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Life and Fertility. Life and Health.

INTERDISCIPLINARY APPROACH

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ul. Franciszkańska 3/47
00-233 Warszawa

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Perinatal experience of women with attention deficit hyperactivity disorder (ADHD)[1]

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Aurelia Anioł[a], Barbara Baranowska[b] ✉

[a] *Aurelia Anioł, https://orcid.org/0009-0005-3545-658X, Faculty of Health Sciences, Medical University of Warsaw*
[b] *Barbara Baranowska, https://orcid.org/0000-0003-2723-9604, Department of Midwifery, Centre of Postgraduate Medical Education*
✉ *Corresponding author: barbara.baranowska@cmkp.edu. pl*

Abstract: *Background*: Attention deficit hyperactivity disorder (ADHD) is a neurodevelopmental disorder with considerable individual variability. Population-based studies put its prevalence at 1% to 5% of the population. Due to the different presentation of symptoms, women with ADHD are less likely to receive adequate help. They face more difficulties in the perinatal period than neurotypical women. Pregnant women with ADHD are more likely to experience family difficulties, including conflicts with their partner or lack of support from relatives, as well as a variety of obstetric complications, such as the need for delivery by cesarean section, pregnancy-induced hypertension or anaemia. A small number of scientific papers focus on their individual experience of pregnancy and childbirth. *Method*: the study was conducted by means of semi-structured individual interviews. Ten women with a formal diagnosis of ADHD, whose last delivery was between 2019 and 2024, participated in the study. Participants were selected by purposive sampling from women willing to participate in the study. Data were analysed and coded according to reflective thematic analysis methodology. *Results*: When analysing the content of the interviews, 3 leading themes were identified: 1. *ADHD in the perinatal period* (Attention Deficit Disorder, Hyperactivity and impulsivity, Atypical sensory processing), 2. *In relationships with others*, and 3. *Consequences of perinatal experiences*, together with subthemes that were relevant to the women interviewed. *Conclusions*: The perinatal experiences of women with ADHD were significantly influenced by the symptoms of the disorder. Focusing on the individual needs of pregnant and birthing women and taking into account the difficulties arising from attention deficit hyperactivity disorder can significantly improve the perinatal experience of these women. Care during labour should take into account the particular sensory sensitivity to the hospital environment described in the study and avoid immobilising parturients. Lack of support from medical staff and family can result in long-term negative consequences. Changes are needed in the management of care for pregnant and birthing women with ADHD, as research has shown that some women, due to traumatic birth experiences, declared abandonment of further procreative plans.

Keywords: ADHD, childbirth, perinatal experiences, pregnancy

Introduction

According to the ICD-11 classification, attention deficit hyperactivity disorder (ADHD) is a neurodevelopmental disorder that occurs in early childhood. The components that make up ADHD show considerable individual variability. For this reason, the disorder has been divided into subtypes, depending on the predominant symptoms, and a mixed subtype. Features associated with attention deficit disorder include difficulty focusing on tasks that do not provide immediate reward, being easily distracted by external stimuli. These individuals also have difficulty organising tasks and forget to complete planned activities. The hyperactive subtype may be characterised by excessive busyness, making it impossible to complete tasks in complete stillness. Such individuals often speak their thoughts without thinking, or interrupt their interlocutors. It is also typical to impulsively take actions under the influence of external stimuli, without thinking about the possible consequences. People with ADHD perceive their environment differently and may not follow established social norms. Although the severity of symptoms shows variability, depending on the current environment and its demands, they must,

1 Article in Polish language: https://stowarzyszeniefidesetratio.pl/fer/63P_Anio.pdf

by definition, negatively affect daily functioning. At the same time, individuals with ADHD, may not be aware of the existence of the disorder until adulthood, when the demands of the environment begin to exceed the individual's compensatory capacity (*Clinical Descriptions and Diagnostic Requirements for ICD-11 Mental, Behavioural and Neurodevelopmental Disorders*, 2024, Elliott et al., 2024). It is noticeably more common in females, as they are less likely to present with typical ADHD symptoms such as hyperactivity or conflictuality. They are most likely to present with the mixed or attention deficit disorder subtype. However, due to social and cultural expectations different from those directed at men, women are able to compensate for their symptoms relatively well. Difficulties in daily functioning are most often noticed during periods of major life changes such as starting a family or entering the workforce. Although most traits present themselves differently according to gender, one of the few equally prevalent traits in men and women is a propensity to abuse psychoactive substances or alcohol (Young et al., 2020).

