awareness among Polish medical students regarding basic fertility physiology. The majority of participants demonstrated accurate knowledge about key aspects such as the first day of the female cycle, ovulation, and fertilization. Students who expressed intentions of starting a family in the future exhibited better knowledge about fertility physiology compared to those who had not yet made a decision or did not desire to have a family. While overall knowledge levels were similar between male and female medical students, women tended to be more accurate in certain areas, what might come from their personal experiences with menstruation. Despite the relatively high awareness levels observed, there is still room for improvement, particularly in understanding modern Fertility Awareness-based Methods (FAMs). Medical education should focus on providing comprehensive knowledge about these methods, which can aid not only in family planning but also in promoting overall health awareness. In education attention should be also drawn to the problem of postponing pregnancy and relying on assisted reproductive technology (ART). These days, late-age conceptions tend to be underlined as successful, creating the misconception that ART can fully counteract age-related fertility decline (Mills et al., 2015). However, according to CDC data from 2021, IVF success rate deceases with age, from 36% life births per embryo transferred in patients under 35 years old to 10% in women above 40 years old (National Center for Chronic Disease Prevention and Health Promotion, 2021). Consequently, many people find they have unintentionally missed their optimal reproductive window (Berrington, 2004). Healthcare professionals play a crucial role in educating patients about these realities, especially because they are considered trusted sources of fertility information. Our study highlights the importance of holistic education on reproductive health, not only within medical curricula but also within families and communities.

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Women's knowledge of procreative health[1,2]

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Abstract: *Backround:* A unique type of health is procreation health, which represents the entirety of a person's physical, mental and social well-being, not just the absence of disease or disorder. Reproductive health refers to all issues related to the reproductive system and procreation of women and men in all phases of their lives. Consequently, it includes topics such as puberty and menopause, fertility and infertility, family planning, health during pregnancy, childbirth, and the post-partum period, as well as cancers of the reproductive organs and breasts. This paper presents results of on women's knowledge of reproductive health in several key areas: sources of information, understanding the concept of ovulation, awareness of factors that positively influence health, knowledge of the most and least fertile ages for women, and preventive measures related to the reproductive system. *The aim* of the study was to assess the knowledge of adult women aged 18 to 49 regarding reproductive health. *Method:* The study was based on a questionnaire survey analysed with the IBM SPSS Statistics 27 program. Results: The majority of surveyed women had knowledge about ovulation, with most obtaining their information from the Internet (22.3%). Nearly all female respondents (93.7%) knew what ovulation is. Most women do not use cycle self-observation (75.2%). The age of sexual initiation for most of the respondents was at 18. More than two sexual partners were reported by nearly 40% of women. *Conclusions:* The group of women studied was homogenous in terms of the selected qualification criteria, i.e.; all of them were of reproductive age. Fertility knowledge did not correspond with adolescent age of sexual initiation and declared number of partners, which is a risk factor for future reproductive health disorders.

Keywords: fertility, prevention, procreation health.

Introduction

As stipulated in a widespread definition by the World Health Organization (WHO), health is one of the most valuable assets a person can possess: "Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity." This definition of health emphasises complexity and multidimensionality in which every element is equally important (Maszczak, 2005).

A unique type of health is procreation health. The Polish Journal of Laws (Dziennik Ustaw) of 16 September 2016 defines it as follows: "Procreation health constitutes an important element of the definition of health as complete physical, mental and social well-being and not merely the absence of disease or infirmity relating to the reproductive system and procreation in all phases of life. It covers puberty and menopause, fertility and infertility, family planning,

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[1] Article in polish language: https://www.stowarzyszeniefidesetratio.pl/fer/59P_Pias.pdf

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health during pregnancy, childbirth and the postpartum period, genital and breast cancer*"* (Regulation of the Council of Ministers, 2016).

The term "procreation health" is, on the one hand, aimed at the promotion of fertility care and preventive measures, i.e. the prevention of fertility pathologies/disorders such as premature sexual initiation during adolescence and its consequences (such as sexually transmitted diseases), as well as preliminary diagnosis of endocrine disorders. During the period of family planning, it helps prepare future parents for conceiving a child ("dual parenthood"); during pregnancy it aids in preventing pathologies and after delivery it promotes natural feeding, etc. (Ślizień-Kuczapska, Sys, Baranowska, Czajkowski, 2017). At the same time, this concept refers to promoting health awareness, education and the use of a fertility awareness method (FAM) as a tool to understand body language. The FAMs include the following: symptothermal double-check method, Josef Rötzer's method, John and Sheila Kippley's method, the method developed in Poland by Teresa Kramarek, and single-indicator methods: strict thermal method, extended thermal method, and Billings' ovulation method (Kinle, Małecka-Holerek, 2009). These fertility awareness methods comprise a tool used for Natural Family Planning (NFP), defined by the World Health Organization as "methods of planning or preventing pregnancy based on observation of naturally occurring signs and symptoms of the fertile and infertile phases of the menstrual cycle" (World Health Organization, 1988). A woman's potential fertility is determined, among other things, by the presence of regular ovulation (Vigil, Lyon, Flores, Rioseco, Serrano, 2017). It is advisable that the observation of the menstrual cycle begin as early as during puberty. Every menstrual cycle can be observed and investigated using the so-called main fertility biomarkers (Ślizień-Kuczapska, et al. 2020) – basal body temperature (BBT), cervical mucus and the position of the cervix (Piasecka, Łyszczarz, Pytka, Ślizień-Kuczapska, Kanadys, 2022).

In the majority of NFP scenarios, women observe basal body temperature (BBT), cervical mucus and/or the position of the cervix (Kinle, Szymaniak, 2009; Piasecka, et al. 2022). Other characteristics of the menstrual cycle include, for example, the length of menstruation or the presence of pre- or post-menstrual spotting, etc. Their appearance may confirm the correctness of the cycle or its potential disruptions such as vaginal bleeding and ovulation pain, in addition to length and regularity of cycles, monitoring of sex hormone levels (Duane, Stanford, Porucznik, Vigil, 2022), e.g. progesterone based on the length of the luteal phase, as well as assessing breast soreness, body swellings and libido (Kinle, Szymaniak, 2009).

By applying observation with the use of biomarkers or indicators of fertility, a woman can assess her menstrual cycle. Understandably, observing just one cycle will not be sufficient to offer a comprehensive picture. The characteristics of a typical menstrual cycle were determined, including the length of the cycle, the two-phase PTC curve, etc. Atypicality recurring in successive cycles requires consultation with a physician, and thus FAMs to serve as a reproductive health diagnosing and monitoring tool.

The characteristics of a typical menstrual cycle are associated, among other things, with confirming that ovulation correctly occurs only once during a cycle. In accordance with scientific reports, ovulation is a sign of health (Vigil, et al. 2017; Duane, et al. 2022). Double ovulation, i.e. the release of two or more ova from the ovary over the course of 24 hours, is also physiological in nature, as evidenced, for example, by dizygotic twins. In studies conducted on animals, e.g. rabbits, it was found that ovulation occurs as a result of sexual stimulation. However, this is not the case in humans (Hilgers, 2018).

As mentioned above, FAM-oriented training serves the purpose of health monitoring and education. It is important for women to be aware that female fertility is age-dependent and lasts from 15 to 49 years. Peak fertility occurs at the age of 20 and starts to decline in the third and fourth decades of life (with a significant decline after year 35), (Drabik, Kubiak-Sokół, Sobol, 2021; Ślizień-Kuczapska, Sys, Baranowska, Czajkowski, 2017; Ford, Roman, McLaughlin, Beckett, Sutherland, 2020). According to the World Health Organization (WHO), a female adolescent is defined as a person aged between 10 and 19 years

(World Health Organization, 1999) and early sexual initiation is sexual activity initiated before the age of 18 (Mazengia, Worku, 2009). Another important question is to educate adolescent girls on sexual behaviours that are considered risky due to their negative consequences (Fetene, Mekonnen, 2018). Furthermore, young women undertaking FAM-based menstrual cycle observations should be considered a health-promoting behaviour (Pachecka, 2009).

As part of procreation health preventive measures, it is proposed that after their first sexual experience, all women aged 25 or younger undergo gynaecological examinations with a cytological check-up at least once a year. This offers the chance to detect, at an early stage, cervical cancer which is an infection-induced disease caused by an oncogenic type of human papilloma virus, as a result of premature sexual initiation (Gośliński, 2019). Measures which play a key role in improving and maintaining one's health include regular preventive check-ups and self-observation (Stępkowska, Przygodzka, 2020; Ślizień-Kuczapska, Sys, Baranowska, Czajkowski, 2017).

Women's knowledge about fertility is important for health literacy in the field of reproductive health. Consequently, health professionals should promote knowledge among women about health, fertility and risk factors to aid in maintaining and improving reproductive health (Mu, Hanson, Hoelzle, Fehring, 2019).

The aim of this study is to analyse the knowledge about procreation health among adult women aged between 18 and 49 years.

1. Method

A diagnostic survey method was used in this study. For this purpose, a questionnaire was drawn up based on the authors' design. This tool provided an opportunity to collect information on the sociodemographic characteristics of the study group and their familiarity with reproductive health. The study was carried out at the Władysław Stanisław Reymont Clothing and Textile School Complex in Lublin (48 questionnaires), the Stefania Sempołowska Secondary School No. 4 in Lublin (21 questionnaires), and the "Farmed" Non-Public Health Care Institution in Lublin (36 questionnaires). 105 paper and 210 online questionnaires were collected, of which 40 had been completed incorrectly. The research was conducted between April and May 2023 and involved female respondents aged from 18 to 49. The study group comprised 315 people. All results, together with multiple-choice questions, were counted up to 100%. The analysis was performed with IBM SPSS Statistics 27 software. Three levels of statistical significance were adopted, as indicated by the symbols * $p < 0.05$, ** $p < 0.01$ and *** $p < 0.001$.

2. Results

A total of 315 women took part in the study. The mean age in the study group was 29.92 years with a standard deviation of 9.56. The respondents were divided into four age groups: 18-19 years (17.5%), 20-29 years (40.6%), 30-39 years (23.8%) and 40-49 years (18.1%). In the study group, 37.5% members came from a rural area, 36.8% from a large city (more than 100,000 residents) and 25.7% from a small or medium-sized town (less than 100,000 residents). The largest proportion of respondents had a university degree (67.3%), followed by secondary (20.6%) and primary education (11.4%). The smallest group was comprised of those with vocational education (0.6%). Most of the respondents were single (51.7%) or married (44.1%). Divorcees were a less numerous group at 3.5%, while widows accounted for 0.6%.

The question regarding resources on reproductive health in which the surveyed women acquired information was multiple-choice. Consequently, it was found that the respondents were most likely to obtain information from the Internet (242, 22.3%), professionals such as doctors, nurses or midwives (217, 20.0%), books (195, 18%), and social media (119, 11%). The fewest respondents reported that they learned about the topic from magazines (7.5%), family (7.3%), school (7.2%) or friends (6.6%) (Table 1).

Table 1. Sources of knowledge on reproductive health used by the respondents

	n	%
Social media (Facebook, Instagram)	119	11,0
Internet (search engines)	242	22,3
Books	195	18,0
Magazines	81	7,5
Professionals (physician, nurse, midwife)	217	20,0
Family	79	7,3
Friends	72	6,6
School	78	7,2
Total	1083	100,0

n – number of answers; % – percentage

Table 2. Women's knowledge of the key symptoms of ovulation

	n	%
Change in cervical mucus and basal body temperature	298	94,6
Increase in libido	7	2,2
Breast pain	9	2,9
Swellings	1	0,3
Total	315	100,0

n – number of answers; % – percentage

Table 3. Number of ovulations per menstrual cycle according to the respondents

	n	%
Any number of times, e.g. because of stress, nervousness or sexual activity	4	1,3
Only once. In exceptional situations, two, three or more ova can be released within a very short time span (which might result in a twin pregnancy)	245	77,8
Usually only once. Sometimes, due to various factors, additional ovulation may occur at any time	53	16,8
It is difficult to say when ovulation occurs	13	4,1
Total	315	100,0

n – number of answers; % – percentage

Almost all (291, 92.4%) respondents declared that they were aware of the fertility symptoms. 14 (4.4%) of them were unable to state with certainty if they had any knowledge of those symptoms, while 10 (3.2%) declared unfamiliarity in this area.

When asked about ovulation, 295 (93.7%) women said that it can be described as the release or expulsion of a mature ovum from the ovary. Three (1.0%) respondents disagreed and 17 (5.4%) were unable to provide an answer to this question.

In the opinion of 298 (94.6%) respondents, the most important symptom of ovulation is a change in cervical mucus and in basal body temperature. For 9 (2.9%) women this would be breast soreness and for 7 (2.2%) an increase in libido. According to one (0.3%) respondent, the most important symptom of ovulation is swellings (Table 2). In analysing the respondents' knowledge of key ovulation symptoms, we used only terms that could be found in popular phone apps, e.g. "menstrual calendar".

According to 245 (77.8%) women, ovulation occurs only once in a menstrual cycle. In exceptional situations, two, three or more ova can be released within a very short time span (which might result in a twin pregnancy). According to 53 (16.8%) respondents, ovulation usually occurs only once. Sometimes, due to various factors, additional ovulation may occur at any time. Four (1.3%) respondents believed that ovulation may occur any number of times, e.g. because of stress, nervousness or sexual activity. 13 (4.1%) women were unable to say when ovulation takes place (Table 3).

A significant correlation was observed between the respondents' age and the knowledge of how often ovulation occurs during the menstrual cycle ($\chi2 = 19.87$; $p = 0.019$). The correct answer to this question is "Only once". Most correct answers were provided by 65 (86.7%) respondents aged between 30 and 39, 46 (80.7%) aged between 40 and 49, 98 (76.6%) aged between 20 and 29. The least likely to provide the correct answer were the youngest women (36, 65.5%) (Table 4).

A significant correlation was found between marital status and knowledge of how often gynaecological examinations should be performed ($\chi2 = 10.23$; $p = 0.037$). A weak correlation was

Table 4. Respondents' knowledge of the number of ovulations per monthly cycle by age

	18-19 years		20-29 years		30-39 years		40 – 49 years	
	n	%	n	%	n	%	n	%
Any number of times, e.g. as a result of stress, nervousness or sexual activity	2	3,6	2	1,6	0	0,0	0	0,0
Only once. In exceptional situations, two, three or more ova can be released within a very short time span (which might result in a twin pregnancy)	36	65,5	98	76,6	65	86,7	46	80,7
Usually only once. Sometimes, due to various factors, additional ovulation may occur at any time	10	18,2	24	18,8	9	12,0	10	17,5
It is difficult to say when ovulation occurs	7	12,7	4	3,1	1	1,3	1	1,8
Total	55	100,0	128	100,0	75	100,0	57	100,0

χ^2 = 19,87; df = 9; p = 0,019*; n – number of observations; % – percentage; χ^2 – test result; p – relevance; df – levels of freedom;

established (V = 0.184) in this respect. The correct answer to this question was "Once a year". Correct answers were mostly given by married women (111, 79.9%) as compared to their unmarried peers (n = 107, 65.6%). Due to a too small study sample, divorcees (n = 11) and widows (n = 2) were not included, so the analysis covered a group of 302 women (Table 5).

Natural family planning methods (e.g. symptothermal methods) were used by 78 (24.8%) respondents; 237 (75.2%) women did not use them (Table 6).

According to 286 (90.8%) respondents, women are most fertile between the ages of 20-24, for 16 (5.1%) respondents this age is between 15-19, and 13 (4.1%) respondents believed that women are most fertile between the ages of 29-35.

98 (31.1%) respondents expressed the belief that women's ability to conceive decreases between the ages of 35-39, for 106 (33.7%) respondents this age is between 40-44, for 104 (33.0%) it is between 45-59. Seven (2.2%) of them were of the opinion that a decline in this respect occurs between the ages of 25-34.

The surveyed women were asked whether they monitor their menstrual cycle using the symptothermal double-check method or another fertility awareness method. Only 78 (24.8%) respondents used one of the several known FAMs for analysing fertility and 237 (75.2%) did not.

Out of 315 women, 269 (85.4%) had undergone sexual initiation, while 46 (14.6%) had not. Consequently, the analysis included the 269 respondents with a history of sexual activity. For the majority of women, sexual initiation took place at the age of 18, but this varied between 14 and 31 years of age (M = 19.07; SD = 2.82; Me = 18), (Table 7).

118 (43.9%) respondents had one sexual partner, two partners were reported by 45 (16.7%) women, and 106 (39.4%) had more than two sexual partners.

3. Discussion

The area of the research covered women's knowledge of procreation health. The following aspects were taken into consideration: the sources in which the respondents acquired information on reproductive health; their knowledge of the main symptoms of ovulation; the number of ovulations during the menstrual cycle and the manner of confirming that ovulation took place; the frequency of gynaecological examinations; the use of fertility awareness methods; and the age of sexual initiation.

The number of women who took part in the self-study was 315. The respondents were most likely to obtain information from the Internet (242, 22.3%), professionals such as doctors, nurses or midwives (217, 20%), and books (195, 18%). This means that online

Table 5. Knowledge of the frequency of gynaecological examinations among the respondents (by marital status)

	Single		Married	
	n	%	n	%
Never	1	0,6	0	0,0
Once in 3 months	8	4,9	1	0,7
Once in 6 months	40	24,5	22	15,8
Once a year	107	65,6	111	79,9
Once in 2 years	7	4,3	5	3,6
Total	163	100,0	139	100,0

$\chi^2 = 10{,}23$; df = 4; p = 0,037*; V = 0,184
n – number of observations; % – percentage; χ^2 – test result; p – relevance; df – levels of freedom; V – Cramér's V

Table 6. Reported use of natural family planning methods (e.g. symptothermal method)

	n	%
Yes	78	24,8
No	237	75,2
Total	315	100,0

n – number of observations; % – percentage

Table 7. Reported age of sexual initiation

	M	SD	Min	Max	Me	Mo
Sexual initiation	19,07	2,82	14	31	18	18

M – average; SD – standard deviation; Min – minimum; Max – maximum; Me – median; Mo – dominant

resources and books compete with the information shared by professionals – this might lead to confusion and inaccuracies, especially in a field such as human fertility. Magazines, family, school and friends were the least popular sources reported by the respondents. In a 2012 study by Muzyczka et al., 467 students declared the Internet to be their main source of information on the menstrual cycle (Muzyczka, Rząca, Deluga, Denisow, Janiec, Krzos, Oleszczuk, Przystupa, 2012). In a study conducted in 2020 among 231 secondary-school students, it was found that they obtained their knowledge from the Internet and from friends (Bączek, Padzik, Duda, Giermaziak, 2020). According to a 2015 study by Bień and Stadnicka, the sources used by young people to learn about pregnancy prevention methods include the Internet (74.0%), school (43%) and peers (40%) (Bień, Stadnicka, 2015). In their 2013 study among 104 girls aged 16-19, Sieńko-Hans found that teenagers derive their knowledge of contraception from the Internet (Sieńko-Hans, 2013). In a study by Hampton, Mazza and Newton, women of childbearing age were most likely to explore the topic, aided by the Internet (almost 50%), books (43%), a physician (30%) or friends (26%). Just slightly below 5% of the respondents declared having acquired information from a teacher of natural fertility awareness methods (Hampton, Mazza, Newton, 2012). Research has revealed that, for women, the Internet is the main source of knowledge on reproductive health. It is important to note, however, that not all the information available online is correct and factual, and it does not always come from a verified and trustworthy source.

Our own research suggests that 93.7% of women know the term "ovulation". In a study involving 231 school students, 52% of those aged 16-19 were familiar with the term (Bączek, et al. 2020).

According to our own research, 77.6% of women were able to correctly determine the number of ova released during the menstrual cycle. In a study by Bączek et al., out of 231 school students, 52% of those aged 16-19 could correctly state the number of ova released during the menstrual cycle (Bączek, et al. 2020).

Our own research revealed that 94.6% of the surveyed women could correctly identify a change in mucus and basal body temperature as symptoms of ovulation. In a study by Przestrzelska et al., among 257 students aged 15-16 years, 25% of the respondents stated that the symptom of ovulation was bleeding; for about 42% it was abdominal pain. Only 18% were aware of the symptomatic increase in body temperature and the day of expected ovulation. Despite these knowledge gaps, more than half of adolescent girls (55%) correctly recognise the symptoms of fertile days (Przestrzelska, Knihnicka-Mercik, Kazimierczak, 2011). However, this is possible through young women's use of mobile apps, which has nothing to do with FAMs.

As further results from our own research, the majority (218) of women believe that a gynaecological examination should be undertaken once a year. In a 2012 study, out of 100 women, those aged 18-39 reported undergoing this examination every six months, which accounted for 34.5% of the study sample. "Once a year" was the frequency reported by 24% and the least frequent option, "Once every two years", was chosen by 17% of the respondents (Kowalewska, Jankowiak, Oleszczuk, Rolka, Krajewska-Kułak, Klimaszewska, Łukaszuk, Gołębiewska, 2012). It should be emphasised that preventive check-ups should usually be performed once a year, but the regularity of gynaecological appointments can be also affected by women's needs and issues such as pain, abnormal vaginal bleeding, infections and other symptoms from the genitourinary tract, and problems regarding sexual activity or plans to conceive a child.

24% of the women participating in the study confirmed that they use the symptothermal method for self-observation. In the study by Simmons and Jennings, use of the symptothermal method was reported by less than 10 percent of the respondents (Simmons, Jennings, 2019).

Our own research shows that 286 (90.8%) respondents correctly pointed to the fact that women are most fertile between the ages of 20-24. According to a study by Walentynowicz-Moryl et al. from 2020, the vast majority (82.6%) of respondents correctly indicated the age at which a woman is most fertile (Walentynowicz-Moryl, Mianowska, 2020). In a study by Nouri et al., when asked about the age of the highest fertility in women, 89.4% chose the 20-25 age range (Nouri, Huber, Walch, Promberger, Buerkle, Ott, 2014). In contrast, in a study by Garcia et al., 63% of women responded that the most fertile age for a woman falls between the years 25 and 29 (Garcia, Brazal, Rodriguez, Prat, Vassena, 2018).

As revealed by the study, 98 (31.1%) of the respondents correctly indicated that women's ability to conceive decreases between the ages of 35-39. According to Walentynowicz-Moryl et al. in their study from 2020, 60.2% of respondents correctly indicated the age at which a woman's ability to conceive undergoes a significant decline (Walentynowicz-Moryl, Mianowska, 2020). In Hammarberg's study, when asked at what age female fertility begins to drop, respondents estimated it at 35-40 years (Hammarberg, Zosel, Comoy, Robertson, Holden, Deeks, Johnson, 2016). In Vassard's study, knowledge of reduced fertility between the ages of 35 and 39 was reported by 60% of women (Vassard, Lallemant, Nyboe Andersen, Macklon, Schmidt, 2016), similarly to Garcia's study with its 63% respondents (Garcia, Brazal, Rodriguez, Prat, Vassena, 2018).

In our own research, the earliest age at which women started sexual activity was 14 years. For the majority of women, it was the age of 19. In Filipp's study, the earliest reported age of sexual initiation was 15 years, and most women (52%) were aged 18-19 years (Filipp, Pawłowska, Wilczyńska, Kowalska, Niemiec, Raczyński, Kęsicka, 2005). In their study, Kowalewska et al. found that 25% of the respondents had undergone sexual initiation at the age of 20. The next largest group were women who started sexual activity at 18 and 21 years of age (17% and 10%, respectively). The lowest age of sexual initiation was 13 years (2% of respondents), while the highest 26 years (2% of respondents) (Kowalewska, et al. 2012).

Conclusions

1. Women are most likely to obtain information about procreative health from the Internet, professionals (doctors, nurses and midwives), and books. The least-reported resources on the topic included family, school, and friends. Most women were familiar with the term "ovulation" and could correctly answer the question of how often a gynaecological examination should be performed (once a year).
2. The majority of women, having observed cervical mucus and PTC, were able to identify the most fertile time during the menstrual cycle. They could also tell the age at which the ability to conceive declines significantly.
3. Most women do not perform self-observation of their menstrual cycle with the use of any fertility awareness method. The lack of observation in this

area makes it difficult to undertake early intervention steps as part of preventive reproductive health care.

4. The early age of sexual initiation of the surveyed women should be considered one of risk-inducing behaviours and can be linked to using the Internet as the primary source of information, potentially resulting in reproductive health disorders in the future.
5. For the sake of women's reproductive health in Poland, the authors suggest that, in addition to health care professionals, such as doctors, nurses, and midwives, also teachers of fertility awareness methods and school educators trained in this area should be involved in preventive health-promoting measures.

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Perinatal experiences after a fetal/child lethal diagnosis (LFD) - a woman's perspective[1]

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Abstract: A lethal fetal diagnosis defines severe developmental disorders that lead to the death of the child either before birth or shortly after. In the global healthcare system, the issue of stillbirths has been overlooked, and care for this group of families has been neglected. As a result, the experiences of women during pregnancy following a prenatal diagnosis of a lethal prognosis for the fetus/child have not been sufficiently studied. However, in the last decade, increasing attention has been given to this issue, and the topic of caring for families who, despite a lethal diagnosis, choose to carry the pregnancy to term has become an important public health concern. Taking into account the needs of this group of women/parents, perinatal hospices have been established, providing multidisciplinary perinatal care tailored to the needs of these families. Research indicates that despite the anticipated loss of the child, parents can have positive experiences related to the period of waiting for the birth and the delivery of a lethally ill child. Through professional, empathetic medical care, parents can be provided with the space to experience prenatal parenthood, growth in personal strength, relationships with others, and an appreciation for life. Therefore, the aim of the article is to describe selected stages/issues of the pregnancy period in women following a prenatal diagnosis of a lethal prognosis for the fetus/child.

Keywords: pregnancy, lethal fetal diagnosis, LFD, perinatal palliative care, perinatal hospice, post-traumatic grow

Introduction

In recent years significant progress has been made in perinatal medical care. However, despite these advances malformations in the baby, especially those with a lethal prognosis, are still a serious challenge for medicine. A fatal fetal disease is defined as a condition that is likely to result in death in the mother's uterus or within the first hours or weeks of the baby's life after birth (Power et al., 2020). The Lancet devoted a series of articles to the problem of stillbirths, in which the authors highlighted that this is one of the most neglected areas of public health, omitted from global health programs (Flenady et al., 2011; Flenady et al., 2020; Frøen et al., 2011; Lawn et al., 2011). This problem is a challenge not only for medicine, but also for families who experience the devastating loss of a child.

More than 2.7 million babies are stillborn worldwide each year (Lawn et al., 2016). The perinatal period is characterized by the highest rates of morbidity and mortality among pediatric patients. In high-income countries, approximately 2-3% of women receive a diagnosis of a fatal fetal disease (Coleman, 2015).

In recent years, research has begun to be conducted on the needs of women/families who have continued pregnancy despite a fatal fetus/child di-

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[1] Article in polish language: https://www.stowarzyszeniefidesetratio.pl/fer/59P_TatP.pdf

agnosis (Cope et al., 2015; Côté-Arsenault & Denney-Koelsch, 2011; Denney-Koelsch et al., 2016).

Thanks to the enormous progress in prenatal diagnostics, both imaging (latest generation ultrasound machines, the possibility to perform fetal MRI), as well as invasive and non-invasive genetic tests (including testing of free fetal DNA in the mother's blood, based on the next generation sequencing technique -NGS), fetal defects, including those of a lethal nature, can be identified early in pregnancy (Breeze et al., 2007; Frates et al., 2004; Rutkowska & Szczepaniak, 2018).

Studies show that 3% of fetuses are diagnosed with life-threatening problems: Live Limiting Fetal Condition (LLFC), and 2% are considered fatal defects: Lethal Fetal Diagnosis (LFD) (Coleman, 2015). In such circumstances, 20-60% of parents decide to continue their pregnancy and give birth to a sick child (Breeze et al., 2007), motivating their decision with moral convictions, a sense of what is moral or right for them, views on abortion, religious beliefs (Sandelowski & Barroso, 2005; Wool, 2011). Also in countries where there is a legal possibility of terminating pregnancy, many mothers in the event of a severe and irreversible defect found during the prenatal life of the child decide to continue pregnancy for the above reasons.

In Poland, in October 2020, the Constitutional Court issued a ruling, the consequence of which is a ban on termination of pregnancy in the event of fetal birth defects (Judgment of the Constitutional Tribunal of 22 October 2020, Sygn. Act K 1/20). The situation in which the child in the prenatal phase of life is a full-fledged patient has brought a number of challenges to create professional, comprehensive perinatal care, adapted to the needs of women/families who, despite the prenatal diagnosis with a lethal prognosis for the life of the child, decide to continue the pregnancy and give birth to a terminally ill child. In response to the needs of this group of parents, perinatal hospices were created, which implement multidisciplinary perinatal care programs.

The purpose of this article is to describe the experiences of perinatal women who continue their pregnancies after a prenatal diagnosis of a lethal prognosis for the life of her child.

1. Pregnancy as a state of liminality – being "in between"

From an anthropological point of view, the gestation period is seen as a liminal space. The transition from pregnancy to parenthood is examined in a social context as a rite of passage. Pregnancy and childbirth are seen as a liminal phase (Côté-Arsenault et al., 2009).

Studies show that every woman during pregnancy experiences an important life transition from one social role to another. This state is referred to as "liminality" – being "in between". The perception of an important life transition as a liminal phase is not new. According to van Gennep's philosophy (1960) life is a successive transition from social group to group. This process concerns all areas of human life in which change takes place. Van Gennep described three phases of this process: separation – when the individual disconnects from previous social roles; liminality – when he transitions to new social roles; and integration – when new social roles are incorporated into the identity of the individual (ibid., see also: Ladge et al., 2012).

Recognizing pregnancy as a liminal state is crucial for a full understanding of what it means for women *to be pregnant* and what its inherent personal challenges and dilemmas are. This is similar to being in a certain type of undefined space (Côté-Arsenault et al., 2009).

2. The experience of pregnancy with a child's lethal defects

Particularly interesting is the contemporary study of liminality in relation to pregnancy, birth and loss of the child in the intrauterine or postnatal phase. In this field, research is used to explain major changes in the treatment of women by society, to recognize them or isolate them from the mainstream of society and to make them "invisible" during pregnancy, childbirth and the postpartum period (Côté-Arsenault et al., 2009).

The difficulty associated with the liminal state of women who continue a pregnancy after an unfavorable diagnosis with a lethal prognosis for the child is exacerbated by the lack of social acceptance regarding the delivery of a child who will die during or after birth. Although the philosophy and approach to caring for parents who have experienced the death of their unborn or newborn child has changed over the past 40 years, there is still a lack of social acceptance of stillbirth. The taboo associated with the perinatal death of a child increases parental suffering, loneliness and social isolation (Rådestad et al., 2011).

Information about a diagnosed congenital defect in a child in the prenatal phase is traumatic for parents. Many women face difficult decisions and choices influenced by many psychological, social and ethical factors (Blakeley et al., 2019). Research shows that parents who decide to continue their pregnancy experience ambiguous feelings (Cope et al., 2015; Côté-Arsenault & Denney-Koelsch 2016; Fonseca et al., 2011; McKechnie et al., 2015). On the one hand, women suffer from the perceived loss of their expected child and the loss of the chance for happy motherhood. On the other hand, they experience positive changes in personal development and the process of rebuilding life after trauma (Black & Sandelowski 2010; E. M. Denney-Koelsch et al., 2018; Lalor et al., 2009).

Research conducted in Ireland shows the characteristic „process of transforming hope" („Recasting hope") adaptation of women after receiving a tragic diagnosis. In this process mothers must face the loss of ideas about motherhood, „normal pregnancy" and their dream baby and go through four phases of adaptation: "Accept Normalcy", "Shock", "Gaining Meaning" and "Rebuilding Hope"". After an unsuccessful diagnosis mothers do not believe that their conceived child has been diagnosed with lethal defects. When the tragic diagnosis is confirmed by subsequent tests, they experience shock. Then begins the stage of giving meaning to this difficult stage of family life. The last phase concerns rebuilding hope, recovering from the trauma of accompanying a child through illness and dying, and in accepting the child's death. In this process, an important role is played by the acceptance of ideas about the unfulfilled expectations of a happy motherhood after the birth of this child (Lalor et al., 2009).

3. Professional medical care

3.1. Empathic medical care adapted to the woman's worldview and philosophy of life

Empathetic medical care, acceptance and support by medical personnel of the decision to continue the pregnancy, despite the lethal prenatal defect found in the child, are an important factor for women, influencing the passage through the difficult time of pregnancy. Many studies show that women in this situation expect that their needs will not be marginalized, that they will be treated like other pregnant women, and that the unborn child will be "given" patient status by medical personnel. They also expect that their pregnancy will not be considered less important and valuable, and that their prenatal child will be treated with respect. These studies also found that women, upon receiving a prenatal diagnosis of a lethal prognosis for the fetus/baby, often faced a lack of understanding from medical personnel, who suggested that they terminate the pregnancy (Guon et al., 2014; Horning & Braun, 2006; Sandelowski & Barroso, 2005; Tataj-Puzyna et al., 2022).

The turning point for this group of women was finding a gynecologist who provided them with medical care that was tailored to their individual needs consistent with their worldview, philosophy of life and principles. Women considered professional, empathetic care and indication/direction to perinatal hospices where they could receive perinatal, multidisciplinary care to be particularly important (Guon et al., 2014; Horning & Braun, 2006; Sandelowski & Barroso, 2005; Tataj-Puzyna et al., 2022).

Tosello et al., (2017) showed that more than half of specialists (52.9%) took the initiative of informing women about options for support in childbirth (including perinatal palliative care), while 32.7% of obstetrician-gynecologists did not take this initiative compared to 10.2% of neonatologists ($p < 0.01$). The results of these studies indicate an urgent need for training in POP for specialists and standardization of its practices (ibidem)[2].

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[2] Studies conducted in France show that not all doctors give women information about the possibility of care in perinatal hospices (Tosello et al., 2017).

Similar results were obtained in a Polish study in the area of perinatal palliative care, medical caregivers have insufficient knowledge about the essence of care for women with lethal fetal diagnosis (Gruszka et al., 2019). This demonstrates the urgent need for more training for healthcare professionals in this area.

Psychological studies indicate that it is better for a woman's mental health to continue pregnancy with a lethal perinatal diagnosis than to remove the pregnancy (cf. Ryś, 2020). A study conducted at Duke University Medical Center in a group of 158 women and 109 men who lost their pregnancies due to lethal defects (anencephaly, a fatal neural tube defect) showed that women who terminated their pregnancies were significantly more likely to report problems related to despair and depression than women who continued their pregnancies. On the other hand, men whose partner continued the pregnancy after an unsuccessful diagnosis were much more likely to report difficulties in coping with emotions than men whose partner terminated the pregnancy (Cope et al., 2015).

Other studies show that for many women, the continuation of pregnancy after an unfavorable diagnosis of a lethal prognosis for the fetus/child was an important and significant experience, enabling the survival of a short, prenatal motherhood. Women consciously tried to make the most of the time to establish contact with the child in the prenatal phase of its development. In this situation, they described the prenatal relationship with the child as "accelerated parenting", during which they compressed the time to establish a close relationship with the child in the phase of its prenatal life and experience parental behavior in the shortest possible time (Côté-Arsenault & Denney-Koelsch, 2011; Guon et al., 2014; Lathrop & VandeVusse, 2011; Tataj-Puzyna et al., 2022).

3.2. Helping to survive anticipatory grief

Modern theorists believe that mourning is a process to adjust to life without a loved one. The grieving process is a way of dealing with loss. Grieving individuals cope by moving from confronting the reality of loss at certain times and avoiding confrontation at other times (Côté-Arsenault, 2020).

An unsuccessful prenatal diagnosis causes a significant increase in the level of anxiety associated with the imagined prospect of losing a child. Each family member experiences an individual reaction related to the future loss of a child's death. This individual response to a potential loss is referred to as anticipatory grief or anticipatory grief. Anticipation is the ability to predict. Through experience and knowledge the family acquires the ability to imagine their emotions and reactions and prepare for the situation that will occur. This is especially important from the perspective of self-control and stress management. It is the experience of mourning before the loss occurs. This experience performs a protective function – it allows you to prepare for difficult emotions that will come later. Some researchers consider this phenomenon as a process that begins from the moment of unsuccessful diagnosis and includes phenomena such as changes in the family system interactions coping methods and psychosocial transformations (cf. Majid & Akande 2022; Rogalla, 2020).

Most literature on anticipatory grief describes the process in adults experiencing the loss of a close adult. There are few reports that concern the death of children and the impact of anticipatory grief on their parents (Rini & Loriz, 2007).

In the case of a prenatally diagnosed defect with a lethal prognosis for the child, the long period of waiting for birth increases the stress during pregnancy, while at the same time it gives parents time to experience anticipatory grief, the possibility of taming the tragic diagnosis. This is the time when parents bond with a child in the prenatal phase of his life, experience prenatal parenthood, at the same time prepare for childbirth, welcome the child, make a decision about saying goodbye to the child and preparing souvenirs related to him (Côté-Arsenault & Denney-Koelsch, 2016). Anticipatory grief allows a family to come to terms with the loss of a child. The support of professionals and immediate family can help the family experience difficult emotional states, but also plan and create meaningful memories already during the waiting period for the birth of a child with lethal defects and give meaning to one's own life without the expected child (Cortezzo et al., 2019, 2020; Pinkeney, 2020).

Understanding some of the main theories of grief and their roots can provide medical caregivers with knowledge about various forms of grief, such as anticipatory grief or complicated grief. These theories may contribute to the ability to distinguish normal grief responses from problematic responses (Côté-Arsenault & Denney-Koelsch, 2016).

3.3. Preparation of parents for birth of a child with a lethal prognosis

The literature devoted to preparing parents for childbirth mostly concerns antenatal education for mothers/fathers who are expecting the birth of a healthy child, not burdened with lethal defects. Few scientific studies have been devoted to how parents, after an adverse prenatal diagnosis, prepare for the birth and probable death of a child (English & Hessler, 2013; Wool, 2013). Research shows that this group of parents is looking for professional tips and information that they can expect during childbirth (Denney-Koelsch et al., 2016).

Parents after an unfavorable diagnosis with a lethal prognosis for the child have the opportunity to prepare for childbirth in in-hospital and out-of-hospital hospices and during individual meetings with a midwife (Dangel, 2015; Dangel & Szymkiewicz-Dangel, 2016; Jalowska et al., 2019; Tataj-Puzyna et al., 2023)[3].

Parents who have decided to continue their pregnancy despite prenatal diagnosis of lethal prognosis for the fetus/child present different styles of handling this situation. Some are looking intensely for information on the stage of child development, diagnosed defects and further proceedings. Others, on the contrary, avoid information related to difficult diagnosis (Lalor et al., 2009).

According to Polish research, some parents sought 'normality', they used prenatal education (birth classes), dedicated to parents awaiting the birth of a healthy child. They did not reveal the child's lethal diagnosis to feel like other parents. Others sought families in a similar situation, so they attended a parenting school dedicated to parents after LFD and LLFD. In a community with other parents who faced the situation of tragic diagnosis for the child, they experienced prenatal parenting. Belonging to some group of parents awaiting the birth of a child made them "visible" to society as parents (Tataj-Puzyna et al., 2023)

According to researchers from other countries, searching for communitas was a need for women, related to the rite of pregnancy transition (Côté-Arsenault & Denney-Koelsch, 2011).

There were also parents who postponed thinking about the moment of birth of a sick child and did not take any activity to prepare for childbirth. They displaced the lethal fetal diagnosis of a child born without having personal resources to confront difficult reality (Tataj-Puzyna et al., 2023).

As part of antenatal education (birth school) parents prepare a birth plan. Writing a birth plan provides an important therapeutic element giving parents a sense of control time to enjoy the baby in the prenatal phase celebrate the birth and experience grief appropriately (Cortezzo et al., 2019 2020; Horning & Braun 2006). Birth planning is not just a written document but a process during which parents can develop trusting relationships with the interdisciplinary team of perinatal palliative care midwife doctor psychologist. Working on setting goals and planning for the future accustoms parents to the difficult inevitable future of their child. This process helps them fulfill parental roles develop parenting skills (prenatal parenting) and regain control over the child's future. Birth planning is a process that takes place over time not just the technical completion of a document (Lamberg Jones & Leuthner 2020).

The birth plan is an expression of the personal goals of the parents the decision of preferences for childbirth the birth of the baby and the initial care of the newborn. Preparing a birth plan gives parents space to reflect and summarize expectations they were afraid to express (Côté-Arsenault & Denney-Koelsch, 2011; Sandelowski & Barroso, 2005; Denney-Koelsch, 2016).

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[3] In 2019, the Parenting School was established at the Warsaw Hospice for Children Foundation, dedicated to parents after prenatal lethal fetal diagnosis (LFD) and life-limiting fetal diagnosis (LLFD). As part of the classes, parents have the opportunity to meet in groups with an interdisciplinary medical team: an anesthesiologist, neonatologist, gynecologist, midwife, psychologist, physiotherapist (Tataj-Puzyna et al., 2023).

As parents adjust to the imminent loss of a child they experience anticipatory grief. The support of the care team can help them begin to grieve plan and create meaningful memories already during pregnancy. Research shows that for parents planning care in advance has a therapeutic impact. Discussing different aspects of pregnancy care approximating the different possible scenarios and actions during childbirth gives them a sense of control and preparation for unexpected events (Cortezzo et al., 2019, 2020).

There is no one right form of pre-natal education for this group of families. Research shows that in a situation of severe stress people adopt different coping strategies resulting from the preferred style: avoidance confrontational or cognitive (Ryś & Trzęsowska-Greszta, 2018). Therefore, health care providers should adapt their care to the individual needs of parents in such a difficult situation.

4. Perinatal Palliative Care

Perinatal palliative care (PPC) is comprehensive care in the perinatal period for this group of parents who, after receiving information about the lethal fetal diagnosis of the fetus/child, decide to continue the pregnancy, give birth and accompany the child until his natural death (Buczek, 2015; Latos-Bieleńska et al., 2010). Doctors of various specialties (gynecologists, neonatologists, geneticists, psychiatrists), and psychologists, nurses, clergy, surround the whole family with medical, psychological and, if necessary, spiritual care (Martín-Ancel et al., 2022). The goal of perinatal palliative care is to comprehensively provide an adequate quality of life for families awaiting the birth of a child with a life-limiting diagnosis. Care is coordinated with inpatient treatment, specialist advice in the field of obstetrics, gynecology or neonatology, cooperation with prenatal diagnosis centers and home hospices in the situation of the possibility of discharge of the child from the hospital (Côté-Arsenault & Denney-Koelsch, 2016)[4]. After birth, the care of the still-living child is taken over by a home hospice, focusing on protecting the infant from persistent therapy and providing him with the right conditions for a dignified life and a dignified death (Jalowska et al., 2019).

Multidisciplinary care also includes a period of bereavement to help parents adjust to life without a child (Côté-Arsenault & Denney-Koelsch, 2016).

Guaranteed benefits in the field of perinatal palliative care are financed in Poland from public funds and may be implemented under agreements concluded between the National Health Fund and prenatal diagnostic centers, prenatal cardiology centers, genetics departments, palliative medicine clinics and home hospices for children or inpatient hospices (Ciałkowska-Rysz, 2019; Dzierżanowski, 2020; Rozporządzenie Ministra Zdrowia z Dnia 31 Stycznia 2017 r. Zmieniające Rozporządzenie w Sprawie Świadczeń Gwarantowanych z Zakresu Opieki Paliatywnej i Hospicyjnej, 2017). In Poland, these services are provided in seventeen perinatal hospices, in 13 voivodships. Midwives are not employed in these facilities, which means that in preparation for childbirth, a woman diagnosed with a lethal fetal defect can only benefit from the care of a primary care midwife (POZ) or a hospital outpatient clinic that does not cooperate with perinatal hospices. Inclusion of a midwife in the palliative care team in the perinatal period would fill the gap in the process of caring for women who continue pregnancy after an unsuccessful diagnosis of a lethal fetal defect, would ensure continuity of care for women from the moment of receiving an unsuccessful diagnosis, through professional preparation for childbirth, survival of the postnatal period, death of the child until the mental balance is restored (Tataj-Puzyna et al., 2023).

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[4] In Poland, guaranteed benefits in the field of perinatal palliative care were first specified in the Regulation of the Minister of Health of 31 January 2017 (Regulation of the Minister of Health of 31 January 2017 Amending the Regulation on Guaranteed Benefits in the Scope of Palliative and Hospice Care, 2017) (Journal of Laws of 2017, item 236). According to the regulation, services in the field of perinatal palliative care may be provided in prenatal diagnostic centers, prenatal cardiology centers, genetics departments, palliative medicine clinics and in home hospices for children or inpatient hospices. The care is dedicated to the parents of a child, including a child in the prenatal phase, with severe and irreversible impairment or an incurable life-threatening disease that arose in the prenatal period of development or during childbirth (Communication of the President of the National Health Fund of 6 July 2022 on Perinatal Palliative Care, n.d.). Rozporządzenie Ministra Zdrowia z Dnia 31 Stycznia 2017 r. Zmieniające Rozporządzenie w Sprawie Świadczeń Gwarantowanych z Zakresu Opieki Paliatywnej i Hospicyjnej, Dz. U. z 2017 (2017)

Among the various forms of organization and ways of providing assistance, the activity of perinatal hospices can be described as a support network for parents experiencing difficulties, and not as a stationary medical facility for pregnant women. As the employees of the hospice claim, it is not just a place, but rather a model based on providing care in accordance with the preferences of the parents of sick children. Perinatal Hospice is not only an institution, but above all a philosophy of life and conduct. Research shows that women perceive the Perinatal Hospice as a place where their own parental resources are taken into account. Employees support families who want to satisfy the need to continue pregnancy and accept a lethally ill child who is most likely to die in the prenatal period or shortly after birth (Różańska et al., 2017).

The dissonance between obstetric practice and the state of bioethical knowledge, problems with defining the beginning of life and the lack of skills of doctors and midwives to effectively support families struggling with a negative prenatal diagnosis are challenges for health care workers in promoting perinatal hospices.

5. Post-traumatic growth

In recent decades, researchers have begun to see the positive effects of traumatic experiences, which has led them to treat trauma as an important existential experience. Research shows that in addition to the negative effects of trauma, such as disorganization of mental life, it is possible to experience positive changes resulting from these difficult experiences (Ogińska-Bulik, 2013).

The positive change resulting from struggling with traumatic life events is referred to as posttraumatic growth (PTG) (Tedeschi & Calhoun, 2004).

The extent of posttraumatic growth depends on the type of traumatic event, the individual characteristics of the person and the support they received. The research shows that approx. 50-60% of people experiencing trauma notice positive changes resulting from these experiences (Popielski & Mamcarz, 2015).

It is emphasized that PTG is expressed in increased empathy for others, in greater respect for life, appreciation of relationships, in engaging in altruistic activities and in increased strength to cope in difficult situations and in greater competences[5] (Meyerson et al., 2011).

N. Ogińska-Bulik (2009) analyzed the mechanisms by which difficult experiences can bring benefits. She paid particular attention to eustress, which is a positive response to stressors. She described it as a beneficial effect of a stress transaction. In order for eustress to be activated, a person must perceive difficulties as a challenge and take specific actions to cope with the situation ((Ogińska-Bulik, 2009). As a result of a positive trauma, significant changes in life may occur, such as a change or deepening of life philosophy or spiritual development (cf. e.g. Frankl, 2019)[6].

Researchers analyzing the perinatal experiences of women after an unsuccessful prenatal diagnosis (LFD – fatal fetal defects) challenge the popular opinion that continuing pregnancy in such a situation is an exclusively negative experience for women and their families. Research also indicates important, positive changes – personal growth of parents, appreciation of the importance of life values, respect for the child (Alvarez-Calle & Chaves, 2023; Black & Sandelowski, 2010; Jarzębińska, 2017).

Jarzębińska (2017) describes the dilemmas and suffering that woman, after the unsuccessful lethal diagnosis of their children, experienced at different stages of the struggle with the child's illness. Studies have shown that trauma has become for some mothers

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[5] The PTG construct has gained prominence and recognition in adult populations, and there is emerging evidence for its generalisability to adolescents (Meyerson et al., 2011).

[6] The pioneer of the idea of transformative role of suffering that can give meaning to life was V.E. Frankl (2019), the creator of logotherapy, the science of the meaning of life. The task of logotherapy is to treat sense. (When you understand "why", you will find each "how"). He deals mainly with problems such as existential voidness, frustration, existential crisis, noogenic neurosis.

an impetus to personal development and change their lives for the better, and the presence of a sick child brought them unique, positive experiences.

The prenatal diagnosis and illness of a child in the context of pediatric palliative care is an extremely complex experience for parents. Cadell (2010) describes that although the stress of caring for a sick child is enormous, many parents experience growth. This growth was measured using the Post-Traumatic Development Inventory, which helps to understand its determinants (Ogińska-Bulik & Juczyński, 2010). Personal resources, such as parental well-being, are crucial in the process of making sense of difficult experiences, which in turn promotes growth (Cadell et al., 2014).

Research shows that the onset of post-traumatic development is favored by the subjective characteristics of the individual and, above all, psychological resilience and integrated personality. The more integrated an individual's personality is, the more likely they are to cope with the traumatic event. Cognitive involvement related to trauma processing also plays an important role in effective coping with trauma (Ogińska-Bulik & Juczyński, 2010).

The style of cognitive functioning, based on the search and processing of information and its creative structuring, increases the chances of the occurrence of post-traumatic development. The ability to find the meaning and meaning of experienced traumatic situations also seems important. Helgeson et al., (2006) point to the role of optimism and religiosity in post-traumatic growth. Reaping the benefits of traumatic events is related to the spiritual development of the individual (ibidem). It is also important to discover the meaning of difficult events and social support (Alvarez-Calle & Chaves, 2023).

The results of the Black & Sandelowski (2010) study also suggest that positive growth may follow an unfavorable prenatal diagnosis. These findings may help create models of perinatal palliative care that support coping with grief and bereavement. Properly prepared medical personnel can help develop strategies to support the further development of parents experiencing the death of their own child.

However, the personal development of parents after prenatal diagnosis of severe fetal anomaly still requires more careful examination. More detailed research on this group of parents needs to be done to better understand the processes that can affect the coping and well-being of this group of parents.

Summary

The diagnosis of lethal fetal prognosis for a child to be born is a traumatic experience for parents, a paradoxical coincidence of life and death. However, research shows that continuing pregnancy after an unsuccessful diagnosis and giving birth to a child with a lethal prognosis is not just a negative experience. Thanks to professional, empathetic medical care, parents can have positive experiences related to the waiting period for the birth and delivery of a terminally ill child.

Despite the high involvement of hospice teams, there is still a lack of public awareness and sufficient institutional support to provide comprehensive care, taking into account the role of the midwife for families expecting a child with an unfavorable diagnosis. The social lack of awareness and stigma associated with the perinatal loss of a child makes mothers feel marginalized and „invisible" in society. This difficult experience of short motherhood means that mothers are more dependent on their own psychological and emotional resources and on the empathetic support of medical caregivers and loved ones to cope with an unfavorable diagnosis and loss of a child. Many parents suffer not only from a devastating loss, mainly in silence, but from the persistent stigma and social taboo still common in society.

Compassionate care tailored to the individual needs of parents, the ability to give meaning to loss, honor the importance of the life of a stillborn child, the opportunity to experience anticipatory grief and mourning for loss, can be an incentive for women/parents to develop personally and change their lives, and thus to be open to further life plans, including procreation plans.

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Midwives and doulas in Poland: mutual perceptions in the context of interprofessional cooperation[1]

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Abstract: A doula is an independent professional who provides emotional, physical and informational support to women during pregnancy, labor and the postpartum period. A doula is not medically qualified, but is trained in techniques to provide comfort, relaxation and proper breathing to women in labor during birth. The relationship between doulas and other members of the perinatal care team has an impact on women's satisfaction and the quality of care provided. The purpose of our study was to analyze the mutual perceptions of the two professional groups and to subjectively assess the actual cooperation between midwives and doulas; *Methods:* The survey instrument for examining mutual perceptions of midwives and doulas in the context of interprofessional collaboration was a self-administered questionnaire consisting of 13 items containing beliefs about collaboration between doulas and midwives and items describing experiences of collaboration between the groups. A total of 238 women participated in the survey: 165 midwives and 73 doulas. *Results:* Mutual perceptions of midwives and doulas can be described as positive or neutral. Examination of the experience of collaboration indicates a predominance of positive behavior. In almost all items, the beliefs of doulas and midwives differed significantly from each other showing the different perspectives of the two professional groups. The highest score in both groups was given to the statement Appropriate relationships between midwives and doulas have an impact on the satisfaction of parturients, which means that both doulas and midwives agree with it. *Conclusions:* There is potential for the dissemination of the doula profession in the Polish health care system. Both professions show more positive or neutral perceptions of each other than negative perceptions, which provides an opportunity to build a satisfying collaboration. The findings underscore the need to reconcile different attitudes in order to foster effective team practice and improve midwifery care outcomes. Training and meetings to learn about roles, competencies and explore each other's work models provide an opportunity to strengthen this collaboration.

Keywords: doula, midwife, collaboration, quality of perinatal care

Introduction

The World Health Organization stresses that midwifery midwives play a "critical" role and are linked to improving the quality of perinatal care. When midwives receive training that meets international standards, and their services include measures for broadly understood reproductive health, this can potentially prevent more than 80% of maternal deaths, stillbirths and neonatal mortality (Homer et al., 2014). To achieve this outcome, it is essential that midwives are formally certified, supervised, seamlessly integrated into health care structures, and work together in interdisciplinary groups (Shamian, 2014).

A doula is an independent professional who provides emotional, physical and informational support to women during pregnancy, childbirth and the postpartum period. A doula is not medically qualified, but

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[1] Article in polish language: https://www.stowarzyszeniefidesetratio.pl/fer/59P_BarB.pdf

is trained in techniques to provide comfort, relaxation and proper breathing to women in labor during birth. Her role is also to support the psychosocial aspects of childbirth, including providing emotional, informational and physical support and ensuring continuity of care (a doula usually gets to know the woman and the entire family during pregnancy, and accompanies her/him during labor and the postpartum period) (DOULA Association in Poland). The creation of interprofessional cooperation resulting from the combination of the professional competence of midwives with the competence and tasks of the doula, who can focus entirely on the psychosocial well-being of parturients, can be of great benefit to women and the perinatal care system (Goshomi, 2023). For this reason, a doula who accompanies a woman during labor should be viewed as a member of the therapeutic team (Turner et al., 2022)

Collaboration between midwives and doulas has been studied in terms of factors that enhance it, as well as barriers and difficulties. However, research has been conducted primarily in the United States, the United Kingdom and Scandinavia (Adams, Bianchi, 2004; Klein et al., 2009; Stevens et al., 2011; Waller-Wise, 2018). The results indicate, among other things, that midwives are concerned that doulas are encroaching on their role (Stevens et al., 2011). On the other hand, doulas who experienced conflicts with midwives explained these conflicts by the midwives' low understanding of their role and involvement and lack of confidence in their competence (Spiby et al., 2015). Very good cooperation between the two professional groups has been described in the case of women with special needs, such as migrant women and single mothers. In such situations, both doulas feel invited to collaborate and midwives feel truly collaborative and helpful (Akhavan, Lundgren, 2012; Khaw et al., 2023). Collaboration was described as very good by doulas who experienced genuine partnerships with midwives, in which they were welcomed as colleagues ("we're in this together") or effectively added to the midwifery team to help with specific tasks (McLeish, Redshaw, 2018). Midwives' favorability toward doulas increases along with their reluctance to medicalize childbirth (Klein et al., 2009; Roth et al., 2016). Thus, it can be said that cooperation between doulas and midwives is necessary and possible, but it can create challenges for both professional groups.

An optimal health care system is one in which there is an integrated system that supports professional partnerships, including those involving midwife and doula collaboration (Waller-Wise, 2018). The support of doulas can significantly complement the professional medical care of midwives, contributing to a more humanized birth process. Relationships between doulas and other members of this team affect women's satisfaction and the quality of care provided (Wojcik-Brylska, Pawlicka, Tataj-Puzyna, Szlendak, Węgrzynowska, et al., 2023).

In Poland, the first doulas began appearing in the labour room in 2001, and in 2015 "doula" was included in the list of professions. Currently, there are two associations with more than 200 doulas. Despite this, their presence in hospitals is not common. In Poland's medicalized and patriarchal system of maternity care, fostering a humanistic approach to childbirth would be highly beneficial. An analysis of the perspective of maternity hospital management staff in the Polish health care system showed that a lack of knowledge of doula roles and competencies, as well as a lack of collaborative experience, was associated with a negative perception of the profession and a lack of openness to such collaboration in the labour room (Wojcik-Brylska, Pawlicka, Tataj-Puzyna, Szlendak, & Baranowska, 2023). There are no studies describing and analyzing collaboration between doulas and midwives in Poland. There is also uncertainty about the place of doulas in the health care structure, but the growing interest in doula services among Polish families will result in more and more hospitals and health centers being forced to provide women with a choice and provide doulas with a place on the team providing perinatal care. The purpose of our study was to analyze the mutual perceptions of the two professional groups and to subjectively assess the actual cooperation between midwives and doulas.

1. Method

The research tool for investigating midwives' and doulas' perceptions of each other in the context of interprofessional collaboration was a proprietary questionnaire originally consisting of 25 items containing beliefs about collaboration between doulas and midwives and items describing experiences of collaboration between the groups. The items were created by a group of professionals (2 midwives, 2 doulas and 1 psychologist) based on comments collected from midwives and doulas (in response to the question, What do you and other midwives/doulas think about collaboration between doulas and midwives?). In the next step, the initial items were evaluated by other experts (midwives, doulas, sociologist) in a 3-round Delphi and pilot process.

The final selected statements containing beliefs (13 items) were indexed as positively related to collaboration (Doula complements midwife's work; Doula is midwife's collaborator; Midwife has less work due to doula; Proper relationship between midwives and doulas influences satisfaction of parturients), neutral, but possibly suggestive of negative attitudes (Doula is an advocate for the women, Doulas earn more than midwives for care during childbirth) and negative beliefs and attitudes (Doulas do not take responsibility for their work; A midwife's building of a relationship with a doula puts additional strain on a midwife's time; Midwives have a poor understanding of doulas' tasks and their involvement during childbirth; Midwives lack confidence in doulas' competence; Doula is a challenge to the midwife's work; A doula undermines a woman's trust in a midwife; A midwife is burdened with additional work when she provides care together with a doula). The response options for each statement were on a 5-point Likert scale (from: totally disagree to totally agree). Both midwives and doulas responded to the selected 13 statements/items.

Items describing midwives' experiences in working with doulas included 9 statements, and items describing doulas' experiences with midwives included 8 statements. Responses were on a 6-point scale (never, very rarely, rarely, often, very often, always).

The hypotheses of the study were that midwives had negative attitudes toward doulas, that doulas had more positive attitudes toward midwives, and that the two professional groups recognized the relevance and importance of collaboration on the satisfaction of parturients.

2. Study group

The study included 238 women: 165 midwives and 73 doulas. The groups did not differ in terms of age (midwives' mean age was 40.7 and doulas': 40.5), educational level (88.5% of midwives and 86% of doulas had higher education), perceived economic situation (midwives: mean 2.15 (SD = 0.7) on a scale of 1 to 5; doulas: mean 2.36 (SD = 0.7)). The groups differed in terms of marital status (53% of midwives and 70% of doulas were married; 27% of midwives and 22% of doulas lived in a cohabitation, and 20% of midwives and 8% of doulas were single), place of residence (doulas lived in larger cities than midwives: 32% of midwives (and 16% of doulas) lived in rural areas and small towns, while 44% of midwives (64% of doulas) lived in large cities) and having children (58% of midwives and 93% of doulas had children). 50% of the midwives who participated in the survey had collaborated with a doula in childbirth (the average number of such births ranged from 11 to 15, but 34% had participated in 1-5 births with a doula), and 50% of these midwives knew whether the doulas participating with them in childbirth were affiliated with the DOULA Association in Poland. The average number of births attended by doulas was 15 (0 to 70; SD = 21.8; 26% did not attend a birth as a doula).