Depending on the diagnostic criteria adopted, the study methodology or the population studied, the prevalence of ADHD is estimated to be between 1.6 % and 5 %. However, these values may be underestimated due to diagnostic difficulties in adults, particularly in women (Popit et al., 2024). In the United States, approximately 4% of parturients had a diagnosis of ADHD one year before, or up to one year after birth. The number of such diagnoses increased by 290% between 2008 and 2020 (Hall et al., 2024).

The perinatal period defines a distinctive constellation of experiences, encompassing both physiological and mental health dimensions, which can be profoundly influenced by an individual's neurodivergent characteristics. This period is distinguished by significant hormonal changes, particularly in relation to estrogen and progesterone levels. Estrogen can increase dopamine and serotonin concentrations, and its stably increased concentration during pregnancy can have a significant impact on attentional abilities, impulsive behaviour and emotional regulation. At the same time, sudden hormonal changes during childbirth may cause a sudden increase in ADHD symptoms (Elliott et al., 2024, Osianlis et al., 2025).

Consequently, women with ADHD in the perinatal period often experience increased emotional, physical and social challenges, leading to a higher risk of psychiatric disorders (Bang Madsen et al., 2024). In a study conducted on a relatively large group of women from seven different countries, a correlation was found between the severity of ADHD symptoms and reduced support from both family and friends. This may make it more difficult to cope with the already increased number of stressful situations that are associated with pregnancy (Murray et al., 2022). Research suggests that women with ADHD may be particularly sensitive to a sharp drop in estrogen and progesterone levels, potentially increasing the risk and severity of postpartum depression. Neuroatypical women report greater difficulty in coping with external stimuli during pregnancy, which is mainly manifested by increased sensory sensitivity (Elliott et al, 2024; Kamath et al, 2020; Panagiotidi et al, 2018). Women diagnosed with ADHD are more likely to have problems related to being underweight or overweight, as well as alcohol, tobacco and substance abuse, which can result in harmful obstetric and perinatal consequences (Skoglund et al., 2019). It has also been shown that pregnant women with ADHD were more likely to have pregnancy-induced hypertension, anaemia, heart or kidney disease. Complications were also not uncommon during labour, including preterm labour, postpartum haemorrhage and the need to terminate labour by caesarean section. Newborns, on the other hand, were more likely to require prolonged stays in the neonatal unit, which may be related to the higher prevalence of low birth weight and associated complications among them. An increased incidence of congenital anomalies was also noted among neonates, which may also have predisposed them to prolonged hospitalisation (Amikam et al, 2024; Poulton et al, 2018; Walsh et al, 2022).

Despite growing public awareness of neurodevelopmental disorders, people with ADHD still face numerous barriers in their interactions with health care professionals. Only a small percentage of patients receive adequate support and tailored therapeutic approaches (Ramos-Quiroga et al., 2013). They often receive recommendations that are not adapted to their individual needs and limitations (Ward et

al., 2024). This can, in the long term, lead to feelings of abandonment and misunderstanding by health professionals (Matheson et al., 2013). In the perinatal period, these factors lead to significant communication difficulties and ignoring the needs of pregnant and birthing women, which can ultimately result in a negative birth experience (Elliott et al., 2024).

Despite the extensive literature on the influence of maternal factors on the possibility of ADHD in the offspring, much less attention has been paid to the wellbeing of pregnant and birthing women with ADHD. In a literature review published in November 2024 on the perinatal experiences of neurodiverse individuals, only one of the eleven studies cited was related to ADHD; the others referred only to the autism spectrum. Seventy-three families participated in the study, including only 17 mothers with ADHD (Elliott et al., 2024). This shows how underrepresented the group of women with ADHD is in work covering the perinatal period. Additionally, in most existing studies, mental status is assessed with standardised questionnaires such as the Adult ADHD Quality of Life (AAQoL), which, due to their generic nature, do not provide the opportunity for deeper insight into the experiences of these women (Gjervan & Nordahl, 2010). This indicates an urgent need to look at the individual stories of women with ADHD. Analysing these experiences can contribute to a better understanding of their perspectives and to tailor the management of health professionals to their individual needs. Despite emerging studies on neurodiverse women in the perinatal period, there is also a lack of studies that take into account the Polish cultural context.

The aim of this study is to analyse the perinatal experience of women with ADHD and to investigate the impact of neurodiversity on the subjective experience of pregnancy, childbirth and postpartum time.

1. Materials and methods

Participants were selected using a purposive sampling method from women who volunteered to participate in the study. They were members of thematic groups targeting people with ADHD on a social networking site. Women with a formal diagnosis of ADHD whose last delivery was between 2019 and 2024 were included in the study. Women with concomitant other neurodevelopmental disorders were excluded from participation. The study ultimately included 10 women aged 28-42 years. Only one of them was over 40 years old. Two of the participants were in informal relationships, the rest were married. Three of the respondents were first-borns, for most of the others it was the second birth.

The study was conducted by means of semi-structured individual interviews conducted remotely with the help of ICT software allowing real-time interview with video transmission. Each woman was interviewed once. Prior to the interview, participants gave their consent to participate in the study. At the beginning of each interview, women gave their consent to be recorded.

The interview began with general open-ended questions "Tell me about your pregnancy.", "Tell me about your birth." and then depending on the answers, more specific questions were asked in order to fulfil the objectives of the study, for example "How was your pregnancy, how did you feel when you were pregnant?", "What treatment by loved ones or medical staff was supportive to you?". The women interviewed had the opportunity to express their feelings and experiences fully freely. The interviews lasted on average about one hour.

The interviews were recorded and then manually transcribed in MS-Word editor by the first author of the study. Data were analysed and coded according to the methodology of reflective thematic analysis according to Braun and Clarke (2022). Codes were grouped into concepts, which were categorised by identifying relationships between them. The categories created in this process, as well as the connections found between them, allowed the main themes to emerge. After revisiting the material from each interview, sub-themes and corresponding quotations were listed.

Reflexivity was used as a means of quality control, and detailed documentation of all stages of the study, coding several times, and consulting the wording and meaning of codes and themes emerging from the data with other members of the research team or researchers not involved in the study.

2. Results

In the process of analysing the content of the collected interviews, 3 leading themes were identified: *ADHD in the perinatal period*, *In relationships with others*, and *Consequences of perinatal experiences*. Within the first theme, subthemes emerged: Attention Deficit Disorder, Hyperactivity and Impulsivity, Atypical Sensory Processing, and within the second: Relationships with relatives, Communication and cooperation with medical staff.

2.1. ADHD in the perinatal period

In narratives about pregnancy and childbirth, women referred to the impact of the various components of the hyperactivity disorder on their experiencing and experiencing the perinatal period. Some of those interviewed described an increase in ADHD symptoms during this period, which caused considerable discomfort and hindered functioning. At the same time, some of the traits and behaviours characteristic of women with attention deficit hyperactivity disorder were described by women as a resource.

2.1.1. Attention deficit disorder

The procrastination tendency present in the women interviewed had an impact on their behaviour in the perinatal period. They had difficulties maintaining attention and focus, starting activities and completing tasks on time. Despite their approaching due date, the women were not prepared for their stay in hospital, and even though labour had started, they were able to procrastinate going to the medical facility. One participant declared that she had laboratory tests done during the beginning of contraction activity, although she should have done this much earlier. Other women postponed getting the necessary things ready for the hospital until they were forced to do so by the onset of labour.

> 'I didn't believe I was actually in labour and I made breakfast, did the dishes and didn't want to get myself together for the hospital, despite my husband's urging. He was angry with me and told me to pack up and go. I had my bag unpacked because I didn't believe so much that it was going to happen anymore.' (participant 2)

In contrast, some women declared different patterns of behaviour. They described an excessive focus and involvement in relation to the course and management of the pregnancy, preparation for the upcoming birth or lactation. They also reported a need for intensive knowledge concerning the perinatal period.