3. Results

3.1. Mutual perceptions of midwives and doulas in the context of interprofessional collaboration

Table 1 shows descriptive statistics on mutual perceptions of midwives and doulas. Each of the 13 items was analyzed separately. In addition, Table 1 shows the results of the ANOVA analysis showing the differences between the responses of midwives and doulas in each of the 13 questions.

The results presented in Table 1 show that in almost all items, the beliefs of doulas and midwives differed significantly from each other showing the different perspectives of these two professional groups (the exception is the question: Doula is midwife's collaborator, which was answered in a similar way

Table 1. Mutual perceptions of midwives and doulas

Item	group	N	Min	Max	M	SD	Standard error of the mean	F	p
Doula complements midwife's work	midwives	165	1	5	3.22	1.105	0.086	5.242	.023
	doulas	73	1	5	3.62	1.497	0.017		
Doula is midwife's collaborator	midwives	165	1	5	2.90	1.211	0.94	0.000	.995
	doulas	73	1	5	2.90	1.426	10.67		
Doula is a challenge to the midwife's work	midwives	165	1	5	2.70	1.118	0.87	22.001	< .001
	doulas	73	1	5	1.96	1.123	0.131		
Doula is an advocate for the women	midwives	165	1	5	2.82	1.239	0.096	20.959	< .001
	doulas	73	1	5	2.03	1.236	0.145		
Midwives have a poor understanding of doula tasks and their involvement during childbirth	midwives	165	1	5	2.79	1.219	0.095	38.750	< .001
	doulas	73	1	5	3.81	1.036	0.121		
Midwives lack confidence in doula competence	midwives	165	1	5	3.39	1.085	0.084	13.379	< .001
	doulas	73	1	5	3.93	0.991	0.116		
Proper relationship between midwives and doulas influences satisfaction of parturients	midwives	165	1	5	4.13	0.938	0.073	23.868	< .001
	doulas	73	1	5	4.71	0.612	0.072		
Doulas undermine a woman's trust in the midwife	midwives	165	1	5	3.11	1.153	0.090	117.125	< .001
	doulas	73	1	5	1.49	0.819	0.096		
Doulas earn more than midwives for care at childbirth	midwives	165	1	5	3.28	0.954	0.074	66.152	< .001
	doulas	73	1	5	2.12	1.130	0.132		
Doulas do not take responsibility for their work	midwives	165	1	5	3.47	1.217	0.095	122.159	< .001
	doulas	73	1	5	1.67	1.001	0.117		
Midwife has less work due to doula	midwives	165	1	5	2.90	1.146	0.089	16.530	< .001
	doulas	73	1	5	3.56	1.202	0.141		
A midwife's building of a relationship with a doula puts additional strain on a midwife's time	midwives	165	1	5	3.07	1.080	0.084	73.365	< .001
	doulas	73	1	5	1.84	0.865	0.101		
Midwife is burdened with additional work when she provides care together with a doula	midwives	165	1	5	2.93	1.118	0.087	104.136	< .001
	doulas	73	1	5	1.42	0.865	0.101		

by both groups). The highest score in both groups was given to the statement *The right relationship between midwives and doulas has an impact on the satisfaction of parturients*, meaning that both doulas and midwives agree with it.

3.2. Perceptions of cooperation with the other group

Additional questions in the survey focused on the experience of working with a second group. Respondents who had experience working with a second professional group were asked to rate the frequency of positive and negative doula/midwife behavior on a scale from 1 never, 2 very rarely, 3 rarely, 4 often, 5 very often to 6 always. Average scores for each question separately, as well as basic descriptive statistics, are presented in Table 2 and Table 3.

Midwives working with doulas most often appreciated the positive aspects of the collaboration, i.e., they reported that the doulas thanked them for their cooperation, seemed satisfied with the collaboration and were helpful to the midwives. In contrast, they indicated the rare and very rare presence of negative

Table 2. Experiences of midwives working with doulas in the labor room (n=62)

	min	max	M	SD
She exceeded her authority	1	6	2.87	1.29
Persuaded/encouraged, the women to refuse to cooperate with the staff	1	5	2.52	1.33
By her behavior/attitude expressed disregard for your work	1	5	2.60	1.36
Did not comply with the requests of the staff	1	5	2.72	1.37
Interfered with your work	1	5	2.67	1.26
Asked about the possibility of activities she encouraged the parturient to do (e.g., opportunities to use the shower)	1	5	3.74	1.20
She thanked you for your cooperation	1	6	3.76	1.42
She seemed satisfied with the cooperation	1	6	3.89	1.26
Provided assistance in your work	1	6	3.76	1.18

Table 3. Experiences of doulas working with midwives in the labor room (n=62)

	Min	Max	M	SD
She criticized/disregarded the methods you used	1	5	2.45	1.10
She was unkind, repulsive	1	5	2.55	1.20
She belittled, disparaged your work	1	5	2.69	1.08
She often asked you out of the delivery room	1	5	1.94	1.14
She took your opinion into consideration	1	6	3.66	1.12
She provided information	1	6	3.98	1.18
She seemed satisfied with your cooperation	2	6	4.16	0.99
Thanked you for your cooperation	1	6	3.45	1.50

aspects of cooperation, such as urging the parturient not to cooperate with staff, not complying with staff requests, or being dismissive of the midwife's work (Table 2).

The doulas also rated the experience of cooperation with midwives positively. They rarely or very rarely experienced negative behaviors such as being asked out of the labour room, criticized or belittled, while more often their opinions were taken into account by the midwives, the midwives gave them information, and they seemed satisfied with the cooperation. Detailed results are shown in Table 3.

4. Discussion

This is the first study in Poland to show how midwives and doulas view their professional groups in the context of interprofessional cooperation. The roles and tasks of these two professions differ and are precisely defined, midwifery – in the Act on the Profession of Nursing and Midwifery (Act of July 15, 2011 on the Profession of Nursing and Midwifery, no date), and doula – in the Code of Ethics for Doula Work Standards (Doula Code of Ethics – DOULA Association in Poland, 2019). In practice, however, there may be overlap in some areas of activity (e.g., a doula's provision of emotional support to a woman in labour is also essential to the care provided by a midwife) (Berg, Terstad, 2006) and the existence of mechanisms of interprofessional competition and rivalry.

Our survey showed that both professional groups were more likely to agree with statements indexed as positively related to collaboration between midwives and doulas than negatively. Both professional groups agreed with the statement that proper relationships between midwives and doulas have an impact on the satisfaction of parturients, which seems to indicate an understanding of the need for cooperation and the potential for proper cooperation in caring for women. This may be due to the alignment of the goal of the work, which is the health and satisfaction of the woman during the perinatal period. The doula's focus on the woman in childbirth is closer to the humanistic and holistic approach presented by midwives than the medical biomedical model of care. Research in Canada has shown that doulas consider midwives to be the most sympathetic professional group, and the midwives surveyed overwhelmingly showed a positive grounding toward doulas (Klein et al., 2009; Eftekhary, Klein, Xu, 2010). Stevenson's research further showed that despite antagonism, both groups saw potential for collaboration (Stevens et al., 2011), and labor nurses surveyed in the United States agreed that doulas were important members of the maternity care team (Lanning et al., 2019).

At the same time, the results of our study indicated that the responses presented by the two professional groups differed. This may indicate a different perspective and difficulty in mutually empathizing with the actions of the other group. Doules were closer to stating that midwives do not know and trust their competence than the midwives surveyed. Findings from studies in Europe and the United States show that misunderstanding of the doula's role is common in midwifery circles, while emphasizing the importance of knowing each other's roles and competencies for smooth collaboration (Adams, Bianchi, 2004; Smid et al., 2010; Spiby et al, 2015; McMahon, Morris, 2018; Waller-Wise, 2018). Middlemiss (2015) showed that misunderstanding of the doula's role is a major potential for conflict. It can also lead to antagonistic attitudes toward the doula profession (McLeish, Redshaw, 2018), as well as tensions between midwives and doulas (Steel et al., 2013) and concerns about doulas usurping the midwifery role (Meadow, 2015; Middlemiss, 2015; de Carvalho Leite, Awoko Higginbottom, 2017). As the authors suggest, appropriate training can positively influence midwifery providers toward working with doulas. A training format that describes the doula model of care, defines doula roles, and strengthens doula relationships could support the effective integration of doulas into hospital maternity care teams (Neel et al., 2019). Greater exposure to each other during education can help create better positive interprofessional attitudes among midwifery team members (Klein et al., 2009).

The results of our study also show that midwives were more likely than doulas to believe that doulas are not responsible for their work. This may be due to the sense and awareness of midwives working in the labour room that they bear full legal and professional responsibility for the progress of the birth and the accuracy of the medical care process, are subject to strict standards of medical conduct and medical record-keeping requirements, and that the doula is doing her job, over which she defacto has no external control, and after the birth "goes home" without having to complete at least the birthing reports. From the doula's perspective, the "responsibility" defined in our study is arguably understood as a legal obligation between the doula and the client describing the reliability of the task performed (determined by a detailed service agreement signed between the doula and the woman). The midwives' understanding of responsibility in our study can thus be considered here in the context of medical responsibility, as described by Swedish women 'doula (...) has no medical responsibility'(Lundgren, 2010).

Our research also shows that it is midwives who are more likely to find that doulas attending births burden them temporarily and physically, and less likely to find that they have less work to do as a result of doulas. Research to date clearly indicates that midwives benefit from the presence of doulas in the labour room, although at the same time, the presence of doulas can be viewed by midwives as a challenge (Berg, Terstad, 2006; Akhavan and Lundgren, 2012). This may be due to a situation where the doula and midwife have worked together before and trust each other, in which case the doula can relieve the midwife in caring for the woman. If, however, this collaboration is just beginning, it often requires both parties to become familiar with the other's workshop, this generates additional time, which can be a challenge for overworked midwives (Ballen, Fulcher, 2006; Roth et al., 2016). Lack of trust, too, can cause midwives to need to frequently inspect the doula's work, or to fear the doula's judgment of her own actions.

Factors that influence differences in provider and midwife attitudes toward doulas range from personal exposure to individual preference (Lucas, Wright, 2019). Personal attitudes may have a greater impact on practice than existing evidence about the doula profession (Klein et al., 2011). For this reason, we explored not only beliefs and perceptions about collaboration, but also the experiences these professional groups had with collaboration. Midwives who interacted with a doula in the labour room agreed with the statement that the doula was a help to them. The majority of both midwives and doulas described behaviors that were positive and indicative of mutual commitment and satisfaction (e.g., thanking them for their cooperation, being pleased with their cooperation, taking the other party's opinion into account). Doulas particularly appreciated being given information and indicated the rarity of frequent situations of being asked out of the labour room. Negative, cooperation-destroying actions such as criticism, undermining competence, etc. were shown to be reported as occurring rarely. In this context, it is also worth considering the specifics of the study group – whether the preponderance of mothers in the doula group, may have influenced their attitudes towards midwives. Research shows that being a mother, especially of a young child, is associated with higher levels of empathy, and thus may affect one's ability to put oneself in another person's place and see a situation from their point of view, and thus one's attitude toward them (Jin, Wu, Li, 2022).

Providing continuity of woman-centered care in an emotionally safe environment can ensure good collaboration between midwives and doulas (Siboulet, 2023). The positive potential for building effective collaboration, converging philosophies of care, and the skills of doulas and midwives to support women during labour and postpartum provide an opportunity for the introduction of interprofessional teams in the care of pregnant, birthing, and postpartum women.

However, a limitation of the study is the small number of respondents and the lack of clear verification that midwives' experiences were based on collaboration with certified doulas. Further investigation of midwives' experiences based on, for example, multiple collaborations with a particular midwife (which would help reduce the impact of an early, mutually demanding period of collaboration) could be of great importance.

Conclusions

There is potential for the dissemination of the doula profession in the Polish health care system. The two professions – doulas and midwives, show more positive or neutral perceptions of each other than negative perceptions, which provides an opportunity to build rewarding collaborations. The findings underscore the need to reconcile different attitudes in order to foster effective team practice and improve midwifery care outcomes. Training and meetings to learn about roles, competencies and explore each other's work models provide an opportunity to strengthen this collaboration.

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Parenthood as a disappearing determinant of adulthood[1, 2]

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Abstract: The article is of an analytical nature. It was developed based on scientific, familiological, mainly pedagogical, sociological and psychological literature. The aim of the article is to analyse the concept of parenthood /parenting in the context of social changes and transformations in the understanding of parenthood/parenting by young adults. The main research problem of the theoretical analyses undertaken here is to answer the question of whether parenthood is a disappearing determinant of adulthood. The article presents demographic and social problems related to the decreasing number of children being born and of working-age people planning procreation. It presents changes in the way of thinking about family and parenthood that have occurred in Poland over the last century, and especially the last 30 years. It shows the dissemination of new family forms (DINKS) and voluntary childlessness, postponement of adulthood, delayed adulthood, and prolonged cohabitation with parents (referred to as "boomeranging"). The reader may become acquainted with the issue of the readiness of young adults for parenthood and parenting. The basic determinants of adulthood, including parenthood, are described here. Despite the changes mentioned, parenthood and parenting still retains an important place in the development of young adults. It can also be described as an important attribute of adulthood. However, it may only be concluded that parenthood has ceased to be an obligatory determinant of adulthood. The theoretical considerations presented here may provide inspiration for undertaking research among young adults. The problems presented also encourage educational reflection – how to support young people in their preparation for adulthood, including parenthood and parenting.

Keywords: parenting, parenthood, family, readiness for parenting, young adults

Introduction

The number of births in Poland, especially since 1990, has been falling sharply and does not guarantee rudimentary replacement fertility rate. The introduction of the Family 500 plus program (PL: Rodzina 500 plus) improved the fertility rate briefly. In 2017 there were roughly 145 children per 100 women aged 15-49, which means that the fertility rate was 1.45 (*Postawy prokreacyjne kobiet*, 2023, p. 1; Szałtys, 2023, p. 10). However, the uncertainty associated with the SARS-CoV-2 pandemic contributed to a further decline of the fertility rate to 1.33 in 2021 (ibidem, p. 1). The percentage of women planning to have offspring is also decreasing and intentions to procreate in the near future are most often declared by women aged 30-34 (31%), and slightly less frequently – by women aged 25-29 (27%) (*Postawy prokreacyjne kobiet,* 2023, p. 1; cf. also: *Bariery zamierzeń prokreacyjnych,* 2023; Szałtys, 2023).

Demographic changes directly and indirectly indicate the spread of alternative forms of marital and family life, including cohabitation, monoparentality, living apart together (LAT)[3], as well as voluntary childlessness (Garncarek, 2014, p. 98; cf. also: Matysiak, 2014). A new form of family life has appeared – the dual-income couple with no kids (DINKS)[4] (Liberska, Matuszewska, 2014, p. 124; cf. also: Brągiel, Górnicka, 2020, p. 66-68; Ostrowska, 2020; Tomaszewska, 2017). Postponed

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[3] LAT–Living Apart Together.

[4] DINKS–Double Income, No Kids.

adulthood is becoming common, i.e. a phenomenon of young adults not accomplishing developmental tasks (Brzezińska, 2016, p. 24-26; Brzezińska, 2017, p. 26-29, 60-61; Daszykowska-Tobiasz, 2023). There also appears the problem of prolonged cohabitation with parents–so-called boomeranging (or Boomerang Generation)–i.e. young adults aged 25-34 living with their parents in their family home (Barszcz, 2019; Bieńko, Kwak, Rosochacka-Gmitrzak, 2017).

Demographic analyses in European countries, including Poland, show a change in behaviours related to starting a family: the importance of cohabitation is increasing, the age at which women give birth to their first child is going up, the number of extra-marital births is increasing, the willingness to marry is declining, the number of children in individual families is decreasing and the problem of childlessness is noticeable (Matysiak, 2014; *Bariery zamierzeń prokreacyjnych,* 2023, *Postawy prokreacyjne kobiet,* 2023; Szałtys, 2023). Transformations in the intimate and emotional sphere of family life are also noted. These changes result from the "fragility of relationships" (Slany, 2020, p. 21-22). The decreasing number of marriages and the increase in cohabiting relationships is considered to be a manifestation of the deinstitutionalisation of marriage and attention is also drawn to the weakened obligatoriness of the norms regulating the behaviour of individuals in the parenthood sphere (Taranowicz, 2022, p. 8).

One social problem that is becoming important nowadays is the child penalty, i.e. the impact of parenthood on the professional situation of women (Pałka, 2024, p. 1). Women's professional activity decreases after the birth of their first child, and the decrease in professional activity related to parenting is one of the main determinants of parents' income inequality on the labour market (ibidem, p. 8).

On the one hand, the importance of starting a family and of parenthood as a necessary stage of adult life in society is waning, on the other hand, the presence of a child in the lives of people and families forms a guarantee of survival and development (Cieślińska, 2014, p. 282). Nowadays, the child becomes a "sophisticated project" (Bieńko, 2020), the implementation of which requires multiple investments and full parental involvement, with an absence of clear guidelines on what the goal of this project is and how it should be implemented (Taranowicz, 2022, p. 10).

1. Parenting, parenthood

Two terms referring to fulfilling the role of a parent are generally distinguished: parenting means accepting and performing the role of a parent and carrying out tasks related to parenthood, ensuring that the child's needs are met and enabling them to develop and raise a child, while parenthood means having children, becoming a parent, including by accident, in a nonvoluntary manner (Kwak, 2008, p. 19).

Numerous changes are observed in modern families, including those referring to functions, roles, structure, lifestyle, and the durability of interpersonal relationships, which are the subject of research, analysis and scientific reflection, especially in social sciences (Opozda, 2023, p. 123). Despite these changes, parenting still retains constant and inalienable attributes, such as: ability to raise, educate, and provide care for the child, i.e. to create optimal, adequate and possible conditions for its development. Another undeniable attribute of parenthood and parenting is the inalienability of the bond that the parent builds with the child, the continuity, irreversibility and permanence of being a parent (Opozda, 2017, p. 21).

From a psychological perspective, parenting can be understood as a "big challenge", being capable of uniting a married couple, strengthening their sense of community or, on the other hand, undermining a marriage. Parenthood means transition to a new stage of the relationship, transformation of a system focused on the needs of adults to one focused on the child, whereby it confers a "certificate" of adulthood. Parents who were treated fairly, valued and loved as children are likely to treat their children as such (Plopa, 2011). In turn, abnormal relationships between the child's parents, their immaturity and inability to meet their own needs and those of the child, their inability to understand and regulate their own emotions and lack of assistance in dealing with the child's emotions, aggressive communication and creation of a hostile atmosphere forms an environment conducive to disturbing the image of family relationships (Lisiecka-Bednarczyk, 2023). Parents who have experienced rejection, alienation, conflict or hostility will, consciously or not, repeat child-raising patterns or consciously change them, "work through these patterns" so that their children could not have a similar fate (Plopa, 2011, cf. also: Lisiecka-Bednarczyk, 2023).

Parenthood and parenting, as a subjective, interdependent and lifelong process and a multi-level field of activity based on interpersonal relationships, regardless of whether a family is a valuable or dysfunctional environment, affects the child and the parent (Błasiak, 2019, p. 10, 94; Brągiel, Matyjas, Segiet, 2021, p. 71-83; Matyjas, 2023; Opozda, 2017, p. 22; Plopa, 2011).

Parenthood is associated with the stress experienced, the intensity of which is determined by factors such as: 1) the degree to which a person wants to be a parent, 2) previous experience in being a parent, 3) transparency of the requirements for the parenting role, 4) the amount and quality of support available in the early stages thereof (Plopa, 2011, p. 21). Parenthood and parenting also includes positive, special experiences, giving many parents a sense of meaning, purpose, fulfilment and commitment, increasing the value of their lives and being a source of positive, deep feelings, stimulating development. The challenge of parenthood is to simultaneously care for the quality of the relationship and the development of the child, child's development and the parent's self-development, balancing between a generational family and a family of procreation, as well as between family and work (Plopa, 2011) or combining parenting with studying (Mleczko, Pustułka, Sarnowska, Buler, 2019).

Lucyna Bakiera (2023, p. 15) emphasises the value of the intrapsychic dimension of parenting, the experience of oneself as the author of care and upbringing, which plays a regulatory function in relation to the actions taken towards the child. She deepens the description of parenting from an interpersonal perspective — the relationship between the parents and the child, complementing the interpersonal aspect. The intrapsychic dimension of parenthood and parenting becomes interesting and important also in the perspective of socio-cultural changes affecting the experience of parenthood (ibidem, p. 20). This intrapsychic dimension of parenthood and parenting can be found in such categories as "compassion towards oneself" (Żmuda, 2024), "self-compassion" (Rojewska, 2023) or "self-creation of parenthood" (Wąsiński, 2018).

2. Changes in the way of thinking about parenthood and parenting

Nowadays, various scientific disciplines and sub-disciplines examine the topic of parenthood and parenting. Currently, generational differences in understanding, and even defining family, parenthood and childhood are noticeable (Brągiel, Górnicka, 2020; Ostrowska, 2020; Tchorzewski 2020). Nowadays, people who have experienced childhood, parenthood and parenting in different ways happen to live in one and the same family[5].

Changes in the way of thinking about parenthood and parenting are revealed in the analyses of research covering young people from the last 30 years. Anna Kwak (2008-2009), while analysing research from the turn of this century, stresses the importance of life goals based on traditional values for the young people of that time. The most important values for the young generation were: a successful family life, an interesting job, as well as love and friendship. Most of them predicted that in 10-15 years they would live

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[5] In 2023, the book "*Chłopki. Opowieść o naszych babkach*" by Joanna Kuciel-Frydyszak (2023) gained immense popularity in Poland. The author, basing on archival sources from the beginning of the 20th century, presents the situation of countryside women and children, marked by hard work, poverty, war and violence. The publication enables us to understand the experience of many families in Poland, triggering a wave of discussion about epigenetics and hereditary trauma. It was only in the 20th century that childhood and parenthood gained a new dimension, in connection with the spread of education, and ensuring a prosperous and happy future through good education became an important educational goal. There has also occurred a shift in the role of the child in the family – from an economic value to an emotional one (Błasiak, 2017, 33-34). It was only in the 20th century that the ideas of children's empowerment and rights began to be widely promoted (Kwak, Mościskier, 2002, Frączek, 2020).

formal marriages (allowing it to be preceded by an informal relationship) and have children – most frequently two (ibidem, p. 59-63).

The research carried out in 2003 by Iwona Przybył (2003) demonstrated that the status of a woman was determined in terms of family life, as well as motherhood and marriage were the main way of the woman's identification with her own gender. A woman pursuing a professional career, not looking after her house and family, was negatively identified as an "spinster", "deprived of the warmth of household", deserving of pity. A woman who decided to raise a child on her own was generally considered a "loser" or a "dissolute young lady with a child". Childbearing was expected of all married women, and infertility was treated as a "tragedy, failure, crisis". The lack of a child, an "expression of marital love", was perceived as proof of a love that was "incomplete, fruitless, unstable" and devoid of strong foundations. Motherhood was "the order, the duty of the spouses", and the society was looking for the means and ways thanks to which this "predetermined order" could be maintained (ibidem, p. 51).

Research from 2007 on a sample of 2351 people aged 18 to 26 demonstrated that the basic and desired form of family life for young people was a marriage with at least one child (Biernat, Dyczewski, Sobierajski, Szulich-Kałuża, 2007). It was believed that marriage and family are of communal and institutional nature at the same time, as separate, but closely related and relatively permanent institutions. Three quarters of the respondents (75.1%) believed that marriage has and will have great importance in the future (ibidem, p. 139). People who valued marriage highly, when asked "What will be important to you in 25 years' time?" most often chose the answers: "I and my children get along well" (61.05%), "I have children" (54.4%), "I am married" (53.2%) (ibidem, p. 139). Among the reasons for entering into marriage, they most often pointed to: love for their partner – 68.9%, the desire to have children together – 52.1%, obtaining a sense of security – 34.6% (ibidem, p. 141). The young people being respondents to the survey valued having children very highly and most often preferred two children in their own family, followed by three and more children (more often than one child). Almost 88% of the respondents clearly stated that they wanted to have children, and only 2.2% definitely did not want to. 10% of the young people did not yet know whether they wanted to have children in the future (ibidem, p. 145-149).

Similar research was carried out by Iwona Taranowicz (2015) among 45 second-year students of social work at the University of Wrocław. When defining family, young women stated that it simply consists of specific people, "a woman and a man or parents and children: a woman and a man or parents of the same sex, parents with or without children" (ibidem, p. 76). It was also pointed out, although much less frequently, that it is a set of people, a group, sometimes they gave some kind of definitions, e.g. "a family is a primary group, it is a woman and a man living together in a relationship, formal or not, having children or not" (ibidem, p. 76). The women defined family as a community, drew attention to a specific type of bond, holistically and emotionally binding its members into a network of interdependencies, it should give a sense of security and support, a place providing an emotional anchorage. The students surveyed did not identify family with entering into marriage. There was a departure from the requirement to formalise the relationship, as well as acceptance for same-sex relationships. Even having a child was not assessed as a necessary condition for the existence of a family. Among 45 students surveyed, 33 declared their willingness to start a family and marry, 4 declared that they did not plan either marriage or family, 7 were going to start a family, but did not intend to formalise a relationship, one person was already in a relationship, had a child and was planning a wedding (ibidem, p. 79). Among the respondents, there was a prevailing belief about the importance of the durability of marriage and the opinion that the decision to break up is made too quickly, without trying to maintain the relationship. People who plan to get married, mainly due to religion, considered divorce to be a manifestation of recklessness, lack of responsibility and efforts to maintain a relationship. Two beliefs existed side by side, recognising family, and above all marriage, as a possible but not an indispensable life choice, consciously rejecting motherhood and recognising the breakdown of a relationship when it ceases to be satisfying, and a belief being closer to the traditional understanding of family as an inseparable relationship based on marriage (ibidem, p. 80-82, 87).

The emergence of capitalist society, with all its ramifications, is an important factor determining procreative behaviour, also amongst contemporary Poles (Garncarek 2014, p. 106). Problems co-occurring with the free market economy, such as: inflation, unemployment, difficulties with institutional child care, shortage of admissions in nurseries and kindergartens, difficulties in buying one's own apartment, extended period of education, undertaking paid work by women, rise of individualism, striving for self-fulfilment in the workplace, emphasis on the quality of life and the quality of free time, as well as secularisation and liberalisation of norms are considered to be the main factors responsible for changes in the process of family formation – they do not contribute to making decisions about having children and they contribute to postponing motherhood (Mynarska, 2011, p. 227-228). The key factors responsible for postponing parenthood are aspects related to professional work and the desire to achieve stability on the labour market before deciding to become a parent. In addition, the lack of appropriate mental maturity prevents the formation of procreative intentions, while the lack of employment, housing or insufficient financial resources hinders the fulfilment of these intentions. Insufficient material resources are the reason for postponing parenthood, but not for resigning from it (ibidem, p. 238).

As Anna Mitręga and Małgorzata Biedroń (2014, p. 65) write, "until relatively recently, pedagogical sciences dealt with single-parent families in contexts resembling pathologies, and the term 'single mother' bore clearly stigmatising connotations, signifying helplessness and potential deviations of family life." The research conducted by Mitręga and Biedroń answers the question about factors which make families with one parent fulfil the tasks resulting from social and educational function, and which may threaten their effective implementation. Most of the single parents participating in it were able to perform their functions, fitted into the socio-cultural environment and were able to handle the tasks (ibidem).

Nowadays, parenthood is presented in terms of procreative freedom, democratisation of family life, shaping a close relationship with the child, taking care of its health, proper development, ensuring a good start in adulthood, but also in the context of "parenting marketing", i.e. the commercialisation of parenthood, parenting and childhood and the globalisation of the market of products for children and parents (Bieńko, 2020).

In order to understand transitions in the context of parenthood and parenting, it is important to emphasise the changes in the scope of parental roles. Currently, there is a noticeable shift in the parental subsystem (from dependence and subordination towards democratisation, partnership, equality) and a new model of maternity and paternity: the mother-wife has become the outright independent partner of the husband in all spheres of marriage and family life, and the father-husband has ceased to be "head" of the family (Matyjas, 2023, p. 32, 35). The democratisation of the family, legal changes and the advancement of medicine have an impact on procreation by allowing parents (especially the mother and not social pressure or external orders) to make decisions / conscious choices regarding having (or not having) a child, the control of procreation (Brągiel, Matyjas, Segiet, 2021, p. 98) and even the control of the conceived child's life. The democratisation of marital relations, the humanisation of family relations may also promote the democratisation, humanisation and empowerment of the child as well as the upbringing based on dialogue, authenticity, commitment, building bonds and cooperation (Błasiak, Dybowska, 2020; Ostrouch-Kamińska, 2017).

3. Childlessness

The procreative function of the family has so far been understood as the assurance of societal continuity and a guarantee of satisfying their intimate needs in a socially acceptable way for the spouses. Today, the procreative function of family is no longer considered obligatory (Walęcka-Matyja, Janicka, 2021, p. 24). Non-performance of this function (or its postponement) by married couples, accomplishing procreative tasks outside marriage is becoming socially acceptable, and there are greater possibilities of controlling procreation, which is justified by the increase in people's sense of individualism (orientation towards education and professional success) and the high costs of raising offspring (Walęcka-Matyja, Janicka, 2021; Walęcka-Matyja, 2014).

Nowadays, procreative and parental decisions are understood as a private sphere and may be implemented without entering into marriage (Taranowicz, 2022, p. 7). In the last 30 years, the age of highest fertility of women has shifted from the age group of 20-24 to the group of 25-29, and now also to the group of 30-34 (Szałtys, 2023, p. 12; cf. also: *Bariery zamierzeń prokreacyjnych,* 2023, *Postawy prokreacyjne kobiet,* 2023). Prolonged postponement of the decision to have children also appears to be one of the possible reasons for the decrease in the average number of children in particular families or their childlessness (Mynarska, 2011, p. 227). Women's professional involvement hinders or prevents their maternity plans. Difficulties resulting from combining childcare with full workplace commitment and the fear of losing a job may cause resignation from maternity (Mitręga, Biedroń, 2014, p. 66).

Childlessness has been noticed as a social problem for a long time. It is worth starting reflections by analysing the connotations ascribed to childlessness in Poland 20 years ago. The research by Iwona Przybył (2003) demonstrated that childlessness was most often (66.7%) associated with such negative feelings as "emptiness, lack of fulfilment, suffering". Childless women were perceived by 71.1% of the respondents as unhappy, unfulfilled, suffering, with numerous insecurities ("she is unhappy, she will not attain self-fulfilment in life, she feels inferior to those who can have children, she envies them, she is a tragic case, she is stubborn and embittered"). In the study, these pejorative terms for childless women were not used by 20% of the respondents, emphasising that infertile women may have different life goals than parenthood, as well as that childlessness does not deprive them of their value. Infertile men were stigmatised by 61.5% of the respondents ("he is like a plant without a root, he is not exactly a man, he does not feel fulfilled because being a man is, among other things, being a father"), while over 27% of the respondents expressed the opinion that an infertile man is as valuable as a man being a father. Few stated that an infertile man "is more accepted by the society as the blame is shifted and placed on the woman; he is less often unhappy because of his infertility than the woman and he is in a better situation than the woman" (ibidem, p. 54-55).

Currently, unwanted / unintended childlessness is also analysed in the context of miscarriages, infertility and its treatment, difficulties in finding a suitable partner to start a family, or adoption (Wąsiński, 2018). Demographic changes necessitate the analysis of women's reproductive plans (*Postawy prokreacyjne kobiet,* 2023) and the causes of reproductive barriers (*Bariery zamierzeń prokreacyjnych,* 2023). At the same time, new terms are used to describe childlessness, such as voluntary childlessness and childlessness by choice. Voluntary childlessness is understood as the conscious choice not to have children out of one's own free will (Garncarek, 2022, p. 118) and as one of the alternative forms of family life, it is referred to as a sign of changes in the essence and functions of the modern family (ibidem, p. 127). DINKS couples, consciously rejecting parenthood, increasingly appear in Poland (Liberska, Matuszewska, 2014, p. 124, cf. also: Brągiel, Górnicka, 2020, p. 66-68, Ostrowska, 2020, Tomaszewska, 2017). Childlessness by choice is presented by those who pursue this option as a modern lifestyle, which, unlike parenthood, does not entail financial costs, but generates savings, does not require changes in one's current life, and carries the promise of a fascinating life, focused on satisfying personal needs, aspirations and ambitions (Cieślińska, 2014, p. 282-283). Attractive life opportunities, indicated by the childless persons are: pursuing their hobbies, social activities, travel and the possibility of a consumer-oriented lifestyle. Being a matter of choice rather than necessity, voluntary childlessness is perceived as a result of post-modern tendencies (Garncarek, 2014, p. 114).

Emilia Garncarek carried out research answering the question of why young, educated Poles do not undertake parental roles (Garncarek, 2014, 2022). The surveyed women who consciously gave up parenthood listed the following reasons for making decisions about childlessness: 1) economic: concerns about financial stability, the desire to provide themselves and their wife/husband with the opportunity to meet various needs, the pursuit of a consumer-oriented lifestyle, 2) fear of "carrying the burden" of the responsibilities related to parenting/taking care of possible offspring by oneself, 3) personal predispositions and needs – no space for the role of a parent in their self-concept, 4) negative attitude towards children, 5) the importance of personal development, the desire to maintain an active life, the possibility of mobility or pursuing one's own hobbies, 6) traumatic childhood experiences (alcohol abuse by parents, divorce of parents), 7) health concerns (childbirth as an act dangerous to the health of the woman or child), 8) concerns related to the loss of their current physical attractiveness, 9) belief that parenthood is an irreversible state, 10) belief that maintaining the current level of intimacy and physical closeness with a partner will be impossible when a child appears, 11) belief that refraining from bringing more people into the world is a noble deed (due to overpopulation of the world), but also that 12) the world is full of threats and it is impossible to be sure that possible offspring will have successful life (Garncarek, 2014, p. 106-108). In turn, the researcher identifies the following reasons for voluntary childlessness among men: 1) avoiding negative experiences related to parental duties, taking responsibility for a child, deterioration of partner relationships, and financial losses; 2) maintaining current (satisfactory) material well-being; 3) the opportunity for personal self-realisation, building a professional career, experiencing joy in life, and establishing/maintaining satisfactory relationships with a partner. (Garncarek, 2022, p. 127).

4. Readiness for parenthood of modern young adults

Categories: moratorium, achieving adulthood, transition to adulthood, young adults or early adulthood refer to the transitional phase between youth and adulthood, which has become significantly prolonged nowadays. (Grotowska-Leader, 2019). It is assumed that the period between 18 and 30 years of age, and even slightly later, is characterized by the main developmental task of resolving the crisis of intimacy vs. isolation[6], finding one's own place in the system of social relations – achieving the ability to enter into a close relationship and create an intimate relationship with another person, finding ways of self-realisation adequate to the living conditions and integrating experiences from various areas of one's life (Pastwa-Wojciechowska, 2023, cf. also: Lisiecka-Bednarczyk , 2023).

Social determinants / markers of adulthood, such as: 1) completing education, 2) getting the first job, 3) moving out of the family home and managing an independent household, 4) getting married or 5) having a child, is now occurring at an increasingly older age, which extends the process of becoming an adult. Today, the concept of adulthood is predominantly defined by the need of economic security and acquiring skills and competencies, mainly in the professional area. In the second place, young people enter adulthood by seeking opportunities to fulfil their need for autonomy, independence, and relationships. (Wiszejko-Wierzbicka, Kwiatkowska, 2018).

Anna I. Brzezińska (2016) defines the postponement of adulthood as a conscious strategy of young people, the consequence of refraining from making the most important choices in Favor of experimenting, checking various possibilities and paths (adulthood as a challenge, part of the project of one's own life), and the moratorium on adulthood granted by people close to them, which accompanies young people, is viewed by young adults as the exercise of their right to self-determination and free choice (ibidem, p. 24-26). In turn, adulthood is delayed by supra-individual factors, mainly economic and structural ones, limited access to resources and support networks (adulthood as a risk and avoided for as long as possible). Brzezińska indicates the lack

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[6] One of the stages of identity development according to Erik H. Erikson. People in the period of early adulthood (between 19/20 and 35 years of age) are considered to be individuals shaping their own living space; a positive solution to the crisis of *intimacy vs. isolation*, means the ability to enter into a close relationship and create an intimate relationship with another person, and starting a family, along with commencement of a professional career, becomes a constitutive development goal during this period (Erikson, 2002).

of support (not only financial, but also emotional and cognitive one) in the immediate environment, possible physical or health limitations and individual resources of the individual (ibidem, p. 25).

In most European countries, including Poland, an increase in the cohabitation of an adult child in the family home is observed (Kwak, 2017, p. 12). An analysis of the situation of Polish "boomerang adults", i.e. young adults (aged 25-34) still living with their parents, are classified into 4 types: 1) "tenants by choice" – the effect of their own decision (for convenience or to meet affiliation needs) and a certain kind of life strategy (one that gives a sense of security, alleviating the fear of loneliness), young people work professionally, contribute to the family budget, or not, and will move out when they find a partner or experience a significant career change; 2) "hostages", forced to live with their parents owing to socialisation, feel responsible for their parents, are "emotionally dependent" and do not try to change their conditions; 3) "those unable to pull their own weight in life", for whom living with their parents is a way of life; they do not plan to move out, do not have goals, qualifications, willingness to work and do not want to change it – they are usually unemployed, dependent on parents and social programs, helpless and inefficient; 4) "forced residents", their cohabitation with their parents (with whom they are not strongly connected) results from financial necessity or temporary problems in relationships (ibidem, 15-16).

Individualistic attitudes moderate the postponement of adulthood. The moratorium is not only a period of delay in adulthood, but also a stage of intensive, although often unconscious work on self-development. The time of suspending commitments, given to young people so that they can seek, discover and prepare to undertake specific tasks has now become the dominant way of entering adulthood (Bieńko, 2017, p. 39-40). The overwhelming majority of young people today declare their desire to have offspring; 8% of respondents aged 18-40 declare that they do not want to have children (*Bariery zamierzeń prokreacyjnych,* 2023, p. 2).

There is also a growing recognition of the need for inner development, gaining self-knowledge, and cultivating psychological competencies, searching for internal autonomy, as a new quality of thinking about adulthood in terms of reflection on oneself, striving to achieve mental maturity (Wiszejko-Wierzbicka, Kwiatkowska, 2018).

Summary and conclusions

Nowadays, demographic changes and transformations in thinking about family, parenthood and parenting are noticed, new family forms are widespread and single parenthood as well as voluntary childlessness are normalized. The lack of decisions and actions in terms of completing education, starting employment, autonomy and independence from parents, building a lasting relationship / marriage or the birth and upbringing of a child is a certain kind of suspension between youth and adulthood. Failure to take these actions, especially parenthood, may be dictated by circumstances outside the decision of the person who wants to implement them (health problems, material problems, lack of a suitable partner), but it could also be a conscious decision. Attaining these objectives does not mean maturity either. Having children alone does not guarantee a responsible fulfilment of a parental role. Parenthood (biological, foster, adoptive) may be an expression and test of personal maturity of an adult.

Despite the changes mentioned, parenthood and parenting still retains an important place in the development of young adults. Parenthood and parenting can be treated as an important attribute of adulthood, and it also becomes a specific test of maturity and responsibility. It can only be stated that parenthood has ceased to be an obligatory determinant of adulthood. Maturity and responsibility can also be implemented in other ways. It cannot be unanimously ascertained whether voluntary childlessness is underpinned by attitudes of immaturity and egocentrism or responsibility.

The theoretical considerations presented here may provide inspiration for undertaking research among young adults. The changes in thinking about family, parenthood and parenting provoke the question of how contemporary young adults perceive parenthood and parenting, what meanings they impart to parenthood and how they perceive themselves in the role of a parent. Particularly interesting is the intrapsychic dimension of parenthood, which refers to the experience of oneself as the author of care and upbringing.

Today, many changes and transformations of parenthood and parenting are observed, which in turn cause changes and transformations in the processes of upbringing and socialisation. Therefore, it needs to be stressed that pedagogues play an important role in supporting the family, and above all parents who shape the family, educate and socialize future generations (Błasiak, 2019, p. 171). The problems presented above encourage educational reflection, all the more so because young people notice the need for internal development, gaining knowledge about themselves and shaping parental competences. It is worth considering, especially in the context of the proposal to withdraw the subject "Family Life Education" from schools as of the next year, how to undertake the tasks of education and support for young people to take up challenges and family roles, including those related to parenthood, how to support teens and young adults as potential future parents who conduct self-creation of their own parenthood and parenting.

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Ethical and legal aspects of the abortion dispute in Italy in 2020-2023[1]

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Abstract: The main goal of the article is to analyze the key elements of the current dispute over worldviews and politics in Italy concerning the ethical and legal aspects of various forms of abortion. The country on the Tiber River was one of the states around the world that widely liberalized abortion laws during the COVID-19 pandemic. In August 2020, the Italian Ministry of Health decided that pharmacological abortion – performed with the medical preparation RU-486 – should not be practiced at hospital gynaecology-obstetrics wards, but at day hospital facilities, with no requirement of hospitalization for women performing this type of abortion. Limited access to medical services in public and private healthcare facilities led to the practice of pharmacological abortion shifting largely from hospitals and clinics to pharmacies, private apartments, and homes. In 2021, pharmacological abortion in Italy accounted for 48.3% of all abortions performed under the current abortion law. In the face of the trivialization of the termination of pregnancy, Italian pro-life circles have taken a variety of measures to protect preborn life. One such initiative was the "Beating Heart" campaign, which looked at the possibility of showing the unborn child and its beating heart to the woman seeking an abortion. The analyses carried out in the article show that in the age of the Internet and the global village, it is not so much the legal norms that are increasingly important, but human free will and the awakening of people's moral sensitivity by developing appropriate bioethical awareness at the societal level. In this context, the various initiatives currently implemented in Italy by pro-life circles to achieve these goals are of great significance. In addition, the abortion debate in Italy supplies a number of arguments for the need to extend the conscience clause to pharmacy personnel.

Keywords: chemical abortion, pharmacological abortion, bioethics, conscience clause, principle of conscientious objection

Introduction

Intense debates are currently underway in many countries around the world regarding the moral evaluation of abortion and the various forms of its legalization. Two recent developments demonstrate the fierceness and importance of this dispute over worldviews and politics. The first is a landmark ruling by the U.S. Supreme Court of June 24, 2022, overturning the famous 1973 *Roe v. Wade* ruling that made abortion a federal right throughout the United States half a century ago. The Supreme Court now ruled that the "right to abortion" is not a federal right. As a consequence of the ruling, the power to create their own regulations for the protection of preborn life has been restored to individual states. The second development, headed in the exact opposite direction, was the official recognition in France of the "right to abortion" as one of the fundamental rights. In early 2024, the official enshrinement of this right in the French constitution received overwhelming support from Parliament and approval from President Emmanuel Macron. The adoption of a similar solution across the EU has also been advocated by the European Parliament, which passed a resolution on April 11, 2024 calling for the inclusion of the "right to abortion" in the Charter of Fundamental Rights.

One country currently witnessing a fierce dispute over abortion is Italy. The country on the Tiber River was one of those states around the world which widely liberalized abortion laws during the COVID-19 pandemic. In Italy, a profound change in this area

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[1] Article in polish language: https://www.stowarzyszeniefidesetratio.pl/fer/59P_Koby.pdf

was the result of a decision by government authorities in August 2020 to move pharmacological abortion from hospital gynecological-obstetrical wards to outpatient clinics and day hospitals.

Pharmacological abortion, also known as chemical abortion, is a method used only in the early stages of pregnancy, i.e. up to 7-9 weeks. The first stage of the abortion procedure involves taking the RU-486 pill, containing a preparation called Mifepristone, which results in killing the newly formed life in the womb. The second stage of chemical abortion involves the use of a preparation called Misoprostol, among other things, which belongs to a group of drugs called prostaglandins that cause the cervix to relax and induce contractions leading to expulsion of the dead embryo from the woman's body. Pro-life circles in Italy have not been indifferent to the liberalization of abortion laws, launching many initiatives to protect preborn life (Cioncolini, 2023; Gissi, Stelliferi, 2023; De Ciero, 2022; Perna, 2022; Balzano, 2021; Mattalucci, Raffaetà, 2020).

What specifically is involved in the current abortion debate in Italy? How was the "Beating Heart" campaign implemented and what was its main message? What kind of information is contained in the Health Ministry's annual reports on the operation of the abortion law currently in effect in the country on the Tiber River? What does the work of the Permanent Observatory on Abortion consist in? What is the scale of pharmacological abortion in Italy? Should pharmacists and pharmacy staff exercise the conscience clause?

The main goal of the article is to analyze the key elements of the current dispute over worldviews and politics in Italy concerning the ethical and legal aspects of various forms of abortion.

1. The beating heart of the preborn child

In May 2023, more than 50 Italian pro-life organizations jointly drafted an amendment bill to the abortion law which had been passed in the country on the Tiber River in 1978 and is most commonly referred to as Law 194/1978. In Italy, a group of at least 50,000 citizens with active voting rights may launch a legislative initiative by signing a citizens' bill. The authors of the legislative initiative titled "A Beating Heart" *(Un cuore che batte*) filed their project with the Supreme Court and launched a signature-gathering campaign. The amendment to the abortion law was designed to make it mandatory for doctors to show – using appropriate medical equipment – the unborn child and its beating heart to the woman seeking an abortion.

Many pro-life associations signed the bill, yet the two entities most closely associated with the Italian Bishops' Conference did not: Movement for Life *(Movimento per la Vita*) and Let Us Defend Our Children *(Difendiamo i nostri figli*). Differing reactions to the "Beating Heart" initiative have exposed major tensions among Italian Catholics as regards the assessment of many contemporary bioethical issues. With respect to abortion, many conservative Catholics do not share the position of the Vatican and the authorities of the Catholic Church in Italy, which is not to challenge Law 194/1978 in any way. Cardinal Matteo Zuppi, President of the Italian Bishops' Conference, has repeatedly spoken along the same lines. Archbishop Vincenzo Paglia, President of the Pontifical Academy for Life, takes an identical position. The main political forces in the country on the Tiber River, from the center-right coalition in power since 2022 to the opposition center-left parties, are also in favor of defending the current abortion law and its application in practice.

From the very beginning, authors of the "Beating Heart" campaign were fully aware that there is currently no chance of such a change being made to the present abortion law in Italy. Therefore, their main goal was to promote the protection of life from the moment of conception and to demonstrate a proactive rather than a merely defensive approach to the drama of terminated pregnancies. The signature-gathering initiative was designed to operate as a driving force behind conferences, debates, roundtables, discussion in the media, etc. It was primarily about awakening consciences and forming moral sensitivity. It was a typical attempt at reducing the negative consequences of the existing legal order (Urbančok, 2018a). This kind of action can be called the principle of the greatest possible good, which finds theoretical justification *inter alia* in Pope John Paul II's encyclical *Evangelium vitae*.

"A particular problem of conscience," claims John Paul II, "can arise in cases where a legislative vote would be decisive for the passage of a more restrictive law, aimed at limiting the number of authorized abortions, in place of a more permissive law already passed or ready to be voted on. Such cases are not infrequent. It is a fact that while in some parts of the world there continue to be campaigns to introduce laws favoring abortion, often supported by powerful international organizations, in other nations – particularly those which have already experienced the bitter fruits of such permissive legislation – there are growing signs of a rethinking in this matter. In a case like the one just mentioned, when it is not possible to overturn or completely abrogate a pro-abortion law, an elected official, whose absolute personal opposition to procured abortion was well known, could licitly support proposals aimed at limiting the harm done by such a law and at lessening its negative consequences at the level of general opinion and public morality. This does not in fact represent an illicit cooperation with an unjust law, but rather a legitimate and proper attempt to limit its evil aspects" (John Paul II, 1995, no. 73).

It is worth noting here that inspiration for the action taken by Italian representatives of pro-life movements came from a law passed in 2011 in the US State of Texas. Under this law, women who wanted to terminate a pregnancy in the State of Texas had to first see their unborn child on an ultrasound and listen to its heartbeat. If she refused, the doctor was required to describe to the woman what she was seeing on the monitor. The law was passed in 2011, but its provisions were objected to by doctors' organizations and hospital managements. The Federal Court agreed with them, ruling that the new regulations violated healthcare professionals' right to freedom of conscience and religion. As a result, the law was suspended for several months. In early 2012, however, the Court of Appeals dismissed the Federal Court's ruling, and the regulations went into effect. In the second half of 2022, the State of Texas banned abortions after a baby's heartbeat was detected. The adoption of this type of state law became possible following the previous Supreme Court ruling.

The legislative proposal made in Italy in 2023 read as follows: "In Article 14 of the Law of May 22, 1978, No. 194, containing 'Provisions on the Social Protection of Maternity and on the Voluntary Termination of Pregnancy,' the following wording shall be added: 'The physician who conducts the examination preceding a voluntary termination of pregnancy under this law is required to show to the woman seeking an abortion, by means of diagnostic examination, the unborn child she is carrying in her womb and ask her to listen to its heartbeat'" (Scandroglio, 2023a).

On July 20, 2023, Giuseppe Anzani published an editorial titled "Abortion. These Radical Signatures Are a Senseless Refusal to Help." The text appeared in the daily *Avvenire* owned by the Italian Bishops' Conference. The author sharply criticized the legislative initiative referring to the law in force in the State of Texas. He called the efforts taken by the bill's promoters to amend abortion law an act of ideological propaganda. On the one hand, he criticized representatives of the far left who sought to liberalize Law 194/1978 by removing any moral or administrative restrictions on women's reproductive freedom and making it freely available to anyone who chooses to terminate a pregnancy. On the other hand, Anzani disagreed with conservative circles that called for tightening Italy's current abortion law.

The author of the article argues that the legislative initiative seeking to make it obligatory to show the baby and its beating heart to the mother is a mistake. He claims such a demand violates constitutional principles which provide that a doctor must not perform any diagnostic or therapeutic procedures without the patient's consent or against his or her will. Anzani notes that in practice, what is most important is to listen with kindness and show constructive empathy rather than exert pressure bordering on emotional torment. The thorns of difficult motherhood are not in the child, but in the many various problems faced by women. Therefore, true protection of life at the initial stage of development should primarily consist in intervention in difficult situations, providing psychological help and economic assistance, solving specific problems, etc. The author strongly emphasizes that there is no need to change the abortion law in Italy, but instead to focus on various social and economic initiatives that offer effective assistance to pregnant women experiencing serious difficulties and considering abortion of their preborn child. This type of assistance is also referred to in Law 194/1978, which includes a provision on the obligation to "promote all appropriate intervention to support the woman, provide her with all necessary assistance both during pregnancy and following delivery" (Anzani, 2023).

The editorial in *Avvenire* drew sharp backlash from most pro-life circles in Italy. Many statements voicing harsh criticism of the text have appeared e.g. on the opinion-leading conservative Catholic portal *La Nuova Bussola Quotidiana*. On August 16, 2023, Tommaso Scandroglio published an article titled "Beating Heart.' No, Avvenire Prefers Law No. 194." In his view, Anzani is wrong when he calls it "emotional torment" for a mother to watch and listen to her child's heartbeat. Scandroglio believes that Anzani is mistaken to say that since the proposal to amend the abortion law is doomed to failure, the whole initiative is pointless (Scandroglio, 2023b). After all, the proponents of this project were well aware that such a proposal might in fact never see the light of day in the form of a law passed by Parliament. Their intent was cultural and educational: to cause a stir, to challenge people to think, not to take it for granted that Law 194/1978 could remain in force forever, to revive pro-life impulses, to play offensively against the Law rather than in its defense.

Scandroglio rejects Anzani's claim that the Law should not be challenged, but that it is necessary to focus on its good elements, which include the obligation of the state and society to help pregnant women. Scandroglio notes that the obligation to offer assistance is only incumbent on counseling centers and hospitals where the conversation with women seeking an abortion takes place, while it no longer applies to the doctor performing the abortion procedure. Moreover, the Law's provision on this duty during the pre-abortion interview is so enigmatic that those who fail to fulfill it cannot be punished in any way, because it is impossible to learn of its violation. Indeed, a woman who has had an abortion would never think of suing the doctor for not properly informing her about other options. Scandroglio stresses that in a pre-abortion interview, the woman intending to terminate a pregnancy in fact only sees abortion personnel. Consequently, one can hardly expect abortion professionals to honestly and authentically show women any alternatives to abortion (Scandroglio, 2023b; Urbančok, 2018a).

An open letter addressed to the faithful of the Diocese of Terni-Narni-Amelia by its Bishop Francesco Antonio Soddu was published in September 2023. It was an isolated public voice in Italy of a Catholic bishop who strongly supported the collection of signatures as part of the "Beating Heart" legislative initiative. Soddu pointed out that the main goal of the project was to increase women's awareness so that they can more freely and consciously decide whether to seek an abortion. This way, a woman can be helped to realize that what she is carrying in her womb is not a "cluster of cells," but a human person. Or, more precisely, the person of her child.

Soddu stressed that where the medical practice advocated by the "Beating Heart" project had been adopted, the number of abortions had dropped dramatically. The measure should therefore be appreciated by anyone who claims to care about women and the birth rates. According to Soddu, the "Beating Heart" campaign also provided an opportunity to draw attention to the reality of the child's existence in the womb, so that it was recognized as a subject of rights, above all the right to life as the first and foremost of all other fundamental rights (Soddu, 2023).

The signature-collecting campaign for the "Beating Heart" bill ended on November 7, 2023. A total of 106,000 signatures were collected, significantly exceeding the required limit of 50,000. Signatures could be submitted only at municipal and city halls. Unfortunately, in many towns and cities the local authorities boycotted the action, preventing residents from submitting their signatures. On December 5, 2023, the draft amendment to Law 194/1978 was presented to the Chamber of Deputies *(Camera dei Deputati*), which is the lower house of the Italian Parliament. It is worth noting the change in the position of *Avvenire* editors on the issue after the end of the signature-collecting campaign. Previously, the journal expressing the opinions of the authorities of the Catholic Church in Italy had been critical of the initiative, while after collecting the required number of signatures it became its advocate (Scandroglio, 2023c).

On December 9, 2023, Francesco Ognibene published an article in *Avvenire* titled "'Beating Heart.' 106,000 Signatures to Amend Law 194." He admitted that, at first, the initiative seemed an undertaking bordering on the impossible, which only representatives of the radical left, with their recognized know-how in initiatives of the exactly opposite nature, would be capable of. And yet it turned out differently. During the signature-gathering period, a remarkable network of cooperation was formed between volunteers from the various entities involved and many individuals who believed that Law 194/1978 should be amended to make sure doctors carried out their legal and ethical duty to give pregnant women all of the crucial information about the value and dignity of their preborn child – a new life with a beating heart.

Ognibene said in his article that the success of the signature-gathering campaign showed Italians' interest in protecting life. Indeed, a recent sociological study shows that 76% of the citizens, or nearly 8 out of 10 Italians, believe that the state should provide more social, economic and psychological assistance to pregnant women to offer real alternatives to abortion, and as many as 58% believe that if pregnant women had adequate assistance, most abortions could be avoided (Ognibene, 2023; Waleszczyński, 2019).

2. Activities of the Permanent Observatory on Abortion

One important initiative in Italy, supporting mothers and parent couples seeking abortions, is the creation of separate rooms in some hospitals with pro-life volunteers who offer them assistance. The volunteers are specialists in women's and children's health, including gynecologists, pediatricians, and psychologists. The main goal of their work is to provide support to women who are pregnant and experiencing various kinds of difficulties that may lead to thoughts of aborting their preborn child.

In the summer of 2023, a room of this kind was established at St. Anne's Hospital in Turin (Giojelli, 2023). The small room was set up on the initiative of the Piedmont regional government, which signed a relevant agreement with the hospital management and the Movement for Life Federation *(Federazione del Movimento per la vita*). The organizers believe that their mission is to stop abortions right where pregnancies are terminated, namely at the hospital. In their view, this is a way to show support for women and couples who have decided to terminate a pregnancy. St. Anne's Hospital in Turin ranks first in Italy in terms of the number births, with 6,590 new births in 2022. It is also the medical facility in the Piedmont region where the highest number of abortions are performed, with about 2,500 procedures in 2021, accounting for 90% of abortions performed in Turin and about 50% in the region.

Of importance in this context are initiatives taken by the Piedmontese authorities, who say they are now aiming for the entire region to be in the vanguard of social maternity protection, which several other Italian regions are taking as a model. In justifying their actions, they cite, among other things, Law 194/1978, which says in one of its articles that one should help overcome the causes that can lead to the termination of pregnancy. Piedmont authorities strongly reject criticism from some feminist circles who claim that this kind of initiative threatens the principle of women's autonomy and self-determination. According to officials in the region, every time a woman has an abortion because she felt abandoned in the face of the challenges of motherhood represents a dramatic failure of state, local and social institutions. For this reason, setting up a room in Piedmont's main obstetrics and gynecology hospital where women and couples who find themselves in a difficult situation can find help with projects that support preborn life is a social achievement for the entire region, especially crucial at a time of deep concerns about Italy's "demographic winter" (Zambrano, 2023; Kućko, 2023; Randle, 2021).

Another important initiative of Italian pro-life circles was the creation in 2021 of the Permanent Observatory on Abortion *(L'Osservatorio Permanente sull'Aborto*). It is formed by a team of doctors and scientists who support the Ministry of Health's annual reports on the implementation of Law 194/1978 with relevant intellectual analyses. The Observatory hopes that its work can contribute to reflection and foster calm and constructive dialogue on a topic that is crucially related to public health management and the need to overcome the deep demographic crisis. In pursuit of its statutory goals, the Observatory has compiled three reports. The first was published in 2021 and was entitled *Costs of the Abortion Law in Italy (1978-2018)* (L'Osservatorio Permanente sull'Aborto, 2021). A year later, a second report titled *Toward the Privatization of Abortion* was published (L'Osservatorio Permanente sull'Aborto, 2022). The report titled *Hidden Dialogue* (L'Osservatorio Permanente sull'Aborto, 2023) was published in 2023. The documents are also available electronically on the Observatory's website.

The Observatory's analyses show that the number of official abortions in Italy has been declining for many years mostly due to a sharp decline in the population of women of childbearing age. Data on official abortions performed legally in healthcare facilities do not take into account the growing scale of so-called "at-home abortions" performed using abortion pills. Another factor explaining the decline in the number of "official" abortions is the spread of various forms of so-called emergency contraception, namely the "72-hour after" pill, available in Italy under the name Norlevo, and the "five-day after" pill, sold under the name ellaOne. Such medical preparations have a dual effect: contraceptive and abortifacient – depending on when in the woman's menstrual cycle they are taken.

Norlevo pills have a contraceptive effect if taken up to three days before ovulation, in which case they inhibit or delay ovulation, preventing fertilization and the formation of a new human embryo. The ellaOne pill can be used no later than 120 hours after sexual intercourse. The product has a contraceptive effect if taken 1-2 days before ovulation, by inhibiting or delaying ovulation and preventing conception. If taken after fertilization and the formation of a new life, however, these preparations work as abortifacients. The period between fertilization and complete implantation of the new human embryo in the uterus is 12-14 days. For two weeks after fertilization, there is a new life that is not yet implanted in the uterus.

At this stage, there can be two reasons for the preborn life being terminated. The first is the natural expulsion of the human embryo from the mother's body, which in many cases occurs spontaneously. Even if such preparations are not used, most human beings do not nest in the uterus due to various natural causes, but are excreted outside the body. With Norlevo or ellaOne, however, the probability of a human embryo not implanting in the uterus increases dramatically, since the effect of these preparations is also anti-implantation, anti-nidation. It involves blocking the action of progesterone, which plays a key role in getting the endometrium ready for implantation. The endometrium is the mucous membrane lining the uterine cavity. It provides a place for the embryo to nest. The after pill causes a change in the mucous lining of the uterine walls, the endometrium becomes inhospitable, the uterus shrinks. If fertilization has occurred after sexual intercourse, the inhospitable endometrium either does not receive the human embryo or removes the already implanted embryo. In this case, the effect of the Norlevo and ellaOne pills is specifically abortive (L'Osservatorio Permanente sull'Aborto, 2022; Kobyliński, 2021).