> 'I had hyper focus on this pregnancy, I had all the tests done as on time as no one, I had two pregnancy cards, one on the National Health Service, one privately, I had all the tests done twice.' (participant 6)

> 'And I got into hyperfocus and a whirlwind of reading books about childbirth. From the beginning of my pregnancy I read, I read probably all the popular literature available about pregnancy and childbirth. And the same with childcare, I tried to learn everything about it.' (participant 4)

2.1.2. Hyperactivity and impulsivity

The women interviewed described making ill-considered decisions and impulsive actions during the perinatal period, some of which were associated with negative consequences. A recurring motive was to travel during pregnancy at the due date, despite the risks involved. Hypervigilance in respondents' opinions influenced hospitalisation behaviour. Women were discharging themselves from hospitals at their own request, and the need to stay on the move made the immobilisation required during KTG recording or the delivery itself difficult to bear. Despite being aware of the possible consequences, the women surveyed tried to avoid immobilisation by all means.

> 'When I was a baby I was just naughty because I couldn't sit still. In pregnancy pathology I was a naughty patient.' (participant 6)

> 'And also they didn't let me move at all, that's something, that's the nail in the coffin (...) I wasn't able to lie down. So they couldn't do the CTG properly, so I had to keep lying down, so I was lying down, it was hard.' (participant 1)

Some participants described the difficulty in accepting a change of plans during the perinatal period triggered by circumstances beyond their control.

> '(...) when I got up on the morning of Christmas Eve I got a text message that my appointment was cancelled. And I said to my partner that no matter what I wasn't going to go on any Christmas until I went for that ultrasound. So we found a doctor at the other end of town and we went there.' (participant 6)

2.1.3. Atypical sensory processing

All of the women interviewed frequently remarked on the inadequacy of the hospital environment to meet their needs, which affected their feelings and behaviour. Abnormalities in the processing of external stimuli made the experience of childbirth additionally difficult.

> 'The same walking around in wet flip-flops after a shower. The feeling of sticking to that foil on the birthing chair, the felt and plastic. And the fact that you're all wet and sweaty and still sticking to it (...) It was horrible. The light was on, so I had my eyes closed for practically the whole birth.' (participant 2)

> 'I have hypersensitivity to light, overhead light especially, I hate it. And there was an overhead light on all the time and it was very bothersome. I also have auditory hypersensitivity. And in the hospital the children were crying all the time, I practically didn't sleep, I thought I was going mad.' (participant 5)

Some women specifically highlighted the psychological discomfort that medical activities requiring tissue disruption caused them. The potential risk of reliving such an event again may even have influenced the decision to choose the type of birth.

> 'It was literally written in the birth plan that I was tactilely hypersensitive, that I couldn't stand the needles because they caused me psychological pain and I could feel it in every movement. I remember her exasperation and great wonder why I was so scared of needles as I had three c- sections. But I have just survived three c-sections and I don't want another one. If I wasn't so scared of needles, I could have had another caesarean.' (participant 7)

Women with ADHD declared that discomfort can cause them to experience events that are completely physiological in childbirth. A particularly sensitive sense of touch meant that the birth experience included additional sensations that were unpleasant for them.

> 'They put the baby on my chest and I was so irritable, I didn't want to cuddle that baby. It was so wet, slimy, I felt bad too. (...) I already wanted it to be clean, dry, wrapped in something, or even naked, but clean. Because I know it's mine, I know it's from me and it's not something bad, what it's wearing, but it made me feel so disgusted, uncomfortable and unpleasant very much.' (participant 3)

> 'I, after giving birth, I felt terribly dirty afterwards, I felt awful. It irritated me incredibly, this feeling of sweating, of dirt. (...) I spent a lot of time in the shower, I didn't want to get out from under it. I found it soothing, the fact that the water was running and that I could wash off the sweat on a regular basis.' (participant 3)

Discomfort was also associated with breastfeeding. This forced women to make difficult decisions and look for alternatives.

> 'When I pumped for him, I didn't do it with a breast pump, I did it manually and everyone was shocked too. I hated the breast pump, the touch of it, the sound of it, a nightmare. (...) And that's also mainly why I weaned them, because of the sensory sensations. Even though I didn't want to finish, I wanted it to finish on its own, I did it because it made me so tired.' (participant 2)

The women interviewed declared that they often tried to calm down after giving birth with things that usually brought them comfort. They then chose relaxing pastimes like watching a favourite TV series, or eating food that they associated with the carefree nature of childhood.

> 'And I felt so empowered to eat those Michals (name of candy) and I would just have those Michals in a drawer stashed away and eat them like that. It was like some sort of trance state, like under the influence of drugs I would say. I love Michaleks, they are my favourite sweets, maybe sentimental, because my dad is very fond of Michaleks and I always snacked on them from him.' (participant 4)

> 'She cooked me a soup like she used to cook for me when I was little, there is 12 years difference between us, so she used to cook me when I was a little girl such a soup.' (participant 1)

Some participants described food selectivity resulting from sensory difficulties during the perinatal period. Women who perceived such difficulties in themselves emphasised that they found a diet that did not take into account individual food exclusions burdensome during their hospital stay.

> 'I have a certain food selectivity. If the smell of something doesn't suit me, I'm not able to eat it because I throw up. I took a big stock of food of my own to the hospital to have.' (participant 5)

> 'I am proud of myself when I eat a vegetable in a sandwich. (...) I don't like the texture of many either. If someone adds a fresh tomato or a pickled cucumber, the whole dish is such that it would be abstract to eat it. (...) I don't have such a thing that I can eat food even though I don't like it. If it doesn't taste good to me, I will vomit sooner than eat it.' (participant 4)

2.2. In relationships with others

A large space in the women's interviews was occupied by relationships both in relation to relatives, especially the partner and also people from the medical staff.

2.2.1. Relationships with relatives

The women interviewed described experiencing difficulties in family relationships during their pregnancy. This included both the relationship with the partner and with older children. At the same time, the origins of the conflicts were varied, although all related to the disorder described.

> 'Everything was taking me out of balance and I wasn't able to stop, as usual, this gets worse in pregnancy. I was very sensitive to touch and sounds. (...) It made me nervous when my children were next to me, when they wanted to hold my hand. Normally that's fine, but in pregnancy it's not. If the children are playing loudly, or squealing, arguing, I normally go into the other room and manage, but in pregnancy if I can hear it even from another room, I find it hard to bear.' (participant 7)

> 'In pregnancy, especially in those first 4 months we argued terribly and I also liked to have everything on a knife edge like that.' (participant 9)

At the time of the birth itself, women's expectations of their partners varied. For some of them, the instrumental support they received and the mere accompaniment of the birth was sufficient. For others, however, the insufficient emotional involvement of the men was a problem.

> 'I in childbirth preferred to be more alone, I don't like touch. So my husband gave me water, but he didn't take such a direct part, because I don't need it that much either. But it is very important for me to have his presence and for him to switch the music.' (participant 1)

> 'He, when he came to this delivery room, was also such a technical support. He followed the midwife's instructions 'Here, you hold your wife's leg' and took care of my hydration during labour. (...) Maybe I would have needed him to be more present, with his emotions rather than his body, but he was in his own way.' (participant 4)

2.2.2. Communication and cooperation with medical staff

Some of the respondents were aware of their difficulties in interpersonal contacts. The women interviewed paid particular attention to the role of communication in the therapeutic relationship with medical staff during childbirth. According to the majority of respondents, it could dramatically change their perinatal feelings. Even difficult experiences, when staff were able to respond to the needs of the parturient in a way that was appropriate for her, were mentioned as positive. However, in many cases communication and cooperation with staff was unsatisfactory. The parturients often perceived the messages addressed to them as incomprehensible or too vague. They declared that they would have needed clear instructions during childbirth.

> 'I was prepared for the birth but I needed someone to tell me at that moment how to behave and I didn't know that and I felt very bad about it and I was completely alone. (...) I didn't know what was going on.' (participant 1)

> 'And I didn't know what to do and I felt like I was doing everything wrong. The midwife was making me feel guilty because I didn't know at all how I was supposed to push, what I was supposed to do, how it was supposed to look. (...) And she was telling me that here the head is already coming out, you can already see, and you won't push and you'll strangle your baby. See what you're doing.(...) the way this midwife conducted this action, it was a nightmare. (participant 3)

Another problem often highlighted was the lack of a sense of subjectivity. Women felt that they were treated in a patronising and objectifying way, which projected onto their feelings about the birth and their willingness to cooperate with the staff.