In Italy, "emergency contraception" preparations are also available without prescription to minors. More than 600,000 boxes of Norlevo and ellaOne pills were sold in 2021. This surge in sales explains the decline in official abortions (taking into account the sum of surgical abortions and drug abortions performed using abortion pills) with an increase in the number of very early drug abortions, even assuming an extremely conservative abortion rate for these pills. In this context, abortion in Italy is being increasingly trivialized and becoming "just another form of contraception": when all other various forms of "emergency contraception" fail, then legal abortion is used as provided for in Law 194/1978. The progressive shift in legal abortions from surgical to chemical procedures, from the operating room to pharmacies and a woman's private home, is increasingly blurring the line between contraception and abortion (L'Osservatorio Permanente sull'Aborto, 2022).

3. Pharmaceutical abortion vs. Pharmacists' conscience clause

In Italy, each year the Ministry of Health submits a report to Parliament on the implementation of Law 194/1978. The latest report was sent to MPs and Senators on September 12, 2023, presenting information for 2021. The data is collected via the Epidemiological Surveillance System for Voluntary Abortion, operating in Italy since 1980. The monitoring relies on questionnaires provided by the National Statistical Institute *(Istituto Nazionale di Statistica*), which must be filled out for each abortion at the medical facility where the abortion is performed. The completed questionnaires are then collected and delivered by regional authorities to the Ministry of Health in Rome.

The most recent report shows that 63,653 abortions were performed in Italy in 2021 in accordance with the procedures set forth in Law 194/1978, confirming the continuous downward trend (-4.2% by 2020) since 1983. The abortion rate (the number of abortions per thousand women aged 15-49 living in Italy), which is the most accurate indicator for correctly assessing the use of abortion, confirms the downward trend as well, with 5.3 per thousand women in 2021 (-2.2% compared to 2020). It is worth noting at this point that Italy's abortion rate is one of the lowest in European countries with similar social and healthcare systems. The use of abortion in 2021 declined across all age groups compared to 2020, especially among the youngest. The abortion rate remains the highest among women between the ages of 25 and 34 (Ministero della Salute, 2023).

A report by the Health Ministry shows that among minors, the abortion rate in 2021 was 2.1 per thousand women. In 2021, 1,707 young women under the age of 18 had abortions, a total of 2.7% of all abortions performed in Italy. The abortion rate is higher among foreign women (12.0 per thousand women) than among mothers with Italian citizenship (5.0 per thousand women). The percentage of abortions performed by women who have already had experience with abortion has been declining since 2009, and stood at 24.0% in 2021. Italy has seen a steady increase in the percentage of abortions performed early in the pregnancy: 61.7% of the procedures were performed within the first 8 weeks of pregnancy, 21.7% at 9 to 10 weeks, 9.9% at 11 to 12 weeks and 6.7% after 12 weeks (Ministero della Salute, 2023).

A very interesting piece of information contained in the Ministry of Health report concerns the substitution of surgical abortion with drug abortion. A comparison of data sets on the timeline shows a steady increase in the use of chemical abortifacients. In 2021, 48.3% of abortions performed in healthcare facilities under the rules laid down in Law 194/1978 were performed with Mifepristone and various types of prostaglandins. The use of pharmacological abortion varies considerably from region to region, both in terms of the number of procedures and the number of facilities offering them.

At this point it is worth noting that a large number of healthcare professionals in Italy exercise the conscience clause provided for in the Italian legal system. Those who do not wish to participate in the performance of abortions can, when signing their employment contract, file a statement with the hospital or clinic administration invoking the principle of conscientious objection. In 2021, 63.6% of gynecologists, 40.5% of anesthesiologists and 32.8% of non-medical personnel exercised the conscience clause. Major regional differences can be seen in all three categories. In culturally traditional and politically conservative regions, this rate is higher than in progressive-liberal ones (Ministero della Salute, 2023).

The surge in the sales of Norlevo and ellaOne pills in Italy has also led to the issue of the conscientious objection by pharmacists and pharmacy staff becoming particularly important. Unfortunately, the Italian legal system does not extend the principle of conscientious objection to this professional group (Kobylinski, 2020). Maria Teresa Riccaboni of the Union of Italian Catholic Pharmacists *(Unione Cattolica Farmacisti Italiani*), which currently has more than 1,000 members, says the problem has been known for years, but is still being disregarded by much of Italy's political class. In recent years, the topic has made the headlines, especially after the radical liberalization of access to "emergency contraception" pills. Unfortunately, the conscience clause for this professional group is objected to by the Federation of Italian Pharmacists' Associations and Federfarma, a national association representing more than 18,000 private pharmacies contracted by the public health service.

Riccaboni says that the inability of pharmacists and pharmacy personnel to exercise the right to conscientious objection represents blatant discrimination against this professional group. Unfortunately, several drafts of relevant bills submitted to Parliament have failed in recent years. According to Riccaboni, pharmacists and pharmacy personnel should also be able to exercise the conscience clause in exactly the same way as doctors, nurses, and healthcare professionals, who are guaranteed such a right by two laws: Abortion Law 194/1978 and Artificial Insemination Law 40/2004. As a result, those working in pharmacies who wish to follow ethical principles and the natural moral law in their work have little choice today: they must either sell Norlevo and ellaOne pills against their conscience, or seriously risk losing their jobs. Unfortunately, after the radical liberalization of the sale of "emergency contraception" pills in Italy, most pharmacists have stopped asking ethical questions and are freely selling it. Riccaboni says that cases of pharmacists declaring their willingness to stop dispensing Norlevo and ellaOne pills are very rare (Dovico, 2023).

Conclusions

The main goal of inquiries pursued in the article was to present key elements of the current debate in Italy on the moral evaluation of abortion and the conditions for its legalization. The following five research conclusions emerge from the analyses.

First, Italy is among those countries in the world where the COVID-19 pandemic caused a sharp increase in the number of pharmacological abortions performed in hospitals, clinics, or at home. When it comes to legal abortions performed at healthcare facilities under Law 194/1978, drug abortions accounted for 48.3% of all abortions in the country on the Tiber River in 2021. Limited access to medical services in public and private healthcare facilities resulted in the practice of chemical abortion moving largely from hospitals and clinics to pharmacies and homes.

Second, changes in the use of pharmacological abortion in Italy are not as radical as those in the UK or the Netherlands, as well as elsewhere. In 2020, government authorities in London made chemical abortion one of the medical procedures available through telemedicine. After the end of the COVID-19 pandemic, this revolutionary solution became part of the normal functioning of the British healthcare system. The Parliament in the Hague, on the other hand, passed a law in April 2024 that allows doctors to prescribe abortion pills and send them by mail to Poland. This means that women living in Poland – after online doctor consultation – can receive medical preparations in the mail to perform chemical abortions at home.

Third, while the Italian dispute over abortion is a local one, as it concerns the interpretation of the country's current Abortion Law of 1978, it also relates to the international debate, an important element of which is the definition in some countries of the "right to abortion" as one of human rights. In this context, it should be considered a revolutionary change to enshrine this "right" into the French constitution in early 2024.

Fourth, the abortion debate in Italy provides many arguments for the need to extend the conscience clause to pharmacists and pharmacy personnel as well. With abortion increasingly moving from hospitals and gynecological surgeries to pharmacies and homes, pharmacists and pharmacy staff should also be able to exercise the medical clause, just like doctors, nurses, and medical personnel.

Fifth, the Italian abortion dispute clearly demonstrates that legal regulations are now playing a diminishing role when it comes to protecting the dignity and value of human life from the moment of conception to natural death. Living in a global village and having access to the Internet, one can order any medical preparation – including abortifacients. Undoubtedly, human free will and autonomous decisions are becoming increasingly important. In this context, the various initiatives undertaken in Italy by pro-life circles should be appreciated, as they enhance people's moral sensitivity and foster a proper understanding of contemporary bioethical issues.

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Exploring links between attachment and mental health

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Abstract: Attachment theory provides numerous implications for mental health and individual functioning throughout the lifespan. Attachment styles, formed based on early interactions with a caregiver, play a crucial role in emotional regulation, relational satisfaction, and psychological well-being. Childhood experiences become the foundation for the development of internal models of self, the world, and others, influencing attachment patterns in adulthood. These patterns are significant for later relationships, especially romantic ones, mental health, and the development of psychopathology. If the primary caregiver responds consistently, supports, and comforts the child, the child will be inclined to cooperate, seek closeness, and feel loved and safe. Such a child will develop a secure attachment, viewing the caregiver as a secure base and a refuge from the unpredictable world. Individuals who formed a secure attachment style in childhood tend to create stable and mature relationships, exhibit greater psychological resilience, and are less likely to struggle with mental health issues. Conversely, if the caregiver is unresponsive or lacks sensitivity, the child may develop an insecure attachment style, characterized by heightened anxiety or avoidance. Attachment-related anxiety is associated with a persistent state of heightened vigilance, as individuals remain on alert, anticipating potential separation from their parents. Avoidant attachment is marked by a tendency to maintain emotional distance, reluctance to rely on others, and a lack of seeking comfort and support from caregivers. An insecure attachment style negatively impacts romantic relationships. Moreover, individuals characterized by attachment anxiety or avoidance are more prone to mental health disorders. Attachment theory provides a crucial framework for understanding the complex links between early relational experiences and mental health. Poor relationship quality, complex PTSD, depression, personality disorders—particularly antisocial and borderline—have their roots in early maladaptive relationships between the child and caregiver and may be related to interpersonal trauma. Secure attachment acts as a protective factor against psychopathologies, promoting emotional stability and healthy social functioning.

Key words: attachement, C-PTSD, depression, personality disorder

Introduction

Attachment theory revolutionized thinking about the gravity of relationship between child and it's mother. It sheds a light on the subsequent consequences of its disruption through separation, deprivation, and bereavement, which can lead to serious health and mental problems (Bretherton, 2000; Hodny, Prasko, Ociskova, Vanek, Holubova, 2021; van Leeuwen, van Wingen, Luyten, Denys, van Marle, 2020; Yazici-Celebi, Yilmaz, Karacoskun, Sahin, 2024). Throughout a lifespan people suffer repercussions of maltreatment which occurred in early stages of their life and which manifest itself in a serious health problems such as depressive (Frost et al., 2024; Hayre, Sierra Hernandez, Goulter, Moretti, 2024; Yazici-Celebi et al., 2024), obsessive-compulsive (Hodny et al., 2021; van Leeuwen et al., 2020), or ADHD symptoms (Akman et al., 2024; Wylock, Borghini, Slama, Delvenne, 2023), or C-PTSD symptoms (Farina, Liotti, Imperatori, 2019).

Today's research concur Bowlby's theory about importance of attachment pattern forged in early childhood. According to the theory, children seek proximity of responsive caregiver from early infancy. These early experiences become a base to develop an internal model of the self, the world and others, and will influence attachment patterns in adulthood. Hence, if the primary caregiver is responsive, consistently supports and consoles a child, the child will eagerly interact with him, seek his proximity in order to being loved and secured. This child will be securely attached and will perceive the caregiver as a safe base, a shelter protecting from an unpredictable world (Ainsworth, Blehar, Waters, Wall, 1978; Bowlby, 1997).

However, the lived experience often diverges from the above picture. When a caregiver is unresponsive, shows a lack of sensitivity or even frightens the child, he or she may develop an insecure type of attachment, which is characterized by greater level of anxiety or avoidance (Ainsworth et al., 1978). Attachment anxiety involves a persistent state of heightened alertness, as individuals remain on guard anticipating potential separation from their parents (Brumbaugh, Fraley, 2006; Castellini et al., 2023), whereas attachment avoidance is associated to a tendency to maintain emotional distance, reluctance to rely on others, seek comfort and support from caregivers (Norris, Lambert, Nathan DeWall, Fincham, 2012).

Van Ijzendoorn et al. (van Ijzendoorn, Schuengel, Bakermans-Kranenburg, 1999) conducted a comprehensive meta-analysis exploring the prevalence of different types of attachment relationships across general population and several clinical groups. According to collected data, 62% of the young children were securely attached to their caregiver. Thus, over 38% of the children in general population exhibit some kind of harmful attachment style. Notably, in maltreated samples, securely attached children constituted only 9% of the sample (van Ijzendoorn et al., 1999). Those children not only experience early injustice and abuse, but also establish a life-long pattern of functioning in relation to oneself and others and suffer its consequences, most probably, for the rest of their lives. Previous meta-analytic studies have shown, insecure attachment is linked to psychopathology such as internalizing and externalizing problems (Hoeve et al., 2012; Madigan, Brumariu, Villani, Atkinson, Lyons-Ruth, 2016).

Building on the foundational principles of early attachment theory, adult attachment theory extends these concepts into adulthood. Adult attachment theory investigates how early attachment experiences with primary caregivers influence attachment behaviors and dynamics in adult relationships. Originating from the work of Hazan and Shaver in 1987, the theory has evolved to examine how secure, anxious, and avoidant attachment styles influence interactions with romantic partners, close friends, family members, and even therapists. It underscores the critical role these attachment styles play in emotional regulation, relational satisfaction, and psychological well-being across the lifespan (Meredith, Ownsworth, Strong, 2008; Zagaria, Baggio, Rodella, Leto, 2024). Additionally, attachment theory highlights the profound impact of attachment styles on overall mental health. Secure attachment is linked to greater psychological resilience and lower incidence of mental health disorders, while insecure attachment styles, such as anxious and avoidant, are associated with increased vulnerability to conditions like depression, anxiety, and personality disorders (Choenni et al., 2024; Colonnesi et al., 2011; Luyten, Campbell, Fonagy, 2021; Madigan, Atkinson, Laurin, Benoit, 2013; Murray, Jacobs, Rock, Clark, 2021; Trucharte, Valiente, Espinosa, Chaves, 2022). This underscores the importance of understanding and addressing attachment issues in mental health treatment and intervention.

1. Attachment in romantic relationships

A key determinant of a child's attachment pattern is the caregiver's sensitivity, which involves the ability to perceive and appropriately respond to the child's signals of distress (Ainsworth et al., 1978; Duschinsky, 2020). Secure attachment is commonly associated with a caregiver who is sufficiently sensitive, providing consistent and appropriate responses to the child's needs. This secure base allows the child to explore the world with confidence, knowing they can rely on their caregiver for support and comfort.

Adult attachment styles in intimate relationships closely align with Ainsworth's (1978) classifications: secure, avoidant, and anxious/ambivalent and a rich body of research indicates that attachment styles significantly affect romantic relationships. The attachment style formed with a caregiver acts as a foundational schema for subsequent functioning – encompassing cognition, communication, intimacy, love, self-perception, social environment, and interpersonal interactions. Through early relational experiences, individuals develop internal working models of themselves and others. When these models are grounded in positive self-beliefs and a benevolent view of the world, they signify secure attachment. In such cases, individuals perceive themselves as deserving of care and love, while viewing others as responsive and trustworthy. Conversely, attachment insecurity is linked to negative self and other models, characterized by the conviction that one is unworthy of love and care, and that others are perceived as unresponsive and untrustworthy. It is these internal models that guide an individual's relationship with their romantic partner (Beeney et al., 2017; Evraire, Dozois, Wilde, 2022).

Securely attached individuals exhibit satisfaction and contentment with mutual closeness, perceiving their partners as trustworthy and accepting. Their relationships are stable, mature, and rich in positive emotions. Secure attachment positively correlates with the components of love: passion, intimacy, and commitment, resulting in a satisfying relationship (Bukalski, 2020). Numerous studies confirm this correlation and describe negative associations of these love components with avoidant attachment (Juroszek, Haberla, Kubeczko, 2012; Liberska, Suwalska, 2011). Studies also suggest that there is a link between secure attachment and forgiveness in relationship and (Körner, Schütz, Fincham, 2022).

Conversely, childhood experiences of insecure attachment negatively impact romantic relationships. Avoidantly attached individuals experience low satisfaction and emotional intimacy with their partners, struggle with trust and acceptance, and feel insecure and distant. Anxiously attached individuals are preoccupied with relationship stability and fear rejection, worrying about their attractiveness and their partner's commitment. They constantly seek reassurance but fear rejection, leading to distress in relationships (Campbell, Stanton, 2019; Kardasz, Dudka, 2019; Liberska, Suwalska, 2011). Moreover, anxious attachment predicts love addiction and lower levels of relationship functioning such as sexual satisfaction, commitment and relationship satisfaction) (Dineen, Dinc, 2024; Moors, Ryan, Chopik, 2019).

The findings from the research demonstrate that there are clear connections between the anxiety and avoidance dimensions of attachment and communication behavior in general (Anders, Tucker, 2000; Bond, Bond, 2004). These associations highlight the impact of attachment styles on how individuals interact and communicate with others. Interpersonal communication between partners with insecure attachment styles is of poorer quality and features more conflict behaviors (Bukalski, 2020; Liberska, Suwalska, 2011). This may relate to conflict resolution styles – avoidantly attached individuals tend to avoid and ignore problems, while anxiously attached individuals respond more negatively and aggressively (Çağlayan, Körük, 2022). Individuals exhibiting higher levels of avoidant attachment tend to shy away from intimacy, which makes them less inclined to use communication strategies that foster close connections. Weger and Polcar (2002) found that those with lower levels of attachment avoidance find communication less rewarding and less effective for gaining others' approval. Additionally, avoidant attachment shows a negative correlation with person-centered comforting behaviors, which are closely tied to the concept of confirmation (Weger, Polcar, 2000). Since confirming messages promote closeness while disconfirming messages create distance, it can be inferred that attachment avoidance is likely associated with communication patterns that include more disconfirming and fewer confirming messages.

The issue of attachment styles in romantic relationships is widely studied in various contexts (Han et al., 2021; Richter, Schlegel, Thomas, Troche, 2022; Takano, Mogi, 2019; Tosun, Yıldırım, Altun, Yazıcı, 2022). Research shows that anxious attachment is characterized by higher levels of daily excessive reassurance seeking (ERS), which paradoxically results in lower trust in women. Avoidant attachment features lower daily ERS, possibly due to a tendency to limit the expression of negative emotions. Excessive reassurance seeking is understood as persistent demands for validation of self-worth (Evraire et al., 2022). Additionally, studies comparing attachment styles in different types of relationships reveal that secure attachment is more associated with marriage, providing a conducive environment for forming and maintaining secure bonds, unlike engagements or cohabiting relationships. Moreover, the number of previous relationships negatively correlates with the intensity of secure attachment in the current relationship (Liberska, Suwalska, 2011). Securely attached individuals believe that spending more time with their partner would yield more benefits than costs, leading to increased intimacy and emotional closeness (Monteoliva, García-Martínez, Calvo-Salguero, 2016). Furthermore, women securely attached to their partners experience higher overall relationship quality, encompassing support, passion, and responsibility for the relationship (Gulczyńska, Jankowiak, 2016). Secure attachment also correlates with higher relationship satisfaction, positively impacting overall mental and physical well-being, and life satisfaction (Alabrudzińska, Bakiera, 2021; Malina, 2011).

2. Attachment trauma and C-PTSD

Post-traumatic stress disorder (PTSD) has been officially recognized as a mental disorder since 1980 (American Psychiatric Association, 1980). Initially, PTSD was formulated to describe the psychological symptoms that develop after experiencing significant traumatic events, such as combat or natural disasters. However, it has become increasingly clear that individuals who undergo complex trauma, particularly interpersonal trauma, may exhibit symptoms that the traditional PTSD diagnosis does not fully encompass (Fung, Chien, Lam, Ross, 2023).

Complex Post-Traumatic Stress Disorder (C-PTSD) is a term used to describe a distinct pattern of symptoms that can arise from prolonged and repeated exposure to trauma, particularly in interpersonal or relational contexts. The symptoms of C-PTSD include both the classical PTSD symptoms and additional disturbances in self-organization such as affective dysregulation, negative self-concept, and disturbances in relationships. C-PTSD has been recognized as an official trauma disorder in the ICD-11 (Fung et al., 2023; Harrison, Weber, Jakob, Chute, 2021; Lam, Ng, Zhou, Hung, Fung, 2024).

C-PTSD symptoms are more related to social-interpersonal trauma and adversities such as childhood maltreatment than to non-human trauma. From this viewpoint, C-PTSD can be understood and classified as a disorder primarily related to social and interpersonal factors (Fung et al., 2023; Po el al., 2023). To better capture the unique and multifaceted symptoms experienced by children and adolescents who endure prolonged and repeated interpersonal trauma, scholars proposed the term "developmental trauma disorder", acknowledging that these symptoms extend beyond the scope of traditional PTSD. The typical outcome of cumulative relational trauma, which leads to complex PTSD, includes alterations in affect and behavioral regulation, interpersonal problems, dissociative symptoms, and somatizations (van der Kolk, Roth, Pelcovitz, Sunday, Spinazzola, 2005).

The pathological processes observed in C-PTSD, particularly emotional dysregulation, disturbances in relationships, and negative self-cognitions, are believed to originate from early traumatic misattunements between the child and caregiver (Cloitre et al., 2009; Farina et al., 2019; Zagaria et al., 2024). Childhood maltreatment, including neglect, abuse, and inconsistent caregiving, disrupts the child's development of secure attachment and healthy emotional regulation. These early adverse experiences impair the child's ability to form stable and trusting relationships, leading to pervasive interpersonal difficulties later in life. C-PTSD symptoms are routinely observed in the clinical practice of patients with Attachment Trauma (Farina et al., 2019). Among the wide array of diagnoses received by patients with AT, C-PTSD seems to be an efficient category to describe AT-related problems in adulthood. This further underscores the significant link between childhood maltreatment and the manifestation of C-PTSD, highlighting its utility in clinical settings for accurately capturing the long-term impacts of early relational trauma.

In conclusion, the recognition of Complex Post-Traumatic Stress Disorder (C-PTSD) has provided deeper insights into the intricate relationship between attachment and trauma. The introduction of C-PTSD as an official disorder in the ICD-11 emphasizes the significant impact of prolonged and repeated interpersonal trauma, particularly in the context of childhood maltreatment, on the development of emotional dysregulation, negative self-concept, and disturbances in relationships. The term "developmental trauma disorder" has been proposed to further encapsulate the unique clinical presentations in children and adolescents who experience such trauma. The correlation between early traumatic misattunements with caregivers and the manifestation of C-PTSD symptoms underscores the critical role of secure attachment in healthy emotional and relational development.

3. Depression and attachment style

The World Health Organization (WHO) defines mental health as "a state of mental well-being that enables people to cope with the stresses of life, realize their abilities, learn well and work well, and contribute to their community". Yet, depression remains a serious global issue. Despite ongoing efforts, there has been no significant progress in reducing its burden since 1990 (GBD 2019 Mental Disorders Collaborators, 2022). The European Brain Council's Value of Treatment study found that only 52% of depression cases are diagnosed, 62% of these receive treatment, with 33% achieving good outcomes and another 33% experiencing poor results. Only 12% of those receiving treatment are referred to a psychiatrist or specialist. On a global scale, just 30% of individuals with depression receive treatment, and among them, only 40% receive adequate care (Mekonen, Chan, Connor, Hides, Leung, 2021; Strawbridge et al., 2022).

In Europe, major depression was identified as the most common mental disorder and a cause of disability worldwide (Gu, Jing, Li, Huang, Wang, 2018). Depression and anxiety are among the most prevalent mental illnesses in young people, with 50% of lifetime mental illness cases starting before age 14 and 75% before age 24 (Kessler et al., 2005). Thus, identifying the roots of this significant mental obstacle experienced by modern society, as well as potential protective mechanisms against it, appears to be a pivotal endeavor for psychologists around the world.

Bowlby (1973) emphasized the crucial role of attachment in understanding both normal development and psychopathology. He proposed that attachment experiences have enduring impacts throughout a person's life and are pivotal in shaping personality and psychological disorders (Blatt, Levy, 2003). In line with this, insecure attachment has been linked to depression, anxiety, and stress(Blatt, Levy, 2003; Bowlby, 1973; Fonagy, Luyten, 2016; Fonagy, Target, 2002).

Research indicates that secure attachment is a protective mechanism against psychopathology, while insecure attachment is related to child psychopathology associated with internalizing problems, especially depression (Colonnesi et al., 2011; Madigan et al., 2013). Both father-child and mother-child attachment negatively predict loneliness and depression in children later in life (Tan et al., 2023). Bowlby argued (1973) argued that the loss of security contributes to negative self-representations, views of others, and perceptions of the environment. This loss can lead to low self-esteem, difficulties in interpersonal relationships, and a pessimistic outlook on life, which in turn increases the risk of developing depression in adulthood (Craba et al., 2023).

Contemporary research indicates that both avoidant and anxious attachment styles are associated with an elevated risk of developing depression. Adults with an anxious attachment style often experience fear of rejection, abandonment, or lack of acceptance. They tend to hold negative self-beliefs and perceive others as highly attractive and necessary, leading to a continual pursuit of approval. Conversely, adults with an avoidant attachment style harbor negative thoughts about others, fear intimacy, feel discomfort with closeness and dependency, and exhibit emotional suppression, which impairs their ability to effectively manage problems (Dagnino, Pérez, Gómez, Gloger, Krause, 2017; Demirci, Ateş, Sağaltıcı, Ocak, Kıvanç Altunay, 2020). Research indicates that avoidant attachment has both direct and indirect effects on depressive symptoms, whereas anxious attachment influences depression only indirectly through mediating mechanisms (Trucharte et al., 2022). Factors such as self-esteem, stress management, certain dimensions of psychological well-being (self-acceptance, interpersonal relationships, environmental mastery), alexithymia, self-criticism, and social support play mediating roles between attachment style and depression (Dagnino et al., 2017; Şenkal, Işıklı, 2015; Trucharte et al., 2022). On one hand, when attachment is characterized by anxiety or avoidance and satisfaction with social support is low, depressive symptoms intensify, highlighting the moderating role of social support. On the other hand, insecure attachment styles weaken the positive effects of social support by perceiving the environment as less supportive, thereby exacerbating depressive symptoms. This indicates that insecure attachment moderates the relationship between social support and depression (Costa-Cordella, Vivanco-Carlevari, Rossi, Arévalo-Romero, Silva, 2022; Dagnino et al., 2017).

Valighani et al. (2018) investigates the role of mediators between attachment style and depression. According to their study, self-knowledge, self-control, and self-compassion appears to be key mediators. In the context of anxiety and stress, integrative self-knowledge, mindfulness, and self-compassion are the relevant mediators. Furthermore, mindfulness and self-compassion uniquely act as moderators in the relationship between insecure attachment and depression and appear to play a protective role in mitigating the impact of insecure attachment on depression (Valikhani, Abbasi, Radman, Goodarzi, Moustafa, 2018).

Undoubtedly, emotion regulation strategies play an important role in the interplay between attachment style and depression. Individuals, depending on their attachment style, exhibit tendencies towards different regulatory strategies, some of which may be maladaptive (Pastuszak-Draxler, Bętkowska-Korpała, Gierowski, 2019; Picardi et al., 2019). An avoidant attachment style is characterized by the deactivation of the attachment system, wherein emotion regulation is achieved through denial, suppression, avoidance, distancing, or minimizing the internal experience and expression of emotions. Suppression pertains to the inhibition of unwanted thoughts associated with unpleasant emotions, while avoidance serves to mitigate suffering (Ludwikowska-Świeboda, 2022; Murray et al., 2021; Trucharte et al., 2022). Consequently, individuals with an avoidant attachment style encounter challenges in relying on others, fostering trust, seeking support, and relinquishing emotional distance (Picardi et al., 2019). This maladaptive emotion regulation strategy constitutes a primary mediator in the relationship between avoidant attachment style and depression.

Conversely, individuals exhibiting an anxious attachment style tend to magnify difficulties, display heightened sensitivity, and express anxiety in an amplified manner. The hyperactivation strategy encompasses mechanisms such as cognitive disconnection, which entails a lack of coherence between the actual problematic situation and the individual's behavior and emotions. Furthermore, individuals with an anxious attachment style are inclined toward rumination, characterized by the pathological overprocessing of negative thoughts and emotions (Ludwikowska-Świeboda, 2022; Murray et al., 2021). Such maladaptive emotion regulation strategies lead to a preoccupation with relationships, feelings of being undervalued, and excessive fears of rejection within interpersonal dynamics (Picardi et al., 2019).

4. Attachment and personality disorder

Personality disorders afflict approximately 10-13% of the general population, manifesting as enduring patterns of cognition, affectivity, interpersonal functioning, and impulse control that deviate markedly from cultural expectations. These pervasive and inflexible behaviours can lead to significant distress or impairment in social, occupational, or other important areas of functioning (Żuchowicz, Bliźniewska, Talarowska, Gałecki, 2018). Their etiology encompasses numerous variables of a biological, psychological, socio-relational, and socio-cultural nature. Attachment theory serves as a valuable framework for elucidating the etiology of personality disorders. Notably, attachment styles and personality disorders exhibit a parallel developmental trajectory and share foundational structures (Shorey, Snyder, 2006). Patients with personality disorders (PDs) exhibit characteristic, often maladaptive ways of interacting with others. Nearly all PDs are marked by significant challenges in interpersonal functioning, as highlighted by Widiger and Frances (Widiger, Frances, 1985) with the majority of DSM-V criteria for PDs being interpersonal in nature (American Psychiatry Association, 2013). Given their profound connection to interpersonal functioning, most DSM-V PDs can be effectively conceptualized within an attachment-oriented framework.

Models of self and others formed in early childhood influence an individual's emotions, behaviours, as well as relationships, thus impacting the very constructs encompassed by personality dysfunction. Bowlby (1977) was among the first to suggest such connections, and numerous contemporary studies now confirm the link between personality disorders and insecure attachment styles (Choenni et al., 2024; Luyten et al., 2021; Machowicz, Cieciuch, 2023; Siczek, Cieciuch, 2023; van Leeuwen et al., 2020).

Attachment theories have greatly enhanced our understanding and treatment of personality disorders. Attachment theories have been pivotal in shaping both the theoretical framework and therapeutic approaches for individuals with PDs, particularly those with antisocial and borderline traits (Fonagy, Luyten, 2016; Gunderson, 2007; Gunderson, Lyons-Ruth, 2008; Levy, Johnson, Clouthier, Scala, Temes, 2015). These theories have significantly enhanced our comprehension of the core characteristics of PD individuals, notably their profound difficulties in forming relationships.

Empirical research has shown a high incidence of anxious and disorganized attachment in individuals with borderline personality disorder (BPD), characterized by fluctuating between hyperactivating and deactivating attachment strategies, which either amplify or downplay needs (Bradley, Westen, 2005; Westen, Shedler, Bradley, DeFife, 2012). Mancinelle et al. (2024) investigated the relationship between BPD and attachment patterns and proved that borderline symptoms as well as measures of attachment anxiety and attachment avoidance are negatively correlated with an overall positive impression of social interactions. According to their research, attachment anxiety was also linked to the level of perceived responsibility to have caused partners to be unhappy. Mancinelle et al. (2024) research align with a large body of work indicating that BPD individuals tend to hold negative evaluation of others (Barnow et al., 2009; Fertuck et al., 2019; Nicol, Pope, Sprengelmeyer, Young, Hall, 2013).

However, recent findings have led to a reevaluation of attachment's role in PDs. While there is overlap between attachment theories and core PD features, evidence increasingly suggests that the impact of childrearing environments, including attachment contexts, on later outcomes may be less substantial than previously though (Luyten et al., 2021).

Attachments pattern have also been proved to be one of the key social factors contributing to developmental of antisocial personality disorder (ASPD). ASPD severely disrupts personal and social functioning and frequently leads to criminal behavior. Additionally, it imposes a significant burden on healthcare services, the criminal justice system, society, the individual's friends and family, as well as the professionals and caregivers involved with the individual. Individuals with ASPD frequently refuse treatment (Tyrer, Mitchard, Methuen, Ranger, 2003). Their tendencies toward chronic rule-breaking, recklessness, impulsivity, aggression, and irresponsibility make it difficult for them to assume the conventional patient role. Consequently, professionals are also reluctant to offer treatment to this group (Mcgauley, Adshead, Sarkar, 2008; McGauley, Yakeley, Williams, Bateman, 2011).

Within a bio-psychosocial framework, ASPD is understood to develop from the interplay between genetic predisposition and environmental factors. As mentioned, one of the primary social factors influencing gene-environment interactions is assumed to be the attachment patterns. Extensive research has established a link between attachment disruptions and the emergence of personality psychopathology (DeKlyen, Greenberg, 2008). Individuals who develop ASPD often experience early life disadvantages characterized by adverse environmental factors that disrupt the developing attachment system (Luntz, Widom, 1994; Pert, Ferriter, Saul, 2004). Many of these children exhibit conduct problems before adolescence, which are strongly associated with an elevated risk of developing adult antisocial behaviour and engaging in criminal activities (Moffitt, Caspi, Harrington, Milne, 2002). Therefore, ASPD can be seen as an attachment disorder where genetic predispositions combined with early environmental adversity lead to abnormal personality development, particularly in areas like affect regulation, and impulse control.

The relationship between attachment style and personality disorder appears to be complexed. The etiology of personality disorders constitutes an ambiguous and complex issue. Nonetheless, it is a fact that what appears to be common for individuals with personality disorders is a disrupted attachment system (Choenni et al., 2024; Erkoreka et al., 2022; Luyten et al., 2021; Mancinelli et al., 2024; van Leeuwen et al., 2020).

Conclusions

The extensive research on attachment theory highlights its profound implications for mental health, especially in understanding and treating various psychopathologies. Early attachment experiences significantly influence emotional regulation, self-perception, and interpersonal relationships across the lifespan. Secure attachment, fostered by responsive caregiving, is associated with psychological resilience and healthy relational patterns, while insecure attachment, stemming from neglect or inconsistent caregiving, leads to heightened risks of mental health disorders such as depression, anxiety, obsessive-compulsive disorder, ADHD, and personality disorders.

Attachment theory, originally formulated by Bowlby (1973), underscores the importance of early caregiver-child interactions in forming internal working models that shape future relationships and mental health outcomes. Disruptions in these early attachments can result in maladaptive emotional regulation strategies, negative self-concepts, and difficulties in forming stable and trusting relationships, which are characteristic of disorders like C-PTSD and various personality disorders. Secure attachment acts as a protective factor against these psychopathologies, promoting emotional stability and healthy social functioning.

Research on attachment styles in romantic relationships reveals that securely attached individuals experience greater satisfaction and stability, while insecurely attached individuals struggle with trust, intimacy, and emotional regulation. These patterns extend into adulthood, influencing relationship dynamics and overall mental well-being. Furthermore, attachment disruptions in early childhood are strongly linked to the development of personality disorders, with insecure attachment styles prevalent among individuals with borderline and antisocial personality disorders.

In conclusion, attachment theory provides a crucial framework for understanding the intricate links between early relational experiences and mental health. The theory's principles have informed therapeutic approaches and interventions aimed at addressing attachment-related issues, emphasizing the need for supportive and responsive caregiving to foster secure attachments and mitigate the risks of mental health disorders.

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Personality metatraits and Young's early maladaptive schemas[1]

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Abstract: Introduction and objective: The objective of the research presented here was an attempt to identify, represented in metatraits, personality-based determinants for early maladaptive schemas in Young's concept. The basic assumption was that metatraits understood as biologically conditioned, basic forces shaping a person's style of functioning in the sphere of thoughts, feelings and behaviour, explain to a significant extent the intensity of the maladaptive cognitive-emotional schemas. ***Materials and methods:*** A group of 404 subjects (221 women and 183 men) aged between 18 and 78 years ($M = 37$; $SD = 10.78$). Respondents completed the *CPM-Q-SF Personality Questionnaire* and the *YSQ-S3 Young's Schema* Questionnaire. ***Results:*** The results from the advanced statistical analyses confirmed the assumption that personality metatraits play a sigfnificant role in terms of predicting early maladaptive schemas. It turned out that the metatraits alpha-minus disinhibition and gamma-minus disharmony underlie all five schema areas in Young's approach. ***Conclusions:*** By verifying the relationships discussed, it is possible to conclude that metatraits denoting emotional instability, low frustration tolerance, aggressiveness as well as depressiveness, distrust and generally poor psycho-physical condition may represent a biologically determined personality basis for the organisation and development of dysfunctional mental codes that function as information processing mechanisms and motives for maladaptive behavioural reactions. In practical terms, the above-mentioned means that in case of certain personality disorders, working on schemas, referring to childhood experiences, may be the main approach due to the inability to change the biologically determined personality.

Keywords: personality metatraits, circumplex of personality metatraits, early maladaptive schemas

Introduction

Young (2010), inspired by the low effectiveness of cognitive behavioural therapy in the context of recurrence of certain psychiatric disorders, developed the cognitive meaning of schemas, characterising them as effects of destructive experiences from childhood, related to the deprivation of basic psychological needs. This approach focuses on factors other than cognitive distortions that sustain the rigidity of schemas and assigns much more importance to their early childhood origins (Roediger et al., 2018). A schema, in Young's terms, is more than a belief, it is a dysfunctional pattern made up of corresponding memories, emotions, thoughts and bodily sensations. The current model assumes eighteen such schemas, mapped to five higher-order factors, called the areas. These areas include: disconnection and rejection, impaired autonomy and performance, impaired limits, other-directedness, and over-vigilance and inhibition (Young et al., 2003).

1. Theoretical basics of research

In addition to the family environment, which is primarily responsible for the level of the child's needs met, the child's innate dispositions also have a significant influence on the development of maladaptive schemas (Vreeswijk et al., 2015). Personality characteristics that interact with social experiences can determine the quality of schemas formed, reinforce or nullify their intensity, and may even be the main cause of their emergence and development (Young et al., 2003; Arntz and Van Genderen, 2020).

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[1] Article in polish language: https://www.stowarzyszeniefidesetratio.pl/fer/59P_Grab.pdf

Metatraits defined as biologically determined general and basic patterns of personality dispositions (Digman, 1997; DeYoung et al., 2002; Musek, 2007) fit adequately with the assumptions of Young et al.'s (2003) concept, cited above, regarding the involvement of innate dispositions in the development of maladaptive schemas. Many researchers point to the biological endowment of metatraits, arguing for their genetic and neuropsychological basis (DeYoung et al., 2002; Hirsh et al., 2009; Jang et al., 2006; Musek, 2007; Rushton et al., 2008; Rushton and Irwing, 2011). According to Strus et al. (2014) metatraits understood in this way form a circular structure called the *Circumplex of Personality Metatraits*–CPM, determined by the orthogonal configuration of two basic dimensions: alpha and beta, on which two additional metatraits are located: gamma and delta. Each of them is bipolar, with specific sets of the Big Five characteristics (Costa i McCrae, 1992) corresponding to the respective poles, but forming more than just a combination of them. This structure is depicted in Figure 1, followed by Table 1, which contains the characteristics of metatraits.

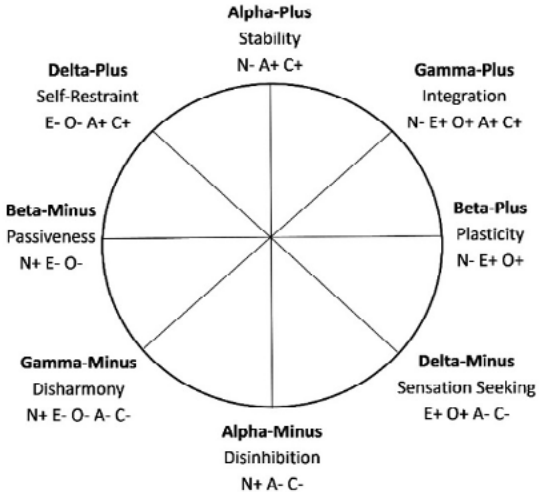

Figure 1. The Circumplex of Personality Metatraits

Note. N = Neuroticism, E = Extraversion, O = Openness to Experience, A = Agreeableness, C = Conscientiousness, +/– = positive/negative intensity of the trait (Kwiatkowska and Strus, 2021).

Table 1. Meaning of metatraits in the CPM model

Metatrait	Big Five configuration	Meaning
Alpha-plus Stability	N-, A+, C+ (E0, O0)	social adaptation, ethical attitude towards the world, ability to delay gratification, patient and persistent pursuit of a goal, calmness and emotional balance
Alfa-minus Disinhibition	N+, A-, C- (E0, O0)	emotional instability, imbalance, low tolerance for frustration, aggression, antagonism towards people, norms and social obligations
Beta-plus Plasticity	N-, E+, O+ (A0, C0)	behavioral and cognitive openness to change, engagement in new experiences, tendency to explore, initiative and inventiveness in social relationships, focus on personal development
Beta-minus Passiveness	N+, E-, O- (A0, C0)	shyness, behavioral and cognitive passivity, apathy, inhibition, submissiveness and submissiveness in relationships with people
Gamma-plus Integration	N-, E+, O+, A+, C+	balance in relation to ourselves and other people, effectiveness, openness to the world, warm and pro-social attitude, experiencing mental well-being
Gamma-minus Dysharmony	N+, E-, O-, A-, C-	depressiveness, negative emotionality, pessimism, distrust in interpersonal relationships, susceptibility to mental problems, mental and physical health deficits
Delta-plus Self-Restraint	E-, O-, A+, C+ (N0)	tendency to conformism and conventionalism, low emotionality (both negative and positive), high control of emotions and behavior, strong tendency to adjustment, modesty, scrupulousness, tendency to perfectionism
Delta-minus Sensation-Seeking	E+, O+, A-, C- (N0)	impulsiveness, emotional lability, stimulation seeking and risk taking, domination and expansiveness in social relationships, hedonistic tendencies

Note. N = Neuroticism, E = Extraversion, O = Openness to Experience, A = Agreeableness, C = Conscientiousness, +/– = positive/negative intensity of the trait, 0 = average intensity of the trait (Kwiatkowska and Strus, 2021).

The circular organisation assigns particular value to metatraits in the form of being able to unify many other personality models and constructs concerning tempers, values, emotions or mental disorders (Strus and Cieciuch, 2017). The theoretical potential of CPM also means that it is possible to match, i.e. localise, many different personality characteristics within the circle of metatraits. Such a procedure makes it possible to identify the most basic predispositions represented in metatraits for narrower content cognitive, emotional and motivational patterns (Kwiatkowska and Strus, 2021; Rogoza et al., 2019; Skoczeń et al., 2018).

In the context of the above considerations, it seems reasonable to assume that metatraits constitute the personality basis for early maladaptive schemas, and that these, as cognitive-emotional patterns, to some extent reflect underlying metatrait dispositions. So far, analyses focusing exclusively on the personality basis of schemas have mainly consisted of correlational studies indicating significant associations of schemas with the Big Five traits, especially high neuroticism (Muris, 2006; Sava, 2009, Thimm, 2010). Relationships between schemas and personality dimensions, as determined by the *TCI – Temperament and Character Inventory*, were also explored. This inventory distinguishes four temperament dimensions (novelty seeking, harm avoidance, reward dependence, perseverance) and three character dimensions (self-direction, cooperativeness and self-transcendence). The analyses showed high levels of positive and negative correlations between most *TCI* scales and individual schemas (Halvorsen et al., 2009; Atalay et al., 2013). The results cited therefore allow us to conclude that personality dispositions can be considered an important vulnerability factor in the development of maladaptive schemas. Metatraits describe general and basic patterns of personality dispositions (Strus and Cieciuch, 2021), and therefore this level of description appears to be the most pertinent and relevant for analysing, understanding and predicting schemas in the context of their psychobiological background.

2. Own research methodology

2.1. Objective of the research, problem, hypotheses

A study was therefore designed to attempt to identify, represented in metatraits, personality basis for early maladaptive schemas. Based on theoretical premises, five hypotheses were formulated regarding the location of schema areas (Young et al., 2003) in the CPM circular metatrait model (Kwiatkowska and Strus, 2021).

The area of disconnection and rejection mainly concerns difficulties in building relationships. The schemas belonging to it are associated with feelings of abandonment, insufficient love from other people, danger in social relationships, undeserving of love, lack of belonging (Young et al., 2003). Analysing metatraits predispositions (Kwiatkowska and Strus, 2021), hypothesis H1 was formed assuming that such patterns of thoughts and feelings are attributable to inaccessibility, distrust, distance and emotional coldness towards other people (gamma-minus disharmony).

The second area of impaired autonomy and performance relates to a low sense of subjectivity and competence (Young, 2010). Relating beliefs and perceptions associated with this area to metatraits (Kwiatkowska and Strus, 2021), hypothesis H2 was formulated, according to which weak psychological condition (gamma-minus) combined with cognitive and behavioural passivity (beta-minus) are the basis for schemas associated with a self-confidence deficit and a belief in a lack of readiness for self-determination.

The third area of impaired limits relates to difficulties in accepting limitations. On the basis of the semantic similarity of discussed schemas (Young et al., 2003) with personality metatraits (Kwiatkowska i Strus, 2021), hypothesis H3 was proposed. It assumes that tendencies to fall into frustration, aggressiveness and antagonism towards people, norms and commitments (alpha-minus) are determined by beliefs related to impaired control, intolerance of deferred gratification and difficulties in respecting one's own and others' boundaries.

A typical trait for the area of other-directedness is the feeling of having to put other people's needs and desires before one's own (Young et al., 2003). By relating beliefs and feelings associated with this area to personality metatraits (Kwiatkowska and Strus, 2021), hypothesis H4 was formulated, according to which it was assumed that orientation towards others resulting from a sense of pressure to satisfy the needs of the environment develops on the basis of dependence and subordination in social relationships (beta-minus) and general poor psychological health and resilience (gamma-minus).

The fifth area of over-vigilance and inhibition is characterised by feelings of anxiety and tension that prevent the attainment of a state of relaxation and psychological well-being (Young et al., 2003). Analysing these types of thought and emotion patterns in relation to metatraits predispositions (Strus and Cieciuch, 2021), hypothesis H5 was formulated, assuming that depressiveness, distrust and poor mental resilience (gamma-minus) are the basis for the area of hypervigilance and inhibition.

2.2. Research tools

The *CPM-Q-SF Personality Questionnaire* and the *Young's Schema Questionnaire YSQ-S3* were used to obtain results on the analysed variables.

The CPM-Q-SF Personality Questionnaire by Strus et al. (2014) contains 72 statements describing a variety of thoughts, feelings, behaviours and is used to examine the 8 metatraits distinguished in the Circumplex of Personality Metatraits (CPM). In the present study, the Cronbach's alpha coefficients for the individual scales ranged from 0.68 to 0.84.

The Young's Schema Questionnaire YSQ-S3 (Young, 2005) in a Polish adaptation by Oettingen et al. (2018), is used to measure the severity of 18 early maladaptive schemas, forming five general areas as defined by Young et al. (2003). The Cronbach's alpha reliability parameters for the individual scales ranged from 0.76 to 0.94.

2.3. Subjects

The study targeting adults was conducted online in accordance with the principles of the Declaration of Helsinki. Subjects were informed of their voluntary participation, the purpose and conduct of the study and were assured of full anonymity and that the results obtained would be used for research purposes only. After giving their consent, respondents were sent a link to take part in the survey. A total of 404 people were surveyed, of whom 54.7% were female (221) and 45.3% were male (183). The age of the subjects ranged from 18 to 78 years (M = 36.80; SD = 10.78). Most of these were people living in towns with more than 50 000 inhabitants – 41.6% (168), as well as in towns with up to 10 000 inhabitants – 35.4% (143). The remaining 23% (93) indicated a town of between 10,000 and 50,000 citizens as their place of residence. The surveyed population mostly consisted of people with higher education – 58.4% (236). The remaining participants of the study were students – 19.8% (80) and persons with secondary education – 10.9% (44), primary education – 9.4% (38) and basic vocational education – 1.5% (6). As regards relationship status, the surveyed group consisted of persons in: a formal relationship – 44.1% (178), an informal relationship with plans for a joint future – 18.3% (74), an informal relationship without plans for a joint future – 13.1% (53). The remaining 24.5% (99) declared having no relationship at all.

2.4. Statistical analysis methods

Due to the number of individual schemas and the clarity of presentation and interpretation of the results, the analysis was limited to five general schema areas.

Hypotheses concerning the location of maladaptive schemas in the CPM model were tested according to the procedure recommended by Rogoza et al. (2021) in the R.Studio environment. The results obtained were analysed taking into account the three parameters most relevant to the present study, which determine the quality of interdependencies between the analysed constructs. The first one is the goodness-of-fit coefficient of the model (*fit*; R^2). This coefficient refers to the degree of fit of the correlation profiles of the external variables to the circular model, i.e. in this case the schemas to the CPM matrix. The fit thresholds are: < 0.70 – bad fit; > 0.70 < 0.80 – acceptable fit; > 0.80 – good fit. The second is the amplitude, indicating the distance between the average and the highest correlation of the external variable with the variables from the circular model, i.e. the CPM metatraits. An amplitude value < 0.15 indicates that there is no definite relationship with a particular metatrait, which would mean that the external variable (schemas) does not have a clear location in the circular structure of the CPM. In contrast, a value > 0.15 indicates a strong enough association that the external variable is clearly located in the circle of metatraits. The third coefficient is the congruence coefficient, indicating the degree of congruence between the theoretical matrix and the empirical matrix. A value of > 0.85 indicates acceptable congruence, while > 0.95 indicates very good congruence (Strus and Cieciuch, 2021).

3. Results

3.1. Presentation of the obtained results

The results of the analyzes of the fit and placement of the five schema areas in the CPM model are presented in Table 2 and the corresponding Figures 2-6.

The fit coefficients for all five areas reached a value exceeding 0.80, indicating a good fit in the CPM matrix. The amplitude parameters (> 0.15) indicated a clear location of the analysed areas in the metatraits circle. The congruence coefficients confirmed the high degree of congruence between the assumed theoretical matrix and the obtained empirical matrix (>= 0.95). As expected from hypothesis H1, the area of disconnection and rejection was located in CPM space in the region delimited by gamma-minus disharmony (225°) with a shift towards alpha-minus disinhibition (270°). As assumed in hypothesis H2, the area of impaired autonomy and performance was located around gamma-minus disharmony (225°), however, contrary to expectations, not in association with beta-minus passiveness (180°), and alpha-minus disinhibition (270°). The area of impaired limits was located in the metatraits circle in the region defined by alpha-minus disinhibition (270°) with a relocation towards gamma-minus disharmony (225°). This result is consistent with the expectations formulated in hypothesis H3. The location of the area of other-directedness in the CPM was around 230°, and thus between gamma-minus disharmony (225°) and alpha-minus disinhibition (270°), and not, as assumed in hypothesis H4 between gamma-minus disharmony (225)° and beta-minus passivness (180°). The area of over-vigilance and inhibition was located in CPM space in the region defined by gamma-minus disharmony (225°). This result is consistent with the assumption made in hypothesis H5.

3.2. Discussion

The issues addressed in this thesis essentially revolved around the examination, represented in metatraits, personal determinants that contribute to the development of Young's schemas. It turned out that the region of the circular structure of the metatraits (Kwiatkowska and Strus, 2021), falling between alpha-minus disinhibition and gamma-minus dishar-

Table 2. Indicators of fit and location of schema areas in the CPM model (N=404)

Areas	Amplitude	Fit; R2	Matrix		Congruence
			Theoretical	Obtained	
Disconnection and rejection	0,44 [0,37; 0,51]	0,96	225	244,5 [236,7; 252,7]	0,99
Impaired autonomy and performance	0,44 [0,37; 0,51]	0,96	202,5	239,1 [232,1; 245,9]	0,95
Impaired limits	0,33 [0,26; 0,42]	0,92	270	259,9 [250,7; 269,8]	0,88
Other-directedness	0,25 [0,17; 0,33]	0,92	202,5	243,5 [228,4; 258,1]	0,93
Other-vigilance and inhibition	0,33 [0,25; 0,40]	0,96	225	230,9 [220,5; 240,1]	0,98

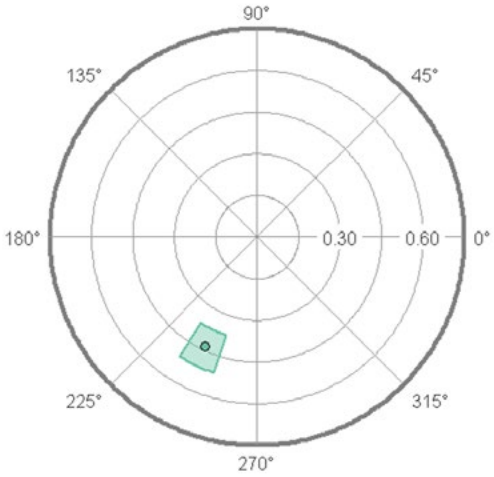

Figure 2. Location of the disconnection and rejection area in the CPM model

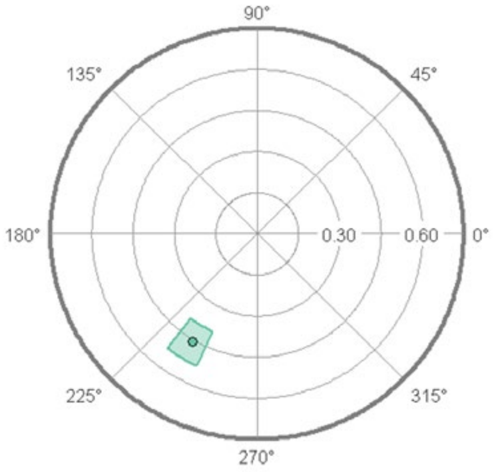

Figure 3. Location of the impaired autonomy and performance area in the CPM model

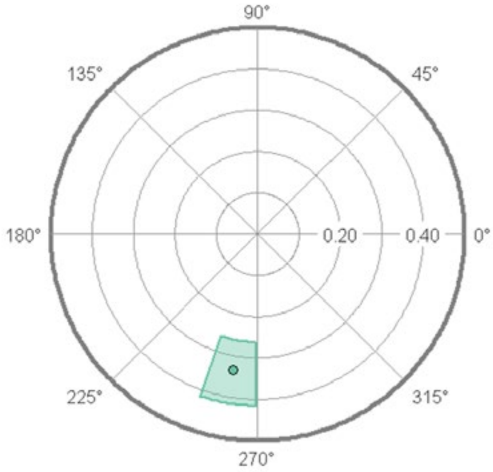

Figure 4. Location of the impaired limits area in the CPM model

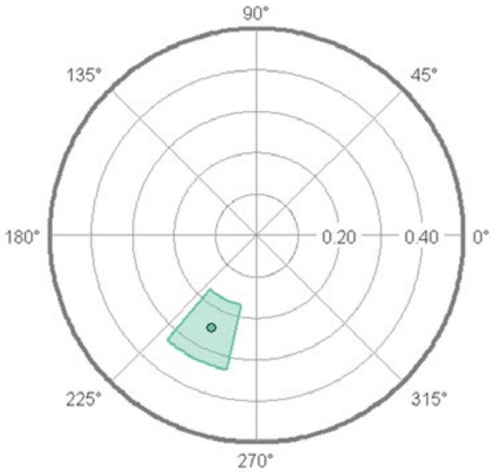

Figure 5. Location of the other-directedness area in the CPM model

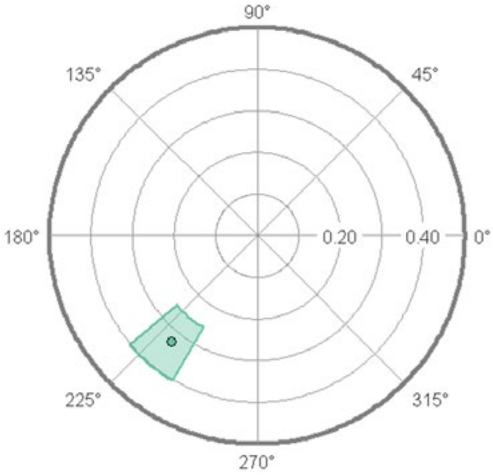

Figure 6. Location of the over-vigilance and inhibition area in the CPM model

mony, underlies all five areas of schemas, including those that, by virtue of their submissive nature, were hypothesized to be associated with beta-minus passivness. Thus, emotional instability, low tolerance for frustration, aggressiveness, antagonistic tendencies towards people and rules oriented internalisation, which in effect takes the form of inaccessibility, depressiveness, negative emotionality and general poor mental condition, are the basis for the development of convictions related to a deep sense of insecurity in interpersonal relationships, helplessness and dependence on others, the inability to defer gratification, the need to adapt one's actions to others' opinions and desires as well as the need to suppress the experiencing of emotions and the expression of one's own needs.

This regularity is in line with previous research indicating clear associations of schemas mainly with neuroticism and introversion (Muris, 2006; Sava, 2009, Thimm, 2010). The results obtained also correspond with DeYoung et al.'s (2002) assertion about the functions played by two basic meta-factors: alpha and beta. The first one is responsible for maintaining stability in terms of psychosocial functioning, while the second one is responsible for plasticity and adaptation to novelty and change. The individual's instability and low level of adaptability weaken his or her information processing system, which limits effective functioning in a changing environment. As suggested by the results of our own research, this system of maladaptive properties is also responsible for the organisation and perpetuation of patterns that are harmful to the individual in Young's (2010) conception. It is also worth noting the location of the schema areas around gamma-minus disharmony, which in the CPM model (Strus et al., 2014) has the status of a general factor of psychopathology along the lines of GFP (*General Factor of Personality*) in Musk's (2007) conception. The results in question confirm the psychopathological potential of gamma-minus disharmony as a general configuration of dysfunctional dispositions, which, according to this study, is also primarily responsible for various types of cognitive distortions that are detrimental to the individual, as well as the associated debilitating emotional states (Rushton and Irwing, 2011).

Validation of Young's schema localisation analyses in the CPM model provides a rationale for further research related to the mediating role of schemas in the relationship between metatraits and personality disorders (Zawadzki, 2017; Rogoza et al., 2018; Rogoza et al., 2019). In addition – taking into account the analyses indicating that certain parental attitudes are significant predictors explaining schema variability (Esmali Kooraneh and Amirsardari, 2015; Mącik, 2018), studies analysing the interactional relationships of personality metatraits with environmental experiences at the level of cognitive-emotional schemas seem appealing.

In the context of this study's limitations, it is worth noting first of all the issue related to the research concept adopted, which assumes – according to the CPM model (Strus et al., 2014) – a temperamental, and therefore occurring from birth, structure of personality metatraits among the subjects. Although numerous studies provide evidence of the neuropsychological basis of metatraits, so that they are inherently characterised by relative constancy over the life course, conclusions about their influence in the process of schema formation should be treated with caution-only in relation to theoretical assumptions and research confirming their validity.

Conclusions

The empirical localisation of the five schema areas in the circular matrix of metatraits makes it possible to conclude that an individual's natural tendencies towards emotional instability, falling into frustration, depressiveness, distrust and general poor psychophysical resilience represent a personality potential for the development of dysfunctional mental codes that function as information processing mechanisms and motives for maladaptive behavioural reactions. On a practical level, this means that in the case of some personality disorders, working with schemas, referring back to childhood experiences, may be the main focus due to the limited possibilities of changing the biologically determined personality.

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Body image of postmenopausal women[1]

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Abstract: Body image is a multidimensional, subjective and dynamically changing concept which encompasses personal perceptions and feelings about one's own body. Postmenopause is associated with significant changes in external appearance and physical functioning. ***Purpose of the work:*** The aim of the study was to find out how postmenopausal women evaluate their own bodies and by what factors it is determined. *Material and methods:* The study was conducted in six randomly selected gynaecological outpatient clinics and primary care clinics in the city of Lublin. 510 women were covered. A diagnostic survey was used as the research method. The research tool was a questionnaire, consisting of a self-administered section (sociodemographic data) and a standardised Body Esteem Scale (BES) questionnaire. *Results:* All subscales (sexual attractiveness, body control, physical fitness) had average scores, although the highest was for body weight control ($M = 5.85 \pm 2.00$) and the lowest was for sexual attractiveness ($M = 4.78 \pm 2.17$). The values of all subscales were significantly differentiated by the subjects' subjective health assessment ($p<0.05$). Sexual attractiveness rating values were significantly associated with place of residence ($p = 0.021$) and with the respondents' occupational activity ($p = 0.030$). Self-assessed physical fitness values were significantly associated with place of residence ($p = 0.012$) and with marital status of the respondents ($p<0.001$). *Conclusions:* Postmenopausal women perceive their bodies in all categories (sexual attractiveness, weight control/body strength, physical condition) at an average level, indicating a need for psychosocial support. Giving them support for self-acceptance, and perhaps lifestyle changes, can improve their self-esteem in relation to their body image.

Keywords: menopause, postmenopause, body evaluation

Introduction

Body image is a multidimensional, subjective and dynamically changing concept which encompasses personal perceptions and feelings about one's own body. It is not limited to the phenomenon of aesthetics, but includes elements of health status, general physical and sexual fitness (Nazapour, Simbar, Majd, Torkamani, Andarvar, Rahnemaei, 2021). It is a component of the structure of the so-called "bodily self" and at the same time has a representational function within it. The corporeal self is the overarching experience of the body, manifested in a sense of being, experiencing the boundaries of the body and feeling internal coherence (Mirucka, 2014; Kling, Kwakkenbos, Diedrichs, Rumsey, Frisen, Brandao, Fitzgerald, 2019).

Body image consists of a general sense of female attractiveness. These changes are most accentuated on the ground of sex life. Female psychophysiological disorders, related to sexual desire, arousal, orgasm and pain disorders, affect a wide population of postmenopausal women. Feelings of low attractiveness are associated with affective disorders and unsatisfactory sexual relationships. What seems important

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[1] Article in polish language: https://www.stowarzyszeniefidesetratio.pl/fer/59P_Palu.pdf

here is the phenomenon of sexual self-knowledge, which is responsible for subjective self-perception in the context of intimate relationships, and healthy sexuality is a motivational factor for seeking and developing appropriate interpersonal relationships (Afshari, Houshyar, Javadifar, Poumotahari, Jorfi, 2016; Terauchi, Hirose, Akiyoshi, Kato, Miyasaka, 2017; Heidari, Ghodusi, Rafiei, 2017).

Cultural perspectives on ageing are some of the strongest influences on body image in women. Western culture not only emphasises a slender figure, but also equates youth with a standard of physical beauty. What's more, it rewards a youthful appearance by conferring a certain status and social recognition. The promotion of unrealistic beauty standards expresses concern about the physiological changes associated with the ageing process. Women who tend to internalise stereotypical patterns in terms of appeal and give more importance to their appearance express more problems in terms of their self-image (Hockey, Milojev, Sibley, Donovan, Barlow, 2021).

Body dissatisfaction is quite widespread; however, research on its prevalence in menopausal women is limited. It should be noted that postmenopause is associated with significant changes in external appearance and physical functioning. This can lead to a loss of a sense of control over one's own body (Włodarczyk, Dolińska-Zygmunt, 2017; O'Reilly, McDermid, McInnes, Peters, 2024).

The aim of the study was to find out how postmenopausal women evaluate their own bodies and what determines this.

1. Material and methods

The study was conducted in six randomly selected gynaecological outpatient clinics and primary care clinics in the city of Lublin. 510 women were covered.

The inclusion criteria for the group were:

- the time since the last ever menstrual period (menopause) from 2 years to 10 years,
- giving written consent to participate in the study,
- good general condition before examination.

Women after surgical menopause and after premature menopause were excluded from the study.

A diagnostic survey was used as the research method. The research tool was a questionnaire specially prepared for the purpose of this study, consisting of a self-constructed part (sociodemographic data) and a standardised questionnaire, the Body Esteem Scale (BES).

The questionnaire part of the self-constructed questionnaire was retrospective and aimed to collect sociodemographic data and obstetric-gynaecological history of the women studied. In addition, information on their subjective health assessment.

The Body Esteem Scale by Franzoi and Shields, adapted by Lipowska and Lipowski, made it possible to determine the respondents' attitudes towards their own bodies. The scale consists of 35 statements in three subscales – sexual attractiveness, weight control and physical fitness. The sexual attractiveness subscale referred to components of external appearance that cannot be modified by, for example, physical exercise. These included: nose, mouth, ears, chin, breasts, eye appearance, cheeks, face, sex drive, sex organs, sexual activity, body hair, body odour. Weight control is a subscale that referred to body parts whose appearance can be improved through various measures, including physical activity and diet. This group included:appetite, waist, thighs, physique, buttocks, hips, legs, figure, abdomen, weight-bearing. Physical fitness included: physical capacity, reflexes, muscular strength, energy level, physical coordination, excitability, health, physical conditions. The respondents answered the questions on a 5-point Likert scale, where 1 meant I have strongly negative feelings, 2 – I have moderately negative feelings, 3 – I have no feelings, 4 – I have moderately positive feelings, 5 – I have strongly positive feelings. The collected data were categorised according to the summed numerical values obtained, corresponding to the attitude towards one's own body: low (strongly negative and moderately negative feelings), average (neither positive nor negative feelings), high (moderately positive and strongly positive feelings) (Lipowska and Lipowski, 2013). Guidance and a specially prepared database for compiling and interpreting the collected results was obtained from the authors of the Body Assessment Scale.

Each woman was asked individually to participate in the study, confirmed by written consent on a specially prepared form explaining its purpose and conduct. Anonymity and voluntary participation were emphasised. In the gynaecological outpatient clinics, examinations were carried out in a separate office, where women were guaranteed intimacy and peace. The research was performed in accordance with a protocol approved by the Committee on Bioethics of the Medical University of Lublin (No. KE-0254/292/2015) and was conducted in accordance with the principles of the Helsinki Foundation for Human Rights.

The collected material was subjected to statistical and descriptive analysis.

The collected research material was statistically processed using the IBM SPSS Statistics package. Quantitative variables were described by mean, standard deviation, median, as well as minimum and maximum values. For qualitative variables, the percentage and abundance of response categories indicated are given. For the nominal variables, a chi-squared test of independence was used. The results of the analysis obtained were assumed to be statistically significant at a significance level of $p<0.05$. The results of the analyses are given to the nearest thousandths, e.g. (0.014).

2. Results

2.1. Characteristics of the study group

Women's ages ranged from 44 to 65 years (Me = 57.07). More than half (304; 59.6%) of the respondents were urban residents. A further 206 (40.4%) rural areas. Most respondents had a secondary education (215; 42.2%). A further 170 (33.3%) have tertiary education; 81 (15.9%) have basic vocational training and 44 (8.6%) primary education. During the study period, 306 (60.0%) women were economically active. The remaining 204 (40.0%) declared that they had no permanent employment, with the majority of them (159; 78.0%), being retired. Others 22 (10.8%) were on pension; 8 (3.9%) had never worked; 7 (3.4%) had lost their job and 8 (3.9%) gave another reason, which they did not specify further. The vast majority

Table 1. Results of Body Assessment Scale analysis

Statistics		I	II	III	I	II	III
		Raw results			Converted to sten scores		
Average		42.80	31.34	29.38	4.78	5.85	5.18
Standard deviation		8.63	7.84	6.34	2.17	2.00	1.90
Minimum		13.00	10.00	9.00	1.00	1.00	1.00
Maximum		65.00	50.00	45.00	10.00	10.00	10.00
Percentile	25	37.00	26.00	25.00	3.00	4.75	4.00
	50	42.00	30.00	29.00	4.50	6.00	5.00
	75	50.00	38.25	35.00	7.00	8.00	7.00

I - Sexual/physical attractiveness; II - Control of body weight/body strength; III - Physical condition

Table 2. Selected sociodemographic and sexual attractiveness

Variables		Sexual attractiveness					
		Low n=139 27.3%		Average n=338; 66.3%		High n=33;6.5%	
		n	%	n	%	n	%
Place of living	City n=304; 59.6%	84	60.4	193	57.1	27	81.8
	Rural areas n=206; 40.4%	55	39.6	145	42.9	6	18.2
Relevance		$\chi^2 = 7.683$; p=0.021					
Education	Primary n=44; 8.6%	13	9.4	30	8.9	1	3.0
	Vocational n=81; 15.9%	26	18.7	52	15.4	3	9.1
	Secondary n=215; 42.2%	61	43.9	140	41.4	14	42.4
	University degree n=170; 33.3%	39	28.1	116	34.3	15	45.5
Relevance		$\chi^2 = 5.872$; p=0.438					
Professional activity	Yes n=306; 60.0%	94	67.6	189	55.9	23	69.7
	No n=204;40.0%	45	32.4	149	44.1	10	30.3
Relevance		$\chi^2 = 7.009$; p=0.030					
Marital status	Married n=380; 74.5%	107	77.0	247	73.1	26	78.8
	Widow n=63; 12.4%	15	10.8	48	14.2	0	0.0
	Miss n=35; 6.9%	7	5.0	23	6.8	5	15.2
	Divorcee n=32; 6.3%	10	7.2	20	5.9	2	6.1
Relevance		$\chi^2 = 9.813$; p=0.133					

Table 3. Selected sociodemographic and weight/body weight control

	Variables	Weight control / body strength					
		Low n=70; 13.7%		Average n=360; 70.6%		High n=132; 25.9%	
		n	%	n	%	n	%
Place of living	City n=304; 59.6%	44	62.9	186	60.4	74	56.1
	Rural areas n=206; 40.4%	26	37.1	122	39.6	58	43.9
	Relevance	χ^2 = 1.075; p=0.584					
Education	Primary n=44; 8.6%	7	10.0	24	7.8	13	9.8
	Vocational n=81; 15.9%	14	20.0	42	13.6	25	18.9
	Secondary n=215; 42.2%	32	45.7	134	43.5	49	37.1
	University degree n=170; 33.3%	17	24.3	108	35.1	45	34.1
	Relevance	χ^2 = 6.288; p=0.392					
Professional activity	Yes n=306;60.0%	46	65.7	186	60.4	74	56.1
	No n=204; 40.0%	24	34.3	122	39.6	58	43.9
	Relevance	χ^2 = 1.825; p=0.401					
Marital status	Married n=380; 74.5%	53	75.7	233	75.6	94	71.2
	Widow n=63; 12.4%	10	14.3	36	11.7	17	12.9
	Miss n=35; 6.9%	3	4.3	25	8.1	7	5.3
	Divorcee n=32; 6.3%	.4	5.7	14	4.5	14	10.6
	Relevance	χ^2 = 7.912; p=0.245					

Table 4. Selected sociodemographic and physical fitness

	Variables	Physical condition					
		Low n= 111; 21.8%		Average n=360; 70.6%		High n=39 (7.6%)	
		n	%	n	%	n	%
Place of living	City n=304; 59.6%	64	57.7	208	57.8	32	82.1
	Rural areas n=206; 40.4%	47	42.3	152	42.2	7	17.9
	Relevance	χ^2 = 8.835; p=0.012					
Education	Primary n=44; 8.6%	7	6.3	33	9.2	4	10.3
	Vocational n=81; 15.9%	17	15.3	60	16.7	4	10.3
	Secondary n=215; 42.2%	54	48.6	145	40.3	16	41.0
	University degree n=170; 33.3%	33	29.7	122	33.9	15	38.5
	Relevance	χ^2 = 4.070; p=0.667					
Profession-al activity	Yes n=306; 60.0%	76	68.5	206	57.2	24	61.5
	No n=204; 40.0%	35	31.5	154	42.8	15	38.5
	Relevance	χ^2 = 4.513; p=0.105					
Marital status	Married n=380;74.5%	74	66.7	279	77.5	27	69.2
	Widow n=63; 12.4%	16	14.4	45	12.5	2	5.1
	Miss n=35; 6.9%	12	10.8	14	3.9	9	23.1
	Divorcee n=32; 6.3%	9	8.1	22	6.1	1	2.6
	Relevance	χ^2 = 27.097; p<0.001					

of professional workers (217; 70.9%) were engaged in white-collar jobs. The remaining 89 (29.1%) physical. BMI values ranged from 16.60 to 44.86. Nearly one in three (354; 69.4%) respondents were overweight. A further 152 (29.8%) were normal weight and 4 (0.8%) underweight.

More than half (298; 58.4%) of the women rated their own health as good. A further 172 (33.7%) as average; 21 (4.1%) as bad; 19 (3.7%) as very good.

They were interested in whether the experience of menopause changed the perception of health and body status of the women surveyed. Such changes were observed in both health (283; 55.5%) and body (261;51.2%) perceptions of the subjects after cessation of menstruation. However, they were often negative in this group of women, namely self-perception of health deteriorated in 267 (52.4%) respondents, while self-perception of the body deteriorated in 238 (46.7%).

During the study period, more than half (269; 52.7%) of the female respondents were sexually active, while the remaining (241; 47.3%) were not. According to 45.3% (N = 231) of female respondents, the onset of the menopause resulted in a decrease in their sexual activity.

Table 5. Subjective assessment of health and sexual attractiveness

	Variables	Sexual attractiveness					
		Low n=139; 27.3%		Average n=338; 66.3%		High n=33; 6.5%	
		n	%	n	%	n	%
Health status	Very good n=19;3.7%	4	2.9	11	3.3	4	12.1
	Good n=298; 58.4%	63	45.3	215	63.6	20	60.6
	Average n=172; 33.7%	59	42.4	105	31.1	8	24.2
	Bad n=21; 4.1%	13	9.4	7	2.1	1	3.0
	Relevance	χ^2 =29.886; p<0.001					

Table 6. Subjective health assessment versus weight/body weight control

	Variables	Weight control / body strength					
		Low n=70; 13.7%		Average n=360; 70.6%		High n=132; 25.9%	
		n	%	n	%	n	%
Health status	Very good n=19;3.7%	2	2.9	8	2.6	9	6.8
	Good n=298; 58.4%	28	40.0	191	62.0	79	59.8
	Average n=172; 33.7%	30	42.9	102	33.1	40	30.3
	Bad n=21; 4.1%	10	14.3	7	2.3	4	3.0
	Relevance	χ^2 = 32.098; p<0.001					

Table 7. The subjective ocean of health versus physical condition

	Variables	Physical condition					
		Low n= 111; 21.8%		Average n=360; 70.6%		High n=39; (7.6%)	
		n	%	n	%	n	%
Health status	Very good n=19; 3.7%	2	1.8	14	3.9	3	7.7
	Good n=298; 58.4%	48	43.2	223	61.9	27	69.2
	Average n=172;33.7%	49	44.1	115	31.9	8	20.5
	Bad n=21; 4.1%	12	10.8	8	2.2	1	2.6
	Relevance	χ^2 = 30.073; p<0.001					

2.2. Body Evaluation Scale

The results of the study, concerning women's self-assessment of body image, are presented in Table 1.

Of the three subscales designed for women, the highest mean values were for weight/body weight control (M = 5.85; SD = 2.00). This was followed by physical fitness (M = 5.18; SD = 1.90) and the lowest by sexual attractiveness (M = 4.78; SD = 2.17).

In the opinion of more than half (338; 66.3%) of the respondents, their sexual attractiveness had average values. Among another 139 (27.3%) low and the remaining 33 (6.5%) high. For weight/body weight control, average values were observed in 308 (60.4%) subjects. In another 132 (25.9%) high and 70 (13.7%) low. One's own physical condition most often obtained average values (360; 70.6%). This was followed by low (111; 21.8%) and high (39; 7.6%).

The relationships between self-assessment, divided into three subscales, and selected sociodemographic data are presented in Tables 2-4.

Sexual attractiveness rating values were significantly associated with the respondents' place of residence (p = 0.021) and with their occupational activity (p = 0.030). Other variables, i.e. education, marital status, were unrelated to the value of sexual attractiveness ratings (p>0.05).

Body weight/body weight control scores were not differentiated by residence (p = 0.584), education (p = 0.392), occupational activity (p = 0.401) or marital status (p = 0.245) of the subjects.

Self-assessed physical fitness values were significantly associated with place of residence (p = 0.012) and with marital status of the respondents (p<0.001). Physical fitness assessment values were not differentiated by the subjects' education (p = 0.667) or occupational activity (p = 0.105).

The study was interested in whether there was a relationship between the subjects' evaluation of their own body and their subjective assessment of their health. The results are presented in tables number 5-7.

Sexual attractiveness, body control/body strength and physical fitness scores were significantly associated with subjects' subjective health assessment ($p<0.001$).

3. Discussion

The study group of women was differentiated by several sociodemographic factors, most notably their age, which ranged from 44 years to 65 years. This was certainly due to the inclusion criteria adopted in this study, which referred not to metric age but to the time since the last menstrual period in life. The rather large time span adopted for this issue – from 2 years to 10 years after menopause – was also not insignificant. The term menopause refers to the cessation of cyclic monthly bleeding and thus a woman's reproductive potential, due to a decrease in ovarian follicle activity. The phenomenon of the menopause is established retrospectively, which means that the postmenopausal period begins 12 months after the last menstrual period in life. The changes taking place, associated with the gradual cessation of endocrine function of the ovaries, can affect the appearance of many psycho-physical complaints. The risk of metabolic diseases and cancer also increases during this time (Monteleone, Mascagni, Giannini, Genazzan, Simoncini, 2018; Talaulikar, 2022).

Symptoms resulting from the endoctrine changes of the peri-menopausal period form the menopausal syndrome, alternately referred to in the literature as prolapse symptoms. It is a syndrome of complaints, occurring during the peri-menopausal period, directly related to endocrine disruption. The symptoms of the syndrome affect the somatic, psychological and sexual spheres. Key symptoms include hot flashes, night sweats, irritability, feelings of fatigue, lowered mood, cognitive decline, sleep disturbances. In turn, vasomotor symptoms, i.e. hot flashes and night sweats, are considered to be the most troublesome (Monteleone et al., 2018; Santoro, Roeca, Peters, Neal-Perry, 2021).

Menopausal symptoms vary greatly in type, severity and aetiology, so it is unclear whether they interact with body image as an accumulation of negative psychophysical experiences, or whether specific individual symptoms are more strongly related to body perception. The literature notes a stark contrast due to the impact of menopausal symptoms on body image. There are also differences in the perception of one's own corporeality depending on the menopausal stage a woman is in. Based on a systematic review by Vincent et al. (2023) observed that entering the postmenopausal period is not always associated with poorer body satisfaction. However, research among Polish women has shown that the greater the severity of menopausal symptoms women experience, the worse their body evaluation is (Olchowska-Kotala, 2017).

Theoretical and empirical research highlights the emergence of negative changes in the physical appearance of peri-menopausal women. Women are increasingly dissatisfied with their health and have lower self-perceptions of their physical and sexual attractiveness (Nazapour et al., 2021). In our study, nearly half (46.7%) of the female respondents stated that their sense of female attractiveness had changed (in a negative sense) after the menopause. The same was true for self-perception of health, which worsened in more than half (52.4%) of the respondents. Both of these features clearly demonstrate the negative impact of the various changes that women undergo during the transition period on their self-assessment of their continued physical functioning. That is where a discrepancy between the desired and actual body image arises, which can have certain consequences for health and quality of life. It is quite often associated with conditions such as depression, eating disorders and low self-esteem. Moreover, body dissatisfaction can negatively affect social interactions, employment opportunities, productivity and socio-economic status (de Morais, do Nascimento, Vieira, Moreira, da Câmara, Maciel, das Graças Almeida, 2017; Stadnicka & Iwanowicz-Palus, 2017; Fenton 2021).

Postmenopausal women's attitudes towards their own physicality were examined in three of its dimensions: sexual attractiveness, weight control and physical fitness. All of these subscales had average scores, although the highest scores were for weight control ($M = 5.85 \pm 2.00$). Abnormal BMI values are a common problem for postmenopausal women. It is associated with difficulties in maintaining a healthy body weight, due to a slowed metabolism and the hormonal disturbances that occur. The menopausal transition also entails significant changes in body composition (i.e. an increase in fat mass and a decrease in muscle mass) (Greendale, Sternfeld, Huang, Han, Karvonen-Gutierrez, Ruppert, Cauley, Finkelstein, Jiang, Karlamangla., 2019; Dąbrowska-Galas, 2021). In the group presented, nearly 70% of the women were overweight. Based on the available literature, it is estimated that weight gain in middle age is experienced by 60%-70% of women (Kodoth, Scaccia, S, Aggarwal, 2022). BMIs that are too high must be a cause for concern. Overweight and obesity at this age promotes faster bone loss, exacerbates symptoms of metabolic syndrome and increases the risk of developing cancer (Knight, Anekwe, Washington, Akam, Wang, Stanford, 2021; van den Brandt, Ziegler Wang, Hou, Li, Adami, Smith-Warner,2021; Fenton, 2021). In addition to this, some scientific reports indicate a negative impact of overweight and obesity on body satisfaction (de Morais et al., 2017 Stadnicka et al., 2017; Gümüşsoy, Öztürk, Keskin, Özlem Yıldırım, 2023). However, there are also those whose authors claim that, in a group of peri-menopausal women, the overall self-esteem of one's own body was more related to feelings about other aspects of corporeality (e.g. external appearance, physical condition) than its size (Olchowska-Kotala, 2017).

The lowest scores, of all body image dimensions, were for sexual attractiveness (M = 4.78±2.17). It is worth noting that some women retain sexual performance throughout their lives, however age may determine changes in this area (Vidia, Ratrikaningtyas, Rachman, 2021). Many women experience sexual dysfunction during the peri-menopausal period and the prevalence in this population ranges from 25 to 85.2% (Nazapour et al., 2021). Research has also shown that low body image is associated with high levels of orgasmic dysfunction. This relationship between sexual function and body image may be due to women's focus on their bodies, which can distract them from positive orgastic experiences. Dissatisfaction with body image and likely accompanying psychological stress are associated with impaired orgasmic response during both partnered sex and masturbation, and may reduce satisfaction with the sexual act. Women with high body image dissatisfaction may be characterised by specific patterns of sexual response (Horvath, Smith, Sal, Hevesi, Rowland, 2020).

In their own research, female respondents perceived significant transformations in relation to their sex lives. Just over half of the respondents admitted to having regular sexual intercourse. Nearly one in two (45.3%) stated that they became less sexually active after the menopause. The same was reported by other authors (Javadivala, Merghati-Khoei, Underwood, Mirghafourvand, Allahverdipour, 2018; Fernández-Alonso, Cuerva, Chedraui Pérez-López, 2019). Most scientific publications show that the frequency of sexual intercourse decreases with age. Based on a study by Kremska (2020), more than half of peri-menopausal women admit to having intercourse once a week (53.0 per cent), but 50.5 per cent of respondents do not show initiative before intercourse and only sometimes feel like having sex. A different light is shed on the situation by studies conducted on women in northern European countries, which show that most women over 50 are still sexually active and there is even an increase in sexual needs among some women during the menopausal transition. It is thought that this may be related to a sense of freedom in terms of reproductive consequences and having more leisure time as adult children leave the family home (Ringa, Diter, Laborde, Bajos, 2013; Kremska, Raba, Kraśnianin, 2020).

The reasons for the abandonment (or significant reduction) of sexual intercourse after the menopause are complex, although the emerging symptoms of the climacteric syndrome, most notably urogenital atrophy, can have a major impact. It occurs in many postmenopausal women (Briggs, 2022). The state of health therefore influences the perception of one's physical attractiveness. However, negative biological changes do not equate to the disappearance of sexual needs. The Women's Health Across the Nation study found that for 75 per cent of middle-aged women, sex life is still important (Avis, Colvin, Karlamangla, Crawford, Hess, Waetjen, Brooks, Tepper, Greendale, 2017).

During the conduct of the present study, we were interested in what demographic variables are associated with postmenopausal women's body image.

It was determined that sexual attractiveness rating values were significantly associated with place of residence (p = 0.021) and with respondents' occupational activity (p = 0.030). The aforementioned relationships were in favour of urban residents and economically active women.

Self-assessed physical fitness values were significantly associated with place of residence (p = 0.012) and with marital status of the respondents ($p<0.001$). The results of the study suggest that married women and those living in cities are more likely to rate their own physical fitness highly.

The results of a systematic review by Nazapour et al, (2021) also showed a significant correlation between peri-menopausal women's body image and some socio-demographic factors such as women's education level, number of children, marital status, income, employment and housing status. On the basis of the analysis of these studies, the conclusion was drawn that women with a high level of education, who are economically active, who own their own home and have a higher monthly income have a better appreciation of their own body. Besides, married women have been shown to have lower body image scores compared to single/widowed/ separated women.

Our own research also examined what the self-assessment of health was in the group of women studied. Indeed, it turned out to be surprisingly high. More than half (58.4%) of the women rated them as good and 33.7% as average.. Body assessment values in all three subscales were significantly differentiated by the subjects' subjective health assessment ($p<0.05$). Those with a high rating of sexual attractiveness were more likely to rate their health as good or very good. Those with high ratings for weight control and physical fitness were also more likely to report good health.

4. Limitations of the study

Firstly, the limitations of the study may be due to the fact that the study group represented only the eastern part of Poland (dispensaries within the city of Lublin) and therefore cannot be representative of the entire population of postmenopausal women in Poland. Another limitation of the study may be due to the convenient group selection method of selecting participants for their convenient accessibility and proximity. Which does not allow generalisation of the present study results. In addition, it would be useful to supplement the results with data related to the prevalence of menopausal symptoms among the women surveyed using a standardised tool.

The research results presented encourage further scientific inquiry. In addition, it is worth noting that there are not many studies on body image in a group of Polish women. It should also be noted that it is quite difficult to compare the results of body image research, as different research tools are used in publications. A strength of the study is that it treats the postmenopausal period as a distinct period of a woman's life, as such a division is still lacking in the literature. However, the peri-menopausal study group is more common.

Conclusions

1. Postmenopausal women perceive their bodies in all categories (weight control/body strength, physical condition and sexual attractiveness) at an average level, indicating a need for psychosocial support. Providing them with support for self-acceptance and perhaps lifestyle changes can improve their self-esteem in relation to their body image.
2. Postmenopausal women living in cities and economically active were characterised by high body image ratings in the category of sexual attractiveness. High body image scores in the fitness category, on the other hand, were more prevalent among married urban women. In addition, women with a good assessment of their own health were characterised by high body image scores in all three categories (sexual attractiveness, weight/ body weight control, physical fitness).

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Mediation models of the interaction between Internet gaming disorder and psychological pain and symptoms of anxiety, depression, and borderline personality disorder[1]

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Abstract: *Introduction:* The prevalence of Internet gaming disorder (IGD) ranges from approximately 2% to 27.5% in the world population and 5.5% in the Polish population. Research findings indicate that IGD may be associated with depression, ADHD, anxiety, autism spectrum, and aggressive behaviours. However, there is a lack of research on the relationship between IGD and borderline personality disorder and psychological pain (psychache). The aim of this study is to examine the relationships between IGD and symptoms of anxiety, depression, psychological pain, borderline personality disorder and determining the role of psychological pain as a mediator of the above-mentioned links.; *Methods:* A sample of Polish gamers (n=201) was assessed using clinical scales (HADS, IGD-20, BPD Checklist) to evaluate the severity of depression, anxiety, IGD, and borderline personality symptoms. Additionally, the psychological pain scale was administered to assess relationship with IGD *via* mediation models. *Results:* Regression analysis in a mediation model revealed that IGD significantly predicted anxiety and depression, while borderline personality disorder was a significant predictor of IGD. Moreover, a bidirectional relationship between IGD and psychological pain had been demonstrated–IGD was a significant predictor of psychological pain and vice versa. Psychological pain also mediated the relationship between IGD and anxiety and depression, as well as the relationship between borderline personality symptoms and IGD. *Conclusions:* In the diagnostic and therapeutic process of people suffering from IGD, the co-occurrence of IGD with psychological pain, depression, anxiety and borderline personality disorder should be considered. Further scientific exploration is required to assess the associations between IGD and clinical variables and psychological pain.

Keywords: anxiety, depression, borderline personality disorder, Internet gaming disorder, psychological pain

Introduction

With the phenomenon of the dynamic digitization of the entertainment industry, the number of video game players is increasing at an alarming rate, reaching 2.7 billion people worldwide in 2023 (Patterson, 2020; Turner, 2024, Number of Gamers in the World section) and 20 million in Poland, of which at least 80% are adults (Marszałkowski, Biedermann, Rutkowski, 2023). Among the global population, 55% of gamers are from Asian countries (Turner, 2024, section Regional Distribution of Video Gamers), 36% are adults aged 18-34, 52% are male (Turner, 2024, section Editors Picks, point 7). Symptoms of problematic video game use may be manifested by approximately 2% to 27.5% of the global population (Mihara, Higuchi, 2017; Stevens, Dorstyn, Delfabbro, King, 2021) and 5.51% of the Polish gamer population, 7.15% of males, 8.70% of people of different gender, 8.06% of people aged 17-24, approximately 3.6% of people being young adults (PredictWatch, PAN, 2022).

Gaming disorder (GD) has been included as a new diagnostic entity (code: 6C51) in the *Disorders due to addictive behaviours* group of the ICD-11 (*International Statistical Classification of*

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[1] Article in polish language: https://www.stowarzyszeniefidesetratio.pl/fer/59P_Fele.pdf

Diseases and Related Health Problems, 11th Edition). The ICD-11 classification also describes a category of hazardous gaming (QE22), a condition of increased risk of addiction that precedes GD but does not yet meet the diagnostic criteria for GD (World Health Organization, 2023). Gaming disorder according to the ICD-11 classification is described as a continuous or episodic, recurrent pattern of behaviour associated with playing digital or video games (online or offline), characterised by: (1) loss of control over gaming, (2) prioritisation of gaming in life, (3) continuation or intensification of this behaviour, despite its negative consequences (e.g. social, professional). The American Psychiatric Association's DSM-5 classification (*Diagnostic and Statistical Manual of Mental Disorders, 5th Edition*), on the other hand, proposes nine diagnostic criteria for Internet gaming disorder (IGD) (a minimum of five criteria must have been met in the last 12 months), such as: (1) preoccupation with gaming, (2) withdrawal symptoms in the event of an inability to play, such as irritability, annoyance, anxiety or sadness, (3) tolerance, defined as the need to engage in more and more gaming to achieve the same effect, (4) unsuccessful attempts to take control of gaming, i.e. to stop or cut down on it, (5) loss of previous interests/hobbies, (6) continuation of disturbed gaming pattern despite its negative consequences, (7) underestimation of time spent gaming, (8) gaming as a way of coping with problems and as a method of regulating emotions, (9) difficulties in interpersonal relationships leading to social withdrawal/isolation, problems at work and at school due to excessive gaming (American Psychiatric Association, 2013).

Previous research findings indicate that excessive self-destructive gaming may be associated with increased depressive symptoms, ADHD, anxiety, autism spectrum disorder, aggressive behaviours, and psychoactive substance use (Buiza-Aguado, Alonso-Canovas, Conde-Mateos, Buiza-Navarrete, Gentile, 2018; Burkauskas et al., 2022; Murray, Mannion, Chen, Leader, 2022; T'ng, Ho, Sim, Yu, Wong, 2020; Wojtczak, Walenda, Kucharska, 2023). Coyne et al. (2020), in a longitudinal study of 385 adolescents over a six-year period, revealed that in a group of 10% of players with moderate levels of gaming at the beginning of the study, there is a worrying dynamic of increased pathological gaming over time along with increased symptoms of depression, anxiety and aggression. In contrast, Han, Yoo, Renshaw, and Petry (2018) showed that higher initial levels of depression and attentional problems are predictors of longer treatment time and lower likelihood of recovery for people with IGD. A study by Sepede et al. (2016) confirmed the association of IGD severity with depression, reduced quality of life or increased suicidal behaviour. A study by Burkauskas et al. (2022) found that IGD symptoms were associated with depressive symptoms, anxiety and substance use, regardless of time spent online, psychiatric diagnosis, cultural norms or sociodemographic characteristics. The aforementioned work suggests that the severity of IGD symptoms correlates with the severity of depression in gamers. However, the number of longitudinal studies to identify the direction of the causal relationship of IGD psychopathology remains limited.

People suffering from IGD often face the experience of psychological pain (psychache), in addition to depression, anxiety and feelings of loneliness in the real world. The concept of psychological pain was explained in Shneidman's model (1993) and has gained increasing popularity in suicidological research. The author of the concept, having read the content of suicide notes, described the concept as an inner feeling of anxiety, guilt, hopelessness, mourning, loss, anger or deep sadness, and identified the deprivation of important needs, including the need for love, belonging, affiliation, achievement, dominance and aggression, as the primary source of psychological pain (Shneidman, 1996). For a better understanding of the experience of psychological pain, it is worth referring to a review of research conducted by Morales, Barros (2022), in which the authors described states of people experiencing such pain as emptiness, abandonment, guilt, helplessness, loneliness, hopelessness, despair, unbearable suffering, and overwhelming thoughts. A study by Mills, Green, Reddon (2005) found correlations of psychological pain with depression, feelings of hopelessness or symptoms of a psychiatric nature.

However, to the authors' current knowledge, there are no scientific reports about associations between psychological pain and severity of IGD and clinical variables. Research reports indicate a bidirectional relationship between diagnoses of IGD and borderline personality disorder (Lu et al. 2017; Torres-Rodríguez, Griffiths, Carbonell, Oberst, 2018). The clinical picture of at least hazardous gamers includes a high risk of behavioural and substance addictions and problems with emotion regulation, identity, aggression, self-aggression, impulsivity, relational difficulties, or emotional lability. Playing computer games often becomes a way of coping with psychological pain that is a source of suffering and self-destructive acts, fear of rejection or a way of regulating emotional states and internal tensions. In a systematic review, Gervasi et al. (2017) point to personality traits such as neuroticism, impulsivity and aggression as predictors of the occurrence of GD.

The aim of this study was to assess (1) the associations between IGD, psychological pain, anxiety, depression and borderline personality disorder symptomatology, and (2) the mediating effect of psychological pain on the associations between IGD and anxiety, depression and borderline personality disorder symptoms.

1. Material and methods

Due to limited number of studies conducted in this research domain, an exploratory study was carried out posing the following research questions:

1. Is there a link between IGD and anxiety and depression?
2. Is there a link between IGD and psychological pain?
3. Is there a link between borderline personality disorder and IGD?
4. Does psychological pain mediate the relationship between IGD and anxiety and depression?
5. Does psychological pain mediate the relationship between borderline personality disorder and IGD?

1.1. Participants

The online study included 215 gamers, regardless of the amount of time spent playing and the game genre. Exclusion criteria for the study were: substance dependence, schizophrenia, bipolar affective disorder, organic damage to the central nervous system. Finally, data of 201 respondents (35.82% female, 63.18% male, 1.00% people identifying as a different gender) ages between 18 and 52 years old ($M = 27.72$; $SD = 6.80$) was eligible for analyses. Respondents had most often secondary education (47.76%) and tertiary education (45.76%), less often primary/middle-secondary education (4.48%) and vocational education (2.49%). Duration of their education varied from 9 to 18 years ($M = 15.09$; $SD = 2.80$).

74.63% of participants were professionally active, 25.37% inactive. The preferred game genre was RPG (*Role-Playing Game* – 74.75%), survival games (58.08%), FPS (*First-Person Shooter* – 59.09%), RTS (*Real-Time Strategy* – 48.48%), racing games (28.28%), sports games (21.21%).

The study received approval from local University Ethics Committee No. 9/2023.

1.2. Methods

Participants were requested to fill online a sociodemographic questionnaire and five standardised measures.

The *Internet gaming disorder-20* Test (*IGD-20*, Pontes, Griffiths (2014); Polish adaptation: Grajewski, Dragan (2021)) consists of 20 items to measure the prevalence of symptoms of IGD over the past twelve months according to the DSM-V (APA, 2013). It measures an overall score and six subscales: Salience, Mood Modification, Tolerance, Withdrawal Symptoms, Conflict, Relapse. The Cronbach's α reliability coefficient was 0.93 for the total score and 0.76 (Conflict) to 0.85 (Withdrawal Symptoms) for the subscales (Grajewski, Dragan, 2021).

The Hospital Anxiety and Depression Scale (*HADS*, Zigmond, Snaith (1983); Polish adaptation: Czerwiński, Mackiewicz, Mytlewska, Atroszko (2020)) consists of 14 items and measures two subscales: Anxiety and Depression. The Cronbach's

α reliability coefficient was 0.74 for the Depression subscale and 0.85 for the Anxiety subscale (Czerwiński et al., 2020).

The Psychache Scale (*The Scale of Psychache*, *PAS*, Holden, Mehta, Cunningham, McLeod (2001); Polish adaptation: Chodkiewicz, Miniszewska, Strzelczyk, Gąsior (2017)) consists of 13 items and is used to measure the level of psychological pain. The Cronbach's α reliability coefficient was 0.93 (Chodkiewicz et al., 2017).

The Alcohol Use Disorders Identification Test (*AUDIT*, Saunders, Aasland, Babor, De la Fuente, Grant (1993); Polish adaptation: Klimkiewicz et al., (2021)) consists of 10 items and measures the intensity of an alcohol problem, assigning respondents to one of four drinking patterns: low-risk drinking, risky drinking, harmful drinking, suspected alcohol dependence. The high reliability and validity of the tool has been confirmed (strong correlation with the MAST and CAGE scales, $\rho = 0,76$; Klimkiewicz et al., 2021).

The Borderline Personality Disorder Checklist (*BPD Checklist*, Bloo, Arntz, Schouten (2017)) scale consists of 47 items and is used to measure the intensity of symptoms associated with borderline personality disorder experienced in the past month according to the DSM-IV (APA, 1994). It measures the total score and nine subscales not included in the study: Abandonment Avoidance, Unstable Relationships, Identity Disturbance, Self-Destructive Impulsivity, Recurrent Suicidal Behaviour, Affective Instability, Lack of Anger Control, Dissociation, Paranoid Ideation. The Cronbach's α reliability coefficient was 0.97 for the total score and for subscales ranging from 0.72 (Self-Destructive Impulsivity) to 0.93 (Affective Instability) (Bloo et al., 2017).

2. Results

Statistical analyses were performed using SPSS Statistics 28.0. The means and standard deviations were presented, and the Pearson's correlation coefficient and regression analysis in a mediation model using the PROCESS macro (Hayes, 2013) were applied.

2.1. Correlational analyses between study variables

Table 1 shows the means, standard deviations and *r-Pearson* correlation matrix between the study variables. Significant positive correlations were found between the total score and most of the subscales of IGD (IGD-20) and anxiety (r = from 0.15-salience to 0.33-mood modification), depression (r = from

Table 1. Means, standard deviations and Pearson's r correlation matrix between the studied variables (N = 201)

	M	SD	1	2	3	4	5	6	7	8	9	10	11
IGD-20: Total score	41.25	12.83	-										
IGD-20: Salience	6.15	2.89	0.85***	-									
IGD-20: Mood modification	9.57	3.32	0.65***	0.46***	-								
IGD-20: Tolerance	6.39	3.07	0.79***	0.72***	0.44***	-							
IGD-20: Withdrawal symptoms	4.91	2.24	0.75**	0.60***	0.40***	0.47***	-						
IGD-20: Conflict	7.26	2.97	0.61***	0.39***	0.14	0.35***	0.38***	-					
IGD-20: Relapse	5.26	2.38	0.73***	0.54***	0.35***	0.44***	0.55***	0.39***	-				
HADS: Anxiety	7.55	4.34	0.26***	0.15*	0.33***	0.19**	0.24***	0.12	0.10	-			
HADS: Depression	5.25	3.86	0.37***	0.23***	0.30***	0.31***	0.28***	0.29***	0.17*	0.61***	-		
ZOB: Total score	89.95	31.06	0.47***	0.32***	0.39***	0.36***	0.37***	0.30***	0.30**	0.72***	0.62***	-	
PAS: Total score	31.37	15.31	0.30***	0.22**	0.35***	0.25***	0.23***	0.14*	0.12	0.76***	0.60***	0.81***	-

Note. M – mean; SD – standard deviations.
*** $p < 0,001$; ** $p < 0,01$; * $p < 0,05$.

0.17-relapse to 0.37-total score), psychological pain (*r* = from 0.14-conflict to 0.35-mood modification) and the strongest correlations with borderline personality disorder (*r* = from 0.30-conflict and relapse to 0.47-IGD total score). Psychological pain correlated significantly, positively with anxiety (*r* = 0.76), depression (*r* = 0.60) and IGD total score (*r* = 0.81). borderline personality disorder correlated significantly, positively with anxiety (*r* = 0.72) and depression (*r* = 0.62).

2.2. Psychological pain as a mediator of the relationship between borderline personality disorder and IGDr

The relationship between the variables discussed (see Table 1) formed the basis for testing a mediation model considering the role of psychological pain as a mediator of the relationship between borderline personality disorder and IGD.

A suppression effect of psychological pain was found on the relationship between borderline personality disorder and IGD (IGD-20: total score): β = -0,18; 95% C.I. (-0,38; -0,01). The suppression effect was described, when the mediator was included in the model, the role of borderline increased and was stronger in explaining IGD (β = 0,64; *p* < 0,001) than in the model without the mediator (β = 0,47; *p* < 0,001; Figure 1).

2.3. Psychological pain as a mediator of the relationship between IGD and anxiety and depression

A mediation model that considers the role of psychological pain as a mediator of the relationship between IGD and depression and anxiety was also tested.

A mediating effect of psychological pain was found on the relationship between IGD (IGD-20: WO) and depression: β = 0,16; 95% C.I. (0,09; 0,23) and anxiety: β = 0,22; 95% C.I. (0,13; 0,32). The mediating effect was noticed when the mediator was included in the model, the role of IGD decreased and was weaker in explaining levels of depression (β = 0,37; *p* < 0,001 vs. β = 0,21; *p* < 0,001) and insignificant in explaining levels of anxiety (β = 0,26; *p* < 0,001 vs. β = 0,04; *p* > 0,05) than in the model without the mediator (Figure 2).

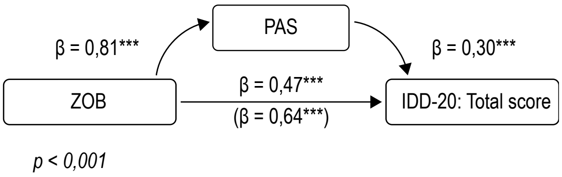

Figure 1. The suppression effect of psychological pain on the relationship between borderline personality disorder and IGD (N = 201)

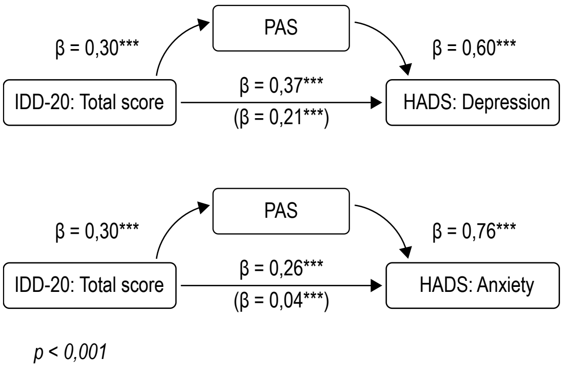

Figure 2. The mediating effect of psychological pain on the relationship between IGD and depression and anxiety (N = 201)

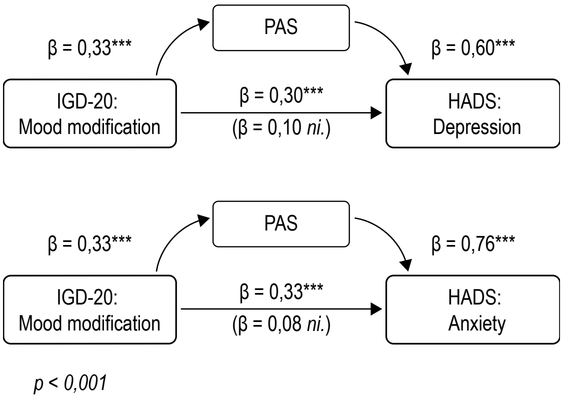

Figure 3. The mediation effect of psychological pain on the relationship between mood modification in IGD and depression and anxiety (N = 201)

There was also a total mediating effect of psychological pain on the relationship between mood modification (IGD-20: Mood Modification) and depression: β = 0,20; 95% C.I. (0,12; 0,28) and anxiety: β = 0,26; 95% C.I. (0,16; 0,35). The mediating effect was noticed when the mediator was included in the model, the role of mood modification in IGD decreased and was non-significant in explaining levels of depression (β = 0,30; *p* < 0,001 vs. β = 0,10; p > 0,05) and anxiety (β = 0,33; *p* < 0,001 vs. β = 0,08; p > 0,05) than in the model without the mediator (Figure 3).

3. Discussion

Research findings to date remain worryingly consistent regarding the negative impacts of problematic gaming and IGD on the mental health and daily functioning of gamers. The present study assessed the associations of IGD with depression, anxiety, psychological pain and borderline personality disorder. Each of these clinical variables showed positive associations with IGD. In addition, these variables were positively and strongly associated with each other.

The results showed that higher severity of IGD appeared to be a significant predictor of depression and anxiety, stronger for depression. The importance of IGD as a predictor of the occurrence of depression has been confirmed by the findings of limited number of papers (Coyne et al., 2020; Sepede et al., 2016). Coyne et al., (2020) showed that the severity of IGD symptoms co-varied with the severity of depressive symptoms in gamers. A similar direction of the relationship between IGD and depression has been confirmed in studies of other authors (Mikuška, Vazsonyi, 2018; Sepede et al., 2016). However, on the other hand, individuals with depressive symptoms show a tendency towards problematic gaming and IGD, which is more often confirmed in the research literature than the direction studied in this paper (Burkauskas et al., 2022; Teng, Pontes, Nie, Griffiths, Guo, 2021). It can thus be hypothesised that depressed individuals seek relief from suffering, escape from loneliness and social anxiety, and therefore engage in behavioural addictions. Depression in gamers is most often undiagnosed and treated late (Ostinelli et al., 2021). It also more often affects the at-risk group – young men, while in the rest of the players, gaming alleviates depressive symptoms (Pallavicini, Pepe, Mantovani, 2022). Also, young men with low self-esteem, experiencing symptoms of generalised anxiety disorder and poor stress tolerance are more likely to play problematically (Lavoie, Dufour, Berbiche, Therriault, Lane, 2023). Players of particular genres of computer games, in this case MOBA (*Multiplayer Online Battle Arena*) and MMORPG (*Massively Multiplayer Online Role Playing Games*), suffer from higher levels of anxiety and depression (Bonnaire, Baptista, 2019). The lack of consistency in the assessment of the relationship between IGD and depression indicates the complexity of this relationship and the likelihood of its bidirectionality.

Higher severity of IGD was also found to be a significant predictor of higher levels of psychological pain. Conversely, higher levels of psychological pain were a significant predictor of higher severity of IGD symptoms. Thus, IGD may be a cause of aggravated psychological distress and pain, the treatment of which would include psychotherapeutic, behavioural and pharmacological interventions including treatment of co-occurring mental health disorders, i.e. depression or anxiety disorders. Sadly, the lack of research in this scientific domain does not allow a discussion with the results of other authors.

Higher severity of borderline personality disorder symptomatology has been shown to be a predictor of higher severity of IGD, as evidenced by studies in people addicted to gaming (Torres-Rodríguez et al., 2018) and internet (Lu et al., 2017), as well as a predictor of higher levels of psychological pain. The psychological substrate of this pain may be disturbed emotion dynamics and regulation, which initiates maladaptive emotion regulation strategies, self-destructive and suicidal behaviour (Chen, Fu, Wang, Sun, 2024; Laghaei, Honarmand, Jobson, Ranjbar, Asgarabad, 2023; Olié, Guillaume, Jaussent, Courtet, Jollant, 2010; Paris, 2002; Pompili, Lester, Leenaars, Tatarelli, Girardi, 2008; Troister, Davis, Lowndes, Holden, 2013).

This study also demonstrated a specific role for psychological pain as a mediator in the relationship between borderline personality disorder and IGD and between IGD and both depression and anxiety. The presence of psychological pain makes the role of borderline personality disorder in the prediction of IGD stronger and the role of IGD in the prediction of depression and anxiety weaker. Thus, it can be said that in players experiencing psychological pain, the effect of borderline personality disorder on the severity of IGD symptoms becomes more intense. In contrast, the interaction of IGD on the severity of depression and anxiety symptoms does not occur without players experiencing psychological pain.

The definition of psychological pain by Orbach, Mikulincer, Gilboa-Schechtman, Sirota (2003a, 2003b) as "a subjective experience accompanied by an awareness of negative changes in oneself and one's functioning together with co-occurring unpleasant emotions" allows an understanding of the complex emotional states of the gamer who is trapped in addiction, depression and self-harm. Psychological pain is associated with symptoms of mental health disorders, including depression, and feelings of hopelessness (Mills et al., 2005) and with increased suicide risk – suicidal ideation, plans and acts (Olié et al., 2010; Pompili et al., 2008; Troister et al., 2013). Unfortunately, the number of studies on suicidality among gamers still seems very limited, given the seriousness of the phenomenon. In the research literature, an association has been shown between suicidal ideation, acts and problematic gaming (Erevik et al., 2022), as well as between problematic gaming, suicidal ideation and non-suicidal self-harm in the female population (Leino et al., 2024).

Summary and practical implications

The practical implications of this project are based on the results of the mediation models evaluated, in which IGD was a significant predictor of anxiety, depression and psychological pain, while borderline personality disorder and psychological pain were significant predictors of IGD. The demonstration of the bilateral direction of the relationship between IGD and psychological pain is undoubtedly a novel aspect of this study. On the other hand, the confirmed associations between IGD, depression, anxiety and borderline personality disorder and psychological pain provide an important diagnostic clue. In the process of diagnosing IGD and assessing the suicide risk of players, the variable of psychological pain seems to be very relevant. The gamer's clinical interview should be deepened with questions about psychological pain, motives for playing, as well as social context and functioning, which are stronger predictors of IGD than playing time (Sauter, Braun, Mack, 2021). The co-occurrence of IGD with other mental health disorders should be clinically assessed, and the construct of psychological pain should be thoroughly evaluated in the diagnostic and therapeutic process of gamers to cover suffering and potential suicidal risk.

In the future, the mediation models assessed, in which IGD is a significant predictor of anxiety, depression and psychological pain, should be conducted in large samples of people suffering from hazardous gaming/IGD and in longitudinal studies that allow assessment of the impact of the dynamics of the disorder on the clinical variables assessed.

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Profiles of depression in adolescents in the context of depressive symptoms, selected psychosocial and demographic characteristics – cluster analysis[1]

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Abstract: The aim of the study was to determine and characterize the profiles of the studied adolescents in terms of depression, psychosocial and demographic characteristics using a hierarchical cluster analysis. In the presented research, the characteristics of the clusters include data on: the occurrence of depressive symptoms, mood (general and situational), basic emotions, loneliness, personal competences, coping with stress, gender and age. During and after the COVID 19 pandemic, a global increase in depression in children and adolescents has been observed. The study of the relationships between symptoms of depression, psychosocial and demographic characteristics aims to deepen the knowledge and use it in the development of programs for interventions, support and therapy in medical and educational practice. The presented research involved students of grades 4-8, aged 11 to 16 (M = 12.5), 53% – girls, 42% – boys, 5% did not answer. The analyzes showed the existence of four clusters. There are significant relationships between the intensity of depressive symptoms, psychosocial features and gender in the surveyed adolescents, i.e. with the severity of depressive symptoms, the following decreases: the level of self-efficacy, the use of active coping, the experience of positive mood and joy, increases level of loneliness, dominance of negative mood and experiencing negative emotions (fear, anger, guilt, sadness). Two different profiles were identified in people with moderate depressive symptoms. The obtained research results confirm the heterogeneity of the phenomenon of depression, which is revealed by different pictures (profiles) of this disorder, also within a specific type. The research results confirm the position that the symptoms of depressive symptoms described by teenagers are not always consistent with the diagnostic criteria, therefore the phenomenon of depression in children and adolescents requires further recognition. The presented results confirm the validity of the position that it is necessary to increase and adapt intervention activities at school aimed at children and youth to gender and gender in order to strengthen their personal resources.

Keywords: depression, psychosocial characteristics, gender, adolescents, cluster analysis

Introduction

Recent analyses of depression in children and adolescents show a global rise in this mental disorder, particularly during and after the COVID-19 pandemic (Madigan, Racine, Vaillancourt, Korczak, Hewitt et al., 2023; Mayne, Hannan, Davis, Young, Kelly et al., 2021; Wang, Chen, Ran, Che, Fang et al., 2022). Meta-analyses by Nicole Racine and colleagues reveal that 25.2% of adolescents (1 in 4) exhibit clinically elevated depressive symptoms, underscoring the urgent need for intervention, prevention, and support to enhance adolescent well-being. Additionally, further research is needed to consider individual differences (Racine, McArthur, Cooke, Eirich, Zhu et al., 2021).

Research on depression, as documented in the literature, often focuses on uncovering the mechanisms underlying the disorder and identifying characteristics specific to different types. Significant attention is given to both external resources, such as social support, and internal resources, related to

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psychosocial attributes. However, findings indicate that depressive symptoms reported by adolescents do not always align with diagnostic criteria, highlighting the need for further understanding of depressive disorders in children and adolescents (Twivy, Kirkham, Cooper, 2023).

There remains a gap in the scientific literature regarding empirically developed profiles of adolescents with varying degrees of depressive symptoms, particularly in relation to different psychosocial and demographic characteristics. This study aims to address this gap by identifying configurations of associations between selected psychosocial characteristics–such as mood (general and dispositional), core emotions, loneliness, self-efficacy, and stress coping strategies–and demographic characteristics (age and gender). Using cluster analysis, the study identifies distinct groups of adolescents with different combinations of these characteristics, offering new insights that could benefit clinical and educational practices.

1. Associations of depression with selected psychosocial and demographic characteristics

Depressive disorders are among the most significant mood disorders affecting children and adolescents (Burnett, 2020; Pels, 2020; Radziwiłłowicz, 2020). Depression is commonly understood as a "progressive dysphoric state, an illness, or at least a disorder that inhibits the experience of positive emotions over an extended period" (Barr-Zisowitz, 2005, p. 761). The symptoms of depression typically include negative thinking, self-criticism, pessimism, social withdrawal, reduced activity, low motivation, insomnia, fatigue, changes in appetite (either decreased or increased), and moods characterized by sadness, irritability, and guilt (Hay, 2021; Padesky, Greenberger, 2017). Depression is also one of the most significant risk factors for suicide, with approximately 80% of suicide victims suffering from some form of depression, leading it to be classified as a terminal illness (Ministry of Health, 2018).

Diagnosing depression can be challenging due to the high individual variability in its clinical presentation–different symptoms may be more prominent depending on factors such as the patient's age. Additionally, the diagnosis can be complicated by other conditions that manifest with symptoms similar to those of depression, requiring careful evaluation by specialists to accurately identify "true" depression (Murawiec, 2017).

It is important to note that the prevailing belief is that the clinical presentation of depression during developmental years does not fundamentally differ from that in adults. Both are considered the same disorder, which is why current classification systems do not distinguish separate diagnostic criteria for children and adolescents. As a result, childhood or adolescent depression is not treated as a distinct nosological entity (Jankowicz, 2018).

The literature predominantly frames depression through the lens of biological, psychosocial, developmental, and environmental "deficits". However, with the rise of humanistic, existential, and positive psychology, recent studies on this condition are increasingly focusing on psychosocial attributes and developmental resources (Zhou, Shek, Zhu, Dou, 2020).

1.1. Depression vs. mood and core emotions

Numerous research results show the existence of a link between the experience of emotions and mental health, which is confirmed, among others, by findings in the field of psychoneuroimmunology (Soloey-Nilsen, Nygaard-Odeh, Kristiansen, Kvig, Brekke, Mollnes, Berk, Reitan, Oiesvold, 2024). Pullen et al. present correlations between anger and depression in adolescents (Pullen, Modrcin, McGuire, Lane, Kearnely, Engle, 2015). The results of a longitudinal study presented by Alisson E. Hollender et al. suggest that a deficit in the ability to label anger and surprise in preschool age, which is associated with greater emotional lability, may be associated with depression in adolescence (Hollender, Elsayed, Vogel, Tillman, Barch, Luby, Gilbert, 2024).

Fredric Bush identifies conflictual anger as one of the five central dynamics of depression, which, along with blame and jealousy, leads to behaviours that harm social relationships and creates confusion about responsibility and self-directed anger (Henriksen, Ulberg, Tallberg, Løvgren, Johnsen Dahl, 2021). Empirical evidence suggests that conflictual anger is a significant aspect of depression. Studies show that anger as a trait predicts loneliness in adolescents and that effective anger management is associated with lower levels of depression and anxiety (Karabab, 2020). Additionally, findings indicate that as anger intensity increases, so do stress levels (Morales-Rodríguez, 2021).

Guilt and shame are also strongly linked to depression (Hay, 2021). The literature distinguishes between two forms of guilt: adequate and pathological. According to Antoni Kępiński (2014), pathological guilt, particularly in neurotic depression, is common in individuals with depression. Children diagnosed with depression often exhibit high levels of guilt and shame, yet they tend to show a lower inclination to take corrective action. It is acknowledged that depressed children may experience intense guilt, often coupled with difficulties in resolving interpersonal issues, and sometimes their guilt is disproportionate to the offense. Dale F. Hay's (2021) research indicates that about 80 percent of depressed children experience feelings of worthlessness and guilt, which significantly impacts their social and emotional development. Empirical studies further support the hypothesis that self-blame is positively correlated with depression, as it was identified as a significant independent predictor of depression in a regression model (Horwitz, Hill, King, 2010).

Fear signals a perceived threat and typically triggers reactions such as avoidance, escape, or, in some cases, fighting (Gasiul, 2007). In adolescents, depression is often associated with high levels of anxiety (Zulkipli, Suliaman, Abidin, Anas, Mohamad et al., 2024). Meta-analyses examining the psychological impact of the pandemic on the mental health of children and adolescents suggest that even those without prior symptoms of psychopathology experienced significant effects: 42.3% reported irritability, 41.7% depression, 34.5% anxiety, 30.8% had difficulty concentrating, and 79.4% showed negative changes in their behavioural and psychological state, with approximately 22.5% experiencing significant fear of COVID-19 (Lopez-Serrano, Díaz-Bóveda, González-Vallespí, Santamarina-Pérez, Bretones-Rodríguez et al., 2023). A cross-sectional study conducted during the COVID-19 pandemic among Chinese students aged 12-18 years revealed a prevalence of 43.7% for depressive symptoms, 37.4% for anxiety symptoms, and 31.3% for a combination of both, with these rates being higher among girls (Zhou, Zhang, Wang, 2020).

Sadness in depression is linked to an increased tendency to recall sad events and words, as well as a focus on negative experiences. This sadness influences cognitive processes and reasoning quality; for instance, individuals with moderate depression often make more accurate judgments. However, it is noted that "excessive sadness can place a burden on others", which is likely the case in depression (Barr-Zisowitz, 2005). "Extreme sadness" can lead to a loss of interest in the external and social world, resulting in "profound depression and withdrawal" (Izard & Ackerman, 2005, p. 335).

Joy, on the other hand, is generally seen as a pleasurable state that arises in safe, familiar situations that require little effort (Johnson, 2020). It is associated with the achievement of personal goals, flexible thinking, more effective and creative problem-solving, the formation of social bonds, the perception of social support, and the strengthening of psychological resilience. Depression, however, may impair the recognition of positive signals, heightening "caution" in detecting signs of joy (Marszałek-Wiśniewska & Fajkowska-Stanik, 2005). When sadness–a "low energizing" emotion–predominates, depression worsens the ability to detect emotions like anger and joy, impairing the perception of energizing emotions, especially anger. Conversely, when joy is the initial emotion, depression may lead to a more conservative, impulsive recognition of positive signals. This can result in 1) weakened "vigilance against threats" in situations that typically reinforce a depressive mood of sadness and 2) activated "defence mechanisms against positive signals" in joyful situations (Marszałek-Wiśniewska & Fajkowska-Stanik, 2005, pp. 119-130). Empirical research suggests that in adolescents, the experience of joy is significantly and positively correlated ($p<0.05$) with a sense of strength, perseverance, and personal competence.

As joy increases, so do these protective factors, which may help guard against depression (Ryś, Mausch, Baranowska, 2023).

1.2. Depression vs. self-efficacy

Self-efficacy refers to the belief in one's ability to successfully cope with challenges. According to Albert Bandura's cognitive-social theory, there is a bidirectional relationship between self-efficacy and depression: a lack of self-efficacy can lead to depressive symptoms due to a perceived gap between one's aspirations and abilities. Adolescents often set high, sometimes unrealistic goals for themselves but may lack the competence to achieve them. This can lead to reluctance to engage in various activities, negatively impacting their well-being and increasing their risk of developing depressive disorders. The belief among young people that they are unable to form satisfying relationships or control intrusive thoughts plays a significant role in the development of depression (Bandura, 2007).

Research supports this view. Empirical studies by Peter Muris, Cor Meesters, Anna Pierik, and Bo De Kock (2016) show that a strong sense of self-efficacy reduces vulnerability to stress, anxiety, and depression in adolescents. Particularly important protective factors against anxiety and depression in children and adolescents include strong self-efficacy beliefs in social functioning, emotional regulation, and academic achievement. Additionally, a study by Daiane Nunes and Andre Faro (2021) found that lower levels of self-efficacy were associated with higher levels of depressive symptoms in adolescents aged 14-19 years.

1.3. Depression vs. coping strategies

Research indicates that individuals experiencing positive affect are better able to utilize their cognitive potential, particularly in memory, decision-making, and problem-solving, and are more effective at recognizing different aspects of situations. Conversely, lower levels of positive affect are associated with coping strategies that focus on negative emotions and psychological withdrawal (Morales-Rodríguez, 2021). Adolescents diagnosed with depression are more likely to rely on less adaptive emotion regulation strategies and face greater learning difficulties, leading to a decreased sense of self-efficacy. This is supported by a study involving 1,341 Dutch students with an average age of around 14 years (Taka, Brunwasser, Litchwark-Aschoff, Engels, 2017). On the other hand, adolescents with lower levels of depression tend to use active coping strategies (Türk, Kul, Kılınç, 2021), while a lack of behavioural engagement – characterized by giving up on trying to cope with a situation – is both a risk factor for and a symptom of depression in adolescents (Kaminsky, Robertson, Dewey, 2006).

Adolescents who use strategies focused on addressing the source of stress are better protected against developing depressive symptoms. In contrast, a preference for strategies that involve emotion regulation or distancing oneself from the problem is linked to higher rates of depression. A study conducted among Polish adolescents (aged 11-18 years) in 2019 and 2020, who were diagnosed with depressive and anxiety disorders, indicates that the greater the severity of depressive symptoms, the more likely they are to rely on emotional coping strategies (Lelek, Mostowik, Kwapniewska, Adamczyk-Banach, 2021). Similarly, research involving adolescents aged 13-17 shows a positive correlation between the use of emotion-focused strategies, such as self-blame, and both depression and suicidal thoughts (Horwitz et al., 2010).

1.4. Depression vs. loneliness

A common hypothesis in the literature is that individuals experiencing severe loneliness struggle with interpersonal interactions and have unmet emotional needs, which can lead to depression (Erzen & Cikrikci, 2018). Notably, there is a bidirectional relationship between loneliness and depression: people with depression often isolate themselves, which in turn exacerbates feelings of loneliness. Psychological literature highlights that loneliness is a relatively enduring aspect of adolescence, often emerging suddenly and without a specific cause. This type of loneliness is subjective and personal, characterized by a sense of inner psychological isolation, primarily stemming from a perceived lack of connection with others, feelings of alienation, and the absence of a close companion (Wrótniak, 2018). In adolescents, loneliness is positively correlated with negative emotions and negatively correlated with positive emotions (Twenge, Haidt, Blake, McAllister, Lemon et al., 2021). Research also suggests that loneliness leads individuals to perceive their social interactions as more negative and less satisfying, triggering negative emotions such as sadness, anger, and fear. When these emotions persist over time, they can contribute to the development of mental health disorders (Hutten, Jongen, Verboon, Bos, Smeekens et al., 2021).

These findings are supported by empirical research conducted globally. A study by Kubra Kayaoğlu and Mehmet Başçıllar (2022) found a statistically significant positive correlation between overall depression and loneliness scores among adolescents aged 10 to 19 years ($p < 0.05$). As loneliness levels increased in these adolescents, so did their levels of depression. Similar conclusions were drawn by Maria Oleś (2006), whose study of 11- to 13-year-olds revealed that children with a strong sense of loneliness not only experience nervous tension, a tendency to self-blame, and low self-esteem but are also more prone to depression. These children often exhibit a depressed mood and a pessimistic outlook on the future.

1.5. Depression vs. gender and age

Research indicates that girls are about twice as likely as boys to suffer from depression, with hormonal, genetic, and psychosocial factors contributing significantly to this disparity. The symptoms of depression also tend to differ between the sexes: girls are more likely to exhibit internalizing symptoms such as a depressed mood or frequent crying, whereas boys are more prone to externalizing symptoms like attention difficulties and aggressiveness (Baptista, Borges, Serpa, 2017).

Data from the WHO (2021) reveals that depression and anxiety are more prevalent among children aged 15-19 years (4.6%) compared to those aged 10-14 years (3.6%). A meta-analysis by Maggu Gaurav, Suprakash Chaudhury, Vinoda Verma, and Vishal Vindel (2023) on the impact of the pandemic on depression and anxiety in children and adolescents suggests that age is a significant moderator of depression, with the severity of symptoms, particularly anxiety, increasing significantly with age.

2. Research methodology

The aim of this research is to identify and characterize the profiles of adolescents based on selected psychosocial characteristics in the context of depression, and to compare these profiles to highlight similarities and differences. The study utilizes cluster analysis to examine data on various factors, including depressive symptoms, mood (both general and situational), basic emotions, loneliness, self-efficacy, stress coping strategies, gender, and age. By analyzing these characteristics, the research aims to establish connections between them, allowing for the creation of clusters representing groups of individuals with similar traits. Individuals within each cluster exhibit comparable levels of the studied characteristics, enabling the detailed characterization of each profile. These profiles reveal the combinations of traits and the structure of the studied population, including the number and variety of profiles identified.

The following research questions were formulated:

1. What profiles of adolescents emerge based on characteristics such as depressive symptoms, mood (both general and situational), basic emotions, loneliness, self-efficacy, stress coping strategies, gender, and age?
2. What are the similarities and differences among the characteristics of the identified adolescent profiles?

The research was conducted in November 2022 using a paper-and-pencil method through direct contact. The study involved 168 students from grades IV to VIII of primary school, aged 11 to 16 years ($M = 12.5$). Of the participants, approximately 53%

were girls, 42% were boys, and 5% did not specify their gender. The study utilized five distinct tools, described as follows.

Children's Depression Inventory (CDI-2) – Developed by Maria Kovacs, with Polish adaptation by PTPE. Wrocławska-Warchala and R. Wujcik, from the PTP Psychological Tests Laboratory.

The CDI-2 is a comprehensive diagnostic tool used to assess depressive symptoms in children and adolescents aged 7 to 17. It includes a full-length self-report questionnaire, an abbreviated self-report version, and versions for parents and teachers. This set is designed to help identify depressive symptoms in children and adolescents, facilitate early detection of those at risk of depression, and monitor treatment outcomes. Elevated scores on the CDI-2 may suggest clinical depression, though a definitive diagnosis requires a thorough clinical evaluation, including historical and current functioning assessments.

The CDI-2 consists of four independent questionnaires. Two of these are self-report versions for completion by the child: the full self-report version (CDI-2:S) and an abbreviated version (CDI-2:S/S), which was utilized in the current study (taking approximately 5 minutes to complete). The self-report version can be administered individually or in groups; in this study, the questionnaires were completed by respondents in groups.

The CDI-2 adheres to psychometric standards, with a 2013-2014 Polish standardization sample comprising 1,010 children aged 7-18. The reliability of the CDI-2, as indicated by a Cronbach's alpha coefficient of 0.84, is high, and psychometric analyses confirm its accuracy in measuring depressive symptoms.

KompOs – Personal Competence Scale (Zygfryd Juczyński)

The KompOs scale comprises two subscales, each containing six statements, with half of the items worded positively and half negatively. It assesses generalized self-efficacy, including two key components: beliefs about having the necessary power to initiate action and beliefs about the persistence required to sustain it. The KompOs scale is applicable for both healthy and ill children and adolescents. It measures two main factors: strength and perseverance, which are crucial aspects of self-concept related to competence. The scale focuses on subjective confidence in overcoming challenges and achieving goals. The survey can be administered individually or in groups, typically taking around 10 minutes to complete. The internal consistency of the KompOs scale, measured by Cronbach's alpha, is 0.72 for the entire scale.

The JSR Scale, ("Jak Sobie Radzisz" – "How Are You Doing?"), is designed to assess stress and coping mechanisms in children and adolescents. Developed by Zygfryd Juczyński and Nina Ogińska-Bulik, this scale is grounded in the research paradigm of R. Lazarus and S. Folkman. It evaluates both *dispositional and situational coping strategies.* Dispositional coping reflects an individual's typical repertoire of stress management strategies, while situational coping focuses on how the individual dealt with a specific stressful event over the past year.

The scale includes two parts: one that asks respondents how they would cope with a hypothetical scenario (a friend's name-day party to which everyone except the respondent was invited) and another that examines their coping strategies in a real stressful situation they experienced in the past year. Each section comprises nine statements: the statements are written in the present tense for the hypothetical scenario and in the past tense for the actual situation described by the respondent. Answers are provided using a five-point scale. The scale measures three coping strategies: *Active Coping, Focusing on Emotions, and Seeking Social Support*. The test typically takes no more than 10 minutes to complete. It has a good reliability score, with a Cronbach's alpha of 0.86, and the validity of the scale is high, with no significant differences found in its factor structure. Standardization was performed on a random sample of 919 children and adolescents, ensuring its applicability across a wide range of individuals.

The DeJong Gierveld Loneliness Scale (DJGLS) is a tool used for both individual diagnosis and research to assess feelings of loneliness. The Polish adaptation of the scale was developed by Paweł Grygiel, Grzegorz Humenny, Sławomir Rębisz, Piotr Świtaj, and Justyna Sikorska. The DJGLS consists of 11 statements, balanced between 6 negatively worded items that describe dissatisfaction with social contacts and 5 positively worded items that assess satisfaction with interpersonal relationships. Respondents are asked to indicate the extent to which each statement reflects their current situation and feelings, using a 5-point scale ranging from "definitely yes" to "definitely no." To calculate the loneliness index, the responses to the 6 negatively worded items (statements 2, 3, 5, 6, 9, and 10) are recoded, after which all items are summed.

The Polish version of the DJGLS demonstrates high reliability and homogeneity, with a Cronbach's alpha coefficient of 0.89, a mean inter-item correlation of 0.42, and a Loevinger homogeneity coefficient of 0.47. The scale is predominantly unidimensional and effectively measures generalized feelings of loneliness. It can be used with adolescents and adults, either individually or in groups, and takes approximately 5 minutes to complete.

The Scale for Measuring Mood and Six Emotions, developed by Bogdan Wojciszke and Wiesław Baryła, is composed of four distinct tools: the General Mood Scale, Positive Mood Scale, Negative Mood Scale, and Emotion Questionnaire. The General Mood Scale is designed to assess overall mood, capturing both positive and negative feelings without targeting specific emotions. It includes 10 statements – 5 reflecting a positive mood and 5 with a reverse key for negative mood. Respondents rate their agreement with each statement using a five-point scale. The overall mood score is calculated by averaging the ratings across the individual items, with possible scores ranging from 1 to 5.

For the Positive Mood Scale and Negative Mood Scale, participants are instructed to select all the statements that accurately reflect their current or recent mood. Each selected statement is scored as 1, resulting in possible scores ranging from 0 to 10 for both scales.

The Emotion Questionnaire includes 24 adjectives representing six primary emotions: joy, love, fear, anger, guilt, and sadness, with four adjectives for each emotion. This scale measures the intensity of these emotions, with respondents indicating how often they experienced each emotion during a specified period using a seven-point scale ranging from 1 (never) to 7 (always). The score for each primary emotion is the average of its four corresponding adjectives, yielding a range from 1 to 7.

All the scales enumerated above demonstrate high reliability, validity, and sensitivity to situational factors, making them effective for assessing mediating and dependent variables in research.

The study's authors adhered to all relevant legal and ethical guidelines, including obtaining informed consent, ensuring the confidentiality of results, and clearly explaining the study's purpose to participants.

The cluster analysis was conducted using the agglomerative hierarchical clustering (AHC) method, selected for its robustness and ability to handle outliers without requiring a predetermined number of clusters. This method is advantageous over others like k-means or Partitioning Around Medoids (PAM) due to these characteristics. For the analysis, standard parameters such as Euclidean distance and Ward's linkage method were employed. Before clustering, all variables were standardized to ensure equal weight in the analysis. The normality of the data distribution was checked using the Shapiro-Wilk test. Group comparisons were conducted using the Kruskal-Wallis test, which is suitable for non-parametric data. When statistically significant differences were found, post-hoc analysis with Dunn's test was performed to pinpoint the specific groups that differed significantly. A significance level of 0.05 was set, meaning that p-values below this threshold were considered indicative of significant relationships. The statistical analysis was executed using R software, version 3.5.0 (R Core Team, 2022).

3. Results

The study results indicate that the adolescents surveyed can be divided into four distinct clusters, which can be treated as individual profiles (Figure 1).

Profile 1:

This cluster comprises adolescents who exhibit a low (developmental) level of depressive symptoms and a generally positive psychosocial profile, with a higher proportion of boys. The key characteristics of respondents in this cluster (52%) include:

- Depressive Symptoms: Developmental level of depressive symptoms, with low to average intensity (52%).
- Self-Efficacy: High levels of self-efficacy.
- Sense of Power: High intensity of the sense of power.
- Sense of Perseverance: High intensity of the sense of perseverance.
- Dispositional Coping: Predominantly characterized by active coping strategies (sometimes), with very infrequent focus on emotions and rare seeking of social support.
- Situational Coping: A coping style that is difficult to define ("neither occurring nor not occurring").
- Loneliness: Moderate intensity of loneliness, with low levels of both emotional and social loneliness.
- Mood: Generally positive mood, with a low incidence of general negative mood; generally positive mood, with a low incidence of negative mood.
- Emotional Experience: Frequent experience of joy, occasional experience of love, very rare experiences of fear, anger, guilt, and sadness.
- Demographics: Predominance of boys in this profile (approximately 60%).

Profile 2:
This cluster includes adolescents with very high levels of depressive symptoms and generally negative psychosocial characteristics, with a strong predominance of female respondents. The key characteristics of individuals in this cluster (18%) are as follows:

- Depressive Symptoms: Very high levels of depression (18%).
- Self-Efficacy: Low intensity of self-efficacy.
- Sense of Strength: Low intensity of the sense of strength.
- Sense of Perseverance: Low intensity of the sense of perseverance.
- Dispositional Coping: Characterized by infrequent use of active coping strategies, with occasional focus on emotions and sometimes seeking social support.
- Situational Coping: Active coping is difficult to define ("neither occurring nor not occurring"), with a tendency to focus on emotions and no seeking of social support.
- Loneliness: Significant intensity of loneliness, with high levels of emotional loneliness and average levels of social loneliness.

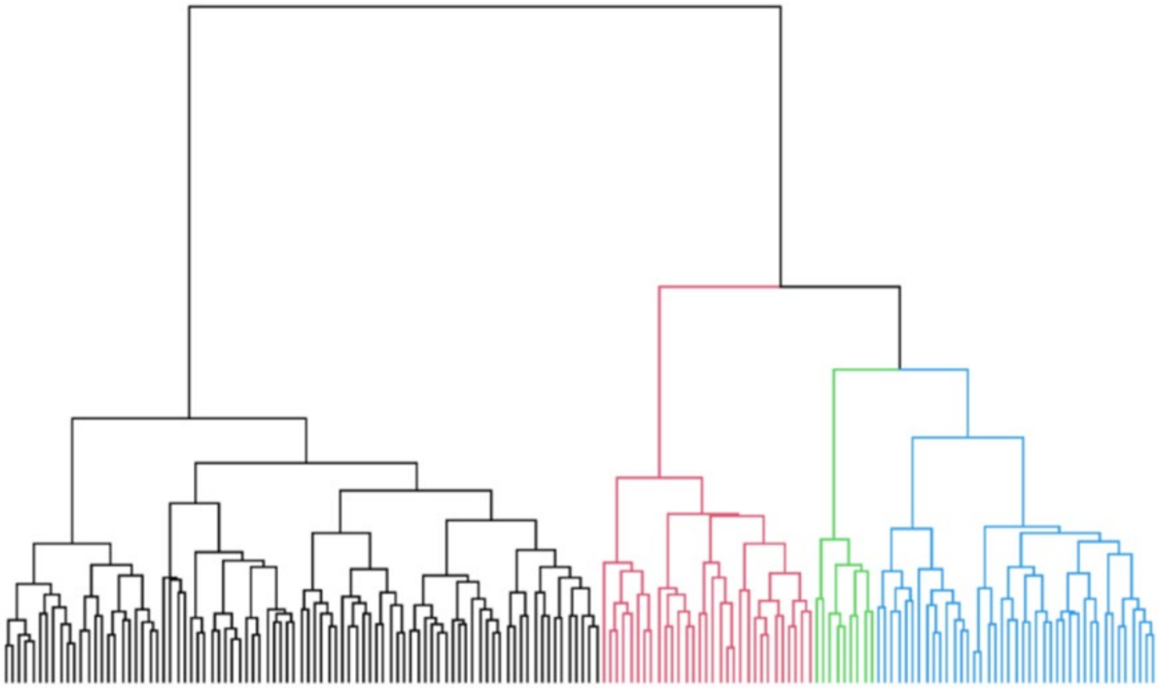

Figure 1: Structure of the Obtained Clusters

Table 1. Descriptive Statistics of the Clusters

Examined variables		Group				p
		A (N = 87)	B (N = 31)	C (N = 9)	D (N = 41)	
CDI2	Mean (SD)	4.22 (2.88)	14.16 (3.77)	8.11 (4.14)	8.8 (2.97)	p<0.001 *
	Median (quartiles)	4 (2-6)	14 (11-16.5)	8 (6-11)	9 (7-10)	
	Range	0-14	7-22	1-15	2-16	
	Missing data	0	0	0	0	
KompOs: sense of power	Mean (SD)	17.66 (3.02)	12.9 (3.23)	14.11 (3.92)	16.76 (3.11)	p<0.001 *
	Median (quartiles)	18 (16-20)	12 (10.5-15)	13 (12-18)	17 (15-19)	
	Range	9-24	8-20	8-20	10-22	
	Missing data	0	0	0	0	
KompOs: sense of perseverance	Mean (SD)	17.4 (2.88)	14.65 (3.27)	14.09 (3.74)	17.32 (3.39)	p<0.001 *
	Median (quartiles)	18 (15-19)	14 (14-17)	14 (11-16)	17 (15-20)	
	Range	10-24	6-21	8-20	9-24	
	Missing data	0	0	0	0	
KompOs: self-efficacy	Mean (SD)	35.06 (4.12)	27.55 (5.37)	28.2 (3.75)	34.07 (4.96)	p<0.001 *
	Median (quartiles)	36 (32-38)	27 (25-31.5)	27 (26-31)	34 (30-37)	
	Range	24-44	16-37	23-35	23-46	
	Missing data	0	0	0	0	
JSR: active coping strategies - dispositional coping	Mean (SD)	1.68 (0.96)	1.44 (0.89)	0.96 (1.16)	1.95 (1.11)	p = 0.029 *
	Median (quartiles)	1.67 (1-2.33)	1.33 (0.67-2)	0.67 (0-1.33)	2 (1.33-2.67)	
	Range	0-3.67	0-3.67	0-3.33	0-4	
	Missing data	0	0	0	0	
JSR: focus on emotions - dispositional coping	Mean (SD)	0.84 (0.8)	2.42 (1.45)	0.67 (0.78)	1.92 (1.06)	p<0.001 *
	Median (quartiles)	0.67 (0.17-1.33)	2.67 (1.5-3.67)	0.33 (0-1)	2 (1-2.67)	
	Range	0-2.67	0-4	0-2	0-4	
	Missing data	0	0	0	0	
JSR: seeking of social support - dispositional coping	Mean (SD)	1.29 (0.97)	1.72 (1.02)	0.26 (0.52)	1.78 (0.91)	p<0.001 *
	Median (quartiles)	1 (0.67-1.67)	1.33 (1.17-2.33)	0 (0-0)	1.67 (1-2.33)	
	Range	0-4	0-4	0-1.33	0-4	
	Missing data	0	0	0	0	
JSR: active coping strategies - situational coping	Mean (SD)	2.37 (0.86)	2.1 (0.85)	1.33 (0.94)	2.67 (0.73)	p<0.001 *
	Median (quartiles)	2.67 (2-3)	2.33 (1.67-2.67)	1.33 (1-2)	3 (2.33-3)	
	Range	0-4	0-3.67	0-2.67	1-4	
	Missing data	0	0	0	0	
JSR: focus on emotions - situational coping	Mean (SD)	1.79 (0.89)	3.13 (0.74)	1.04 (0.59)	2.36 (0.9)	p<0.001 *
	Median (quartiles)	1.67 (1-2.5)	3.33 (2.83-3.83)	1 (0.67-1.33)	2.33 (1.67-3)	
	Range	0-3.33	1.33-4	0-2	0.33-4	
	Missing data	0	0	0	0	
JSR: seeking of social support - situational coping	Mean (SD)	1.67 (0.79)	1.44 (1.09)	0.44 (0.73)	1.98 (0.85)	p<0.001 *
	Median (quartiles)	1.67 (1-2.33)	1.33 (0.5-2)	0 (0-1)	2 (1.33-2.67)	
	Range	0-3.33	0-4	0-2	0.67-4	
	Missing data	0	0	0	0	

Examined variables		Group				p
		A (N = 87)	B (N = 31)	C (N = 9)	D (N = 41)	
DJGLS: loneliness	Mean (SD)	2.87 (2.55)	8.68 (2.4)	7.89 (2.09)	6.93 (3.04)	p<0.001 *
	Median (quartiles)	2 (1-4.5)	9 (7-11)	7 (7-9)	7 (5-9)	
	Range	0-11	2-11	5-11	0-11	
	Missing data	0	0	0	0	
DJGLS: emotional loneliness	Mean (SD)	1.48 (1.44)	5.06 (1.06)	3.44 (1.81)	3.93 (1.72)	p<0.001 *
	Median (quartiles)	1 (0-2.5)	5 (4-6)	4 (2-4)	4 (3-5)	
	Range	0-6	2-6	1-6	0-6	
	Missing data	0	0	0	0	
DJGLS: social loneliness	Mean (SD)	1.39 (1.48)	3.61 (1.69)	4.44 (1.33)	3 (1.75)	p<0.001 *
	Median (quartiles)	1 (0-2)	4 (3-5)	5 (5-5)	3 (2-4)	
	Range	0-5	0-5	1-5	0-5	
	Missing data	0	0	0	0	
Generally positive mood	Mean (SD)	3.96 (0.76)	2.24 (0.72)	2.51 (1.01)	3.14 (0.89)	p<0.001 *
	Median (quartiles)	4.2 (3.6-4.4)	2.2 (1.8-2.7)	2.6 (2.2-3)	3.2 (2.4-3.6)	
	Range	1.6-5	1-4.2	1-4	1.4-5	
	Missing data	0	0	0	0	
Generally negative mood	Mean (SD)	1.74 (0.74)	3.64 (0.69)	2.11 (1.06)	2.6 (0.72)	p<0.001 *
	Median (quartiles)	1.6 (1.2-2.1)	3.6 (3.2-4.1)	2 (1.2-2.4)	2.8 (2-3.2)	
	Range	1-4.2	2.2-5	1-4.4	1-4	
	Missing data	0	0	0	0	
Positive mood	Mean (SD)	4.55 (2.36)	1.35 (1.38)	2.56 (2.13)	2.49 (2.09)	p<0.001 *
	Median (quartiles)	4 (3-6)	1 (0-2)	2 (1-3)	2 (1-4)	
	Range	0-10	0-5	0-6	0-7	
	Missing data	0	0	0	0	
Negative mood	Mean (SD)	1.56 (1.64)	5.42 (2.32)	1.56 (1.88)	3.59 (2.1)	p<0.001 *
	Median (quartiles)	1 (0-3)	6 (4-7)	1 (0-2)	3 (2-5)	
	Range	0-7	0-9	0-6	0-9	
	Missing data	0	0	0	0	
Emotion: joy	Mean (SD)	5.38 (1.02)	3.52 (1.2)	3.44 (1.1)	4.41 (0.82)	p<0.001 *
	Median (quartiles)	5.75 (4.75-6)	3.25 (2.75-4.25)	3.25 (2.75-4.5)	4.5 (4-5)	
	Range	2-7	1.25-6	1.75-5	2.75-6.25	
	Missing data	0	0	0	0	
Emotion: love	Mean (SD)	3.64 (1.24)	3.9 (1.13)	1.64 (0.64)	4.01 (0.86)	p<0.001 *
	Median (quartiles)	3.75 (2.75-4.5)	4 (3-4.75)	1.5 (1-2.25)	3.75 (3.25-4.5)	
	Range	1-7	1.5-6	1-2.5	2.75-6	
	Missing data	0	0	0	0	
Emotion: fear	Mean (SD)	2.43 (0.79)	5.02 (1.17)	1.89 (0.65)	3.65 (1.23)	p<0.001 *
	Median (quartiles)	2.5 (1.75-3)	4.75 (4.5-5.62)	2 (1.25-2.25)	3.75 (2.75-4.5)	
	Range	1-4.25	2.25-7	1-3	1.25-7	
	Missing data	0	0	0	0	

Examined variables		Group				p
		A (N = 87)	B (N = 31)	C (N = 9)	D (N = 41)	
Emotion: anger	Mean (SD)	2.86 (1.2)	5.23 (1.2)	3.08 (1.61)	3.74 (1.11)	p<0.001 *
	Median (quartiles)	2.75 (2-3.5)	5.25 (4.5-6.25)	2.5 (2-3.75)	3.75 (3-4.5)	
	Range	1-7	2.5-7	1-5.75	1.75-6.25	
	Missing data	0	0	0	0	
Emotion: guilt	Mean (SD)	2.24 (0.84)	5.04 (1.19)	1.56 (0.43)	3.2 (1.06)	p<0.001 *
	Median (quartiles)	2.25 (1.5-2.75)	4.75 (4.12-5.75)	1.75 (1.25-2)	3.25 (2.5-3.75)	
	Range	1-4.5	3.25-7	1-2	1.25-5.25	
	Missing data	0	0	0	0	
Emotion: sadness	Mean (SD)	2.06 (0.79)	5.46 (1.07)	2.08 (0.94)	3.82 (0.98)	p<0.001 *
	Median (quartiles)	2 (1.5-2.25)	5.5 (4.62-6.25)	1.75 (1.5-2.25)	4 (3.25-4.25)	
	Range	1-4.75	3.25-7	1-3.75	2-6.25	
	Missing data	0	0	0	0	
Gender	Girls	33 (37.93%)	28 (90.32%)	2 (22.22%)	27 (65.85%)	p<0.001 *
	Boys	50 (57.47%)	1 (3.23%)	6 (66.67%)	13 (31.71%)	
	No response	4 (4.60%)	2 (6.45%)	1 (11.11%)	1 (2.44%)	
Age	11	29 (33.33%)	6 (19.35%)	3 (33.33%)	6 (14.63%)	p = 0.272
	12	25 (28.74%)	8 (25.81%)	4 (44.44%)	10 (24.39%)	
	13	20 (22.99%)	10 (32.26%)	1 (11.11%)	13 (31.71%)	
	14-16	13 (14.94%)	7 (22.58%)	1 (11.11%)	12 (29.27%)	

- Mood: Generally lacks an overall positive mood, with a predominant overall negative mood, lacks of positive mood and occurrence of negative mood.
- Emotional Experience: Occasional experiences of joy and love, but frequent experiences of fear, anger, guilt, and sadness.
- Demographics: A clear predominance of girls in this profile (approximately 94%).

Profile 3:

This cluster represents adolescents with an average level of depressive symptoms, primarily characterized by negative psychosocial factors, yet without a strong dominance of negative mood or frequent negative emotions. The majority of respondents in this profile are boys. The key characteristics of individuals in this cluster (5%) are as follows:

- Depressive Symptoms: Average level of depression.
- Self-Efficacy: Low intensity of self-efficacy.
- Sense of Strength: Low intensity of the sense of strength.
- Sense of Perseverance: Low intensity of the sense of perseverance.
- Dispositional Coping: Very rarely engage in active coping strategies, with infrequent focus on emotions and no seeking of social support.
- Situational Coping: No engagement in active coping, no focus on emotions, and a definite lack of seeking social support.
- Loneliness: Moderate intensity of loneliness, with moderate emotional loneliness and high social loneliness.
- Mood: General positive mood is somewhat present but inconsistent, while general negative mood is mostly absent. Similarly, positive and negative moods are somewhat present but not dominant.
- Emotional Experience: Rarely experience joy or anger, and very rarely experience love, fear, guilt, or sadness.

- Demographics: A predominance of boys in this profile (approximately 72%).

Profile 4:
This cluster includes adolescents with average levels of depressive symptoms, but with a predominance of positive psychosocial traits. The majority of respondents in this group are girls. The key characteristics of individuals in this cluster (25%) are as follows:

- Depressive Symptoms: Average level of depression.
- Self-Efficacy: High intensity of self-efficacy.
- Sense of Strength: High intensity of the sense of strength.
- Sense of Perseverance: High intensity of the sense of perseverance.
- Dispositional Coping: Occasionally engage in active coping, sometimes focus on emotions, and sometimes seek social support.
- Situational Coping: Engage in active coping, with a neutral or uncertain tendency toward focusing on emotions and seeking social support.
- Loneliness: Moderate intensity of loneliness, including both emotional and social loneliness.
- Mood: General positive mood is somewhat present but inconsistent, and general negative mood is also somewhat present. Positive mood is generally not present, while negative mood tends to occur more often.
- Emotional Experience: Sometimes experience joy, love, fear, anger, and sadness, but rarely experience guilt.
- Demographics: A predominance of girls in this profile (approximately 67%).

4. Discussion

The cluster analysis identified four distinct groups of individuals who share similar characteristics across the examined variables. Based on these results, four distinct adolescent profiles were distinguished, each showing significant statistical differences. These profiles are ordered according to their prevalence:

Profile 1 (52%): This group comprises individuals with the lowest levels of depressive symptoms (developmental level). They are characterized by high self-efficacy, a predominant use of dispositional active coping, and a situational coping style that is difficult to define. They experience moderate levels of loneliness–among the lowest in the studied population–with average emotional loneliness and low social loneliness. They generally have a positive mood, with minimal general negative mood, frequently experiencing joy, occasional love, and very rarely (fear, guilt, sadness) or rarely (anger) negative emotions. This profile is predominantly composed of boys, making up 60% of the group.

Profile 4 (25%): This group includes individuals with elevated levels of depressive symptoms. They are characterized by a high sense of self-efficacy and utilize all studied dispositional coping styles. They predominantly use situational active coping, along with emotion-focused coping and seeking social support. They experience moderate levels of loneliness, with average levels of both emotional and social loneliness. Their mood is mixed, with occasional joy, love, fear, anger, and sadness, and rare experiences of guilt. This profile is predominantly composed of girls, making up approximately 67% of the group.

Profile 2 (18%): Individuals in this profile exhibit very high levels of depressive symptoms and low self-efficacy. They rely heavily on emotion-focused coping and seeking social support, both dispositionally and situationally. They experience significant loneliness, with high levels of emotional loneliness and average levels of social loneliness. Their mood is generally negative, with occasional joy and love, but they frequently experience negative emotions such as fear, anger, guilt, and sadness. This group is overwhelmingly composed of girls, accounting for about 94% of the profile.

Profile 3 (5%): This profile consists of individuals with elevated depressive symptoms, characterized by low self-efficacy and a lack of effective coping styles, both dispositional and situational. They experience moderate levels of loneliness, including average emotional loneliness and high social loneliness. Their overall mood tends to be positive, though they rarely experience joy and anger, and very rarely experience love, fear, sadness, or guilt. This group is predominantly made up of boys, approximately 72%. The characteristics suggest potential masked depression; however, due to the study's limitations in assessing other features of this disorder, a definitive conclusion cannot be drawn.

The literature identifies various degrees or levels of depression, each with distinct characteristics. The study results reveal two distinct profiles (Clusters 3 and 4) that both exhibit elevated levels of depressive symptoms. Despite some similarities in psychosocial variables such as loneliness, general positive mood, and general negative mood, there are statistically significant differences between these profiles.

Differences include:

- Psychosocial Characteristics: Self-Efficacy: Low in Cluster 3 and high in Cluster 4.
- Dispositional Active Coping: Very rare in Cluster 3 and sometimes occurring in Cluster 4.
- Dispositional Focus on Emotions: Very rare in Cluster 3 and sometimes occurring in Cluster 4.
- Dispositional Seeking of Social Support: Never in Cluster 3 and sometimes occurring in Cluster 4.
- Situational Active Coping: Never in Cluster 3 and occurring in Cluster 4.
- Gender.

In our study, there was no statistically significant relationship between depressive symptoms and the psychosocial characteristics studied and the age of the respondents. The results obtained may suggest the occurrence of different profiles characterised by a moderate level of depression, but without the lowered mood typical of depression and the dominance of experiencing negative emotions such as fear, anger, sadness, guilt, which confirms the position stating the heterogeneity of depression and the need to take this knowledge into account in the process of diagnosis, support and therapy. These findings may be of particular relevance in enhancing public awareness of the diversity of depressive images in children and adolescents and earlier treatment coverage for those with such symptoms (Loades, St Clair, Orchard, Goodyer, Reynolds, 2022).

Summary

The global mental health crisis among adolescents, marked notably by depressive symptoms, is a pressing concern that has garnered significant attention from researchers and social commentators alike. The findings from this study align with existing literature, confirming high levels of depression, notable associations between psychosocial factors and depression, and a greater prevalence of depressive symptoms in girls compared to boys.

The research highlights that adolescent well-being is closely linked to experiencing positive moods, joy, high self-efficacy, and effective stress coping strategies. These results underscore the need for intensified and gender-sensitive school-based interventions aimed at bolstering personal resources among youth (Adedeji, Otto, Kaman, Reiss, Devine et al., 2022; Essau, Torre-Luque, Lewinsoh, Rohde, 2020; Jull, Hjemdal, Anna, 2021). Such interventions should focus on enhancing intrinsic motivation, fostering a sense of agency, promoting active coping, evoking joy, and strengthening social connections (Cao, Zhu, Li, Zhang, Ding et al., 2022).

Moreover, literature suggests that multicomponent interventions grounded in positive psychology can significantly improve students' well-being and reduce depressive symptoms. These interventions contribute to flexible thinking, positive emotions, self-compassion, awareness of strengths, and satisfying relationships (Hongell-Ekholm, Londen, Fagerlund, 2024).

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Experiencing migraine and the assessment of the quality of life in the context of feeling ressentiment considering causes for increasing depression and anxiety[1]

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Abstract: Migraine is a chronic neurological disease. Research indicates that it has a significant negative impact on daily functioning and, consequently, on the quality of life. Migraine sufferers often experience psychological strain, which can lead to anxiety disorders, depression, and feelings of ressentiment. This article attempts at examining these threads. The study involved 120 women experiencing migraine headaches. The subjects completed several questionnaires: *Headache Impact Test (HIT-6)* – used to assess the impact of headaches on the life of a person with migraine; *Migraine Disability Assessment (MIDAS)* – to assess the disability of a person with migraine; *General Health Questionnaire – Goldberg (GHQ-28)* – to assess adults' mental health; *World Health Organization Quality of Life Test-Bref (WHOQOL-BREF)* – to assess the quality of life; *State-Trait Anxiety Inventory (STAI)* – to assess the severity of anxiety; *Beck Depression Scale* – a screening tool examining the presence and severity of depressive traits; and the Ressentiment Questionnaire. The results show that migraine significantly affects the quality of life of the surveyed women; moreover, ressentiment, as indicated in the research, causes feelings of anxiety and depression and plays an intermediary role in the relationship between migraine and quality of life. As migraines increase in severity and their consequences, the levels of anxiety, depression, and ressentiment increase as well, which negatively affects women's quality of life.

Keywords: quality of life, migraine, ressentiment, anxiety, depression

Introduction

Migraine is a chronic neurological condition. According to a 2019 report by the National Institute of Public Health of the National Institute of Hygiene entitled *The Social Significance of Migraine from a Public Health Perspective*, about 3,607,911 people in Poland meet the diagnostic criteria and suffer from it, while more than 8.1 million people experience symptoms suggestive of probable migraine (Czerw, 2019, p. 18-19). This disease is more common in women than in men, with a three-to-one ratio (Pavlovic et al., 2017). According to epidemiological data, around 50 million people in Europe suffer from migraine, and around two million experience an attack of the disease every day (Stępień, 2020b). Migraine is not an ordinary headache, but is one of the forms of primary headaches, the aetiology of which remains unclear. Migraine has a genetic basis, it manifests itself paroxysmal for most of life, and its frequency depends on the individual predisposition of the patient, the pain is severe and bothersome, most often affects one side of the head and may be accompanied by nausea, vomiting, photophobia, and hypersensitivity to sounds, although these symptoms can be diverse (Rożniecki et al., 2018). Migraine causes not only physical symptoms, but also mental ones. It is a disease that significantly limits the individual, affecting

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various aspects of his or her life (Buse et al., 2012). That is why it arouses interest not only among neurologists, but also psychologists, psychiatrists, doctors from other specialties, and epidemiologists. The wide prevalence of migraine and its impact on individual performance and quality of life has caused the World Health Organisation (WHO) to place migraine in the top twenty diseases that have a negative impact on the lives of people affected by this disease. A migraine patient feels the consequences in various areas of life. In addition to physical and mental symptoms, this burden also manifests itself on the social level, in family, partner, friend, and professional relationships, which is directly reflected on the economic level. Studies show that migraine sufferers are forced to miss work for an average of two to four days, taking an average of three painkillers. Moreover, many people with migraine avoid contact with relatives (24%) and participation in family and social gatherings (12%) for fear of a migraine attack (Stępień, 2009). Furthermore, about 90% of people affected by migraine experience some degree of inability to function, and 50% of them are forced to stay in bed. Most people affected by migraine experience a lack of understanding from their partners, family, superiors, co-workers, and even doctors. Only 33% of patients with migraine are regularly monitored by doctors (Domitrz, 2018). Studies show that people with migraine are more likely to develop mental disorders compared to people who do not suffer from the condition. Migraine significantly affects the quality of life and daily activity of the patient. In addition, a decrease in quality of life is observed during and between migraine attacks (Zhang et al., 2019).

The presented study focused on assessing the quality of life of women experiencing migraine, considering anxiety and depression as mediating factors that can lead to feelings of ressentiment. In addition to establishing the relationship between migraine severity and women's quality of life, the research questions sought to identify the relationship between migraine and the prevalence of anxiety and depression, and how these factors mediate between migraine and women's quality of life.

1. Migraine – triggers, quality of life including social costs

Migraine, which is one of the common diseases, has a genetic basis and is characterised by periodic episodes that occur irregularly for most of the patient's life. It is a chronic, paroxysmal disorder manifested by a primary headache (Amoozegar, 2017). Although migraine is classified as a disease of unknown origin, the exact causes of its occurrence have not been established to this day. Due to its nature, it is difficult to accurately diagnose this condition and find effective treatments. It is defined as a "frequent, chronic neurovascular disorder that impairs the body's efficiency, characterised by attacks of severe headaches" (Stępień, 2009, p. 6).

Migraine is distinguished from a regular headache by its characteristic features, such as intense, throbbing pain, usually affecting one side of the head (Stępień, 2019). It is often accompanied by nausea, vomiting, sounds and smells, and other symptoms, such as problems with vision, sensation, speech, dizziness, and balance disorders, while photophobia is one of the most characteristic symptoms of a migraine attack. Among people with this condition, photophobia occurs in 80-90% of patients (Rasmussen et al., 1991). The clinical picture of migraine is variable and unpredictable, occurring paroxysmal, and the pain can last from 4 to 72 hours (Domitrz, 2018). The theories describing the presumed pathomechanism of migraine headache are: vascular, neuronal, neuromyelitis, biochemical, central, and genetic theories (Zgorzalewicz, 2005).

Epidemiological studies suggest that migraine is experienced by 4% to 20% of the population of various races, while in Poland, it affects almost 10% of the population. This disease is three times more common among women (about 15-18%), while among men its frequence is 6-7% (Amoozegar, 2017). 90% of people with migraine develop attacks before the age of 40, and only 3% after the age of 60. About 25% of migraine sufferers have four or more attacks per month, 48% up to four, and 38% experience one severe attack per month. Migraine can also manifest itself in periods of remission of varying lengths. Migraine is considered a genetic disease because it has been observed to run in families over generations (Russell et al., 1996). It is estimated that the heritability of migraine is certain in 70% of cases, but there is no data yet on the exact mechanism of inheritance of this disease (Stępień, 2019). Studies in Canada show a high correlation between the incidence of depressive episodes in migraine patients in the general population of 17.6% and in other chronic diseases from 7.4% to 7.8% (Molgat & Patten, 2005).

Migraine interferes with daily activities in various areas of life, especially affecting quality of life (QL). In the 1990s, the WHO expanded the concept of QL to include three aspects: social, psychological, and physical. It was defined as a person's perception of her own life situation in the context of cultural conditions, a system of values and a relationship with their goals, norms, and interests (Słońska, 1999; Group, 1995). According to the PWN Encyclopedia (2024), QL means the "degree of satisfaction of material and non-material needs – meeting standards or realisation of the following values: biological, psychological, spiritual, social and political, cultural, economic, and ecological of individuals, families and communities; is a concept used in social policy, psychology, medicine, economics, and sociology" (ibidem).

A complete analysis of the quality of life of patients with headaches, in addition to assessing medical aspects such as reducing the frequency and intensity of headaches, also includes social, emotional, and spiritual assessments. Thanks to questionnaires on quality of life, we can understand to what extent the disease can affect relationships with other people, the ability to express emotions, their intensity and the way they perceive the world (Tobiasz-Adamczyk, 2013). Assessing the quality of life of children with headaches allows us to understand their health status and ability to play an active role in society, including the school environment. Comprehensive assessment of treatment, based on the measurement of quality of life, allows for optimal selection of therapy and may affect the effectiveness of treatment and minimisation of side effects. The choice of medication for patients with headaches, such as tension migraine, may be partly determined by the impact on the patient's quality of life. In the literature, we can also find studies that assess the quality of life of patients with headaches using other general questionnaires, such as the Paediatric Quality of Life Inventory (PedsQL) (Varni et al., 2001). A report by the World Health Organisation places migraine among the twenty most troublesome ailments that significantly affect daily functioning. Migraine headache is one of the most intense and exhausting, often leading to a significant reduction in physical activity. Most people affected try to self-medicate by gradually increasing the dose of painkillers used, which can result in increased frequency and severity of pain. Sometimes, excessive consumption of drugs can lead to some degree of impairment of an individual's functioning. Research conducted in Sweden suggests that migraine attacks can also negatively affect the partners of people suffering from this ailment: "self-medication of people with migraine leads in most cases to an increase in the frequency and intensity of headaches, and over time to their chronication" (Moneta et al., 2018, p. 32). Research conducted in the United States and the United Kingdom suggests that people affected by migraine often experience a deterioration in partner relationships, which may be related to depressive reactions to relationship difficulties. Migraine was observed in 89 women and 19 men, most of whom were in the 20-40 age group. Women with migraine also reported lower libido, greater discomfort during sexual intercourse, and lower levels of satisfaction compared to women without migraine, leading to a decrease in quality of life (Pradeep et al., 2020). Many people with migraine avoid contact with loved ones (24%) and family and social gatherings (12%) for fear of a migraine attack. Moreover, about 90% of migraine sufferers experience some degree of disability, and 50% of them are forced to stay in bed (Stępień, 2020). People with migraine often feel remorse and shame about migraine pain, and most patients face a lack of understanding from partners, family, employers, co-workers, and even doctors (Domitrz, 2018). Although migraine does not last all the time, but occurs in paroxysmal moderation, it significantly affects daily functioning. People with migraine focus on potential triggers of the attack and try to control every activity to prevent migraine. Constantly thinking about avoiding these factors interferes with normal functioning and impairs quality of life (Moneta et al., 2018). Another aspect that the link between sleep and primary headaches has been known for over a century, especially for headaches that occur at night or early in the morning. Migraine, tension headache, and cluster headache can cause sleep fragmentation, insomnia, and excessive sleepiness, resulting in significant social and economic costs and a deterioration in quality of life. Sleep disorders, on the other hand, can cause headache attacks on their own. Despite this background, there is still no clarity on the mechanism linking the two entities, and their interdependence remains to be determined (Aguggia et al., 2011).

Migraine also affects the economic status of the affected person, as they are often unable to work. According to research, a person suffering from migraine misses an average of two to four days of work, taking about three painkillers (Stępień, 2009). During a migraine attack, they are often met with a lack of understanding from co-workers and employers, which can lead to reduced productivity at work or the need to take time off. This can trigger worries about job loss and financial stability, which generates additional stress, which in turn exacerbates migraine. After the pain subsides, these people often have to catch up on work, which is sometimes associated with unfavourable comments from colleagues and superiors, which further increases tension. Moreover, using painkillers can cause negative side effects, which can also affect daily activities, including professional work (Yang et al., 2016). Support and understanding from the community are also important. Lack of this can result in withdrawal from social activity, which can aggravate migraine attacks, depression, and anxiety disorders. And the "most common causes of migraine are psychological. Patients themselves often name them. Others, on the contrary, for fear of being considered mentally ill, prefer to keep quiet about them" (Loisy et al., 1992, p. 85).

Migraine leads to numerous limitations affecting the quality of life taking into account the social costs in both physical and mental functioning, which affects partner, family, professional and economic relationships. It is often accompanied by depression and anxiety disorders, further reducing the quality of life of the patient and their relatives. Patients often experience isolation, misunderstanding, and even stigmatisation, which affects their self-esteem and self-esteem. People with migraine bear not only the costs of pharmacological treatment, but also social and psychological costs, which negatively affects their quality of life.

1.1. Some of the relationships between the onset of migraine pain and the occurrence of anxiety and depression

Depression is the most commonly diagnosed mental disorder, and people with this condition often seek treatment for various somatic diseases associated with chronic headache and anxiety (Bigal & Lipton, 2009). Research suggests that depression is the most common accompanying migraine disorder, affecting up to 28% of people with migraine headaches (Stępień et al., 2021). The relationship between migraine and anxiety disorders is about 70%, with these ailments interacting with each other (Stępień, 2009). The coincidence of migraine with generalised anxiety is up to 9%, with panic disorder it reaches 16%, and with phobias up to 60%. Thus, the risk of diagnosing one of the anxiety disorders in people with migraine is much higher compared to people without migraine: for generalised anxiety it is three to ten times more, for panic disorder three to ten times more, and for phobia it is three times higher (Dudek et al., 2009). Stępień (2011) also notes that people with migraine experience panic attacks twelve times more often than people without migraine. A panic attack during migraine is mainly manifested by severe anxiety, palpitations, numbness of the limbs or their feeling of cold, and fear of death. In both cases, nausea, vomiting, and dizziness may occur during both a panic attack and a migraine. A study conducted by Lilian Dindo et al. (2017) on a group of 227 people aimed to evaluate the relationship between migraine and generalised anxiety disorder in adolescents and young adults. It was observed that the occurrence of anxiety disorders is associated with a high risk of migraine attacks in about 55%. Other studies also confirm the coexistence of migraine with various psychiatric disorders, especially anxiety disorders. According to a study conducted in Colombia in 2007, where 89 patients aged 18 to 65 were examined, it was found that 14.6% of people had generalised anxiety disorder, 5.6% panic disorder, 6.7% social phobia, 5.6% specific phobias, and 2.2% obsessive-compulsive disorder. In addition, 19.1% of the respondents (17 people) were diagnosed with co-occurrence of two different mental disorders; comorbidity of migraine and major depressive disorder was found in 21.3% and dysthymia in 4.5% of the subjects (Cardona-Castrillon et al., 2007).

There are two perspectives from which to look at the relationship between migraine and anxiety. The first hypothesises that anxiety disorders can cause migraine attacks (Breslau et al., 1994), while the second suggests that migraine can cause anxiety and lead to anxiety disorders (Oedegaard & Fasmer, 2005). Available research also indicates that anxiety disorders, especially phobias, may occur before migraine and be its potential trigger in the future (Dudek et al., 2009). In the presented analysis, I assume that migraine is a predictor of anxiety intensity, and the degree of anxiety felt during migraine depends on the frequency of its attacks. In other words, the more frequent the migraine attacks, the higher the level of anxiety. Anxiety can therefore increase with the frequency of migraine, which negatively affects the physical and mental state. Migraine sufferers often feel like they are out of life, focused on pain and feeling bad in general. Therefore, reducing the frequency of migraine attacks leads to a greater sense of control over the disease and improved overall self-esteem. Moreover, migraine headaches can contribute to anxiety disorders not only by experiencing them, but also by the associated increased fatigue and a sense of helplessness. In addition, the inability to predict the occurrence of a migraine attack leads to a sense of loss of agency over one's own health, which additionally causes anxiety, and "repeated pain reduces vitality and increases the sense of fatigue, moreover, they can distort one's self-image and reduce the sense of control, which deepens depression" (Kocwa-Karnaś & Domitrz, 2018, p. 59).

In conclusion, there is solid epidemiological evidence supporting the co-occurrence of migraine and anxiety disorders. However, many factors in this common relationship are not yet fully studied. It is likely that both states are complex, with many factors influencing their development. The coexistence of anxiety disorders and migraine is associated with higher therapy costs, increased loss of ability to work, uncertain prognosis, and the risk of migraine turning from episodic to chronic. For this reason, those affected by migraine should be routinely evaluated for psychiatric disorders, including anxiety disorders, which should be treated to improve the patient's quality of life and the effectiveness of migraine therapy (Krysta, 2021).

1.2. In search of links between the appearance of anxiety and depression in the context of ressentiment

Previously, it was found that the experience of migraine and depression may closely correlate with past fears, as sometimes an individual may unconsciously overlook the impact of traumatic events and the emotions associated with them affect their current adult life (Bidzan, 2013). Emotions related to it have many important functions (Ekman & Davidson, 2017) signalling danger, enabling an adequate response to hunger or pain. In this context, it is worth recalling Paul Ekman's views related to seven basic emotions: anger, fear, disgust, surprise, joy, sadness, and contempt (Keltner & Ekman, 2005). Against this background, it is also necessary to note more complex emotional states such as jealousy, shame, a sense of harm, and hatred, which give rise to ressentiment. Therefore, in this approach, the definition proposed by Dąbrowski (2012, p. 321), which says that "emotions are psychophysical states of emotional nature caused by physiological and neuronal changes, having a cognitive-evaluative component and motivating power, which are usually accompanied by external expression and action" in the light of fear, is important.

The phenomenon of ressentiment as a negative emotion against the background of fear, derived from tensions in social relations, especially in the psychic individual, has been scientifically studied since 1887. This term was first used by Friedrich

Nietzsche, who presented ressentiment as an attitude and a source of morality in people with a weak psyche and slave mentality, standing in contradiction with the original active morality, realising the will of power of dominant people. At the beginning of the 20th century, two German social thinkers, Max Weber and Max Scheler, became interested in the phenomenon of ressentiment again. Therefore, despite the passage of time, the importance of presenting this concept does not diminish. Max Weber wrote in his book *Sociology of Religion*: "The factor of resentment (ressentiment) thus achieved importance in the Jewish ethical salvation religion, although it had been completely lacking in all magical and caste religions. Resentment is a concomitant of that particular religious ethic of the disprivileged which, in the sense expounded by Nietzsche and in direct inversion of the ancient belief, teaches that the unequal distribution of mundane goods is caused by the sinfulness and the illegality of the privileged, and that sooner or later God's wrath will overtake them. In this theodicy of the disprivileged, the moralistic quest serves as a device for compensating a conscious or unconscious desire for vengeance" (Weber, 1965, p. 110). Therefore, an "inhibited and suppressed set of negative emotions applies not only to the psychological experiences of an individual, but can also be transferred to emotional states or components of attitudes" during the onset of anxiety or depression (Karbowski, 2023c, p. 57). According to Scheler's assumption in the book *Ressentiment*, the desire for vengeance in a given context evolves into vindictiveness, and the strengthening reflex of vengeance can be transferred to other objects with a certain common element. The lack of satisfaction of this need can grow to the point where the concept of "duty" becomes dominant, which in turn can "even lead to spiritual decay and death" (Scheler, 2022, p. 23). Ressentiment manifests itself as a negative feeling resulting from childhood insufficiency, which generates a permanent mental state. This state is the result of various emotional reactions. It can transform these feelings into vengeance, without direct action, inducing hatred but avoiding direct harm, which in turn causes jealousy (Karbowski, 2023b, p. 202). According to cross-sectional studies by Demır and Bozkurt (2020), negative emotions, associated with personal experiences, can significantly correlate with the clinical characteristics of migraine and depression and on the overall emotional state. Therefore, experiences related to anxiety and depression create negative emotions and emerging ressentiment. A person who has experienced negative situations in illness falls into rumination, which can become a trigger for memories of the past, related to the sense of injustice, triggering feelings of vengeance, hatred, or jealousy (Herman, 2024). Predisposing factors to disorders resulting from such experiences in adult life, analysed in the context of ressentiment, cause specific emotional reactions. These reactions, while natural and appropriate, can sometimes be inhibited and suppressed within the developing personality, which can lead to certain illusions about values. It can be assumed that some common pathophysiological mechanism is responsible for the co-occurrence of anxiety and depression in the context of ressentiment (Krysta, 2021). Therefore, Stępień (2009) reports that the risk of depression in people with migraine is two to four times higher than in people without migraine. On the other hand, Dudek et al. (2009) state that a person with migraine is five times more likely to develop depression than one without migraine. On the other hand, people experiencing depression are burdened with a three times higher risk of migraine than those without depression. Depression co-occurring with migraine and anxiety in the feeling of negative emotions also raises a higher risk of suicide (Stępień, 2009). Moreover, in the search for connections between the appearance of anxiety and depression in the context of ressentiment, the literature on the subject provides etiological factors of co-occurrence, and these are:

- genetic factors, because studies indicate that there is a higher risk of depression in relatives of people with migraine, which is confirmed by studies on twins. Conversely, it has also been found that people with depression are more likely to suffer from migraine, with this relationship being particularly strong (Yang et al., 2016);

- hormonal factors, such as oestrogens, which affect neurotransmitters, such as serotonin and norepinephrine, and progesterone, which controls the enzyme that breaks down serotonin, may be important for the occurrence of migraine;
- factors related to the neurotransmitter and receptor system – the serotonergic system, which is disrupted in both depression and migraine. In the case of depressive disorders, serotonin levels are reduced, while during a migraine attack, this level increases significantly and then decreases between attacks. Antidepressants, such as selective serotonin reuptake inhibitors and tricyclic antidepressants, are used and sometimes effective in people with migraine (Wachowska et al., 2023);
- personality factors – research by Bhatia and Gupta (2012) shows that people suffering from migraine often show histrionic, anxious, anankastic, and dysthymic traits while experiencing envy and jealousy. Moreover, the literature indicates a relationship between neurotic personality and the tendency to comorbidity of depression and migraine, with 25% of sufferers ranked in the highest quartile of neuroticism (Breslau & Andreski, 1995);
- factors indicating a functional disorder of the central nervous system – pain and depression, which are biologically determined, are associated with a specific brain function or hypersensitivity of the central nervous system. They mainly affect areas such as the amygdala, the anterior cingulate cortex, and the periaqueductal grey matter. These areas are part of the limbic system, called the emotional brain, which regulates emotions (Wachowska et al., 2023).

Analysis of these factors indicates that chronic pain is a common reaction to the appearance of anxiety and depression. Research suggests that depression affects about 70% of people with pain, who often mask depression by manifesting it in the form of a migraine, which supports the statement that a headache is a metaphor for worry (Dudek & Krupa, 2021). Moreover, the authors conclude that migraine attacks can also cause depression, and the presence of a depressive reaction deepens the experience of pain, which leads to negative emotions, creating a sense of ressentiment.

2. Own research

2.1. Research Subject and Aim

The research subject is the analysis of the assessment of the quality of life of women experiencing migraine and the psychological effects caused by this disease, with particular emphasis on the severity of anxiety and depression in the context of the sense of ressentiment. The aim is to investigate the relationship between migraine and women's quality of life. It is also important to demonstrate the impact of negative emotions related to ressentiment during the experience of migraine on anxiety and depression, with the assessment of women's quality of life.

2.2. Research problems and hypotheses

The research problem is to examine the quality of life of women suffering from migraine, taking into account mediating factors such as anxiety and depression. For this purpose, the following research questions have been formulated:

1. What is the relationship between the severity of migraine and quality of life?
2. What is the relationship between the severity of migraine and anxiety?
3. What is the relationship between the severity of migraine and the occurrence of depression?
4. Does anxiety mediate the relationship between migraine and quality of life?
5. Does depression mediate the relationship between migraine and quality of life?

In turn, the hypotheses suggest answers to the research questions:

H1. There is a relationship between the severity of migraine and quality of life. The greater the severity of migraine and its effects, the worse the quality of life.

H2. There is a relationship between the severity of migraine and anxiety. The greater the severity of the migraine and its effects, the higher the level of anxiety.

H3. There is a relationship between the severity of migraine and the occurrence of depression. The greater the severity of migraine and its effects, the more depressive symptoms.

H4. It is assumed that anxiety significantly mediates the relationship between migraine and quality of life.

H5. It is believed that depression significantly mediates the relationship between migraine and quality of life.

2.3. Variables and their indicators

The dependent variable is the quality of life of women experiencing migraine. This variable was measured by the WHOQOL-BREF questionnaire. The independent variable is migraine, which was measured by the MIDAS and HIT-6 questionnaires, this variable also has an inferential index. The mediating variables, on the other hand, are anxiety and depression and a sense of ressentiment.

2.4. Data collection method and research tools

The method of a diagnostic survey was used, and the tests were carried out in paper form. At the initial stage, the respondents were to answer the questions included in the imprint, and the used tools included:

1. *Headache Impact Test* (HIT-6) – is a tool used to assess the impact of headaches on the life of the person experiencing it.
2. *Migraine Disability Assessment* (MIDAS) – a questionnaire assesses the disability of a person who experiences migraine. The respondent evaluates by giving the number of days – the effects caused by migraine in the last three months, such as life activities such as: professional work, productivity, work at home, social and family meetings, entertainment.
3. *General Health Questionnaire – Goldberg* (GHQ-28) – is based on the basic version of David *Goldberg's General Health* questionnaire GHQ-28 is used to assess mental health in adults.
4. *World Health Organisation Quality of Life Test-Bref* (WHOQOL-BREF) – is used to assess the quality of life of sick and healthy people.
5. *State-Trait Anxiety Inventory* (STAI) – a questionnaire to study anxiety as a transient, situational state of a person, but also anxiety as a permanent personality trait.

Table 1. Distribution of the number of respondents (N = 120) due to education, marital status, place of residence, professional activity, migraine diagnosis, type of migraine

		Frequency	Percentage
Education	average	30	25.0
	bachelor's degree	18	15.0
	master's degree	72	60.0
Marital status	miss	14	11.7
	married	70	58.3
	divorced or separated	8	6.7
	in an informal relationship	26	21.7
	lonely	2	1.7
Domicile	village (less than 5,000 inhabitants)	34	28.3
	small town (5-100,000 inhabitants)	24	20.0
	a large city (over 100,000 inhabitants)	62	51.7
Professional activity	student	16	13.3
	working	96	80.0
	unemployed	6	5.0
	pensioner	2	1.7
Is the migraine diagnosed	yes	96	80.0
	no	24	20.0
Type of migraine	no aura/straight	24	20.0
	with aura/classic	36	30.0
	chronic	14	11.7
	sporadic	2	1.7
	paralysed/hemipial	2	1.7
	ocular	4	3.3
	menstrual/hormonal	14	11.7
	likely	2	1.7
	vestibular	2	1.7
	indeterminate migraine	20	16.7

6. *The Beck Depression Scale* is a screening tool, a short one. This questionnaire indicates the presence and severity of depressive features.
7. *Ressentiment questionnaire* – to explain and formalise the key variables included in the questionnaire, an introductory instruction to the pentabase method is presented.

2.5. Characteristics of the Study Group

The study was conducted with a group of women, as the results of many studies suggest that they are the ones who suffer from migraines much more often than men (Stępień, 2009). The selection of the group was therefore purposive. The study included 120 women, ranging in age from 19 to 66 years; with a secondary education of 25%, a bachelor's degree of 15% and a master's degree of 60%. The vast majority of the respondents were employed - 80%; studying - 13.3%; unemployed were 5% and 1.7% of the respondents were pensioners. The majority of women who took part in the survey were married - 58.3%, 6.7% were divorced or separated, 21.7% were in informal relationships, 11.7% were single and 1.7% described themselves as single. 83,3% of the women participating in the study were diagnosed with migraine and type of migraine and 16.7% with unspecified migraine. The percentage distribution of results specific to the study group is shown in Table 1.

3. Research results

The research was carried out in paper form. Detailed descriptive statistics of the variables included in the study are presented in Table 2.

For most variables, the K-S test and the Shapiro-Wilk test are not statistically significant, as shown in Table 3. It points out that the distribution of results

Table 2. Descriptive statistics of the variables included in the study

Descriptive statistics	N	Minimum	Maximum	Average	Standard deviation	Skewness		Kurtosis	
	Statistics	Statistics	Statistics	Statistics	Statistics	Statistics	Standard Error	Statistics	Standard Error
Overall quality of life	120	1	4	3.10	.986	-.754	.309	-.561	.608
Self-assessment of health status	120	1	5	2.45	.964	.381	.309	-.319	.608
WHOQOL Physical Domain	120	6.29	18.29	12.5143	2.92074	-.128	.309	-.831	.608
Psychology field WHOQOL	120	4.00	16.67	11.3556	2.99143	-.329	.309	-.459	.608
WHOQOL Social Relations	120	5.33	20.00	13.2222	3.52589	-.123	.309	-.353	.608
WHOQOL Environment	120	8.00	19.00	13.3333	2.38403	.319	.309	-.132	.608
WHOQOL.sum	120	36.71	78.10	55.9754	10.75752	.065	.309	-.722	.608
Anxiety-STAI state.X1	120	39.00	75.00	51.6833	8.35746	.742	.309	.248	.608
Anxiety – a trait of STAI.X2	120	33.00	74.00	52.0000	9.53850	.159	.309	-.277	.608
STAI.sum	120	75.00	149.00	103.6833	16.76810	.641	.309	.052	.608
Beck Depression Scale	120	.00	50.00	15.7333	11.10789	1.149	.309	1.467	.608
HIT6.sum	120	52.00	74.00	64.6500	4.63526	-.582	.309	.593	.608
MIDAS.sum	120	2.00	280.00	48.7000	48.73668	2.384	.309	8.062	.608
MIGRENA	120	54.00	351.00	113.3500	51.21335	2.194	.309	7.189	.608
Somatic symptoms	120	11.00	28.00	18.3667	4.26641	.293	.309	-.714	.608
Anxiety and insomnia	120	11.00	28.00	18.3000	4.79866	.387	.309	-.877	.608
Functional disorders	120	12.00	26.00	17.6333	3.51253	.603	.309	-.259	.608
Symptoms of depression	120	7.00	28.00	12.7000	5.73511	1.289	.309	1.096	.608
GHQ-28 General Health	120	44.00	101.00	67.0000	15.08844	.574	.309	-.399	.1208

Table 3. Normality of distribution tests for variables included in the study

	Kolmogorov-Smirnova			Shapiro-Wolf		
	Statistics	Df	Significance	Statistics	Df	Significance
Overall quality of life	.269	120	.000	.806	120	.000
Self-assessment of health status	.246	120	.000	.891	120	.000
WHOQOL Physical Domain	.091	120	.200	.977	120	.316
Psychology Field WHOQOL	.086	120	.200	.975	120	.258
WHOQOL Social Relations	.129	120	.014	.968	120	.116
WHOQOL Environment	.090	120	.200	.978	120	.347
WHOQOL.sum	.065	120	.200	.973	120	.209
Beck Depression Scale	.136	120	.008	.913	120	.000
HIT6.sum	.130	120	.013	.956	120	.030
MIDAS.sum	.175	120	.000	.779	120	.000
Somatic symptoms	.118	120	.036	.970	120	.146
Anxiety and insomnia	.108	120	.077	.950	120	.015
Functional disorders	.146	120	.003	.950	120	.016
Symptoms of depression	.167	120	.000	.847	120	.000
GHQ-28 General Health	.083	120	.200	.950	120	.016
Anxiety-STAI state.X1	.135	120	.008	.946	120	.010
Anxiety – a trait of STAI.X2	.077	120	.200	.987	120	.766
STAI.sum	.083	120	.200	.964	120	.075
MIGRENA	.162	120	.000	.816	120	.000

of a given variable is significantly different from the normal one, which is why non-parametric tests were used in further statistical analyses. For correlations between the variables, rhoSpearman was used for these statistical analyses using the SPSS 26 tool. Study of mediating compounds based on simple and multiple regression analysis used the medmod module in the JAMOVI program.

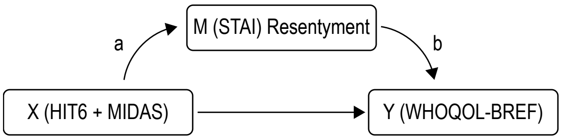

Figure 1. A conceptual diagram of the mediation model capturing the mediating role of anxiety on the relationship between the experience and effects of migraine and quality of life in the conceptualisation of ressentiment

In my project, a conceptual model was built, which is shown in Figure 1. In order to verify the hypothesis of the mediating role of *fear* in the relation of *migraine's* experience to the *quality of life* in the conceptualisation of ressentiment. This model contains the following variables:

- Independent variable X – *migraine* – HIT6 questionnaire on the effects of headaches, MIDAS questionnaire assessing the impact of migraine attacks on functional efficiency; the results of both these variables were aggregated (summed) into one *migraine* variable.
- Dependent variable Y – *quality of life* – the WHOQOL-BREF questionnaire for assessing the quality of life, which contains 26 questions analysing four areas of life and separately the perception of quality of life and self-assessment

Table 4. Results of correlation analyses between the variables included in the study

Correlations			Beck Depression Scale	HIT6. sum	MIDAS. sum	MIGRENA	WHOQOL. sum	Anxiety-STAI state.X1	Anxiety – a trait of STAI. X2	STAI. sum
rho-Spearman	Beck Depression Scale	Correlation coefficient	1.000	.459**	.552**	.549**	-.771**	.629**	.756**	.771**
	HIT6.sum	Correlation coefficient	-	1.000	.586**	.650**	-.410**	.449**	.332**	.401**
	MIDAS.sum	Correlation coefficient	-	-	1.000	.993**	-.574**	.421**	.382**	.418**
	MIGRENA	Correlation coefficient	-	-	-	1.000	-.566**	.447**	.386**	.431**
	WHOQOL. sum	Correlation coefficient	-	-	-	-	1.000	-.641**	-.714**	-.741**
	Anxiety-STAI state.X1	Correlation coefficient	-	-	-	-	-	1.000	.709**	.883**
	Anxiety – a trait of STAI.X2	Correlation coefficient	-	-	-	-	-	-	1.000	.946**
	STAI.sum	Correlation coefficient	-	-	-	-	-	-	-	1.000

**. Correlation significant at 0.01 (bilateral)

of health. For this study, a variable summing the results from all subscales of this questionnaire (WHOQOL.sum) was created.

- Mediator M – *anxiety* – STAI *Anxiety Inventory and Anxiety traits* (in this study, the STAI X1 and X2 scales were aggregated into one variable: *anxiety* and *ressentiment*.

3.1. Analysis of correlations between variables

For the study of mediating relationships between variables, it is important that the variables included in the model are correlated with each other, hence correlation analyses were carried out for all variables included in the study in Table 4.

Correlations between all variables included in the designed model were statistically significant.

The assessment of quality of life, which is the dependent variable in this study, correlates significantly:

- Strongly and negatively with a theorised mediator, i.e., the severity of depressive symptoms (*Beck Depression Scale*) rs = -0.77, p<0.01. Higher scores on the *Beck Depression Scale* are associated with lower scores on quality of life.
- Strongly and negatively with the theorised mediator, i.e., anxiety (STAI.sum) rs = -0.74, p<0.01 and with its two components, i.e., anxiety-state rs = -0.64, p<0.01 and anxiety-trait (STAI.X2) rs = -0.71, p<0.01. The lower the intensity of anxiety, the better the assessment of the quality of life. Anxiety as a trait is more strongly correlated with the assessment of the quality of life than anxiety as a state.
- Moderately and negatively with the independent variable, i.e., the severity and effects of migraine (*migrena*) rs = -0.57, p<0.01. The more severe the

migraine experience, the lower the quality of life rating. Correlations were also tested separately for the components of the *migrena* variable. The results show that the scores obtained in the MIDAS questionnaire are more strongly negatively correlated with the quality of life (rs = -0.57, p<0.01) than the scores obtained in the HIT6 questionnaire (rs = -0.41, p<0.01).

- Anxiety, which is a mediator in this study, correlates significantly:
- Strong and positive with severity of depressive symptoms (*Beck Depression Scale*) rs = 0.77, p<0.01. The greater the intensity of anxiety, the greater the intensity of depressive symptoms.
- Weak and positive with the independent variable, i.e., severity and effects of migraine (*migrena*) rs = 0.43, p<0.01. The greater the severity of the migraine, the greater the anxiety.

The severity and effects of migraine correlate significantly, moderately, and positively with the severity of depressive symptoms rs = 0.55, p<0.01. The greater the severity and effects of migraine, the greater the intensity of depressive symptoms and ressentiment.

4. Discussion of results

At the beginning, it is necessary to mention the research objective, i.e., to determine the quality of life of women with migraine, considering the mediating variables of anxiety and depression in the context of the sense of ressentiment. Another objective was to identify the relationship between migraine and anxiety and depression, as well as the mediation of these variables between migraine and women's quality of life. The theoretical and empirical part has been constructed in such a way as to explain the research problems.

The first research question was about the relationship between the severity of migraine and the quality of life. The results of the study showed that the more severe the experience of migraine and its effects, the lower the assessment of the quality of life in the surveyed women. The second question concerned the relationship between migraine and anxiety. The results of the study indicate that the greater the severity of migraine, the greater the level of anxiety. The third question concerned the relationship between migraine and the occurrence of depression. The results of the study showed that the severity and effects of migraine significantly affect the severity of depressive symptoms. The fourth question concerned the mediation of anxiety, and the fifth question concerned the mediation of depression in the relationship between migraine and quality of life. The study has confirmed that anxiety and depression mediate the relationship between migraine and women's quality of life in the context of ressentiment.

The research shows that:

- Anxiety significantly mediates the relationship between the severity of migraine and the assessment of quality of life and ressentiment.
- The severity and effects of migraine significantly affect the feeling of anxiety, and anxiety, in turn, significantly affects the assessment of quality of life.
- The severity of depressive symptoms significantly mediates the relationship between the severity of migraine and the assessment of quality of life.
- The severity and effects of migraine significantly affect the severity of depressive symptoms, while the severity of depressive symptoms significantly affects the assessment of quality of life.

The verification of the research hypotheses is described below.

In order to verify the hypotheses, correlations between these variables were analysed. Hypothesis 1 was confirmed – the quality of life correlates significantly, moderately, and negatively with the severity and effects of migraine. The more severe the experience of migraine and its effects, the lower the quality of life rating.

In order to verify this hypothesis, correlations between these variables were analysed. Hypothesis 2 was confirmed – anxiety correlated weakly and positively with the severity and effects of migraine. The greater the severity of the migraine, the greater the anxiety. This hypothesis is confirmed by anxiety as a state and as a trait. At the same time, the correlation for anxiety – state is stronger than the correlation with anxiety as a trait.

In order to verify this hypothesis, correlations between these variables were analysed. Hypothesis 3 was confirmed. The severity and effects of migraine correlate significantly, moderately, and positively with the severity of depressive symptoms. The greater the severity and effects of migraine, the greater the severity of depressive symptoms. In order to verify this hypothesis, a regression analysis model was analysed. Hypothesis 4 was confirmed. The results showed that anxiety acts as a mediator between the severity of migraine and the assessment of quality of life. The greater the severity of migraine and its effects, the greater the anxiety, and this in turn manifests itself in a more negative assessment of the quality of life. Analysis of the indirect effect shows that anxiety significantly mediates the relationship between the severity of migraine and the assessment of quality of life. The severity and effects of migraine significantly affect anxiety, and anxiety, in turn, significantly affects the assessment of quality of life and ressentiment. The obtained own results show the occurrence of partial mediation, because after considering the mediating role of anxiety, the direct effect of the severity and effects of migraine on the assessment of the quality of life is also significant. An indirect effect of the mediating role of anxiety is explained by 53.6% of the variance of the variable assessment of quality of life. Moreover, a mediation model was analysed, where the mediator in the relationship between migraine severity and the assessment of quality of life was anxiety as a state, because the variable anxiety includes not only anxiety as a state, but also anxiety as a trait. Analysis of the indirect effect shows that anxiety as a state significantly mediates the relationship between the severity of migraine and the assessment of quality of life. The severity and effects of migraine significantly affect the anxiety experienced, and in turn, the anxiety significantly affects the assessment of the quality of life. The results show the occurrence of partial mediation, because after considering the mediating role of anxiety as a condition, the direct effect of the impact of the severity and effects of migraine on the assessment of quality of life is also significant. An indirect effect of the mediating role of anxiety as a state explains 46.3% of the variance of the variable assessment of quality of life.

A regression analysis model was performed to verify this hypothesis. Hypothesis 5 was confirmed – the results showed that the severity of depressive symptoms acts as a mediator between the severity of migraine and the assessment of quality of life. The greater the severity of migraine and its effects, the greater the severity of depressive symptoms, and this manifests in a more negative assessment of the quality of life. The analysis of the indirect effect shows that the severity of depressive symptoms significantly mediates the relationship between the severity of migraine and the assessment of quality of life. The severity and effects of migraine significantly affect the severity of depressive symptoms, and in turn, the severity of depressive symptoms significantly affects the assessment of quality of life. The results show the occurrence of partial mediation, because after considering the mediating role of the severity of depressive symptoms, the direct effect of the impact of the severity and effects of migraine on the assessment of quality of life is also significant. An indirect effect of the mediating role of the severity of depressive states is explained by 59.9% of the variance of the variable assessment of quality of life. One of the previously cited studies can also be cited on the subject of depression. These were cross-sectional studies (Dudek et al., 2009) that indicate that 28.1% of people with migraine experienced an episode of moderate or severe depression, while the control group had a score of 10.3%. The severity and effects of migraine correlate significantly, moderately, and positively with the symptoms of depression. Similarly, the greater the severity and effects of migraine, the greater the intensity of depressive symptoms and a sense of ressentiment.

To sum up the discussion, it can be said that the topic of this work has been analysed, which allowed to solve the research problems and confirm the hypotheses. In the future, it is worth conducting research on a larger sample that could reach a broader group of people, not just those with migraine, to increase general public's awareness and understanding. The implication of such studies could be an increase in the previously mentioned level of general social understanding for people with migraine and an expansion of the directions of both pharmacological and non-pharmacological treatment.

Summary

The subject matter of this paper concerned the quality of life of women with migraine, considering the role of anxiety and depression as factors co-occurring with migraine and indirectly affecting the quality of life in the context of ressentiment. Some conclusions can be drawn for the sake of summary. People with migraine bear many costs of this disease. These are not only those related to physical pain and its treatment, but also social and psychological. The study results and their analysis indicate that a significant proportion of respondents with migraine are predisposed to anxiety and depressive disorders with a sense of ressentiment.

They mostly coincide with the data from the literature presented before. Stępień (2015) writes that as many as 90% of people experiencing migraine develop an attack before the age of 40. The average age of the women surveyed by the authors was 16.82. In turn, Domitrz (2018) indicates that migraine without aura is experienced by 75% of people with migraine, and aura symptoms are experienced by about 15-30% of patients.

In the presented research, the results indicate that the greater the intensity of migraine, the greater the level of anxiety and sense of ressentiment. Moreover, anxiety significantly mediates the relationship between the severity of migraine and the assessment of quality of life, so it does not necessarily precede migraine, but may be its effect. However, although the co-occurrence of migraine with anxiety disorders has been supported by Dindo's (2017) research, many factors of the interaction of migraine and anxiety disorders are not fully understood. Other studies show that "anxiety disorders (especially phobias) precede migraine and may be a predictor of its later development" (Dudek et al., 2009, p. 112). There are many indications that the nature of both ailments is heterogeneous and the pathogenesis is multifactorial, while the interaction is undeniable. The studies discussed in this paper indicated a significant correlation between migraine and quality of life, namely the more severe the experience of migraine, the lower the assessment of the quality of life of the surveyed women. It is worth noting that depression and migraine have a complex aetiology, which makes it difficult to clearly determine the main factor. It is also unclear which of the observations on the co-occurrence of these two diseases are only correlations, and which may have a cause-and-effect relationship in the context of ressentiment. Therefore, it is important to engage in research and improve the quality of life, because "The fact that no one dies from migraine is a dubious consolation for someone who is suffering from it" (Domitrz, 2018, p. 7).

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Consequences of bullying on the life and health of the person being bullied[1]

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Abstract: Workplace mobbing are one of the most serious pathologies in the work environment. Victims of bullying experience emotional, psychological and sometimes even physical violence, resulting in individual, organisational and social consequences. The aim of this study was to find out the consequences of bullying on the personal lives and health of victims of bullying. 13 participants took part in the study. For the selected sample, it was assumed that participants in the study must have taken part in court proceedings during which bullying behaviour was found in their employment relationship. In order to verify the eligibility of the subjects, an analysis of the court records of the selected study sample was carried out. A qualitative strategy using a narrative interview was used to obtain and analyse the data. The presentation of the study results was made in two areas: the consequences of bullying on personal life and the consequences of bullying on the victim's health. The most common symptoms of somatic disorders the study subjects experienced as a result of bullying were headaches, abdominal pain, nausea, sleep disturbances and general weakness. In the area of mental disorders suffered as a result of bullying experiences, the study subjects most often mentioned concentration and attention disorders, mood disorders, depression, addiction to psychoactive substances and even suicidal thoughts. All the mental disorders mentioned above are inextricably linked to exposure to chronic stress. Consequences of bullying on the victims' health have an impact on personal life. The experience of bullying affects a person's creative activities such as pursuits and interests. The consequence of bullying situations include the abandonment of active involvement, while trying to return to previous pursuits and interests, the subjects experience frustration, stress and also fits of aggression. The effects of bullying also affect the family they live with. Prolonged bullying circumstances and the behaviour of the victim of bullying often results in the family experiencing arguments, deterioration of bonds and relationships, aggression and family breakdown. In order to design intervention and prevention measures, it is necessary to increase public awareness of bullying behaviours and their consequences for individuals, organisations and society.

Keywords: consequences, bullying, symptoms, victim

1. Theoretical introduction to author's own research

Work is an inseparable part of human existence, through which individuals can holistically shape their living space, form their outlooks on life, pursue self-fulfilment and inner development. All approaches to human work indicate that it helps define a person's place in society (Pikuła, 2020, p. 302). Undoubtedly, the role of the individual in society has changed over the years, which is also the influence of work(Pikuła, 2020, p. 302). Work in human life is a universal value that becomes a point of reference in relation to subordinate values, as well as it also impacts one's sense of identity, happiness, dignity and meaning of life. The quality of work can have a positive or negative impact on society's quality of life (Polek-Duraj, 2017, p. 138). The rules of authority and the diversity of personalities in work environments are conducive to the emergence of pathological phenomena. Workplace pathology is a term defining aberrant behaviours at work whose common characteristics are disorganisation, detriment to employees' job roles, dysfunctions and reduced effectiveness of social group activities and the organisation as a whole (Grubicka, 2021, p. 335). The occurrence and exacerbation of so-called psychosocial stressors in the workplace, which threaten the health and lives of employees, is more and more often observed. It has also been noticed that while physical violence against workers is a behaviour which is easy to detect, observe and control, manifestations of psychological violence are

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[1] Article in polish language: https://www.stowarzyszeniefidesetratio.pl/fer/59P_Szcz.pdf

much more difficult to identify (Grubicka, 2021, p. 336). This is why it is so important to have an in-depth understanding of the causes, mechanisms, consequences of bullying behaviours at the workplace.

Bullying, also referred to as mobbing, is a multi-faceted, internally diverse issue that remains of interest to many scientific disciplines. The term of ‘mobbing’ was first used in 1963 by the Austrian ethologist Konrad Lorenz to describe the situation of a single animal being attacked by a group of other representatives of the same species (Sommer, Michno, 2016, p. 138). In the 1960s, Peter Paul Heinemann, a Swedish physician, used the term ‘mobbing’ to describe the hostile behaviour of children towards a chosen victim (Ryś, Dyrla-Mularczyk, 2018, p. 226). However, the concept of mobbing was developed in the work of Heinz Leymann, who studied labour relations and relationships in the Swedish work environment. To describe mobbing, he used the term ‘psychological terror at workplaces’, which is characterised by systematic unethical and hostile behaviour of one or more individuals towards another person (Leymann, 1990). Such behaviour occurs very frequently (at least once a week) and over a long period of time (at least six months) (Grubicka, 2021, p. 337). Leymann distinguished 45 specific characteristics to recognise mobbing and divided them into five groups (Leymann, 1996). These behaviours (1) disrupt the ability to communicate, (2) disrupt social relationships, (3) aim at disrupting the social perception of the person, (4) affect the quality of the living and working situation, and (5) have a detrimental effect on the victim’s health (Marciniak, 2020).

In the literature, there is no single definition of the concept of bullying shared by all researchers, as they draw attention to its various components. The most frequently mentioned characteristics of bullying behaviours are: long and frequent occurrence, power imbalance between perpetrator and victim, experiencing negative consequences, intentionality of the perpetrator, variety of forms of bullying behaviour (Strutyńska, 2019, p. 268). In Polish legislation, workplace bullying termed mobbing is defined as, “[...] actions or behaviours concerning an employee or directed against an employee, consisting of long-term and persistent harassment or intimidation of an employee, causing a diminished employee’s assessment of his/her professional usefulness, causing or intending to cause humiliation of or ridicule an employee, isolating or eliminating an employee from a team of co-workers” (Ustawa z dnia 14 listopada 2003 r. Kodeks pracy, Dz. U. z 2023 r., poz. 1465).

Regardless of the various approaches, bullying behaviour is seen as a form of deliberate, systematic psychological harassment directed at one employee or a group of employees. It manifests as unethical and hostile behaviour that causes the victim or victims experience problems in their professional and personal functioning. Interchangeably with bullying (workplace mobbing), the terms moral harassment, psychological harassment, psychoterror, psychological violence, psychological harassment are used (Woźniakowska-Fajst, 2019).

The consequences of bullying actions are complex and multidimensional. The literature most often divides the consequences of bullying according to a group affected: 1) the victim and his/her family, 2) the employer, the organisation and 3) the society (Gamian-Wilk, 2018). From the point of view of the sciences looking into human functioning in the organisational environment, a distinction is made between the consequences of bullying in terms of individual effects, which affect a specific person, and collective effects, which affect a group of people or the organisation as a whole (Gzik, 2018, p. 360). In the area of collective effects, it is possible to list those of an internal nature, affecting the activities of the institution, and those of an external nature, affecting the institution’s environment. In the context of an organisation, the internal consequences of bullying include staff turnover, employees’ lack of identification with the company, its values and goals, compensation costs, low productivity, collaborative difficulties between employees, lack of commitment and creativity, sickness absenteeism, and higher number of conflicts (Gołaszewska-Kaczan, 2017, p. 18). On the other hand, the external effects of bullying include: the deterioration of the company’s image in the environment, the transfer of information about the manifestations of bullying to the family environment, the inclusion of customers in the internal affairs of the company by giving them negative information about planned changes, the state of the company, superiors and/or the atmosphere (Gamian-Wilk, 2018). The consequences of bullying are also borne by the society in the form of medical costs and social benefits received by the victim (Nerka, 2018, p. 150).

The area of individual consequences and their manifestations can be divided into three phases. Initially, the person affected by bullying experiences temporary anxiety episodes, problems concentrating and sleeping, stomach aches and headaches, general malaise and fatigue. In the second phase, uncontrolled emotions taking the form of aggressive behaviour towards the immediate environment may occur. Further disorders that occur during this phase include anxiety and depression episodes, digestive complaints, chronic migraine pain, cardiovascular disease, isolating, rapid weight gain or loss. The final phase is characterised by severe depression, which in extreme cases can lead to suicide (Marciniak, 2020). Other individual effects of bullying include low self-esteem, feelings of alienation and isolation, loss of interests, sexual problems and feeling shame (Góralewska-Słońska, 2016, p. 70). Among the consequences of bullying on the life and health of the individual, researchers into the phenomenon of bullying point to the distress that emerges in victims of bullying. Depending on its intensity, duration and individual predisposition to cope with it, it can cause different damage to the human body. The four main reactions to distress caused by bullying are:

- impaired cognitive reactions: problems completing intellectual work and expressing oneself, memory issues, decreased concentration;
- negative behavioural reactions: reduced work efficiency, absenteeism and taking sick leaves;
- atypical somatic symptoms: complete or excessive lack of appetite, vomiting, sleeping problems, headaches;
- adverse emotional effects: frustration, uncertainty, suspicion of the environment, anxiety (Kowal, Gwiazda-Sawicka, 2018, p. 133).

The very high level of chronic stress experienced by the bullied person leads to the onset of anxiety disorders (Warszewska-Makuch, 2019, p. 250). However, there is no unanimous standpoint on the prevalence of post-traumatic stress disorder (PTSD) symptoms in bullied people. Some researchers introduce the term Prolonged Duress Stress Disorder (PDSD) to distinguish stress caused by bullying (Matthiesen, Einarsen, 2004). Most studies indicate that individuals subjected to prolonged unethical workplace abuse most frequently do not manifest the entire spectrum of PTSD symptoms, but only a part of its criteria (Gamian-Wilk, 2018).

According to a study by Leymann, typical symptoms of post-traumatic stress arising from bullying include:

- permanent personality changes with the adoption of a passive attitude and giving up the fight for one's rights: cynical attitude to the world, social alienation, isolating;
- permanent personality changes with a depressive component: risk of addictions, permanent inability enjoy pleasures of everyday life, feelings of hopelessness and inner emptiness;
- persistent personality changes with a dominant paranoid component: hypersensitivity to social injustice, chronic feelings of threat, hostile and suspicious attitudes towards the environment (Leymann, Gustafsson, 1996).

According to Schwickerath, the following symptoms are characteristic of the acute phase of bullying: muscle tension, sleep disturbances, postural disturbances leading to joint changes, abdominal pain, inflammation of the intestines and stomach, heart pain, hypertension, sleep disturbances. The chronic phase manifests with the possibility of tumour activation, allergies, immune disorders (Schwickerath, 2001). The author's research has shown that victims of bullying predominantly experience pain and the depressive spectrum complaints, including sleep disturbances, depressiveness, nervous excitability and attention deficit disorder (Wasilewski, 2005, p. 41).

The negative impact of bullying on human psychological and physical wellbeing is undeniable, and a better understanding of its effects will help to better design intervention, prevention and remedy measures. Research on bullying focuses mainly on organisational factors, determinants, course, characteristics and interactions of the parties involved. A better understanding of the area of the consequences of bullying on a person's life and health would help to focus on possible ways to prevent and rehabilitate those who have experienced it.

2. Methodology of author's own research

Being obliged by the ethics of scientific research, the author of the research presented herein wishes to explain that she has threelevels of insights into the subject of the bullying behaviour, its course, phases and mechanisms, as well as its consequences. Firstly, the experience of workplace bullying, as well as the lawsuit against the bully for the breach of employer's fundamental obligations, violation of personal rights and discrimination, allowed the author to gain insight into bullying from the victim's perspective. The second layer relates to working as a micro-enterprise owner who can potentially become a bully. Thirdly, acting as a legal expert for, among other things, the identification and prevention of bullying and discrimination, allows an objective view of the bullying behaviours and the parties to the legal proceedings. Aware that personal experience is both a resource and a limitation for the researcher, the author of this study gave her particular attention to controlling her emotions and reactions during the study.

A 2023 research aimed at finding out the consequences of bullying on professional and personal life, as well as on the health of victims of bullying. In addition, the objectives of the research were to find out the professional and private life functioning strategies of people affected. The following section presents the research results for a selected segment of a broader research conducted on bullying, which aimed at understanding the consequences of bullying on the personal lives and health of victims being bullied. The research question is: What effects does bullying have on the health and personal lives of victims of bullying?

A qualitative strategy was used to collect and analyse the data, using a narrative interview method that focused on the experiences of individuals being bullied. During the interviews, particular attention was paid to interdependence, integrity, as well as community (Karkowska, 2018, p. 113). The aforementioned features of stimulating narratives proved to be particularly important, given that the researcher's task was to describe often traumatic experiences, to put them in order and then to consolidate an evaluation of past events. The average duration of a face-to-face interview was 1.5 hours and was recorded with a voice recorder upon interviewee consent. Undoubtedly, the researcher's experiences of bullying, as well as her good knowledge of the emotions that can accompany the return of traumatic experiences related to bullying helped build rapport, create friendly atmosphere and elicit extensive, factual feedback from the respondents. The resulting material was transcribed according to a specifically defined transcription and analysed.

For the selected sample, it was assumed that participants in the study must have taken part in court proceedings during which bullying behaviour was found in their employment relationship. This assumption was intended to eliminate the need for the author to interpret the bullying behaviours cited by the respondents and to assess whether these behaviours meet the prerequisites of the statutory definition of bullying (mobbing). The author was aware that the sample size could be limited due to her decision that the essential criterion for the sample selection would be a court ruling that bullying occurred in the respondents' employment relationships. The author claims that this method of sampling was necessary because the aim of the study was to analyse the consequences of bullying, not the 'suspected' presence of bullying or discrimination or violation of personal rights. The reason was also a possibility that people who do not have full insight in bullying behaviours may find it difficult to categorise as such the irregularities occurring in the employment relationship.

In order to verify the eligibility of the subjects, an analysis of the court records of the selected study sample was carried out. Finally, 13 respondents (nine women and four men) took part in the study. The respondents' court proceedings ran from 2018 to 2022. Respondents aged 40-45 (6 people) were the predominant group among those interviewed.

There were 5 people aged 46-50 and 2 people aged 35-39. The majority of the respondents declared that they had a tertiary education (7 subjects) and a secondary education (5 subjects). One person had an undergraduate degree. In terms of territorial division, participants in the study were residents of the Mazowieckie (5 subjects), Warmińsko-Mazurskie (4), Zachodniopomorskie (2) and Dolnośląskie (2) voivodeships. Nine of the study participants had their employment terminated as a result of their notice or termination without notice due to employer's fault. In all the cases, the termination was made in writing and included a statement of reasons. The harassed individuals named bullying as their reasons for terminating their contracts, identified specific behaviours that had the symptoms of bullying and defined a degree of their insistence and duration. 4 study participants terminated their employment contract with notice and without a statement of reasons. Initially, they did not consider the possibility of a court dispute with the employer. The average length of the judicial proceedings for study subjects was 3 years.

3. Results of author's own research

The presentation of the results of the study was dividedinto two areas: the consequences of bullying on personal life and the consequences of bullying on the victim's health. In addition, the area of research on the consequences of bullying on the health of victims was divided into somatic disorders, mental health disorders and post-traumatic stress. The area of research concerning the personal life of victims of bullying was divided into pursuits and interests and immediate family.

3.1. Consequences of bullying on subjects' health

Somatic disorders are a diverse group of different types of recurrent or chronic physical complaints having a mental basis. When describing the consequences of bullying on their physical health, the respondents most frequently indicated the following disorders: headaches, dizziness, abdominal pain, nausea, pain in the heart area. In the initial phase of bullying, the disorders mentioned above appeared sporadically and were exacerbated after the experience of bullying behaviour. The more frequent were these occurrences, the more frequent the somatic complaints. According to the respondents, in the last phase of bullying, somatic disorders were caused by a growing anxiety at the very thought that bullying behaviour would occur again: "As soon as I thought that I had to go to work on Monday and the humiliation, threats and shouting would start again, I had a stomach ache (...) I spent the last three days of my leave before returning to work in bed with a headache and fear of what would happen at work" (N2). Body functions in a situation of permanent stress caused a weakening of the immune system in 2 respondents. The lowered body's immunity in both cases manifested as an autoimmune skin disease. One subject was diagnosed with alopecia areata and the other with psoriasis. Autoimmune reactions were triggered by stress: "The diagnosis was made after a number of tests and confirmed my assumptions. It was alopecia areata and the cause was distress due to a situation I had at work" (N5). All respondents noted that the longer they were exposed to bullying behaviour, the more often they developed general weakness and increased blood pressure. This situation may have been related to the stimulation of the sympathetic nervous system, which is responsible for the body's reactions triggered during severe stress and a sense of sudden danger. In addition, respondents stressed the occurrence of sleep disorders: "[...] From the moment it all started I have had trouble sleeping ever since. During the time I was subjected to bullying and during the court proceedings, I would go for 3-4 nights without sleep. When I did manage to fall asleep without pills, my sleep was short (...) At present, I also wake up frequently and my sleep is very shallow, as if I were on continuous standby" (N12). This disorders are induced by norepinephrine, adrenaline and cortisol hormones which mobilise the body and its readiness for action. When exposure to stress is prolonged, chronically released hormones disrupt the secretion of melatonin – the hormone responsible for the normal circadian rhythm. Thus the balance between sleep and wakefulness is disrupted.

In the area of mental disorders related to the experienced bullying, respondents most frequently mentioned mood disorders and depression. In the first case, the symptoms consisted of constant fatigue, apathy and lack of energy: "After six months of being treated this way by the manager, I noticed that I was constantly walking around tired, I didn't want to do anything, and my previous cheerful disposition had disappeared" (N3). Depression was diagnosed in five respondents and manifested as lower mood levels, withdrawal, lack of appetite and sleep, pessimistic thoughts about themselves and their surroundings and low self-esteem. This last symptom of depression appears in the statements of all respondents and is influenced by the duration and intensity of the negative self-concepts caused by the bully's behaviour. Ridicule, humiliation, criticism, undermining of skills and competences recurring in the workplace result in lowered self-esteem in the victims of bullying. Such a state can cause, among other things, difficulty in defining one's own identity, difficulty in achieving autonomy, inability to achieve life goals, constant self-blame and neuroticism. Bullied people suffering from depression, neurosis and anxiety may develop a desire to commit suicide, which seems to them the only way out of a situation they cannot cope with: "I used to wake up in the middle of the night and think about situations at work, analyse them, wonder if there was anything else I could do. I had horrendous migraines, I was tearful, my stomach hurt, a steel hoop was tightening on my head. One morning I came to the conclusion that I couldn't take it any more, my life had no meaning. I took tranquilliser pills (...) I woke up in hospital [breaks in tears]" (N11). Respondents also stressed that concentration and attention deficit disorders occurred during bullying. They thought their anticipation of being attacked by the bully had a major adverse effect on their abilities to focus, especially, on activities that lasted longer. In retrospect, respondents recall that work duties that were not problematic for them before their bullying experience started to overwhelm them after the bullying occurred in their professional life, and it became almost impossible to bring certain tasks to completion: "What I used to do in a few, well, maybe a dozen minutes, started to become an insurmountable obstacle. I couldn't concentrate, I lacked determination (...) In the back of my mind, I was aware that even if I completed the task, the supervisor would still question it" (N7). One interviewee admitted that psychoactive substance abuse is a consequence of the bullying experience. She is currently participating in the therapeutic process and realises that her addiction allowed her to isolate from her problems and that taking the drugs was due to her inability to cope with the negative emotions caused by the bullying. The inability to cope with intense and overwhelming emotions caused by bullying behaviours, especially, if they are anxiety, sadness, anger and frustration, can lead to addiction, which becomes an escape from the bullying situation.

All the mental disorders mentioned above are inextricably linked to exposure to chronic stress. Stress is an underlying basis for physiological reactions (e.g. decreased immunity, thermoregulatory disorders, etc.), emotional and behavioural reactions (e.g. constant feelings of fear and anxiety, frustration, irritability, feelings of hopelessness, etc.), and cognitive reactions (e.g. impaired focus, memory, coordination, feelings of powerlessness, etc.). All the respondents stressed in their feedback that the bullying in their lives had exacerbated their feelings of stress. They also noted that even after their exposure to bullying behaviour ended, their reactions to stressful situations are inadequate to circumstances. In the case of two respondents, despite time has passed since the lawsuit and bullying situations ceased to happen in their lives, memories of the behaviours that occurred still surface. They are unable to identify in which situations such flashbacks occur, but associate them with severe stress, a sense of threat, the experience of helplessness: "Sometimes, I don't know why, I reminisce being in front of all my colleagues, being shouted at and called names by my manager. (...) Sometimes I remember the scene in the school corridor in front of the children and parents when s/he is says in a raised voice that I am to be dismissed and that my competence has reached the bottom. Then, I can't pull myself together, I slip into a depressive state" (N10). Another respondent also has nightmares related to the bully's behaviour. After waking up, she feels fear, terror, anger and rage. 4 respondents said that the experience of bullying caused intrusive thoughts, persistent perceptions of increased threat, hyperactivity, or increased reactions to stimuli: "I can't stay in places where it's noisy (...) Any unexpected situation makes me panic" (N8). It is difficult to say unequivocally whether it is post-traumatic stress disorder, but certainly the symptoms reported by the respondents may confirm some of the criteria of the PTSD symptom spectrum.

3.2. Consequences of bullying on study subjects' personal lives

All the listed consequences of bullying on the victims' health have an impact on their personal life. However, bullying situations have an additional effect on the personal lives of those being bullied. This affected area is related to human pursuits, considered to be a source of human activity. It is responsible for stimulating and enhancing creative activity. Interests are important for a person's intellectual development, shape their individuality and allow them to get to know themselves better. Moreover, they can drive motivation to act, allow one to fulfil their ambitions, as well as calm down and decompress. 9 respondents claimed that they were unable to return to their pursuits and interests having had bullying experiences. Even if they made such attempts, it did not give them the pleasure they had before bullying occurred in their lives. Having had bullying experiences, their pursuits that used to give them satisfaction caused frustration, impatience and also attacks of aggression: "I was thrilled with every glance of a nice piece of wood. I could imagine what I was going to do and the excitement didn't leave me until the end of my work on it (...). I was impatient, I got frustrated (...) Sometimes, I had a meltdown when I would pick up a saw and cut a block of wood into pieces" (N1). The respondents' inability to return to activity in the form of pursuing their passions makes them apathetic and sad. Some of them referred to it as 'inner void'. Pursuing interests was also a way of spending leisure time, which once they experienced bullying behaviours is perceived by respondents as a time of apathy and 'doing nothing'. On such occasions, they often tend to dwell on and analyse the bullying situations they have experienced: "At such moments, I can lock myself in a room, I tell my family that I have a headache (...) I lie down and think about how I should have behaved, what I could have done differently (...) I also think about the people that disappointed me in the bullying situation" (N13). People affected by bullying carry their problems home, into their private lives, so the effects of bullying also affect the victims' families. At first, the immediate family empathises with the victim's suffering, sympathises and tries to be supportive. However, prolonged bullying situation and victim's behaviour often leads to arguments, helplessness, frustration and anger. Respondents acknowledge that, during the day, there were often more conversations about bullying situations than about other topics. In addition, their poor mental state had an impact on their immediate family members. Monothematic, unproductive conversations frustrate other family members, while the poor mental state of the victims of bullying makes it necessary to replace them in the domestic duties they previously completed themselves. Respondents pointed out that their depressive states were exacerbated when immediate family members resented them, threw accusations or even started quarrels: "In the beginning, my wife was very supportive (...) The less household work I did, the more frequent the arguments became (...) I looked at her and thought she was the same as my abuser (...) I was withdrawing more and more from family life" (N1). The points raised during domestic conflicts often overlap with the allegations the victim of bullying faces at work. This state exacerbates feelings of loneliness and depressive reactions. The consequences of bullying also affect children, who feel adults' tension, stress, anxiety, as they themselves feel threatened and rejected, because the victims usually spend less time with them, focusing on their own problems. The children cannot count on their parent for support, help and, in turn, the parent experiences additional stress, feeling the lack of fulfilment as a parent: "In fact, the children have suffered most. My relationship with my son has deteriorated so much that he prefers to discuss his issues with his grandfather rather than with me. I wasn't there when he needed me. Now I know how much it hit him" (N9). Bullying enters the family life of the victims to such an extent that it becomes the focal point of their attention. When experiencing it, they brood over particular situations, behaviours, words, and wonder how they should have behaved, what they would have said, or what is to come the next day. Family life ceases to exist for them, household duties are irrelevant to them and household members even become intruders: "My daughter resents me for isolating her from me, while she wanted to help me so much (...) I, however, was not able to fulfil my household roles, they were pointless for me. I was also unable to take care of my daughter (...) My life at that time was one great suffering, which I could not cope with at all" (N6). Two respondents acknowledged that prolonged negative emotions that related to the bullying situation resulted in the occurrence of aggression towards family members. Remaining at work for eight hours in a state of constant tension and perceived threat creates body fatigue and frustration, which precedes the onset of aggression: "It's no longer the case, but up until a year after the court case, it was normal for all the household members to run away when I came home. Everything annoyed me, everyone annoyed me. It was like a defensive reaction of the body. Shouting and rows for any reason was normal at the time" (N2). The majority of respondents also stated that due to experienced bullying family ties had deteriorated, as well as relationships between family members. Two respondents claim that their marital relationships broke up due to experienced bullying. The prolonged mental and physical disorders of victims of bullying were unacceptable to their spouses. Adopting by victims of bullying a passive strategy was an additional deciding factor in the family break-up.

Interviewees repeatedly described the impact of their experienced bullying behaviours on their lives in the following way: "bullying has destroyed my life", "I am not the same person", "I will never trust anyone again", "I avoid meeting people", "it's not life, it's vegetation". The inner void that interviewees feel after experiencing bullying manifests in their inability to feel joy in life, helplessness and lack of vital energy.

Summary and conclusions

A form of psychosocial threat in the workplace, bullying (workplace mobbing) has very serious consequences not only for the organisation and society, but primarily, on an individual level. Bullying can have a negative consequence in the form of a direct or indirect threat to the health of those affected. This threat can lead to a variety of psychological and somatic disorders, resulting in a reduced quality of life and disruption of personal functioning. The psychological and somatic consequences of bullying affect not only the victim, but also his or her family. Bullying can destroy family bonds and relationships, as well as lead to other forms of family pathology.

Given the serious consequences of bullying, it becomes necessary to expand the research on these behaviours in order to be able to focus, first and foremost, on possible ways to prevent it and rehabilitate those who have experienced it. The traumatic experience of bullying has its consequences for the professional and personal lives of victims of bullying. The negative impact of bullying on human psychological and physical wellbeing is undeniable, and a better understanding of its effects will help to better design intervention, prevention and remedy measures.

Recommendations based on the study are listed below.

1. In order to design intervention and prevention measures, it is necessary to increase public awareness of bullying behaviours and their consequences for individuals, organisations and society.
2. Improve the awareness of health services in the area of accurate diagnosis of mental and health disorders caused by bullying behaviours.
3. Considering the consequences of bullying and the fact that potentially every adult can be affected by bullying in the workplace, the topic of workplace pathology should be included in the educational and preventive curricula of secondary schools.
4. Expanding the educational offer that will suit the age of the participants with workshops on strengthening self-esteem, stress management and assertiveness. Deficiencies in these areas are most often identified as characteristic of victims of bullying.
5. In order to mitigate the effects of bullying in everyday life or to find a way to protect oneself against it, it is advisable to facilitate access for those being bullied or having been affected by bullying to psychotherapeutic services.

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Quality of life and health behaviors of patients diagnosed with cardiovascular disease[1]

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Abstract: *Background:* Cardiovascular diseases are the leading cause of death, both in Poland and worldwide, significantly impacting patients' quality of life. Health behaviors, whether positive or negative, play a crucial role in influencing the incidence of cardiovascular diseases. This study aims to analyze the correlation between health behaviors and the quality of life among patients with cardiovascular diseases. *Materials and Methods:* The study was conducted among 120 patients (116 eligible) at the Independent Public Provincial Hospital in Poland. Standardized tools including the Health-Related Behavior Inventory (HBI) questionnaire developed by Zygfryd Juczyński, the WHOQOL-BREF Questionnaire, and an original questionnaire with metric data were employed for diagnostic survey. Statistical analysis was performed using the Statistica 10.0 program, with a significance level set at $p \le 0.05$. *Results:* The respondents' average HBI score was 5.09, while the average overall quality of life score was 3.42, and the average overall health score in the study group was 3.07. Statistically significant correlations were observed between health practices and the assessment of general health, the general index of health behaviors and the level of quality of life in the physical domain, as well as positive mental attitude and quality of life in the psychological domain. Lower quality of life and poorer health status among patients with cardiovascular diseases were associated with increased preventive behaviors and intensified health practices. *Conclusions:* Despite having a good quality of life on average, individuals with cardiovascular diseases demonstrated moderate health behavior scores. The coexistence of lower quality of life and poorer health status with intensified preventive activities and health behaviors suggests a need for support in mental functioning, as well as adequate education and motivation regarding diet and eating habits. Moreover, it's essential to utilize appropriate techniques to motivate patients to adopt healthier behaviors.

Keywords: cardiovascular disease, health behavior, quality of life

Introduction

Diseases of the cardiovascular system, often categorized as civilization diseases, remain a prominent challenge in healthcare, despite advancements in diagnostics and the availability of modern treatment methods (Lacombe, Armstrong, Wright, & Foster, 2019; Soltani et al., 2021; Woodward, 2019). Epidemiological data consistently identify them as the leading cause of hospitalization and mortality in the population, comprising 34.8% of deaths according to the National Institute of Public Health PZH–National Research Institute (Wojtyniak & Madej, 2021; Łagoda et al., 2020, Szukalski, 2021). Characterized by an insidious, chronic nature, cardiovascular diseases pose a con-

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[1] Article in polish language: https://www.stowarzyszeniefidesetratio.pl/fer/59P_Pawl.pdf

tinual threat to the patient's life and well-being, marked by periods of symptom exacerbation and remission (Baigent et al., 2022; Padro et al., 2020, Sharifi-Rad et al., 2020).

These conditions profoundly impact human body function, leading to a diminished quality of life, potential work absenteeism, or disability. When evaluating quality of life, it's essential to consider both objective determinants (such as performance metrics) and subjective determinants (like health behaviors) (Bahall, Legall, & Khan, 2020; Broers et al., 2020; Kanejima i in, 2022; Mensah, Roth, & Fuster, 2019).

Modern lifestyle intensity, civilization's progress, inadequate dietary habits, sedentary living, and stress contribute significantly to cardiovascular disease development. These factors, termed modifiable risk factors, play a pivotal role in disease incidence and are primarily categorized as negative health behaviors. Various variables influence their manifestation in individuals, including education and health literacy, social environment, living conditions, healthcare accessibility, mental well-being, primary and secondary support systems, mass media influence, and the extent of healthy lifestyle promotion (Barbaresko, Rienks, & Nöthlings, 2018; Bonner, Fajardo, Doust, McCaffery, & Trevena, 2019; Cowie et al., 2019; Díaz-Gutiérrez, Ruiz-Canela, Gea, Fernández-Montero, & Martínez-González, 2018; Timmis et al., 2022; Zhang et al., 2021).

The objective of this study is to examine the connections between health behaviors and the quality of life among individuals diagnosed with cardiovascular diseases.

1. Material and methods

The study was conducted using: a questionnaire, the Health Behaviour Inventory (HCI) by Zygfryd Juczyński and the WHOQOL BREF Questionnaire. The questionnaire asked for basic socio-demographic data along with clinical data such as duration of underlying disease and number of hospitalisations.

The Health-Related Behavior Inventory comprises 24 statements describing health behaviors across four categories: proper eating habits, preventive behaviors, health practices, and positive mental attitude. Participants rated each statement on a 5-point Likert scale, with the overall score indicating the intensity of health behaviors, ranging from 24 to 120 points – higher scores denoting greater engagement in health-promoting behaviors. Additionally, raw scores were transformed into standardized sten norms: 1-4 sten indicating low results, 5-6 sten representing average results, and 7-10 sten reflecting high results (Baumgart, Weber-Rajek, Radzimińska, Goch, & Zukow, 2015; Juczyński, 1999, 2012).

The WHOQOL-BREF questionnaire comprises 26 questions, facilitating the assessment of quality of life across four domains: physical, psychological, social, and environmental. It also includes two separate questions assessing the individual's general perception of their overall quality of life and health status (Skevington, Lotfy, & O'Connell, 2004; Vahedi, 2010).

The study was conducted at the Independent Public Provincial Specialist Hospital in Chełm from February to April 2023. Respondents were assured of their anonymity in accordance with the Act of May 10, 2018, on the protection of personal data (Journal of Laws 2018, item 100). Due to significant missing data or incorrectly completed questionnaires, four questionnaires were excluded, leaving 116 for further analysis.

Data management and statistical analyses were performed using IBM SPSS Statistics 27 software. Descriptive statistics including means, medians, minimum and maximum values, standard deviations, counts, and percentages were used to present quantitative and qualitative variables. Depending on variable distribution and number, tests such as Student's t-test, Mann-Whitney test, and Kruskal-Wallis test were applied. Relationships between variables were explored using Spearman's rho correlation coefficient, with a significance level set at $p \leq 0.05$.

2. Characteristics of the study group

The study encompassed a cohort of 120 patients from the cardiology ward, with 116 eligible respondents included in the analysis, all of whom accurately completed the questionnaires along with providing metric data.

Upon analyzing the demographic diversity, it was observed that the majority of respondents were women, comprising 56% of the study group, while men constituted 44%. Regarding age distribution, the largest proportion fell within the 41 to 60 age bracket (40.5%), followed by those over 60 (31.0%), with individuals under 40 representing the smallest percentage at 28.4%. More than half of the respondents (51.7%) resided in urban areas, while the remaining 48.3% lived in rural settings. The surveyed group was predominantly employed, comprising 65.5% of all participants, while 34.5% were unemployed. In terms of education, 38.8% held secondary education qualifications, 34.5% had vocational education or lower, and 26.7% possessed higher education degrees. The majority of respondents (48.3%) rated their financial status as average, while 46.6% described it as good, and 5.2% reported a poor financial situation. Clinical data are presented in Charts 1 and 2.

Statistical analysis revealed no significant differences in gender ($\chi^2 = 1.690$; $p = 0.194$), age ($\chi^2 = 2.810$; $p = 0.245$), place of residence ($\chi^2 = 0.138$; $p = 0.710$), or education ($\chi^2 = 2.603$; $p = 0.272$) among the respondent categories. However, significant differences were found in professional activity ($\chi^2 = 11.172$; $p = 0.001$), financial situation ($\chi^2 = 41.448$; $p = 0.001$), duration of illness ($\chi^2 = 6.534$; $p = 0.038$), and number of hospitalizations ($\chi^2 = 7.879$; $p = 0.019$).

3. Results

The aggregate result of the Health-Related Behavior Inventory (HBI) questionnaire for the entire study group yielded a sten score of 5.09, indicating an average level of health behaviors, as per the author's

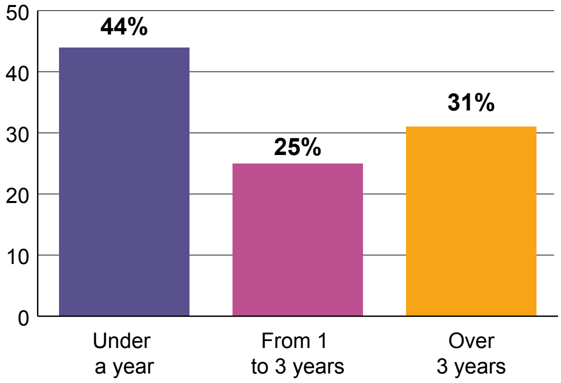

Chart 1. The diversity of respondent depending on the duration of the disease.

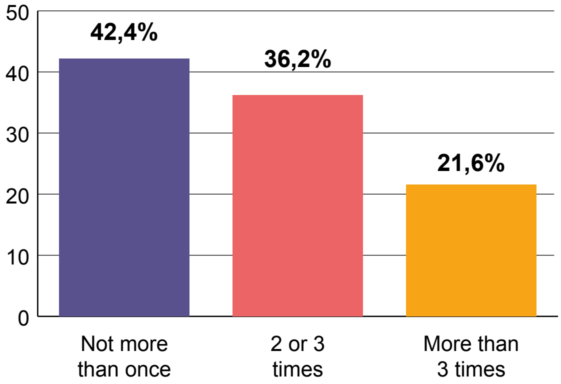

Chart 2. Diversity of respondents due to the number of hospitalization.

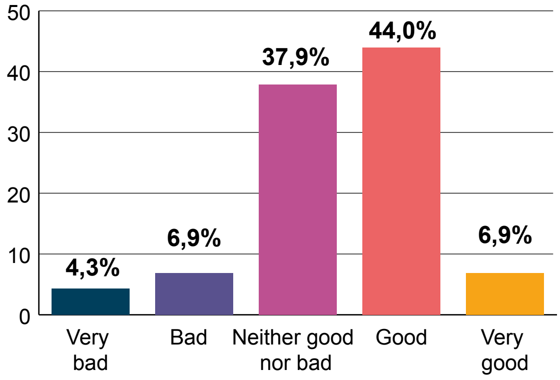

Chart 3. Variation in the overall assessment of the quality of life of the surveyed group.

Table 1. Level of health behaviors of surveyed individuals

The Health – Related Behavior Inventory	M	SD	Me	Min	Max	Standardization group results*
HBI-Sten	5.09	2.02	5.0	1.00	10.00	-
Proper eating habits	3.01	0.77	3.0	1.33	4.67	3.13
Preventive behavior	3.16	0.71	3.17	1.33	4.83	3.45
Positive mental attitude	3.36	0.68	3.33	1.50	4.83	3.53
Health practices	3.11	0.75	3.17	1.00	4.67	3.21

Legend: M–mean, SD–standard deviation, Me–median, Min–minimum value, Max–maximum value.
* Standardization group results based on *Narzędzia pomiaru w psychologii i promocji zdrowia* (Measurement tools in psychology and health promotion), (after: Juczyński, 1999, 2012).

Table 2. Variation in the assessment of the general health of the people surveyed

Rating	N	%
Very dissatisfied	7	6.0
Dissatisfied	25	21.6
Neither satisfied nor dissatisfied	42	36.2
Satisfied	37	31.9
Very satisfied	5	4.3
In total	116	100.0

χ^2 = 49.172; p=0.001
Legend: N - size of the sample population,
% - percentage of respondents.

interpretation. A breakdown of respondents' results across individual categories of health behaviors is provided in Table 1. Upon analyzing the questionnaire results after conversion to the sten scale, a statistically significant difference was observed in the low level of health behaviors within the study group (p = 0.023). Specifically, 43.1% of participants obtained average results, falling within the 5-6 sten range. Meanwhile, 34.5% of respondents exhibited a low level of health behaviors (1-4 sten), while 22.4% demonstrated a high level of health behaviors (7 or higher sten).

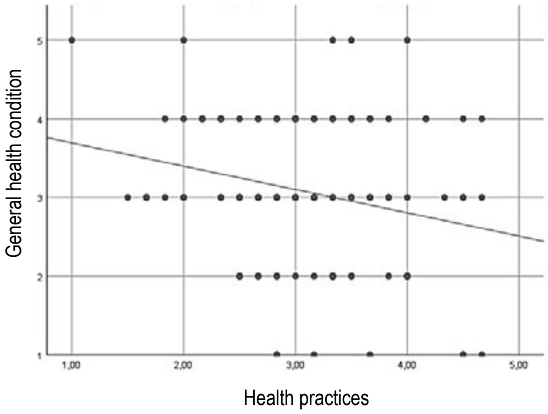

Chart 4. Relationships between assessmbeandtaonfygcehnzeeral health and health practices. Scatter plot.

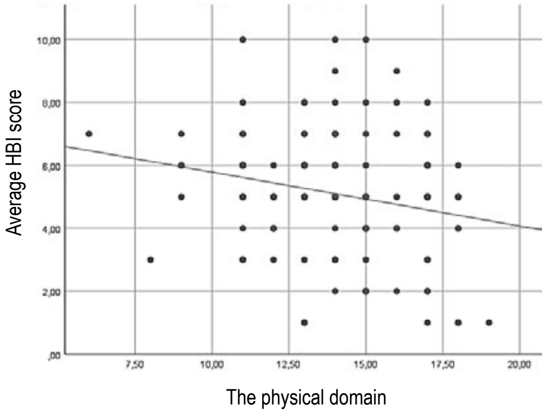

Chart 5. Relationships between the general index of fealth behaviors and the quality of life in the physical domain. Scatterplot.

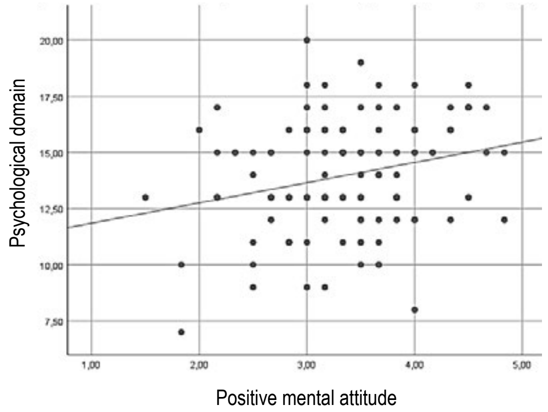

Chart 6. Relationships between positive mental attitude and quality of life in the psychological domain. Scatter plot.

The mean score for the overall quality of life assessment in the study group was M = 3.42, with a standard deviation of SD = 0.89 points. The range of scores varied from a minimum of 1 to a maximum of 5, with a median of Me = 4.0. This indicates that half of the respondents scored 4 or lower, while the other half scored 4 or higher (Chart 3). Among the domains of quality of life, participants reported the highest levels of satisfaction in the social domain, with a mean score of M = 14.78 and a standard deviation of SD = 3.20, followed by the environmental domain, with a mean score of M = 14.29 and SD = 2.24, and the physical domain, with a mean score of M = 14.09 and SD = 2.49. Conversely, respondents reported the lowest quality of life in the psychological domain, where the average score for the entire study group was M = 13.98, with a standard deviation of SD = 2.48.

The average assessment of the general health condition in the study group was M = 3.07, and the value of the standard deviation, SD = 0.98. The minimum score is 1 and the maximum is 5. The median value was 3 points. The differences in the assessment of the general health condition of the surveyed group are presented in Table 2.

Upon analyzing the relationship between health behaviors and the overall assessment of quality of life, as well as the assessment of general health, a statistically significant correlation (p = 0.045) was observed only between the category of health behaviors labeled „health practices" and the assessment of respondents' general health. This correlation was negative, with a very weak strength (rho = -0.187). This negative correlation indicates that as the value of one variable increases, the value of the other variable decreases. In other words, the better respondents assessed their general health condition, the less emphasis they placed on health practices, as depicted in Chart 4.

Upon analyzing the relationship between health behaviors and quality of life, a statistically significant correlation (p = 0.024) was found between the general index of health behaviors and the level of quality of life in the physical domain. This correlation was negative, with a weak strength (rho = -0.209), indicating that as the value of the general health behavior index increased, the level of quality of life in the physical domain decreased, as illustrated in Chart 5. Furthermore, quality of life in the physical domain also exhibited statistically significant correlations with preventive behaviors (p = 0.034, rho = -0.198) and health practices (p = 0.009, rho = -0.240). Again, these correlations were negative, with very weak strengths, signifying that as the level of preventive behaviors and health practices increased, the quality of life in the physical domain decreased.

Statistically significant correlation (p = 0.017) was observed only between positive mental attitude and quality of life in the psychological domain. This correlation was positive with a weak relationship strength (rho = 0.221). This indicates that as the positive attitude towards life increased, the quality of life in the psychological domain also increased. This relationship is depicted in Chart 5.

4. Discussion

Analyzing the results of the questionnaire after conversion to the sten scale revealed statistically significant differences in the level of health behaviors within the study group. In a study conducted by Szkup et al., involving 132 patients undergoing cardiac surgery and staying in various cardiology wards, the average overall result of the health behavior index was at an average level, consistent with the findings of the present study. When examining the individual categories of health behaviors included in the Health-Related Behavior Inventory (HBI), the authors noted that patients undergoing cardiac surgery scored highest in the category of positive mental attitude (mean = 3.90) and lowest in the category of proper eating habits (mean = 3.49) (Szkup, Starczewska, Skotnicka, Jurczak, & Grochans, 2014). Similarly, in our study, respondents also obtained the highest average score in the category of health behaviors related to mental attitude, albeit lower than that reported by Szkup et al. Conversely, the lowest average score was observed in health behaviors concerning proper eating habits. Analogous relationships were shown by Babiarczyk and Małutowska-Dudek (2016) in a group of hospitalised patients with hypertension and by Schneider-Matyka et al. (2015) in a group of subjects with diagnosed cardiovascular disease.

These findings suggest that a positive mental attitude is a strength among patients with cardiovascular diseases, while aspects related to diet and eating habits may necessitate intensified educational interventions.

In our study, the average level of quality of life among patients with cardiovascular diseases was determined to be 3.43 out of a possible 5 points. A study by Klarkowska and Antczak (2017), including 100 patients diagnosed with hypertension, showed that the mean quality of life score was - 3.67 points. The results of the analyses suggest that the level of quality of life of patients with cardiovascular disease is declared as good.

In our own study, more than half of the respondents rated their quality of life as good or very good.

However, in a study by Paplaczyk, Gawor, and Ciura (2015) on a group of 105 patients with ischemic disease of the lower limbs, most respondents rated their general quality of life as neither good nor bad (36.10%) or as poor (33.33%). Notably, none of the respondents rated their quality of life as very good. These discrepancies may arise from differences in the pathophysiology of the underlying diseases among participants, as well as the pain, functional limitations, reduced mobility, and self-care challenges associated with the diseases.

The impact of health behaviors on the quality of life among individuals with heart failure was investigated by Kurowska and Kudas (2013), who demonstrated that as the intensity of health practices increased, the quality of life of the respondents also improved.

In our study, although no statistically significant relationship was found between the general index of health behaviors and the overall assessment of quality of life, an association was observed between the intensity of health behaviors and lower quality of life among patients with cardiovascular diseases in the physical domain. Similarly, heightened preventive behaviors among respondents were correlated with decreased quality of life in this domain.

Moreover, it was revealed that lower quality of life in the physical domain was linked to an increase in the intensity of health practices. However, an increase in health behaviors associated with a positive mental attitude corresponded to an improved level of quality of life in the psychological domain. Surprisingly, correct eating habits did not significantly affect either the overall assessment of quality of life or its various domains. The category of preventive behaviors specified in the HBI encompasses activities such as adherence to medical recommendations, regular medical check-ups, and seeking information about disease prevention. These activities require considerable effort and may drain energy, potentially impacting the physical sphere of quality of life, which is closely related to fatigue and mobility. These findings suggest a hypothesis: individuals who rate their quality of life lower in the physical domain might intensify preventive behaviors out of fear of worsening their health. This could include increasing rest, prioritizing sleep, managing weight, and avoiding smoking as part of their preventive measures.

It's clear that adopting health-seeking behavior often demands lifestyle changes, which can be challenging and may lead to temporary adverse physical or psychological symptoms, like nicotine withdrawal syndrome. Numerous studies have highlighted that a majority of cardiac patients revert to smoking even after completing cardiac rehabilitation programs (Sadeghi et al., 2021). Therefore, the way of motivating patients to change and to maintain it through appropriate behavioral changing techniques that effect self-regulation (An & Song, 2020), health coaching including motivational interviewing (Sokalski, Hayden, Raffin Bouchal, Singh, & King-Shier, 2020; Suls et al., 2020), promoting eHealth literacy (Lin et al., 2020), family support seems to be very important and psychological support for patients at every stage of change (Moradi et al., 2020).

Conclusions

1. Patients with cardiovascular diseases exhibit an average level of health behavior.
2. The quality of life among patients with cardiovascular diseases is generally good.
3. Patients with cardiovascular diseases prefer health behaviors in terms of a positive mental attitude.
4. The activities of medical staff regarding dietary education and the promotion of proper eating habits should be intensified.

5. Patients with cardiovascular diseases need psychological care and mental support in coping with the limitations resulting from the underlying disease.
6. The lower quality of life and poorer health status of patients with cardiovascular disease lead to an increased interest in preventive behaviour and the strengthening of health-promoting practices. Attention should be paid to using appropriate techniques to motivate patients to change their health behaviours and to providing psychological support at each stage of behaviour change.

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Experience of final exam stress from Polish high school students. The narrative of COVID-19 Pandemic Generation

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Abstract: ***Introduction:*** For many students worldwide, school achievements and final exams results are a significant challenge and are understood as determinates of their future college and university education, as well as their professional career. The COVID-19 pandemic not only forced schools to close and a ban on gatherings, but also introduced many new solutions and measures regarding the conduct of final exams, for which students had been preparing for years. In Poland, the government shut schools in 2020, two months before the usual time for final exams. This significant factor required modification in the manner and course of the final stage of preparation for the 'maturity' exam, which resulted in limited contact with teachers and peers, leading to intense emotions and personal challenges. ***Method:*** The study aim was to point out the specific COVID-19 stress experience of high school students who were on the verge of graduating. 120 high school students from South Poland [40 men (33%) and 80 women (66%), aged 18-19 years], who were preparing for the final high school exam in Poland in 2020, participated in the online survey. Phenomenological content analysis of the structured open-ended questionnaire was used. ***Results:*** It was found that the subjective experiences of students were mostly negative to Covid-19 restrictions and remote learning, expressed not only as negative emotions to the new, surprising, and hence fearful situation, but also as negative attitude s towards routine changes. The strong need to develop new adaptation mechanisms necessary to cope with the isolating circumstances was also explored. ***Conclussions:*** The study provides new supplements on mental health prevention (not only during pandemic) in students who were on the verge of graduating.

Keywords: depression, final exam, stress, COVID-19, high school students

Introduction

In March 2020, after the announcement of the pandemic, many countries introduced restrictive rules for teaching in schools. Consequently, millions of students had to adapt to a completely new form of education: remote learning. The COVID-19 pandemic compelled teachers to review their teaching methods (Williams et al., 2021; Mpungose, 2020). Students were offered non-standard solutions and a transfer learning process, which should be considered as initiating a state of permanent transformation. For the school to be able to conduct online classes effectively, radical changes were necessary in the organization and methodology of teaching, as well as the roles and competences of teachers. However, schools were not prepared for them due to poor infrastructure and insufficient technical equipment for all students, as well as insufficient preparation of teachers to conduct remote mentoring and provide support to students (Carrillo & Flores, 2020). Teachers themselves have indicated that online teaching has many disadvantages, with the main one being the lack of a direct relationship with students (Decarli et al., 2022).

The radical change in organizational rules was particularly difficult not only for young students just starting school but also for older students about to graduate and transition to higher education or enter the workforce. For many students worldwide, school achievements and final exam results are a significant challenge and are understood as determinates of their future college and university education, as well as their professional career (Alyahyan & Düştegör, 2020; Song et al., 2021).

The COVID-19 pandemic not only forced the closure of schools and a ban on gatherings, but also introduced many new solutions and measures regarding the preparation of final exams, for which students had been preparing for years. For epidemiological reasons, three main alternative approaches to organizing final exams were implemented: cancelation, change of format, and postponement of date. Final exams (middle school and high school) were canceled in Norway, India, and the United States. This strategy meant that students were admitted to universities without having to pass final exams or solely on the basis of the school's evaluation of their work and completion of the curriculum. The exams were postponed for several months in the West Indies, the Czech Republic, Hong Kong, Ireland, China, and Colombia. However, in Great Britain, the United States and Germany, exams were held in a revised format. In Poland, the government closed schools in 2020, two months before the usual time of final exams. This significant factor required a modification in the manner and course of the final stage of preparation for the 'maturity' exam, resulting in limited contact with teachers and peers, which caused intense emotions and personal challenges.

Pandemic stress has been known to have worsened mental health in the general population (Fancourt et al., 2021; O'Connor et al., 2021; Wang et al., 2020). However, studies exploring the experiences of high school students during the pandemic are scarce (Długosz, 2020; Długosz & Kryvachuk, 2021; Chodkowska et al., 2021; Szwarc, 2020). Therefore, a study on high school students was conducted in the last phase of preparation for the final high school exam during the COVID-19 pandemic, based on the assumption that its impact may have been even greater during such an important moment in the life of a young person.

Qualitative research was conducted in this particular social situation to explore the stress experiences of adolescents, who were preparing for the final exam during the restrictions and isolations of Covid-19.

1. Method

1.1. Sample

The sample included 120 high school students: 40 men (33%) and 80 women (67%) between the ages of 18 and 19. All participants were from third-year classes of high schools in the south of Poland. The study was conducted in April 2020 (one month before the final scheduled exams). Due to the COVID-19 pandemic, this survey was conducted online using the Google Forms platform. The calls to participate in the study, along with links to the Web survey, were distributed through social media. The study adhered to the guidelines outlined in the Declaration of Helsinki and was approved by the appropriate institutional research ethics board. It was conducted anonymously and participation was voluntary, without any remuneration.

1.2. Instrument

The study used a structured online interview questionnaire that contained 10 open-ended questions. The questionnaire comprised items on the experience of a change in the teaching/learning process and the preparation for the high school leaving exam due to the introduction of online education during the Covid-19 pandemic. The questions were constructed by the authors and verified by two independent competent judges (psychologists experienced in working with high school students). Out of the 30 questions originally formulated, the judges finally found the following to be the most adequate to explore the students' experience:

1. How do you perceive the COVID-19 pandemic in the context of preparation for the high school leave examination?
2. What changes do you see in teacher behavior?
3. What changes do you see in parents' behavior?
4. What changes do you notice in your functioning?
5. How has your interest in schooling and learning changed?
6. What changes do you feel with online learning?

7. What changes do you feel about doing your homework?
8. What changes in your own competencies do you experience while performing your school duties?
9. What changes do you feel about your need to rest from school activities?
10. What emotions dominate your feelings in connection with preparation for the final exams during the pandemic?

A phenomenological content analysis of the answers allowed the researchers to capture subjective experiences related to the final exam preparation process with respect to changes in (1) the exam preparation process, (2) the stress and sentiment experience of the students, and (3) the school teaching methods (follow Table 1 for descriptions of the categories for each experience area).

The written statements obtained in response to the questionnaire were subjected to qualitative analysis based on interpretative phenomenological analysis (Smith et al., 2009). This allowed researchers to find phrases that would indicate how respondents identified phenomenological changes resulting from the introduction of distance learning during the most intensive stage of the preparation process for the final exam. Two semantic dimensions were considered in the analysis of the statements. The first dimension focused on the general context and its impact on the student, while the second examined the functional areas (cognitive, emotional, and social).

Table 1. Descriptions of the categories of each area of the student experience related to online education

Experience area	Categories describing subjectively perceived changes related to remote education
Context	General reflections on the pandemic and key aspects of respondents' experience. Difficulties and challenges caused by the pandemic.
Student	Changes in emotional states, interests, competencies, knowledge, motivation.
School teaching	Changes in the pressure exerted on students. Teachers' monitoring and control of their progress, and degree of preparation for the exam.

2. Results

The responses of the respondents were analyzed in the context of the issues listed in the Method section. The phenomenological topics were formulated in comparison with the experiences of high school students who were on the verge of graduating and were going to prepare for the final exam through personal attendance. The main phenomenological categories and their written descriptions are given in Table 2.

As shown in Tables 2, high school students who were on the verge of graduating were confronted with a new reality: the external world became a strange place where predicting the consequences of one's decisions or having future plans or dreams was impossible.

Pandemic high school students isolation final exam experiences are given in Table 3.

Pandemic isolation was followed by extremely strong negative emotions: loneliness, fear, panic, a feeling of overload, constant fatigue, social anxiety, and apathy. This was also related to dysregulation of cognitive self-concept structure, decreased self-esteem, lack of self-confidence, and lack of sense of control over events. High school students who were on the verge of graduating felt imprisoned, socially isolated, and witnessed the complete digitization of social life. Moreover, their concept of the world shifted from a relatively stable one to an imminent collapse of civilization. They experienced anger, sadness, and a longing to return to normal. They also felt a lack of energy, sadness, nervousness, a feeling of being unproductive, and a disruptive daily routine. Their ability to think logically, prove theorems and use previously acquired knowledge also decreased.

For high school students who were on the verge of graduating in 2020, the pandemic crisis could be seen from two perspectives. On the one hand, it was the total destruction of daily routines, while on the other hand, it presented a positive opportunity to develop new skills and training for effective exam preparation. Some high school students identified stress as being more related to health issues than to the postponement of their final exams. Subjects experienced high anxiety due to the lockdown-enforced change in activity.

Table 2. Stress from the final exam related to the pandemic experienced by high school students who were on the verge of graduating

STRESS CONTEXT	
Negative changes	Positive changes
Global manipulation	
I am only afraid of human stupidity because society allows itself to be manipulated like sheep and asks for a vaccine that will mean complete control over the individual by the leaders of the international conspiracy [part. 4]. The problem is the shortage of some goods on the shelves and the need to wear these stupid masks [part. 6] The coronavirus is media manipulation and I am not afraid of it at all [part. 1] This talk about the virus is crazy and irritating [part. 2]	No
Extreme existential uncertainty	
Breakdown of the rules of operation makes loss of stability and constancy. It is worse than war because no one shoots and the virus is invisible [part. 46] The most depressing feeling is related to the lack of possibility of predicting anything [part. 119] This is not a typical disease that can be faced by anyone; although everyone wants to be healthy, this is an absurd situation described only in Albert Camus' "La Peste" novel [part. 56] Anyone can be infected; anyone can be a mortal enemy, so I feel panic before contacting people [part. 32]	No
Anxiety of family members	
My family is in the high-risk group due to chronic diseases, so I fear for myself and my loved ones [part. 2] I fear for my loved ones' lives. Death lurks around the corner [part. 23]	No
Ambiguity about exam dates	Stoicism and acceptance of reality
I feel very bad about the uncertainty of the exam date [Part. 29] The conflicting messages about the exam date are driving me crazy [part. 57] The exam itself is not as burdensome as the uncertainty about its form and date. How can they play with people like that? [part. 46]	I feel well-prepared for the final exams, so I am not stressed about the date [part. 39]
Fear of personal future	
This stress also limits my ability to develop in other areas, such as finding a job or going on vacation [part. 35]	No
Total daily routine change	Not much change due to individual situation
I was very depressed at first because I am social by nature and social contact is forbidden [part. 32]. I have become apathetic because I am sitting at home. Sitting in front of the computer has killed my curiosity and self-esteem [part. 22] I broke down because of the lack of contact with people. [part. 31] Remote contact is driving me crazy [part. 63]	I was often sick, so I didn't go to school anyway, and it was normal for me to study on my own. So not much has changed in my life [part. 35] I like quarantine a lot. I live in the countryside, and I do not feel limited by space. It would be paradise. [part. 56] I am very happy that I do not have to leave the house because I have a nice family. At the same time, I am afraid of how the situation will develop. [part. 34]

Table 3. Pandemic stress of the final exam among high school students who were on the verge of graduating

Students' sentiments	
Negative changes	Positive changes
Emotional state	
Depression, nervous breakdown, panic	Gradual timing/accustomizing toward positive emotion
In the beginning, it was hard for me; I had no desire to do anything, even to live [part. 24] I was so broken and depressed because I enjoyed meeting people and traveling so much that I felt these restrictions just broke me because I had to stay home [part. 22] My emotional state got worse because I had to stay home; I couldn't find a place for myself; I was nervous. [part. 33] I have started to think of death because there is so much talk on television about people dying from COVID [Part. 44] I got depressed, sad, lonely, I feel overwhelmed: constant fatigue, social anxiety, apathy, panic [part. 23] Emptiness, boredom, lack of readiness to act, discouragement, overwhelming feeling of impossibility [part. 35] Indifference, apathy, weariness, increased tearfulness, regret that I did not try to take my own life on an appropriate occasion [part. 46] At first, my mental health was very poor, but with the help of appropriate medication from a psychiatrist, my condition improved [part. 45] At first, I was terrified of everything that was happening, but now I am used to it. I miss my friends. [part. 78]	After a month I got used to the new daily life and I try to think positively, which makes me less depressed [part. 50] I feel positive emotions because I'm developing bonds with loved ones; I'm realizing my interests and simple pleasures; the joy of existence; development of sensitivity and gratitude; mindfulness [part. 60]. I am very happy that I do not have to leave the house because I have a nice family. At the same time, I am afraid of how the situation will develop [part. 61]. Peace of mind, no stress, and more time for myself and my interests [part. 55].
Social Functioning	
I miss my friends and face-to-face conversations [part. 25] I miss my schoolmates: no group or teamwork, no discussion, no peer facilitation [part. 67] I couldn't go to the gym or meet up with friends, and online is different [part. 23]. And, even though I am an introvert, I miss people and freedom of movement [part. 37] What else can I say except that coronavirus and quarantine, restrictions ruined my plans for the near future; I wanted to become independent, settle down, and start developing in different directions; it all failed [part. 57].	But it was also possible to feel better during the pandemic because, paradoxically, the number of opportunities to keep in touch with other people online increased and I gained more social support than before the pandemic [part. 100] Before the pandemic, I was isolated from people, but I found a support group and friends online, and I moved out and started living alone [part. 77]. I have no contact with my father anymore, so I got better. Better focus. It's good for me because I have silence in my apartment and I can focus on my studies [part. 96].
School Functioning	
Didactic mean - individual preparation, scientific lecturing	
I don't have the motivation, conditions, or strength to fulfill myself at home and develop my knowledge or skills, but such opportunities were more available when I went to school [part. 87]. The external structure collapsed (school, lessons, schedule, traffic jams) so I had to develop my own (get up, brush my teeth, tidy up my room, etc.), which wasn't easy at all. [part. 68] No classwork, no repetition, no feedback – it is very strange for me and makes me confused [Part. 28]	I prefer to work on myself. Pandemic isolation is not a problem because I prefer being alone [part. 37] It increased my internal motivation and sense of responsibility, but this is my personality [part. 38] I am good at individual studying, so lectures and textbooks are enough for me [part. 49]
Time management	
It's too hard for me to figure it out on my own [part. 11] The school imposes order; sometimes it overwhelms, but it was a salutary lesson for me [part. 13] Time flies through my fingers, I cannot concentrate on anything and I know I will not make it [part. 14]	I have time to develop interests and gather inspiration for future work [part. 12], I do not waste time on pointless school duties [part. 22] I have time for my interests and I can spend time with my boyfriend. [part. 25] I can prepare for my final exams at my own pace [part. 26] I don't have to rush for the bus, I can open my eyes at 7.55 and turn on the computer. It was cool for the first few days, but in the long run, it totally blew me away [part. 27].

Attention and home distractors	
I am not able to concentrate. The lack of regularity frustrates me [part. 40]. Due to the number of tasks and teacher's requirements, I cannot make it and I am mentally and physically exhausted [part. 41] I have a lot of distractions at home that I cannot control [part. 33] No group or teamwork, no discussion; peer facilitation makes me exhausted [part. 42]	It is more comfortable for me to concentrate in my own room than in a classroom [part. 27]
Remote teaching/learning	
I am very tired of the online classes, connections problems are actually a nuisance, and the teacher perceives the absence of a student badly for reasons beyond his control [part. 60]. Teachers give more tasks; they don't understand that students staying at home all day don't have such well-earned time for learning; some people don't have the conditions for it at home [part. 70]. I also see teaching from the teacher's point of view (a parent is one) and I think that what is happening at the moment is one big chaos [part. 90] No one was prepared for this form of conducting classes; not everyone can fully handle the technology and form of online classes [part. 110]. I didn't have the motivation to get out of bed or take care of personal hygiene because for whom? After all, my cat always accepts me [part. 50]. I have no desire to do anything, I feel more and more tired; I hope this quarantine ends as soon as possible [part. 118].	Teachers reluctantly learned to use the equipment and began to prepare better for lectures [part. 24] Teachers started to organize the lecture material better [part. 40]

Table 4. Summary of the most common phenomenological topics related to the pandemic experience of high school students who were on the verge of graduating

	Main areas of students' experience related to pandemic			
	General reaction to the pandemic	Emotional changes	School functioning changes	Mental health problems
Specific categories	Indifference	Increased fear of death	Remote teaching/learning	Depression
	Disbelief	Negative impact of isolation on mood	Fear related to exam date uncertainty	Suicidal thoughts
	Media manipulation belief	Decreased motivation to act and self-care	Increased homework	Loss of sense of life
	Depression	Increased insecurity	Increased individual efforts, strains, and responsivity	Anxiety and insecurity
	Panic	More social support	Lack of peer mentoring and support	Medical treatment
	Social isolation	Anxiety	Changes in attentional processes	Need for psychotherapy
	Online contact	Learning motivation changes	Changes in resistance to external distractors	Dehumanized formal relationships
			Changes in family relationships	

Remote teaching was stressful for high school students who were on the verge of graduating due to more sophisticated lecturing and excessive homework tasks given by teachers, relying on textbooks. The quantity of practical exercises and peer tutoring was insufficient; therefore, the students felt exhausted and uncomfortable. Teachers assigned many tasks without considering that students staying home all day did not have such well-earned time to learn, and some lacked suitable conditions for studying at home. Technical problems (lack of computers, internet, software) were also an additional stressor because the school system was not prepared for such a big change. It was very chaotic at first; not everyone had the necessary technological skills to navigate online classes. Teachers also developed a bad perception about absent students for reasons beyond their control.

However, the respondents also described some positive changes: increased independence, increased internal motivation, more self-reliance, a more responsible approach to duties, better motivation and time management, improved language competencies, reduction of fatigue caused by intellectual work, better emotional balance, more time for pleasure, less fatigue than when going to school and changes in emotional and social functioning.

Table 4 presents a summary of the phenomenological analysis of the pandemic experience of high school students who were on the brink of graduating.

3. Discussion

Pandemic worries experienced by high school graduates in Poland after the COVID-19 outbreak were relatively common and could also be found in other countries (Długosz, 2020; Szwarc, 2020; Liu et al., 2020). Although qualitative data analysis does not provide general statistically significant results, it should be considered because participants spontaneously reported important mental problems and behavioral symptoms. A recent meta-analysis showed that prevalence rates of clinically severe anxiety and depression in adolescents increased from approximately 12% to more than 20% following the COVID-19 pandemic (Racine et al., 2021). The depressive mood was quite prevalent among Polish students who planned to sit for their final exams in May 2020 (Szwarc, 2020). The highest levels of depression and generalized anxiety symptoms were manifested by students aged 18 to 24 years. These symptoms were strongly associated with difficulties experienced at home (difficult relationships with loved ones, lack of privacy, and fatigue from excess responsibilities) and anxiety, as well as uncertainty about the spread of the pandemic (Chodkowska et al., 2021).

High school students who are about to graduate are in a critical transition stage characterized by cognitive, emotional, and social changes related to the preparation of final exams, making their lives highly challenging (Blakemore, 2019; Casey et al., 2010). This typical developmental crisis was exacerbated by feelings of threat, uncertainty, lack of control, and unpredictability of the pandemic, all of which were also high-risk factors for developing psychological problems (Haig-Ferguson et al., 2020).

The changes experienced by graduates who passed their final school exams in 2020 affected various aspects of their emotional, cognitive, and social functioning. The respondents identified changes that varied in nature, intensity, and valence. On the one hand, the pandemic crisis represented a risk, but on the other hand, it provided opportunities for some people, as was observed in a qualitative survey conducted in the UK (Burton et al., 2020).

Ambiguous and novel circumstances naturally lead to a sense of uncertainty and increased anxiety. Individual differences in tolerance of uncertainty may differentiate these symptoms, but the perception of unfavorable phenomena (such as frightening news, increased number of patients and deaths, mandatory social isolation) and their interpretation in terms of lack of control and efficiency result in increased uncertainty. This, in turn, makes it difficult to function in uncertain situations (Comer et al., 2009). Increased uncertainty leads to a variety of adverse outcomes, including worry and anxiety, depression, and even psychosomatic disorders (Dugas et al., 2012). Young people faced a new unexpected reality where causal analysis and outcome prediction became impossible. The ability to think deductively and hypothetically, which is predominantly used in late adolescence, seemed to have been suspended. Causative orientation, which involves a person actively shaping the course of events, appears to have changed toward a defensive orientation aimed at protecting one's threatened self-esteem (Doliński, 1993). If a person cannot effectively influence the course of events, they switch to a defensive orientation, change their goals, and begin to protect their self-esteem. Belief in a just world (Lerner, 1980) – the vision of the world as a friendly, just, orderly place where one can accurately predict the course of events and the consequences of one's own and other people's behavior – was also broken (Kiral et al., 2022; Mariss et al., 2022; Münscher, 2022). These negative effects of the COVID-19 pandemic can have far-reaching consequences for the younger generation, such as the inability to achieve long-term goals through socially approved activities, the inability to regulate mental well-being, and the appropriate management of negative emotions, especially in difficult situations.

The most important event for high school students who were on the verge of graduating in April 2020 was the final exam; This is usually a very stressful experience, but during the pandemic it became extremely difficult due to the unexpected date and form and the lack of clear information from the Polish Ministry of Education. Media reports presented various opinions about the date (usually in May vs. postponed to June or September) and the form (traditional vs. remote), all of which intensified the stress.

In general, the level of stress increased after press reports on final exams and the uncertainty and difficulty in controlling the course of the situation (Długosz, 2020). During the lockdown and implementation of remote teaching/learning, many students had no contact at all with a significant teacher so final exams were accompanied by extremely negative experiences, often exacerbated by the home environment. A survey conducted in Poland among students who intended to take their final exams in May 2020 confirmed this reality (Szwarc, 2020).

Students in the risk groups were more concerned with their own health and that of their family members, while more introverted students with a lower need for stimulation felt more comfortable staying home, and the lack of contact with peers did not limit their self-development. Although personality traits were not controlled for in the presented study, the phenomenological analysis used could support other findings in the field of COVID-19 stress regulation, specifically related to the interindividual variance of personality traits (Getzmann et al., 2021; Siryk et al., 2022).

Pandemic stress was not only associated with daily hassles, but also with the most important event, namely high school final exams, which are usually characterized by intense examination stress (Długosz, 2020). However, it was also possible to feel better during the pandemic because, paradoxically, the number of opportunities to stay in touch with other people online increased and more social support was available than before the pandemic. Students who were isolated before the pandemic could find a support group and friends online.

Positive changes were also related to positive emotions, the development of bonds with loved ones, the realization of interests and simple pleasures, the joy of existence, the development of sensitivity and gratitude, and mindfulness. It was also found that the ability to express gratitude led to fewer negative changes and more positive experiences resulting from COVID-19. The ability to feel gratitude for family members or others reduced mental health difficulties and promoted positivity at the onset of the pandemic (Kumar et al., 2022). Some people experienced positive changes and experiences during the COVID-19 pandemic in relation to their family situation. For those with a positive family environment and good social support, isolation was not so much of a problem. In supportive families, the risk of juvenile depression is lower (Ni et al., 2020).

The results of the presented studies are of great importance for the family, school and local community, have an impact on our understanding of the individual subjective experience related to COVID-19 stress and the mental well-being and functioning of adolescents. That knowledge seems to be core basic to taking action on five priority areas: depression and suicide prevention, mental health care, and education among young people, taking care of mental health in the schoolplace and family context.

Conclusions

It can be concluded that one month after the implementation of government restrictions and remote learning, the reactions of high school students about to graduate were mostly negative. However, these reactions included not only an emotional attitude towards a new, surprising, and therefore fearful situation, but also a change in routine activity patterns related to attending school and the need to develop new adaptation mechanisms toward acceptance of social isolation. They mostly experienced the subclinical, but some of them also had clinical range for internalizing problems. The study found significant, albeit modest, increases in subdepressive depressive symptoms and negative emotions, such as anxiety, a decrease in life satisfaction, well-being, and cognitive predictability. However, the simplest activities turned into millstones, leaving little energy for more ambitious ones, such as development, creativity, or fun.

It is of key importance for the prevention of mental health problems among high school students who were on the verge of graduating during a pandemic to take action at school, in the family environment, and in the local community. This will support young people in dealing with exam stress in a remote teaching situation and with stress related to the pandemic, while teaching important coping strategies. Due to lockdown, it is also important that mental health clinics and training centers can develop remote learning preventive programs.

Limitations

Despite the important phenomenological results based on the qualitative analysis of interview data on the COVID-19 pandemic experiences of Polish high school students who were on the verge of graduating, the present study has several limitations. First, this study collected data at the beginning of the pandemic when isolation was implemented. Future studies should include more than one data collection time point to provide evidence of the dynamic adaptation process. Second, our results were based on a qualitative analysis of data obtained by a structured interview. Future research should use data from direct evaluation or reports from multiple informants to increase the reliability of study findings.

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The importance of social support in the occurrence of mental disorders in patients suffering from Psoriasis Vulgaris[1]

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Abstract: Psoriasis represents a global issue affecting approximately 1% of the Caucasian population, contributing not only to aesthetic concerns but also to stigmatization, social isolation, and an overall decline in quality of life. The chronic inflammatory state in the patient's body predisposes them to a higher susceptibility to anxiety and depressive disorders. Novel treatment methods, particularly monoclonal antibodies, may serve as a bridge between physical and psychological benefits. The research addresses the issues of psychological disorders in patients with common psoriasis and explores the impact of various dimensions of social support on the course of the disease. Topics covered include the etiopathogenesis of psoriasis, the connection between this dermatosis and an increased frequency of psychological disorders, as well as the bidirectional relationship between both disease entities. Four studies, encompassing clinical, demographic, and psychosocial variables, underwent analysis. Each study description includes statistical analysis, operationalization of variables, and a section dedicated to drawing conclusions. In the discussion section, a strong correlation between social support and the psychological state of dermatological patients is demonstrated. An integrated approach to the therapeutic process and the benefits of a holistic approach to issues related to chronic inflammatory diseases are also discussed.

Keywords: psoriasis, depressive disorders, social support, adaptation model

Introduction

Psoriasis is a chronic inflammatory disease with an epidemiology ranging from 0.09% of the U.S. population (Sahi et al., 2020). According to Bulat et al. (2020), it may be one of the oldest known diseases, yet it remains fraught with uncertainties. Beyond its clinical manifestations, characterized by well-demarcated, erythematous, and scaly lesions, psoriasis is also associated with an increased susceptibility to other inflammatory conditions such as metabolic syndrome, inflammatory bowel diseases, cardiovascular diseases, and psoriatic arthritis (González-Parra & Daudén, 2019). The chronic nature of the disease, marked by periods of remission and relapse, along with its cutaneous manifestations and the stigma associated with the condition, predisposes patients to mood disturbances. Compared to the general healthy population, individuals with plaque psoriasis exhibit a 40-90% higher incidence of psychiatric symptoms, including anxiety, depression, and suicidal ideation (Baka et al., 2021). Recent analyses have revealed a bidirectional relationship between the pathophysiology of depression and psoriasis, based on the interference of inflammatory cytokines with both the nervous and immune systems (Daudén & González-Parra, 2019; Koo et al., 2017). This association opens new therapeutic avenues, both pharmacological and those aimed at reducing the severity of skin lesions through the improvement of the patient's mental well-being (e.g., cognitive-behavioral therapy). It is hypothesized that various psychosocial interventions aimed at enhancing the mental health of individuals with psoriasis could have a beneficial impact on the course

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[1] Article in polish language: https://www.stowarzyszeniefidesetratio.pl/fer/59P_Wojt.pdf

of the disease. According to theoretical frameworks, multidimensional social support is a critical resource that can help patients better cope with the disease.

The mental health of dermatological patients is the subject of numerous scientific studies (Haduch et al., 2008; Hassani et al., 2021; Pollo et al., 2021; Yildirim et al., 2020). However, the limited access to health psychology specialists and the inconsistency in research findings regarding the relationship between the clinical severity of skin lesions and mental health indicators often present challenges in clinical inference. As noted by Łakuta et al. (2018), the negative impact of psoriasis on patients' daily functioning is well-recognized, yet psychological disorders remain underdiagnosed and are often not considered when selecting a treatment for the primary disease. The aim of this paper is to demonstrate the benefits of a holistic approach to managing patients with plaque psoriasis, emphasizing the positive impact of social support on the course of the disease

1. Theoretical introduction

1.1. Clinical characteristics of Psoriasis

Psoriasis is one of the most commonly diagnosed chronic diseases in dermatology. The latest meta-analysis has revealed an uneven geographical and epidemiological distribution of this condition (Parisi et al., 2020). The highest incidence has been observed in Italy, with 321 cases per 10,000 inhabitants annually. Higher prevalence rates are also noted in Western Europe (up to 3.46%), Central Europe (up to 5.32%), and North America (up to 3.6%). The region with the lowest incidence of psoriasis is East Asia, with rates up to 0.4%. According to WHO data, epidemiological statistics from Norway in 2008 reported a record number of cases – 10,302 – which constituted 11.43% of the population aged 20-79 years.

The etiology of psoriasis is multifactorial and remains incompletely understood, involving both genetic and environmental factors (Koo et al., 2017). The manifestations of the disease are mediated by chronic inflammation, characterized by periods of exacerbation and remission. Based on its course, psoriasis is classified into early-onset, with symptoms occurring before the age of 40, which is associated with a positive family history, extensive body involvement, and a strong association with the HLA-C*06 allele, and late-onset psoriasis, which is linked to metabolic disorders such as obesity, diabetes, hypertension, and dyslipidemia (Jing et al., 2021).

The initial lesion of this inflammatory dermatosis is a papule, which gradually expands into a plaque covered with a silvery scale. Fully developed lesions manifest as psoriatic plaques, which can affect various areas of the body. In clinical practice, several tools are used to assess the severity of the disease: the *Psoriasis Area and Severity Index* (PASI), *Body Surface Area* (BSA), and the *Dermatology Life Quality Index* (DLQI). The first two scales are completed by the physician and primarily assess the extent of skin involvement. The DLQI, developed by Andrew Y. Finlay and Gul Karim Khan in 1990, is a questionnaire designed to evaluate the impact of the disease on the patient's quality of life. The questions address issues related to daily activities, interactions with close ones, sexual relations, limitations in work, study, or sports. Patients also assess symptoms such as itching, pain, tingling, and burning caused by the skin lesions.

1.2. Psychosocial aspects of Psoriasis

The relatively high prevalence of psoriasis has prompted researchers to explore not only the dermatological aspects of this disease but also the emotional, social, and financial dimensions it entails. Jing et al. (2021) conducted a comparative study involving 1,571 healthy individuals and an equivalent number of psoriasis patients within the Chinese population. The study revealed significant disparities in education levels (with a higher prevalence of primary education over higher education among those with psoriasis), annual income (substantially lower income in the psoriasis group), and smoking rates (537 smokers in the psoriasis group compared to 238 in the healthy group). A correlational study on depression and anxiety in 174 psoriasis patients in Malaysia also demonstrated a consistent association between psoriasis, lower education levels, and reduced income (Baka et al., 2021). Among 51 participants in the study by Bulata et al. (2020), 76% of psoriasis patients reported a significant deterioration in their financial situation since the onset of symptoms, and 59.3% reported absenteeism from work in the previous year due to their skin condition.

In addition to these measurable consequences, psoriasis patients often face social stigma. Skin diseases affecting visible areas of the body are particularly susceptible to negative reactions from others. Due to aesthetic reasons, psoriatic plaques covered with whitish scales often elicit disgust, emotional fear, and concerns about contagion (Grover et al., 2021). Numerous studies on the stigma associated with dermatological conditions have highlighted the significance of this issue. As Ghorbanibirgani et al. (2016) noted, some analyses suggest that up to 90.2% of patients are affected by this aspect of the disease. One criterion presented by the researchers was the lack of social support, defined as feelings of loneliness, deprivation of natural rights, and the absence of both formal and informal support. Moreover, the phenomenon of stigma extends to caregivers of dermatology patients. Grover et al. (2021) conducted a study on 49 caregivers, evaluated using the CPMI (*Caregiver of People with Mental Illness*) scale, which includes tools such as the FBI (*Family Burden Interview*), PSS (*Multidimensional Scale of Perceived Social Support*), and CBAS (*Cognitive Behavioral Avoidance Scale*). The study found that these caregivers experience stigma at levels comparable to those caring for individuals with mental illness (Basińska et al., 2013).

The cutaneous manifestations of psoriasis vulgaris and the pervasive stigma associated with visible plaques can be a burdensome experience for patients. Difficulties in accepting their appearance, changes in social and private life, and the financial burden of the disease can become sources of chronic stress, potentially triggering various mental health disorders, including depression and anxiety. Hölsken et al. (2021) demonstrated that psoriasis symptoms often exacerbate under psychological stress and stressful events, further evidencing a connection between the somatic and psychological spheres.

1.3. The bidirectional relationship between depression and Psoriasis

The comorbidity of chronic inflammatory diseases, such as psoriasis, with psychological disorders is a complex and multifaceted relationship. Over the past decade, numerous studies have described the bidirectional nature of the connection between psoriasis and mental health disorders (Hölsken et al., 2021; Koo et al., 2017; Sahi et al., 2020). A systematic review from 2021, encompassing 56 studies, identified a neuro-dermatological link between psoriasis and depressive-anxiety disorders (Maqbool et al., 2021). The inflammatory process, with an immunological basis, was found to be closely associated with both conditions. Blood and cerebrospinal fluid analyses in individuals suffering from depression revealed elevated levels of inflammatory markers, such as CRP (C-reactive protein), IL-1, IL-6, and TNFα. Some studies have demonstrated a clear association between increased TNFα levels and heightened activity of the serotonin transporter (5HTT) – a key target for antidepressants, including SSRIs (selective serotonin reuptake inhibitors), SNRIs (serotonin-norepinephrine reuptake inhibitors), and TCAs (tricyclic antidepressants), which inhibit this activity. The chemokine CXCL10/IP10 (interferon γ-induced protein) also plays a significant role, with its levels observed to rise during episodes of severe depression (Krishnadas et al., 2016). This chemokine is linked to the increased influx of Th1 lymphocytes – a subset of immune cells contributing to the inflammatory response.

The immunological basis of psoriasis is characterized by the presence of numerous inflammatory cytokines, including TNFα, which promotes increased activity of antigen-presenting cells in the epidermis (dendritic cells, DCs). These dendritic cells, by releasing further inflammatory cytokines, facilitate the influx of other immune cells into the upper layers of the skin and epidermis. The IFNγ (interferon γ) produced by these cells also elevates the levels of the aforementioned chemokine CXCL10/IP10. A key factor in the etiology of both psoriasis and depression is the reduced level of BDNF (brain-derived neurotrophic factor) in the hippocampus, which diminishes neurogenesis.

As demonstrated above, the presence of chronic inflammation is a common feature of both psoriasis vulgaris and depression. Researchers studying the inflammatory theory that links these two conditions emphasize the importance of considering this phenomenon when selecting pharmacological therapies (Bell et al., 2021). Maqbool et al. (2021) note that dermatology patients with coexisting depressive disorders tend to exhibit a demotivated attitude towards treatment, and pharmacotherapy aimed solely at reducing localized skin symptoms is less effective compared to those without psychiatric comorbidities. Koo et al. (2017) suggest that therapies focusing on reducing inflammation by lowering IL-6 levels may prove to be effective. The bidirectional relationship between psoriasis and depression also underscores the potential for improving the mental health of patients undergoing systemic psoriasis treatment (Hölsken et al., 2021). Certain biologic therapies, such as adalimumab, etanercept, and ustekinumab, used in the treatment of psoriasis vulgaris, have shown statistically significant effects in reducing depressive symptoms. Patients treated with secukinumab or ixekizumab demonstrated lower scores on the DLQI questionnaire (González-Parra & Daudén, 2019). However, the latest guidelines for systemic treatment of psoriasis vulgaris recommend caution in the use of brodalumab and apremilast in patients with a history of depression and suicidal behavior (Lambert et al., 2020). The U.S. Food and Drug Administration (FDA) issued a "black box warning" following reports of six suicide incidents in four different clinical trials involving brodalumab. These current recommendations highlight the critical importance of considering both physical and mental health in patient care. Therefore, treatment decisions should not be made in isolation from the psychological condition of individuals suffering from psoriasis vulgaris

1.4. Mental disorders

The prevalence of mental disorders, particularly depressive and anxiety disorders, represents a global challenge, extending beyond populations with chronic illnesses. According to the World Health Organization (WHO, 2020), depression currently accounts for 4.3% of the global disease burden. Anxiety disorders may coexist with depressive disorders or present independently. The latest edition of the American Psychiatric Association's Diagnostic and Statistical Manual of Mental Disorders, DSM-5, identifies five types of depressive disorders: (1) Major Depressive Disorder, (2) Persistent Depressive Disorder, (3) Substance/Medication-Induced Depressive Disorder, (4) Depressive Disorder Due to Another Medical Condition, and (5) Premenstrual Dysphoric Disorder. This classification also, for the first time, delineates specific spectrums of anxiety disorders: (1) Generalized Anxiety Disorder, (2) Panic Disorder, (3) Agoraphobia, (4) Social Anxiety Disorder, (5) Separation Anxiety Disorder, and (6) Specific Phobias. A new category for mixed anxiety-depressive disorder has also been introduced, capturing the spectrum of both types of disorders. This novel approach to classifying anxiety-related disorders is grounded in the expanding knowledge of the neuronal pathways underlying stress, panic, obsessions, and compulsions (Crocq, 2015).

The increased prevalence of mental disorders in patients with chronic dermatological conditions is a phenomenon widely documented in the literature. The co-occurrence of depression has been estimated to affect 20-62% of these patients. Moreover, severe depression, accompanied by suicidal ideation and anxiety, affects 2.5% to 9.7% of patients (González-Parra & Daudén, 2019). A review of multiple studies has revealed that the rate of self-destructive behaviors among patients with severe depression associated with psoriasis is ten times higher than in the general population (Lamb et al., 2017). The risk of depressive symptoms also extends to patients with mild to moderate depression, where exacerbated depressive symptoms increase the sensation of pruritus, a common symptom in certain types of psoriasis.

The chronic nature of psoriasis vulgaris and the social challenges faced by patients are directly linked to an increased risk of certain mental disorders. Among 104 participants in the aforementioned study by Groover et al. (2020), 30% of patients had at least one psychiatric diagnosis, independent of residence, disease duration, seasonal exacerbations, and regressions, or BSA (Body Surface Area) assessment.

An additional stressor in the course of psoriasis can be the area of the body affected by psoriatic plaques. Łakuta et al. (2018) examined the correlation between the location of skin lesions and depression and social phobia. The analysis demonstrated that both disorders were strongly associated with the presence of skin lesions in exposed areas, such as the head and neck. A particularly strong correlation was observed between involvement of the genital area and the presence of depressive symptoms.

The emergence of mental disorders is a critical issue due to the consequences of neglecting their presence. Studies indicate that patients with psoriasis vulgaris diagnosed with depression are at greater risk for myocardial infarction, stroke, and cardiovascular-related death, particularly during an acute depressive episode. Numerous studies have shown that the prognosis for patients with mental disorders is worse due to less adherence to treatment compared to those without such disorders. Patients with a depression diagnosis are more likely to focus on the negative aspects of the disease. The specter of recurrent skin symptoms, despite ongoing treatment, discourages them from continuing therapy (Sahi et al., 2020).

1.5. Social support

Social support is one of the most extensively studied personal resources. In the 20th century, Dr. Sidney Cobb published an article in *Psychosomatic Medicine* (1976) defining social support as information that leads an individual to believe they are cared for, loved, esteemed, and a member of a network of mutual obligations. This definition became the foundation for the development of the social support model, and Cobb's work has been cited over fourteen thousand times by social researchers. Cobb (1976) introduced the concept of support as a determinant of health and stress levels in individuals. A meta-analysis of studies from the past century demonstrated that patients suffering from various chronic illnesses who receive social support tend to employ more adaptive coping mechanisms, such as problem-focused coping and cognitive restructuring – identifying and challenging maladaptive thoughts (Schreurs et al., 2003). Hypotheses regarding the mechanisms through which this resource operates are contextualized by the circumstances under which it is utilized. The first hypothesis posits social support as a factor that generally benefits individuals, irrespective of stress levels. The second hypothesis suggests that social support acts as an intermediary variable between life events and their consequences. An individual taps into the mechanisms of the support network only in situations of heightened stress to mitigate its effects and survive the crisis, thus making social support a buffer rather than a factor that permanently conditions human well-being (Sęk & Cieślak, 1997).

From the perspective of measuring social support, two categories of variables are distinguished. *Received support* can be measured through observation or questionnaires. *Perceived support*, understood as satisfaction with received assistance, is subjectively evaluated by the individual and quantified using self-report questionnaires. In the literature, various dimensions of social support are delineated depending on what is conveyed to the individual. For the purposes of this work, the typology by Sęk and Cieślak has been used, which identifies: spiritual, instrumental, informational, emotional, and material support. *Spiritual support* involves actions by members of the support network that help imbue life's difficulties with deeper meaning. Any advice and indirect means that help the individual better cope with a stressor are defined as *instrumental support*. *Informational support* involves providing the individual with necessary information, particularly in the context of illness, such as details about health status, treatment options, or prognosis. This type of support can be provided not only by professionals but also by peer support groups. *Emotional support* includes expressions of care, empathy, and trust, as well as the opportunity for the patient to express emotions, which can bring relief and reduce stress related to the accumulation of negative feelings. *Material support* refers to financial resources and other tangible goods that constitute concrete assistance.

The effectiveness of social support in positive adaptation to illness has been demonstrated in numerous scientific studies. It has been shown that a high level of support from close individuals reduces the need for other forms of help, including religious support, and steers the individual away from pathological adaptive mechanisms (Włodarczyk, 1999). Social support also serves as a positive predictor of reduced fatigue among caregivers of individuals with chronic illnesses (Brzezińska, 2013).

2. Objective of the study

The objective of this study is to review the available research on the impact of social support on the mental health of patients with chronic plaque psoriasis. Additionally, the study examines the benefits of a holistic approach to the therapeutic process in patients with chronic illness, with particular emphasis on multidisciplinary medical care

3. Literature review

3.1. Study 1

The first study that offers insight into the role of social support in the course of chronic plaque psoriasis is an analysis conducted on a population of dermatology patients at the La Sapienza University Clinic in Rome (Picardi et al., 2005). This study aimed to examine the role of four variables: social support, attachment, alexithymia, and stressful life events in exacerbations of chronic plaque psoriasis, the most common form of the condition. The study group consisted of 33 individuals aged 18-60, who had received a diagnosis of psoriasis confirmed by at least two dermatologists. Additional inclusion criteria included a *Body Surface Area* (BSA) greater than 10% and at least 8 years of formal education. All participants experienced a psoriasis exacerbation within three months preceding the study. The control group comprised 73 dermatology patients diagnosed with conditions not commonly associated with an increased risk of depressive symptoms. The most prevalent conditions included contact dermatitis, bacterial infections, skin cancers, and connective tissue diseases. Patients with chronic plaque psoriasis were, on average, older and less educated. No significant differences were found in terms of gender, marital status, or tobacco and alcohol use.

The variables in the study were assessed using questionnaires administered by specialists during interviews. Stressful life events were evaluated using the Italian-modified *Paykel's Interview for Recent Life Events*. Importantly, only events that occurred before the exacerbation episode were considered in the analysis. Social support was assessed using the *Multidimensional Scale of Perceived Social Support* (MSPSS), which includes 12 items covering support from friends, family, and others, each rated on a 7-point scale. The conceptualization of the attachment variable was based on tendencies related to the perception of others, self-perception, and preferred coping strategies in the face of threat. Attachment was assessed using the *Experiences in Close Relationships* (ECR) questionnaire, which examines two dimensions: anxiety and avoidance, contributing to adult attachment styles. The final variable, alexithymia – defined as the inability to understand, identify, and express emotions – was assessed using the *Toronto Alexithymia Scale* (TAS). In the statistical analysis, stressful events were categorized as either desirable or undesirable, controllable or uncontrollable, with a separate category for traumatic events such as bereavement. Scores from the attachment and social support questionnaires were summed separately for each variable. TAS scores below 52 points were considered non-alexithymic, scores between 52-60 as borderline, and scores above 60 as indicative of alexithymia. Chi-square and t-Student tests were used for the statistical analysis of categorical and continuous variables, respectively, along with regression models for dependent and independent variables.

The analysis revealed that individuals in the study group did not experience a higher number of stressful events compared to patients without psoriasis, but they did score lower on the MSPSS and lower on the avoidance dimension of the ECR. Additionally, TAS results indicated a higher level of alexithymic traits in the study group. No significant differences were observed in the anxiety dimension of the ECR.

As the author discusses, these results support the psychosomatic nature of psoriasis. Although there was no correlation between stressful events and exacerbations of chronic plaque psoriasis, the remaining variables underscore the importance of psychological components in the induction and exacerbation of dermatological symptoms. Picardi et al. (2005) highlight the relationship between attachment style and social support. Individuals with a secure attachment style are more likely to seek support and believe in its efficacy in managing difficult situations, exhibiting higher levels of trust than those with an avoidant attachment style. In contrast, the avoidant attachment model may exacerbate perceived stress, affect the intensity and duration of the stress response, and result in ineffective help-seeking behavior. The lack of social support may activate alternative coping mechanisms, potentially generating additional stress

3.2. Study 2

Another study addressing the psychosomatic aspects of psoriasis is a multicenter study published in 2017 in *Health Psychology Report* (Sakson-Obada et al., 2017). Researchers from the Department of Psychology at Adam Mickiewicz University in Poznań, along with the Departments of Geriatrics and Dermatology at Poznań University of Medical Sciences, examined the relationships between disease acceptance and selected medical and psychosocial factors. The study involved 109 patients with chronic plaque psoriasis, including 54 men and 55 women, aged 18-89 years. Medical variables included the *Psoriasis Area and Severity Index* (PASI), age at diagnosis, and disease duration. Demographic variables included gender, relationship status, financial situation, and education level. The key variables of interest were social support, body image, and body experiences.

Disease acceptance, understood as the ability to adapt to and overcome difficulties related to the illness, was measured using the *Acceptance of Illness Scale* (AIS). This scale consists of 8 items, each rated on a five-point scale, where higher scores indicate greater disease acceptance. The study also utilized the *Body Self Questionnaire* (BSQ), which consists of sections addressing body experiences and body image. Body experiences were assessed in four categories: lowered sensory threshold, heightened sensory threshold (both scales related to disturbances in the perception of external stimuli), interpretation of emotions and physiological needs, and regulation of emotions and physiological needs. Body image was assessed across three scales: satisfaction with appearance, satisfaction with physical activity, and acceptance of biological sex. Each category was rated on a five-point scale, with higher scores indicating greater disturbances in body experiences and poorer body image. Social support was evaluated using the *Berlin Social Support Scale* (BSSS), a self-report questionnaire divided into two parts: perceived support (emotional and instrumental) and received support (emotional, instrumental, and informational). Each dimension of support was rated on a four-point scale, with higher scores indicating more robust social support.

To explore the relationships between BSQ, PASI, age, disease duration, age at diagnosis, and AIS, Spearman's correlation coefficients were used. To link AIS with demographic variables, t-tests and Fisher's exact tests were employed. Predictors of psoriasis acceptance were identified using multiple linear regression analysis.

The results of these analyses revealed that both medical and demographic variables were unrelated to the level of disease acceptance, consistent with findings from other studies. It was found that individuals with higher levels of social support exhibited greater disease acceptance, with each dimension of support reaching statistical significance. This suggests a positive relationship between social support resources and coping with the disease, aligning with the findings of Study 1. A strong relationship between disease acceptance and all aspects of body experiences and body image was also observed. The strongest positive correlations were found for satisfaction with appearance and acceptance of biological sex.

In the discussion, the author emphasizes the role of social support and satisfaction with appearance in the course of the disease. A lower self-assessment of appearance and lack of support are significant risk factors for depression in the course of chronic plaque psoriasis. One component of this relationship is chronic stress, stemming from feelings of loneliness, inadequacy, and societal rejection. Based on the study's findings, it can be concluded that unimpaired perception of external stimuli, such as cold, touch, and vibrations, as well as the ability to identify and discharge emotions and physiological needs, are crucial resources in the process of accepting a chronic disease. Conversely, a negative body image contributes to psychological disturbances, including eating disorders, self-destructive tendencies, and depression. The results also indicated that a longer duration of the disease was associated with perceptual and emotional regulation disturbances, as well as lower satisfaction with physical fitness, bridging the gap between medical factors and disease acceptance.

3.3. Study 3

Wojtyna et al. (2017) conducted a descriptive cross-sectional study involving a cohort of 219 patients aged 18 years and older (124 women and 95 men) who had been diagnosed with chronic plaque psoriasis at least one year prior to the study. Additionally, these patients did not have any severe psychiatric or cognitive disorders. The primary aim of the study was to answer the question, "What determines depressive symptoms and distress among patients with chronic plaque psoriasis?" The clinical and demographic characteristics of the study participants included age at diagnosis, disease duration, duration of psoriasis treatment, age, employment status, place of residence, and marital status. The researchers sought to identify factors that induce or exacerbate depressive symptoms among variables such as social support, subjective distress, beliefs about the significance and impact of appearance on the patient's life, and the extent of body surface area affected by psoriatic lesions.

To assess these variables, several scales and self-report questionnaires were utilized. One of the primary tools used was the *Beck Depression Inventory* (BDI), a widely recognized instrument for diagnosing depression. Participants completed a 21-item questionnaire, assigning each distractor a score ranging from 0 to 3 points. Higher cumulative scores indicated more severe levels of depression. The extent of body surface area involvement was evaluated using the *Body Surface Area* (BSA) scale, one of the most frequently employed measures of psoriasis severity. Scores below 10% indicated mild psoriasis, while those above 10% were indicative of moderate to severe psoriasis.

Subjective distress was measured using the *Distress Thermometer* (DT), a visual-analog tool. Patients marked a vertical line on a 1-10 scale to indicate their level of distress, with scores above 4 considered a risk factor for developing anxiety and depressive disorders. The belief in the importance of appearance was assessed using the *Appearance Schemas Inventory – Revised* (ASI-R), a scale divided into two parts. One part focused on self-assessed importance (ASI-SES, 12 items), understood as the extent to which individuals define themselves and their self-worth through their appearance. The other part assessed motivational salience (ASI-MS, 8 items), understood as the attention paid to appearance and behaviors aimed at enhancing it. *The Berlin Social Support Scale* (BSSS) was used to assess social support in terms of perceived support (emotional and instrumental). Group comparisons were conducted using Student's t-test, while multiple regression analyses were employed to identify variables associated with the presence of depressive symptoms separately for men and women, as well as combined. A multivariate logistic regression analysis was conducted to describe factors associated with the likelihood of depression.

The results of the BDI questionnaire revealed that nearly half of the participants fell within the range of probable depression, with 21% of respondents reporting suicidal thoughts. Approximately 70% of patients reported a distress level above 4 points. Depressive symptoms and distress were significantly more common among women, with the risk of depressive symptoms being twice as high in female patients compared to males. Additionally, the total scores on the ASI scales (both in the self-assessed importance and motivational salience subscales) were statistically higher in the female group.

The findings of the remaining analyses indicate that the most significant factors associated with the presence of depressive symptoms are social support (specifically the emotional dimension), subjective distress, ASI-SES (only in the female group), and BSA, with the latter showing the weakest correlation, a relationship observed only in the male group.

In the study's concluding section, the author highlights the differing psychosomatic factors in chronic plaque psoriasis between men and women.

Female participants placed greater emphasis on their body image and perceived skin lesions as significantly impacting their self-evaluation, even though no direct correlation was found between the extent of body surface area affected by psoriatic plaques. The author attributes this relationship to the societal pressure on women regarding their physical appearance. The discrepancy between the culturally ingrained ideal of beauty and the patient's subjective body image is described as a dysfunctional schema exacerbating psychological disorders. The researcher also explains the more frequent occurrence of depressive disorders among patients with mild psoriasis and the less severe depressive symptoms in those with moderate or severe psoriasis. This phenomenon is attributed to a greater contrast between the culturally established body image and the self-perception of patients with more severe disease, as well as a sense of social exclusion, which is linked to lower societal expectations regarding the appearance of patients with more pronounced lesions. The author places emotional social support at the forefront of protective factors against mental disorders.

3.4. Study 4

Polish researchers conducted an analysis on a cohort of 104 patients at the Dermatology Clinic in Lublin (Janowski et al., 2012). The study aimed to assess the relationship between social support and adaptation to life with chronic plaque psoriasis in both women and men. The conceptualization of the variable "social support" was based on the multidimensional model described by Sęk and Cieślak (1997), which includes instrumental, informational, emotional, spiritual, and material support.

The study included 52 men and 52 women, aged between 15 and 73 years. Data collected from patients included age, gender, marital status, education level, employment status, and clinical data such as disease duration, presence of psoriatic lesions on exposed and covered areas, number of hospitalizations, comorbidities, living with family, and disease severity measured by the *Psoriasis Area and Severity Index* (PASI). Psychological tests were administered to operationalize variables including adaptation to life with the disease, social support, quality of life, and depressive symptoms.

Adaptation to life with the disease was defined as the patient's ability to reconcile with their health status and maintain a relative level of life satisfaction despite the limitations imposed by the disease. This was assessed using the *Acceptance of Life with the Disease Scale* (ALDS), where patients responded to 20 items rated on a scale from 1 to 4, with higher scores indicating better adaptation. Social support was measured using the *Disease-Related Social Support Scale* (DRSSS), developed by the study authors.

The quality of life related to the disease was measured using the Skindex-29 questionnaire, which consists of three subscales assessing physical symptoms, functioning, and emotions where higher scores indicate poorer quality of life. The final variable, depressive symptoms, was assessed using the *Beck Depression Inventory* (BDI), as in Study 3. However, in this study, a score of 12 points was considered the threshold for clinically significant depressive symptoms.

The correlation between social support and other psychological indicators was evaluated using Spearman's rho correlation coefficient, separately for men and women, and for both groups combined. The relationship between specific dimensions of support and the adaptation process was further analyzed through regression analyses. Cluster analysis was employed to identify subgroups of patients homogeneous in terms of overall adaptation to the disease, followed by an analysis of variables that allowed for the comparison of average social support scores within these subgroups.

No statistically significant differences were found between men and women in terms of social support levels and adaptation to life with the disease. However, women scored higher on the BDI and on the emotional dimension of the Skindex-29 scale, indicating a higher prevalence of depressive symptoms and poorer emotional adaptation. Clinical data were unrelated to depressive symptoms and adaptation to life with the disease, except for a negative correlation between disease duration and instrumental social support.

Social support was strongly correlated with adaptation to the disease in both men and women, particularly in the form of material support. Moreover, material, emotional, and spiritual support were significantly more strongly associated with better adaptation among men. Differences were also noted in the relationship between social support and depressive symptoms in the two subgroups. Women who received higher levels of instrumental and informational support were less likely to experience anxiety disorders, which the authors attribute to an increased sense of control and reduced helplessness among these patients. This relationship did not hold for men, for whom emotional and material support were more critical in preventing depressive symptoms. Thus, the same forms of support that aided men's adaptation to life with the disease were also important in mitigating depressive symptoms. In contrast, male patients exhibited higher quality of life in the emotional domain compared to female patients.

4. Summary

A review of the available studies underscores the importance of social support as a mitigating factor for depression and anxiety symptoms in patients with psoriasis. The bidirectional relationship between psoriasis and depression offers new insights into the treatment process. The theory of an inflammatory basis for both conditions imposes new challenges for dermatologists, who are often the first healthcare providers to see these patients. Accurate assessment of a patient's mental state can facilitate the reduction of psoriasis symptoms through the timely initiation of psychiatric treatment. As demonstrated in the aforementioned studies, treatment that reduces inflammatory processes can lead to improvements in both dermatological and psychiatric symptoms (Koo et al., 2017; Maqbool et al., 2021). Additionally, awareness of the patient's psychological condition can help avoid errors in selecting biological treatments, such as opting against brodalumab in favor of other inflammatory cytokine inhibitors. Comprehensive patient care that includes psychological aspects is therefore critical to the therapeutic process.

Discussion

In the context of utilizing social support, it is essential to recognize gender differences in the type of support desired. Instrumental and informational support proved more effective in women, while men showed better adaptation to the disease when provided with emotional, spiritual, and material support. Studies 2 (Sakson-Obada et al., 2017) and 4 (Janowski et al., 2012) indicate that women are particularly at increased risk for depression and anxiety disorders. In these studies, female patients placed greater importance on their appearance, which had more significance for them than it did for men. This observation is crucial for psychologists working with female clients affected by chronic dermatoses with visible skin changes. Study 2 (Sakson-Obada et al., 2017) found that higher levels of support were positively correlated with a better body image and overall disease acceptance, whereas lower support levels were more frequently associated with poorer self-assessment of appearance.

The location of psoriatic lesions also seems significant in the context of body image. Although studies on the impact of this factor on the patient's psychological state are inconclusive, it is important to note that this is a highly individual matter. Dermatological scales commonly used, such as PASI or BSA, may not be the best tools for linking the severity of lesions to the patient's mental state. Extensive lesions in covered areas may have less harmful effects than smaller lesions on the face or genital areas. This indicates the need to develop tools that can be used by dermatologists, psychiatrists, and psychologists alike in patient assessment.

The importance of social support in improving the mental health of patients with chronic plaque psoriasis is a topic that requires further exploration. A significant limitation of this field is the small number of studies addressing this issue. The studies analyzed in this article are limited to a small number of patients and clinical centers. Additionally, the article does not propose a method for implementing different types of social support, focusing solely on the theoretical aspects of this issue.

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Resiliency Scales – tool adaptation and a preliminary analysis of psychometric properties[1]

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Abstract: The presented study aimed to adapt the Resiliency Scales – A Profile of Personal Strengths in a group of 357 students (178 adolescents with mild intellectual disability and 179 students within intellectual norm) and to conduct a preliminary analysis of its psychometric properties. In accordance with the theoretical background of the completed analyses – resilience theory – the respondents taking part in the study have experienced various challenges during their life. The Resiliency Scales – A Profile of Personal Strengths intends to measure such personality traits of an individual that enable them to better overcome difficulties and adversity (Prince-Embury, 2006). The first stage of the psychometric verification was to study descriptive statistics and distribution. The next stage was reliability analysis and confirmation procedure for factor analysis. The last phase of the adaptation was to standardize the results and prepare norms. As a result of the performed analyses, it can be concluded that Resiliency Scales – A Profile of Personal Strengths is characterized by satisfactory psychometric properties.

Keywords: adolescence, instrument adaptation, mild intellectual disability, psychological resilience

Introduction

The concept of resilience has a key meaning for therapeutical practice, preventive care, and social rehabilitation. However, it should be preceded by a reliable and accurate diagnosis of personality correlates that correspond to the concept of resilience. These constructs must be identified for an individual who is to become the recipient of the strategies. Over the years, both theorists and researches have strived to develop tools which will enable measurement of personality features that contribute to coping with adversities in the environment and socially challenging situations (Urban, 2012, p. 154). The Resiliency Scales: A Profile of Personal Strengths by Sandra Prince-Embury might be an example of such a tool.

1. Resiliency – the theoretical aspect

The concept of resilience has been present in social and medical sciences for over 50 years (Talaga, Sikorska, Jawor, 2018). It appeared in response to researchers' interest in proper development of children and adolescents who grow up in unfavourable life conditions (Sikorska, 2017). The word *resilience* comes from Latin *resilire*, and it means returning to the beginnings, regaining balance, bouncing back.

Psychological resilience determines a range of behaviours and attitudes of an individual. It might constitute a significant factor in goal achievement (Ryś, Trzęsowska-Greszta, 2018). Moreover, it is considered to have a buffering and preventive effect in difficult situations experienced by an individual (Franczok- Kuczmowska, 2022). Emmy Werner has conducted pioneering research on the phenomenon of resilience. This was longitudal research in which the

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[1] Article in polish language: https://www.stowarzyszeniefidesetratio.pl/fer/59P_Wojc.pdf

author analysed life conditions of pregnant women and subsequently (after giving birth) she analysed functioning of their children (Kwiatkowski, 2016). The research was carried out on the Hawaiian island of Kauai and involved 698 children born in 1955 (about 1/3 of them grew up in difficult conditions). Along with a team of specialists (paediatricians, psychiatrists, psychologists, and social workers), Werner observed their life for 32 years (after: Borucka, Ostaszewski, 2008). As a result of this study, it was possible to distinguish specific protective factors which fostered children's positive adaptation despite exposure to significant risk factors, such as: poverty, conflicts, unfavourable family climate, parental mental disorders, and parents' low level of education (Werner, 1994).

Knowing about Werner's pioneering research we can conclude that the concept of resilience stems from observation of children and adolescents who grow up in adverse conditions. This is why definitions of resilience proposed over the years referred mainly to periods of life such as: childhood, adolescence, and early adulthood. Additionally, they put emphasis on proper functioning of children and adolescents, appropriate achievement of developmental tasks and competence despite facing adversity of different kinds (Luthar, Cicchetti, Becker, 2000). In accordance with this approach, resilience can be defined after Werner both as the individual's ability to cope with stress and an above-average (for their age and life circumstances) level of psychological strength of a person (O'Donnell, Schwab-Stone, Muyeed, 2002).

A review of the literature on the subject allows us to conclude that apart of the approach described above, the term *resilience* can be understood more broadly. In this case, it is defined as a dynamic process which shows a person's relatively good adaptation despite adversity, hazards, or traumatic obstacles. This process involves the interaction of protective factors and risk factors. It is also worth paying attention to understanding resilience in terms of a certain development process. Resilience is then meant to serve children and adolescents to gain competences, despite adversity, of using both internal and external resources to achieve positive adaptation (Borucka, Ostaszewski, 2008). We can, therefore, say that the term resilience covers different groups of phenomena, and the most common ones are:

- "Functioning at a significantly better level than could be supposed considering risk factors,
- maintaining high level of functioning despite stressful experiences,
- regaining a normal level of functioning after traumatic experiences" (Mudrecka, 2013, p. 51-52).

Notably, a part of researchers uses the term resilience in reference to personality traits – *ego-resiliency*. This term was used for the first time by Jack Block and Jeanne H. Block at the beginning of 1980. It referred to "a set of features which reflect daring in dealing with stress or problems, as well as strength of character and flexibility in adapting to different life circumstances" (Borucka, Ostaszewski, 2008, p. 2). In this view, *ego resiliency* is an individual trait that can exist without the presence of difficult life events (ibidem). It is characterized by resourcefulness, flexibility, and endurance in reaction to changes that take place in the environment (Luthar et al. 2000).

2. A psychometric analysis of Resiliency Scales – a Profile of Personal Strengths

The Resiliency Scales – A Profile Personal Strengths is a tool developed by Sandra Prince-Embury. It allows to identify these personal trains which enable adolescents more effective coping in the face of different adverse situations (Prince-Embury, 2006). Personal dimensions that have been included in the scale refer to the concept of ego-resilience as proposed by Jeanie and Jack Block. Ego-resilience includes resourcefulness, strength of character and resilience in the person's functioning, which is reflected in their reactions to certain events in the environment (Urban, 2012). The tool includes three scales (Opora, 2016, p. 254):

a. Sense of Mastery Scale, which includes the following dimensions:
- optimism,
- self-efficacy,
- adaptation skills,

b. Sense of Relatedness Scale, which includes:
- trust,
- access to support,
- social comfort,
- tolerance of difference

c. Emotional Reactivity Scale, with dimensions:
- sensitivity,
- recovery,
- impairment in emotional reactivity.

The Sense of Mastery Scale consists of 20 statements. The respondents give their answers on a five-point scale: 0 –"never", 1 – "rarely", 2 – "sometimes", 3 – "often", 4 –nearly always" (Opora, 2016). The scale includes both the individual's belief that he or she can effectively and efficiently influence the environment, as well as the belief in the effectiveness of one's own actions in the face of an emerging difficulty or obstacle. Low results on this scale along with high results on other scales might indicate the individual's increased self-esteem and protective escape (Urban, 2012, p. 155-156).

The Sense of Relatedness Scale includes 24 statements. The respondents give answers on a five-point scale:0 –"never", 1 – "rarely", 2 – "sometimes", 3 – "often", 4 –nearly always" (Opora, 2016). The scale makes it possible to examine a person's experiences in relations with other people, which is expressed through the comfort of trust in others, as well as access to support. These aspects are important in overcoming adversities. One of the dimensions in the scale – trust – is related to expectation of positive actions from people that the person interacts with or forms social systems with. Access to support, in turn, depends on trust. Social comfort is related to a person's temper. We can describe it as "the warmth of being with others". The last dimension listed above, tolerance of difference, refers to recognizing the right of other people to have and publicly express their own opinions (Urban, 2012, p. 156- 157).

The Emotional Reactivity Scale consist of 20 statements. The respondents give answers on a five-point scale: 0 –"never", 1 – "rarely", 2 – "sometimes", 3 – "often", 4 –nearly always". The scale includes three dimensions, which are interrelated: sensitivity, recovery, and impairment in emotional reactivity (Opora, 2016). The scale is based on the assumption that "regulation is mediated by intra- and extra organic factors through which emotional arousal is redirected, controlled, modulated and modified, and thus the individual can adapt to a challenging situation" (Urban, 2012, p. 158). The dimension identified in the scale – sensitivity – refers to the speed and intensity of emotional reactions, as well as predisposition to evoke emotions. The ability to recover, on the other hand, refers to an individual's ability to return quickly to normal functioning after a strong emotional reaction. The last dimension – impairment in emotional reactivity – is visible in deteriorated functioning because of emotional arousal. Conversely to Sense of mastery scale and the Relatedness scale, low scores obtained on the emotional reactivity scale signify resilience–the lack of a person's reactions in response to weak stimuli. High scores, on the other hand, are a sign of oversensitivity (low threshold of sensitivity) (Urban, 2012, p. 156).

The Resiliency Scale – A Profile of Personal Strengths might be applied both in clinical practice and in research aimed at identifying personality traits that make up the phenomenon of resilience (Urban, 2012). The Cronbach alpha reliability coefficients for the Resiliency Scales – A Profile of Personal Strengths range between 0.92-0.94 (Prince-Embury, 2006). It should be noted the adaptation was based on the translation of the scale included in the book "*Ewolucja niedostosowania społecznego jako rezultat zmian w zakresie odporności psychicznej i zniekształceń poznawczych*" by Robert Opora (2016).

3. Psychometric properties of the questionnaire in own research

3.1. The method

The aim of the performed analyses was to present the process of adaptation of the Resiliency Scale – A Profile of Personal Strengths in a group of adolescents with a mild intellectual disability and among students with the intellectual norm. The first stage of analyses was to verify descriptive statistics and distribution. Then, a reliability analysis and confirmatory factor analysis procedure were performed. The last stage was standardization of the results and preparation of the norms. Statistical analyses were performer with the use of IBM SPSS Statistics 25 and AMOS.

3.2. Respondents

A group of 357 adolescents took part in the study (178 students with a mild intellectual disability and 179 within the intellectual norm). Due to the diverse etiology of mild intellectual disability, people with multiple disabilities and those diagnosed with a genetic syndrome were excluded from the study. It should also be noted that, as the theoretical basis of this research was the concept of resilience, the analyzes included the results of respondents who had experienced various adversities during their lives. To be exact, situations considered adverse were among others: loss of contact with a significant person or their death, serious illness of one of the parents/caretakers or the student him- or herself, divorce or separation of parents/caregivers, disability, growing up in an environment with an increased risk of pathology. Prior to the onset of the study, a written consent to participate in the project was obtained (both from the respondents and from their parents/legal caregivers).

Students aged 12 to 19 took part in the research. To specify, the average age of the respondents from the group of adolescents with mild intellectual disabilities was 16 years. The average age among adolescents within the intellectual norm was 17 years. Students with a mild intellectual disability attended special school complexes (45.5%) and special education centres (54.5%). The adolescents within the intellectual norm attended primary schools (23.5%), general education secondary schools (48.6%) and secondary technical schools (27.9%). The respondents form both groups attended schools in the Malopolskie region.

To characterize the sample group more fully we should also add information about the professional situation of the parents/ caregivers of the students. In the group of adolescents with a mild intellectual disability, 57.9% of students declared that both parents were employed. In comparison, among teenagers within the intellectual norm, 74.9% adolescents declared that they parents were working. Moreover, in the group of respondents with a mild intellectual ability, 52.2% respondents were men. In the group of adolescents within the intellectual norm men made up 54.2%.

Table 1. Descriptive statistics with the Kolmogorov-Smirnov test for the Resiliency Scale divided into groups of adolescents within the intellectual norm and a mild intellectual disability.

		n	*M*	*Me*	*SD*	*Sk.*	*Kurt.*	*Min.*	*Max..*	*D*	*P*
Adolescents with an intellectual disability	Sense of Mastery	178	52,03	52	13,58	-0,39	0,72	6	80	0,06	0,200
	Sense of Relatedness	178	64,33	66	15,11	-0,58	0,43	15	96	0,06	0,084
	Emotional Reactivity	178	38,73	36	15,99	0,21	-0,55	0	76	0,07	0,021
Adolescents within the intellectual norm	Sense of Mastery	179	54,82	57	14,59	-0,82	0,48	8	80	0,07	0,022
	Sense of Relatedness	179	68,96	72	15,40	-0,96	0,42	22	94	0,12	0,000
	Emotional Reactivity	179	34,74	34	14,14	0,19	-0,52	8	70	0,05	0,200
The whole group	Sense of Mastery	357	53,43	54	14,14	-0,60	0,46	6	80	0,06	0,008
	Sense of Relatedness	357	66,65	69	15,41	-0,74	0,26	15	96	0,09	<0,001
	Emotional Reactivity	357	36,73	35	15,20	0,25	-0,47	0	76	0,06	0,004

Source: Own elaboration

4. Results

The Resiliency Scale – A Profile of Personal Strengths by Prince-Embury consists of three basic scales: Sense of Mastery Scale, Sense of Relatedness Scale, and Emotional Reactivity (Prince-Embury, 2006). The aim of this analysis was to verify psychometric properties in a group of adolescents between 12 and 19 years of age, within the intellectual norm and with a mild intellectual disability. As the first step, descriptive statistics and distribution were verified. The detailed data are presented in Table 1 and Figures 1-3.

The result of the Kolmogorov-Smirnov test turned out to be statistically significant for most of the variables, which means that their distribution deviated significantly from the normal distribution. However, it should be noted that skewness does not exceed the conventional absolute value of 1, which means that the distribution asymmetric to only a slight extent.

4.1. A reliability Analysis of Resiliency Scales

A reliability analysis of particular subscales in the sample group was carried out with Cronbach's alpha method and it is: 0.91 for the Sense of Mastery scale, 0.91 for the Sense of Relatedness Scale and 0.79 for the Emotional Reactivity Scale. Based on these analyses we can conclude that all subscales can be considered reliable. However, it should be noted that the obtained results were lower than in the original tool, where the results were respectively: 0.95; 0.95 and 0.94, with *n* = 200 (Prince -Embury, 2006).

4.2. Confirmatory factor analysis of the Resiliency Scales

At the next stage, a confirmatory factor analysis was performed. The factors were selected according to the original structure of the tool (Prince- Embury, 2006). The model tested in CFA was presented in Figure 4. The level of model fit was very good and it amounted to CFI = 0.96, RMSEA = 0.07. These properties are comparable to the ones obtained with the original scale (GFI = 0.92, RMSEA = 0.05) (Prince- Embury, 2006).

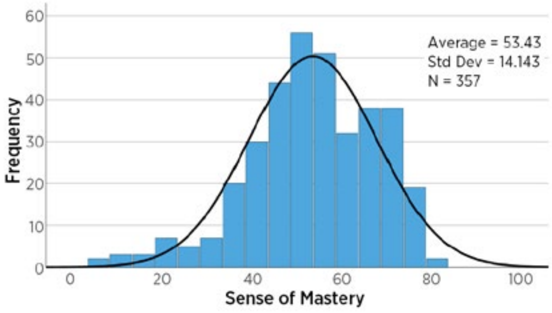

Figure 1. Distribution of results for the whole group in Sense of Mastery Scale in Resiliency Scales.

Source: Own elaboration

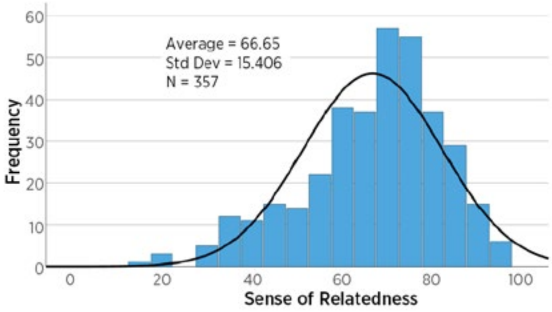

Figure 2. Distribution of results for the whole group in the Sense of Relatedness Scale in Resiliency Scales.

Source: Own elaboration

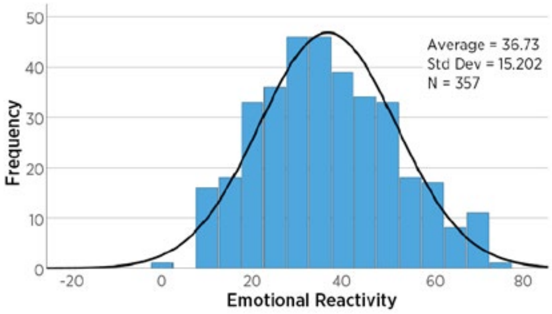

Figure 3. Distribution of results for the whole group in the Emotional Reactivity Scale in Resiliency Scales.

Source: Own elaboration.

The analyses above have shown that the tool is reliable and illustrates the studies construct at an adequate level in the sample group.

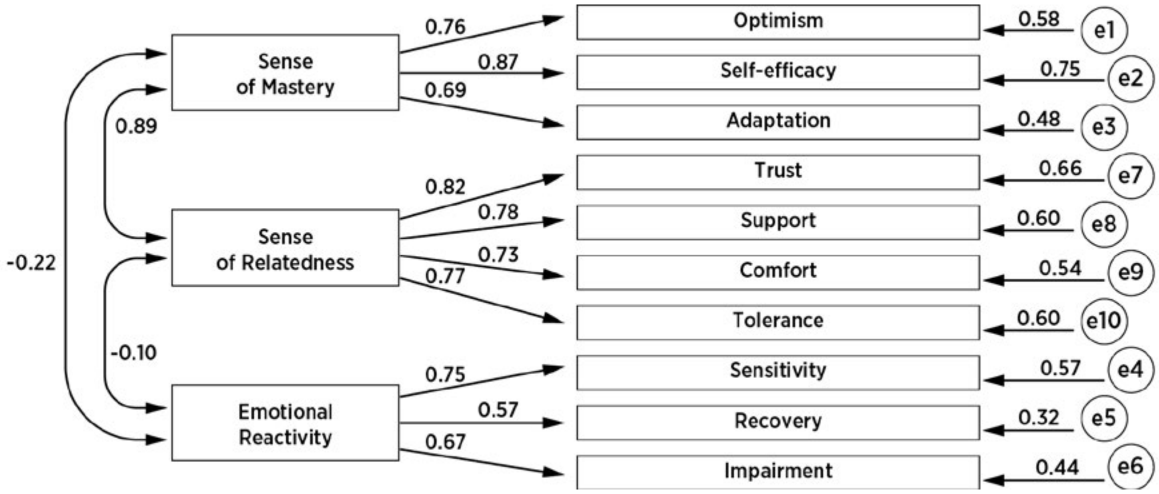

Figure 4. Confirmatory Factor Analysis model (n = 357) for the Resiliency Scales.

Source: Own elaboration.

Table 2. The norms for the Resiliency Scale for Adolescents within the intellectual norm and adolescents with a mild intellectual disability.

Adolescents with a mild intellectual disability – RS			Adolescents within the intellectual norm – RS			Ten	Interpretation
Sense of Mastery	Sense of Relatedness	Emotional Reactivity	Sense of Mastery	Sense of Relatedness	Emotional Reactivity		
<6						16	Very low
7	<15					17	
8-9	17		8			18	
10	18		9	22		19	
11	19					20	
12-13						21	
14						22	
15						23	
16				29		24	
17-18			18			25	
19-20	28	0	19-20	32		26	
21	29	1	21	33-34		27	
22-23	30-31	2-3	22-23	35		28	
24-25	31-32	4-5	24	36-37		29	
26	33-34	6-7	25-26	38		30	Low
27	35	8-9	27	39	8	31	
28	36-37	10	28	40-41	9	32	
29	38-39	12	29-30	42-43	10-11	33	
30	40	13	31-32	44	12	34	
31-32	41	14	33	45-46	13-14	35	
33	42-43	15-17	34	47-48	15	36	
35	44-45	18	35-37	49	16-17	37	
36	46	19-20	38	50-51	18	38	
37	47-48	21	39	52	19	39	

Adolescents with a mild intellectual disability – RS			Adolescents within the intellectual norm – RS			Ten	Interpre-tation
Sense of Mastery	Sense of Relatedness	Emotional Reactivity	Sense of Mastery	Sense of Relatedness	Emotional Reactivity		
38-39	49	22-23	40	53	20-21	40	Average
40	50-51	24-25	41-42	54-55	22	41	
41	52	26	43	56	23-24	42	
42-43	53-54	27-28	44-45	57-58	25	43	
44	55-56	29	46	59-60	26	44	
45	57	31	47-48	61-62	27-28	45	
46-47	58-59	32-33	49	63	29	46	
48	60	64	50-51	64-65	30-31	47	
49	61-62	35-36	52	66	32	48	
50-51	63	37	53-54	67-68	33-34	49	
52	64-65	38	55	69	35	50	
53-54	66	39-41	56-57	70-71	36	51	
55	67-68	42	58	72	37-38	52	
56	69	43	59	73-74	39	53	
57-58	70-71	44-45	60-61	75	40-41	54	
59	72	46-47	62	76-77	42	55	
60	73-74	48-49	63-64	78	43	56	
61-62	75	50	65	79-80	44-45	57	
63	76	51-52	66-67	81-82	46	58	
64	78	53	68	83	47-48	59	
65-66	79-80	54	69-70	84-85	49	60	High
67	81	56-57	71	86	50	61	
68-69	82-83	58	72-73	87-88	51	62	
70	84	59	74	89	53	63	
71	85	61	75	90-91	54-55	64	
72	86-87	62	76-77	92	56	65	
73-74	88-89	63-65	78	93-94	57-58	66	
75	90	66	79-80	>95	59	67	
76-77	91-92	67-68	>81		60	68	
78	93	69			61	69	
79	94	70			62	70	Very high
>80	95-96	71-72			63-64	71	
	>97	73-76			65-66	72	
		>77			67	73	
					68-69	74	
					>70	75	

Source: Own elaboration

4.3. Standardization of Resiliency Scales

In order to standardize the tool for the population of adolescents within the intellectual norm and with a mild intellectual disability norm ($n = 357$), the raw scores of Resiliency Scales were converted to a ten scale. This is a standard normalization scale with the largest range from 0 to 100. This scale was chosen based on the standardization of the original tool. The normalization results of the Resiliency Scale are presented in Table 2.

Conclusions

As a result of the analyses, it can be concluded that the Resiliency Scale – A Profile of Personal Strengths, is a tool with satisfactory psychometric properties. We can therefore assume that it allows for a reliable and accurate measurement of such personality traits among adolescents (both in a group of individuals with a mild intellectual disability and among adolescents within the intellectual norm) which enable effective coping with different life adversities. However, due to the size of both groups of young people participating in the study, it seems necessary to carry out further research on the tool. Conducting analyses in a suitably larger groups of adolescents would allow us to clearly determine whether the Resiliency Scale – A Profile of Personal Strengths, can be used by psychologists and educators to plan specific and effective preventive interventions addressed to specific groups of adolescents.

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Polish adaptation and validation of a family appraisal of caregiving questionnaire for palliative care (FACQ-PC)[1,2]

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Abstract: Increasing numbers of people are taking on the role of informal caregivers of oncology patients in the advanced stages of the disease. The outcomes of such a decision are both positive (e.g. strengthening of bonds) and negative (e.g. strain). Their assessment is necessary to customise appropriate interventions for caregivers and is made possible by the *FACQ-PC (multi-dimensional Family Appraisal of Caregiving Questionnaire for Palliative Care)* – a tool used to assess the functioning of informal caregivers of patients receiving home-based palliative care. The aim of this study was to determine the psychometric properties of the Polish adaptation of the *FACQ-PC*. The study involved 150 informal caregivers of patients receiving palliative care at home, including 106 women and 44 men aged between 22 and 77 years. Study participants completed the Polish version of the *FACQ-PC* and a series of questionnaires measuring positive and negative feelings (SUPIN), stress (PSS-10) and satisfaction with family life (SOR- H). The study did not confirm the four-factor structure of the questionnaire; instead, a three-factor structure was found to be more appropriate. The following factors were determined: negative outcomes, positive caregiving appraisals and family well-being. Based on a validation review, the high reliability of the individual scales was established, and internal relevance was confirmed. *FACQ-PC-PL* was adopted as the abbreviated name of the tool. This tool can be used in scientific research and for initial assessments conducted in a clinical setting.

Keywords: cancer, care assessment, family, informal caregiver, palliative care, well-being

Introduction

As a consequence of the advancement of knowledge about the functioning and needs of patients with advanced cancer, palliative care is increasingly becoming provided at home (Friedrichsdorf et al., 2015). Home care requires the active involvement of informal caregivers in addition to medical personnel (Adejoh et al., 2021; Salifu et al., 2021). In most cases, these are immediate family members (Haan et al., 2021; Veloso, Tripodoro, 2016). Although the assumption of caregiver responsibilities usually takes place gradually, the patient's relatives are often unprepared despite having to make crucial decisions, for example, during end-of-life patient care (Harding et al., 2012; Veloso & Tripodoro, 2016). Assuming the role of an informal caregiver, regardless of the type of illness, is associated with a range of both negative and positive outcomes (Harding et al., 2015).

One example of a negative outcome is stress. Brazil et al. (2010) found that stress is primarily caused by the symptoms experienced by patients and their needs. Informal caregivers also highlight financial issues and inadequate support provided by formal caregivers. Lower levels of stress are observed in individuals with greater confidence in looking after cancer patients (Hampton & Newcomb, 2018).

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[1] Article in polish language: https://www.stowarzyszeniefidesetratio.pl/fer/59P_Pale.pdf

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Another negative outcome is informal caregiver burden, i.e. the perception of physical symptoms, psychological distress, disrupted social relationships, spiritual distress and financial crisis as a result of caregiving tasks or the demands of the role (Choi & Seo, 2019). It is, therefore, an indicator of the degree to which the functioning of a caregiver has deteriorated as a result of caring for a cancer patient (Given et al., 2012). The literature often cites the occurrence of psychiatric symptoms as a consequence of the informal caregiver burden. These symptoms may include anxiety disorders (del-Pino-Casado et al., 2021). The informal caregiver burden is also associated with symptoms of depression and fatigue (Johansen et al., 2018; Sternberg et al., 2010). While all individuals, regardless of their gender or level of education, are at risk of such burden, spending many hours on caregiving, living with the person in need of care and depression play a particularly important role (Ahmad Zubaidi et al., 2020; Adelman et al., 2014). Other noteworthy aspects include the self-assessment of the caregiver and treatment dynamics (Thana et al., 2021).

Acting as an informal caregiver can also lead to informal caregiver burnout, which is characterised by emotional exhaustion, depersonalisation of the sick person and lack of positive experiences of personal growth (Gérain & Zech, 2019). Burnout results from various factors such as loneliness, becoming burdened with caregiving responsibilities, having limited leisure time or experiencing feelings of anxiety (Proot et al., 2003). Importantly, burnout mediates the relationship between satisfaction with care and the quality of life of informal caregivers (Blom et al., 2023).

Despite its challenges, informal caregiving may lead to positive outcomes. Li and Loke (2013) reviewed the scientific literature on the subject and found that the strongest positive aspects were: the improvement and strengthening of the quality of the informal caregiver-patient relationship, a sense of fulfilment and the perception of the role's importance in everyday life. They perceive caregiving as a method of showing affection to people considered important, which enhances the feeling of closeness. Caregivers appreciate the time spent together as they are aware that it is limited. The provision of care is also a form of expressing gratitude by the caregivers for what they received from their loved ones when they were still healthy. Caregiving reinforces a sense of personal growth and strengthens the sense of being needed. It is thanks to their role that informal caregivers often become aware of the meaning of life and change their priorities in life. Therefore, acting as a caregiver may lead to personal growth (Li et al., 2013). Leow and Chan (2017) also highlight the positive aspects of informal care. Researchers single out a sense of fulfilment, personality development and an enhanced feeling of closeness between family members.

The increasing role of home-based palliative care necessitates paying greater attention to informal carers. Research findings from around the world demonstrate that fulfilling this role is an extremely complex phenomenon that affects the lives of informal carers. On the one hand, they face challenges such as stress (Hampton & Newcomb, 2018), burden (Thana et al., 2021) or burnout (Gérain & Zech, 2019). On the other hand, this role is associated with positive outcomes, such as the deepening of bonds (Li & Loke, 2013). Few tools exist in Poland aimed at assessing the level of functioning of informal caregivers of oncology patients, especially those in palliative care (Gawlik & Kurpas, 2015). This makes the analysis of the phenomenon of informal care quite challenging and often impossible. Providing access to appropriate tools would allow screening and rapid identification of caregivers who are at risk of burnout or non-adaptive stress. This would make it possible to react to their needs in a timely manner (Molassiotis & Wang, 2022; Ochoa et al., 2020). The opportunity to analyse the positive aspects of the role would, in turn, provide a basis for identifying characteristics and conditions that can strengthen carers and facilitate the process of caregiving. Taking into account the limited number of tools necessary for the multi-dimensional assessment of the functioning of informal caregivers, this project aims to fill this gap and adapt such a questionnaire. Particularly significant is the *FACQ-PC (multi-dimensional Family Appraisal of Caregiving Questionnaire for Palliative Care; Cooper et al., 2006)*, which enables a multi-dimensional assessment of the functioning of informal caregivers of oncology patients receiving palliative care at home.

1. The original version of the questionnaire

The Family Appraisal of Caregiving Questionnaire for Palliative Care (FACQ-PC) by Cooper et al. (2006) is a tool designed to assess the positive and negative aspects of caregiving of patients receiving home-based palliative care by informal caregivers. The researchers used Lazarus and Folkman's (1984) appraisal model and their own stress model (Kinsella et al., 2000) as the theoretical basis for the questionnaire. They explain that informal caregiving may be a source of satisfaction; however, if the caregiver perceives that the demands of caregiving outweigh their personal and social coping resources, the caregiving process may become a source of distress (Cooper et al., 2006). Therefore, they define care assessment as a primary and secondary, cognitive and affective assessment of a potential stressor and one's effectiveness in coping with it. Furthermore, researchers emphasise the increasing role of the family environment as a protective factor in the context of home-based palliative care.

Based on accepted theoretical models and taking into account research findings on the functioning of informal caregivers, Cooper et al. (2006) identified four areas that formed the basis of the scale. The caregiver strain dimension defines the perceived physical and emotional burden and the feeling of being trapped and isolated because of the responsibilities resulting from the role. The positive caregiving appraisals dimension assesses the perceived benefits or positive emotional benefits of caregiving, including commitment, confidence, development of intimacy in the caregiver-recipient relationship and satisfaction. The caregiver distress dimension comprises negative emotional reactions associated with caregiving, such as anxiety, depression and feelings of guilt. This is the average score obtained from the diagnostic questions for this subscale. The family well-being dimension includes the well-being and quality of family functioning. This is the average score obtained from the diagnostic questions for this subscale.

Based on the scientific literature and the measurement tools available in this area, the researchers (Cooper et al., 2006) generated 35 statements, which were then evaluated by five experts. This evaluation reduced the number of statements to 26. To evaluate the psychometric properties of this tool, the authors conducted a study in which 160 informal caregivers of oncology patients receiving palliative care at home completed the *FACQ-PC*. Those participating in the study rated each item of the questionnaire on a 5-point scale ranging from 1 *(strongly disagree)* to 5 *(strongly agree)*. The higher the score, the higher the respondent's position on each dimension. In addition, 56 informal caregivers completed measures of family functioning, positive and negative affect, and subjective burden. The recruitment process of the respondents was conducted with the assistance of palliative care service institutions located in the Australian state of Victoria. The care service agencies were tasked with distributing kits containing an invitation to participate in the survey, a questionnaire and a prepaid return envelope. Statistical analyses confirmed the four-factor structure of the scale. Having assessed the caregiver distress subscale, one statement was removed due to its poor correlation with the other items. The *FACQ-PC* has good reliability parameters (Cronbach's alpha coefficient for the caregiver strain subscale consisting of 8 statements is .86; for the positive caregiving appraisals subscale consisting of 7 statements: 0.73; for the caregiver distress subscale consisting of 4 statements: 0.75; for the family well-being subscale consisting of 6 statements: 0.84 (Cooper et al., 2006). The range of scores for the positive caregiving appraisals scale varies between 7 and 35; for the caregiver distress scale: between 4 and 20; for the family well-being scale: between 6 and 30; for the caregiver strain scale: between 8 and 40. Scores of the caregiver strain and caregiver distress subscales correlated positively with measures of subjective burden and negative affect and negatively with measures of positive affect and family functioning. The score of the positive caregiving appraisals subscale correlated positively with measures of positive affect and family functioning and negatively with measures of negative affect. The family well-being dimension correlated positively with the family functioning measure and negatively with the measure of negative affect.

2. Method

2.1. Objectives and assumptions

The objective of this study was the preliminary adaptation of an Australian questionnaire developed to measure the positive and negative aspects of the role of the informal caregiver of oncology patients receiving home-based palliative care (Family Appraisal of Caregiving Questionnaire for Palliative Care; FACQ-PC) into Polish (Cooper et al., 2006). Taking into consideration the results of the validation review of the original questionnaire, the project was expected to confirm the four-factor structure. It was also expected to confirm the reliability of the tool using Cronbach's alpha coefficient and internal relevance, evaluated through a series of correlations. It was assumed that there would be a positive correlation between caregiver strain and negative feelings; between positive caregiving appraisals and positive feelings; between caregiver distress and stress; between family well-being and satisfaction with family life.

2.2. Participants

The study comprised 150 informal caregivers (44 men and 106 women) between 22 and 77 years old *(M* = 48.7; *SD* = 14.6) of oncology patients receiving palliative care at home who had been in this role for at least two weeks. Study participants cared for their mother (34 people), father (31 people), husband (27 people), wife (17 people), grandmother (9 people), grandfather (7 people), son (7 people), daughter (7 people), mother-in-law (4 people), cousin (3 people), sister (3 people) and brother (1 person). As many as 49 informal caregivers declared that they do not live with the care recipient. The voluntary assumption of the informal caregiver role was indicated by 146 people, while 4 respondents cited having no other choice. Informal caregivers were recruited with the assistance of psychologists working in home hospices in different cities (e.g. Kraków, Siedlce, Katowice, Świdnica, or Pleszew). Participation in the study was voluntary and anonymous, and each participant received an Empik store voucher worth PLN 25 as a thank-you for taking part.

Care recipients included 68 men and 82 women, who were between 5 and 96 years old (*M* = 64.5; *SD* = 18.3). All individuals were under the care of a home hospice.

2.3. Measured variables

The study used the Polish version of the *FACQ-PC (Kwestionariusz oceny opieki nad bliską opieką; FACQ-PC-PL)* and three questionnaires measuring constructs potentially related to positive and negative aspects of the role of the informal caregiver of oncology patients receiving palliative care at home. They were used to measure the following variables:

- Negative feelings: the sum of the scores obtained from the diagnostic terms for this subscale (e.g. *nervous* in *Skala Uczuć Pozytywnych i Negatywnych – SUPIN* (Brzozowski, 2010), which is the Polish adaptation of the Positive and Negative Affect Schedule – PANAS (Watson et al., 1988). Study participants responded to 10 statements on a scale from 1 (*very slightly or not at all*) to 5 (*extremely*). The range of scores for this scale is between 10 and 50. The higher the score, the stronger the negative feelings in the respondent. The reliability index for this subscale was 0.92.
- Positive feelings: the sum of the scores obtained from the diagnostic terms for this subscale (e.g. *jittery* in *Skala Uczuć Pozytywnych i Negatywnych – SUPIN* (Brzozowski, 2010), which is the Polish adaptation of the Positive and Negative Affect Schedule – PANAS (Watson et al., 1988). Study participants responded to 10 statements on a scale from 1 (*very slightly or not at all*) to 5 (*extremely*). The range of scores for this scale is between 10 and 50. The higher the score, the stronger the negative feelings of the respondent. The reliability index for this subscale was 0.9.
- Stress: the sum of the scores obtained in *Skala Odczuwalnego Stresu PSS-10* (Juczyński, Ogińska-Bulik, 2009), which is the Polish adaptation of the Perceived Stress Scale – PSS (Cohen et al., 1983). Study participants answered 10 questions (e.g. *In the last month, how often have you been able to control irritations in your life?*) on a scale

from 0 *(never)* to 4 *(very often)*. The range of scores for this scale is between 0 and 40. The higher the score, the stronger the stress of the respondent. The reliability index for this subscale was 0.85.

- Satisfaction with family life: the sum of the scores obtained from the diagnostic questions for this subscale (subscale H; e.g. *How satisfied are you with the way problems are discussed?*) in *Skala Oceny Rodziny – SOR* (Margasinski, 2013), which is a Polish adaptation of the Flexibility and Cohesion Evaluation Scales – FACES-IV (Olson, 2011). Study participants responded to 10 statements on a scale from 1 (*extremely dissatisfied*) to 5 (*extremely satisfied*). The range of scores for this scale is between 10 and 50. The higher the score, the greater the respondent's satisfaction with family life. The reliability index for this subscale was 0.9.

3. Procedure

3.1. Adaptation of the questionnaire

To begin with, consent was obtained from the author of the original FACQ-PC questionnaire to create its Polish adaptation. The first research stage was a procedure for translating the questionnaire together with establishing the equivalence of the two language versions. In the first step, all 25 items were translated from English to Polish. In the course of the next stage, a competent judge – a psychologist with experience in working with oncology patients in palliative care and their families, as well as in conducting scientific research – evaluated the translation for factual errors and clarity. Any changes put forward were introduced to the questionnaire. In the next step, the text was back translated into English and presented to the author of the original questionnaire. After several additional aspects were clarified, the final version was agreed.

3.2. The study proper

At the start, study participants signed a consent to participate in the study and a GDPR form. They then completed a form with their personal details. In the final step, they filled in the individual tools: the Family Appraisal of Caregiving Questionnaire, the Perceived Stress Scale – PSS-10, the Positive and Negative Affect Schedule – SUPIN, and Flexibility and Cohesion Evaluation Scales – SOR. The procedure was completed with the respondents receiving an Empik store voucher, having signed an appropriate form. The project was carried out between January and October 2023. The study was approved by the Ethics Committee of the Institute of Psychology at Kraków's University of the National Education Commission.

4. Results

Statistical analyses were performed using IBM SPSS Statistics (version 29) and JASP (version 0.18.1) programs.

4.1. Confirmatory factor analysis

As the first step in the analysis, a confirmatory factor analysis (CFA) was performed in JASP (version 0.18.1) to confirm the four-factor structure of the Family Appraisal of Caregiving Questionnaire.

The goodness-of-fit results obtained do not confirm the original structure of the tool. The RMSEA (root mean square error of approximation) value was RMSEA = 0.096, which is above the acceptable value of 0.08, indicating a high approximation error. An unsatisfactory fit is also indicated by a goodness-of-fit index value of CFI = 0.776 (which should be greater than 0.9). The test result was also statistically significant $\chi 2(269) = 639.69$; $p < 0.001$, indicating a discrepancy between the observed covariance matrix and that implied by the model. The results are presented in the figure below (Fig. 1).

4.2. Exploratory factor analysis

As the original structure of the questionnaire could not be reproduced, an exploratory factor analysis (EFA) based on the maximum likelihood (ML) method was performed to create a new structure. Promax oblique rotation was used to isolate the factors. The JASP program (version 0.18.1) was used once again.

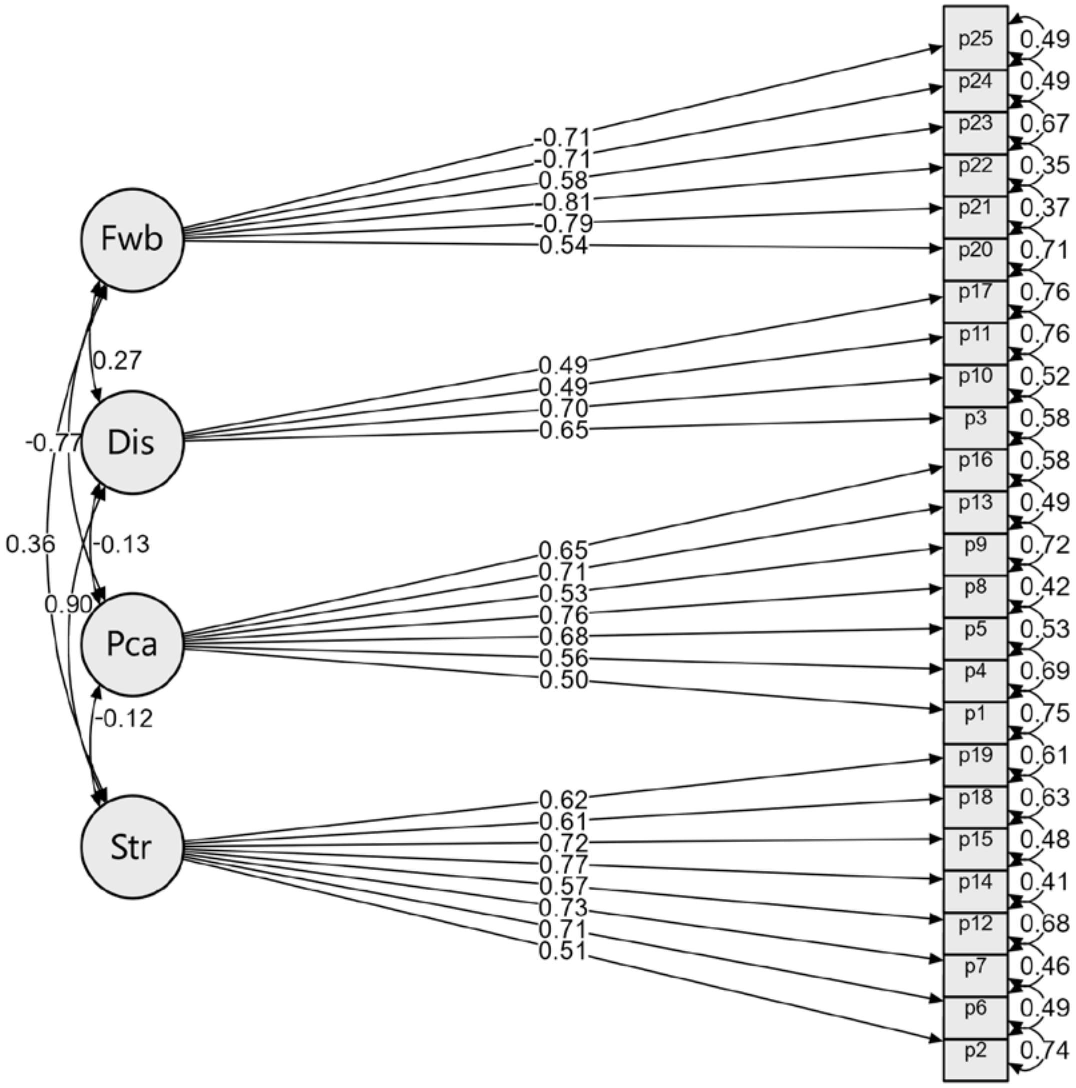

Figure 1. Results of exploratory factor analysis

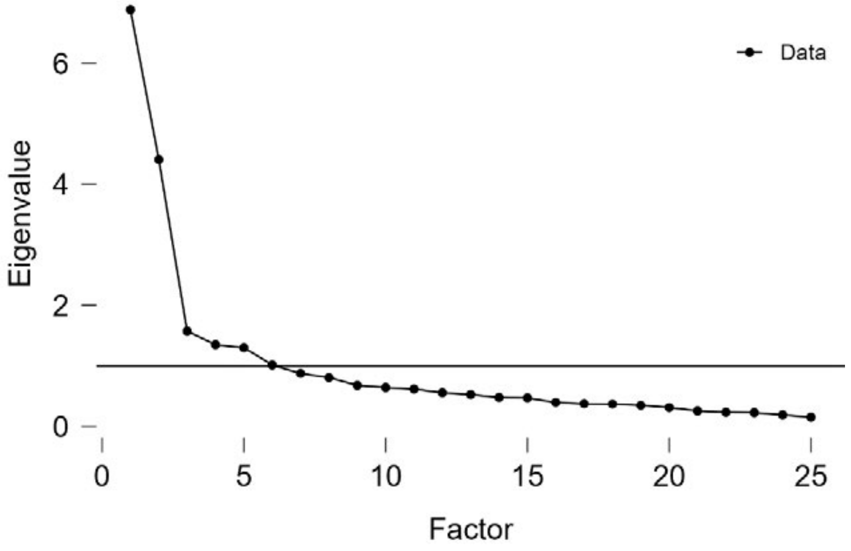

Figure 2. Screen plot showing eigenvalues for each component; based on this, it was decided to adopt a three-factor structure for the tool

To begin with, an analysis based on the criterion of an eigenvalue greater than 1 was performed. It allowed five factors to be identified, which together explained 52.3% of the variance. This structure was different from the original four-factor structure; in addition, two factors contained only one test item each (factor 4 – item 1; factor 5 – item 17). As a result, the criterion for selecting the number of factors was amended. A scree plot was analysed (Figure 1), based on which it was decided to isolate three factors.

The analysis was repeated, setting a preset number of three factors. The resulting structure appeared to explain 45.0% of the variance. This version of the questionnaire included 22 of the 25 test items. Items 1 and 9 from the *Positive caregiving appraisals* scale and item 11 from the *Distress* scale were excluded due to excessively low factor loadings (below 0.4).

The resulting configuration was then compared with the structure of the original version of the questionnaire. The result of this comparison, together with the factor loadings for each scale, is presented in Table 1

Factor 1, comprising 11 test items, comprised all eight items included in the original *Strain* scale and three of the four items originally included in the *Distress* scale. The last item of the *Distress* scale (item 11) was not included in any of the factors due to an eigenvalue of less than 0.4. These results indicate that almost all the items originally isolated as separate factors – *Strain* and *Distress* – can be treated as part of one overall factor. This is confirmed by a qualitative analysis of the content of these test items and by a similar theoretical relevance of the two constructs. Factor 1 can, therefore, be considered consistent and has been given the name *Negative outcomes (pl. Negatywne aspekty opieki)* in this version of the questionnaire.

Factor 2 comprised seven of the nine items that were part of the *Positive caregiving appraisals* scale in the original scale structure (the other two items were not part of any factor) and two of the six items of the original *Family well-being* scale. Analysing the content of these two items: item 24 *(Our family is able to talk about our feelings with each other*) and item 25 *(Because of caring for ... our family is better able to cope with change*) can be considered to coincide with the theoretical meaning of the construct concerning positive caregiving appraisals. Therefore, the analysis demonstrated that they are more related to this factor than to the *family well-being* scale in the original construct. In consequence, a decision was made to retain the original name for factor 2 – *Positive caregiving appraisals*.

Table 1. Results of the exploratory factor analysis for the family appraisal of caregiving questionnaire – comparison of the structure matrix with the original scale structure

Test item	Original version of the factor	Factor		
		1	2	3
Item 6	Caregiver strain	0.756		
Item 3	Caregiver distress	0.745		
Item 7	Caregiver strain	0.685		
Item 14	Caregiver strain	0.673		
Item 15	Caregiver strain	0.651		
Item 10	Caregiver distress	0.617		
Item 2	Caregiver strain	0.611		
Item 18	Caregiver strain	0.605		
Item 19	Caregiver strain	0.546		
Item 17	Caregiver distress	0.495		
Item 12	Caregiver strain	0.409		
Item 8	Positive caregiving appraisals		0.875	
Item 5	Positive caregiving appraisals		0.831	
Item 4	Positive caregiving appraisals		0.665	
Item 13	Positive caregiving appraisals		0.570	
Item 25	Family well-being		0.567	
Item 16	Positive caregiving appraisals		0.469	
Item 24	Family well-being		0.465	
Item 21	Family well-being			0.796
Item 22	Family well-being			0.683
Item 20	Family well-being			-0.661
Item 23	Family well-being			-0.618

Annotation. Promax oblique rotation was used.

Factor 3 comprised four test items. All of them in the original structure of the questionnaire refer to the *Family well-being* factor. Originally, this scale contained six items, but as described above, two of these items became part of the *Positive caregiving appraisals* scale.

Table 2. Location of items in factors in the original and Polish versions of the FACQ-PC

Test item	Original version of the factor	Polish version of the factor
As a carer, I don't have enough time for myself.	Caregiver strain	Negative outcomes
As a carer, I feel tired and run down.	Caregiver strain	Negative outcomes
As a carer, I feel I am losing control over my life.	Caregiver strain	Negative outcomes
I feel isolated and alone in caring for X	Caregiver strain	Negative outcomes
As a carer, I feel my own health has suffered.	Caregiver strain	Negative outcomes
I have had to give up my social life to care for X	Caregiver strain	Negative outcomes
As a carer, I have not been able to do my job or study as well as I would like.	Caregiver strain	Negative outcomes
Caring for X creates financial difficulties.	Caregiver strain	Negative outcomes
I am anxious about caring for X	Caregiver distress	Negative outcomes
I feel depressed about caring for X	Caregiver distress	Negative outcomes
I feel guilty about not being able to do more for X	Caregiver distress	Removed
I worry that I won't be able to do enough to care for X	Caregiver distress	Negative outcomes
I am committed to caring for X	Positive caregiving appraisals	Removed
I am confident that I can handle most problems in caring for X	Positive caregiving appraisals	Positive caregiving appraisals
Caring for is satisfying.	Positive caregiving appraisals	Positive caregiving appraisals
It is a privilege to care for X	Positive caregiving appraisals	Positive caregiving appraisals
I am able to comfort X when he/she needs it.	Positive caregiving appraisals	Removed
I feel useful in my relationship with X	Positive caregiving appraisals	Positive caregiving appraisals
Caring for X has made me feel closer to him/her.	Positive caregiving appraisals	Positive caregiving appraisals
Our family disagrees a lot about caring for X	Family well-being	Family well-being
Our family works together to solve problems.	Family well-being	Family well-being
I feel our family is closer because of caring for X	Family well-being	Family well-being
Our family avoids discussing their fears and concerns about caring for X	Family well-being	Family well-being
Our family is able to talk about our feelings with each other.	Family well-being	Positive caregiving appraisals
Because of caring for X our family is better able to cope with change.	Family well-being	Positive caregiving appraisals

Table 3. Descriptive statistics for FACQ-PC-PLscales

Variable	*Mean*	*Median*	*Standard Deviation*	*Skewness*	*Kurtosis*	*Min.*	*Max.*
Negative outcomes	2.97	3.09	0.83	-0.31	-0.69	1.09	4.55
Positive caregiving appraisals	3.66	3.71	0.81	-0.44	-0.30	1.43	5.00
Family well-being	3.59	3.75	0.91	-0.66	0.23	1.00	5.00

This being said, the structure is close to the original one, so it was also decided to keep the original name of the scale also for factor 3 – *Family well-being*. Two items (items 20 and 23) were shown to have negative factor loadings, meaning that they are reversed items, just as in the original version of the questionnaire. The described changes are presented in Table 2.

Descriptive statistics on the results obtained for the scales of the tool FACQ-PC-PL: Negative outcomes, positive caregiving appraisals and family well-being are presented in Table 3 and intercorrelations in Table 4.

4.3. Reliability analysis

Reliability analysis was then performed for the created *FACQ-PC-PL* questionnaire using Cronbach's alpha internal consistency coefficient. Its results are shown in Table 5.

The analysis showed that all three factors have a high internal consistency. This is confirmed by Cronbach's alpha values > 0.8 for each scale.

4.4. Relevance analysis

Internal relevance analysis was then performed. The results for the factors obtained were correlated with the results of other questionnaires measuring similar constructs. It was assumed that the *Negative outcomes* scale will correlate positively with the Perceived Stress Scale – PSS-10 and the Negative Affect Schedule (SUPIN- NU), the *Positive caregiving appraisals* scale will correlate positively with the Positive Affect Schedule (SUPIN- PU), and the *Family well-being* scale will correlate positively with the Satisfaction with Family Life Scale (SOR- H). The results of the analysis are shown in Table 6.

Based on the analyses carried out, the internal relevance of all scales was confirmed. In relation to the *Negative outcomes* scale, a positive and strong correlation with PSS-10 and a positive and weaker correlation with SUPIN-NU were demonstrated. A positive, weaker correlation with SUPIN-PU was determined for the *Positive caregiving appraisals* scale. A positive and strong correlation with the SOR-H scale was shown for the *Family well-being* scale.

Table 4. Correlations between scales FACQ-PC-PL

Variable		1.	2.	3.
1. *Negative outcomes*	Pearson' *r*	–		
	p-value	–		
2. Positive caregiving appraisals	Pearson' *r*	-0.152	–	
	p-value	0.063	–	
3. Family well-being	Pearson' *r*	-0.339	0.553	–
	p-value	<0.001	<0.001	–

Table 5. Results of Cronbach's alpha reliability analysis for individual scales of the family appraisal of caregiving questionnaire

FACQ-PC-PL	Cronbach's alpha	Number of items
Negative outcomes	0.879	11
Positive caregiving appraisals	0.885	7
Family well-being	0.802	4

Table 6. Internal relevance analysis – correlation analysis between factors of the family appraisal of caregiving questionnaire and the scales measuring similar constructs

Family appraisal of caregiving questionnaire	PSS-10	SU-PIN-PU	SU-PIN-NU	SOR- H
Negative outcomes	0.59***		0.39***	
Positive caregiving appraisals		0.38***		
Family well-being				0.51***

Annotation. PSS-10 – perceived stress scale; SUPIN – PU – positive affect schedule; SUPIN – NU – negative affect schedule; SOR- H – satisfaction with family life scale as part of the flexibility and cohesion evaluation scales.
*** $p < 0.001$

In conclusion, the four-factor structure of the questionnaire was not confirmed based on the analyses carried out, and instead, a three-factor structure was found to be more appropriate: n*egative outcomes*, positive caregiving appraisals and family well-being. After removing three test items due to excessively low factor loadings, the *FACQ-PC-PL* comprises 22 test items. The tool has satisfactory internal consistency (Cronbach's alpha > 0.8) and internal relevance.

5. Discussion of the results

Fulfilling the role of an informal caregiver for oncology patients receiving home-based palliative care is a complex experience with both positive and negative outcomes. Suitable tools are necessary to quickly detect the suffering of the caregiver and the benefits stemming from the role undertaken. The aim of this study was the verification of the psychometric properties of the Polish adaptation of the *FACQ-PC: FACQ-PC-PL.* The questionnaire was first translated into Polish and then back translated into English. The resulting version was approved by the creator of the original scale. The questionnaire and three others were then filled in by 150 informal caregivers. The confirmatory factor analysis performed did not confirm the original four-factor structure of the family appraisal of caregiving questionnaire. The results of the exploratory factor analysis demonstrated that a three-factor structure was more appropriate, with most items included in the Caregiver strain and Caregiver distress scales in the original version of the questionnaire forming one overall factor, which was named *Negative outcomes*. This means that the scale measures the negative consequences of the informal caregiver role, such as perceived strain and negative emotional reactions associated with caregiving. The structure of the remaining two factors – Positive caregiving appraisals and Family well-being – also differs from the original, but the discrepancies are not significant; therefore, it was decided to retain the original naming of the scales. Ultimately, the *FACQ-PC-PL* tool comprises 22 test items. Of the initial 25 items, three were rejected because of excessively low factor loadings. The created version of the questionnaire has satisfactory internal consistency (Cronbach's alpha > 0.8) and internal relevance. The intensity of the caregivers' negative outcomes was demonstrated to be positively correlated with the intensity of negative feelings and stress, in line with the study's assumptions. A positive relationship between family well-being and satisfaction with family life and between positive caregiving appraisals and positive feelings was also confirmed. These results are consistent with those obtained by the authors of the original questionnaire (Cooper et al., 2006). The *FACQ-PC-PL* tool is designed to assess the functioning of adult informal caregivers. As the study did not involve children and adolescents, its use in this age group is not recommended.

As regards the functioning of Polish informal caregivers of palliative care patients, researchers most frequently focus their research on the caregivers' quality of life (Masternak et al., 2020). This trend coincides with that occurring internationally (Del Río Lozano et al., 2017; Duimering et al., 2020). The *FACQ-PC-PL* provides additional, complex information on the functioning of informal caregivers of palliative care patients. This tool not only allows an assessment of the positive and negative aspects of the role, but it also enables a preliminary analysis of the family system's functioning.

Limitations of the study and further directions for research

The vast majority of study participants were women. Although this is in line with previous observations on the numerical predominance of women in informal caregiving (Dahlberg et al., 2007) and similar proportions demonstrated in other studies (do Nascimento et al., 2021; Leow and Chan, 2017), the participation of men should not be underestimated (Dahlberg et al., 2007). The results would more accurately reflect the factual state of affairs if the proportion of men and women was maintained. Secondly, the number of people participating in the study was not considerable. It should be emphasised, however, that this paper-and-pencil study was conducted on an individual basis, and the participation criteria were very specific. Furthermore, a large number of informal caregivers refused to participate in the study, citing their low mood as the reason for this decision. This may mean that most study participants had a better frame of mind, which also reduces the variability of those surveyed. Another limitation of the project is that no information was collected on how long the care recipients had been receiving palliative care. Such information could provide a broader context for the study group to be described.

Further research should aim to standardise the tool. The availability of standards would considerably facilitate the screening and determination of informal caregivers who require psychological support and those who have been successful in adapting to their new role.

Conclusion

Taking into account the psychometric parameters obtained, it is reasonable to use the FACQ-PC-PL in scientific research addressing the functioning of informal caregivers of patients receiving home-based palliative care. This tool significantly broadens the range of possible analyses and, as a result, enables a more accurate characterisation of the caregivers taking on this role and focusing the attention on those who require support. The tool, therefore, is a solution that can be used to address the increasing need for researchers and clinicians to focus on informal caregivers. However, it is important to remember that this tool has a different structure from the original one.

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