'There was no cooperation with the midwife, I remember her back at the desk more than her face or her voice.' (participant 7)

'And that's how I felt like an intruder there. (...) I felt patronised.(...) I found it hard to talk to them.(...) I would like the doctors to take me seriously, as a partner, that what I say is important to them, how I feel. And that they didn't treat me like another cow to give birth to that they got, but no woman. That's how I imagined it. I felt like I was just another woman on a conveyor belt and I'm supposed to go give birth in this room and see ya. The factory has to work like that and we go with the next woman to give birth.' (participant 5)

When staff gave parturients a sense of agency and competence to make decisions, their cooperation was better and more effective. Parturients who received instructions that were clear to them followed them and described the birth experience as more positive, even when there were medical complications.

'During labour, the midwife encouraged me to change position, but very gently and explaining what it was about so that I agreed. The fact that she was explaining why was important to me. She asked my consent and encouraged me and this made me feel involved in the process and not treated down. (...) I was empowered and that was the biggest difference in all of this. In that first birth they left such a mother totally crushed, I felt so inadequate, up to no good. Not knowing at all what had happened, totally without the strength for what was ahead of me. And in the second one, I felt that I could do it, that I had the power inside me to take care of this child, that I could cope with everything. (participant 2)

'I wasn't traumatised by my causality in the first birth. I could come out of it traumatised, but by me agreeing to everything I didn't have trauma. I was able to say 'no'. And it was this doctor who emphasised 'it is your decision. I am telling you that there could be hypoxia. But it is your decision whether you agree to it. I am waiting to do it, if you say no, I will not do it'.' (participant 1)

3. Consequences of perinatal experiences

The difficult experiences of pregnancy and childbirth cited above had long-term consequences in the form of psychological problems in some of the women interviewed.

'After my first birth I had suspected postnatal depression (...) The therapist at the time suggested to me that I might have PTSD after that birth and that kind of treatment by the midwife. I have flashbacks of that birth. For example, I could see the tower of the church from my window and whenever I see that tower walking around the city, I am reminded of those scenes.' (participant 2)

'I didn't have a diagnosis of postnatal depression after any birth, but I think there were indications for it. Maybe if I had had more time, or my partner had been more sensitive to my needs, it would have been done. I felt that I was alone, that no one understood me (...) Lack of support and lack of understanding from my partner and in-laws, lack of interest, lack of willingness to help' (participant 3)

Two of the female participants in the study declared that they had to change their procreation plans as a result of the traumatic perinatal experience.

> 'And I wanted to say that this is one of the most important reasons that I don't plan to have a second child. Because I'm scared of this birth and how these women in labour are looked after, that you don't know what you're going to end up with. I really wanted to have a lot of children-four or three. And definitely two. And now I don't want to have another child. (...) And it was so bad that I still can't get over it. It is a tragedy simply.' (participant 5)

> 'During this later therapy I also worked on the topic of pregnancy and childbirth. And after that I decided that my daughter was my first and only child, because the whole thing cost so much nerves that I wouldn't want to go through it a second time. I would consciously rather not decide to have a second child.' (participant 6)

4. Discussion

The study focused on the individual pregnancy and childbirth experiences of 10 women with a formal diagnosis of ADHD. The interviews identified several main elements that significantly influenced the experience of pregnancy and the perinatal period of women diagnosed with attention deficit hyperactivity disorder. Most of the women paid a lot of attention to the difficulties resulting from ADHD. One of the most notable was sensory overreactivity, the severity of which is typical of this period (Elliott et al., 2024). In some cases, this led to significant discomfort during pregnancy, during hospitalisation and an aversion to medical interventions, regardless of their benefits. Also during childbirth, there were strong negative feelings related to external stimuli, which are less frequently reported by neurotypicals. At the same time, none of the women reported experiencing perinatal complications such as pre-eclampsia, postpartum haemorrhage, or preterm birth, despite these being more common in pregnant women with ADHD (Poulton et al., 2018; Walsh et al., 2022).

Some of the women reported difficulties in adhering to a healthy diet during pregnancy, which were mainly related to sensory disturbances. During their hospital stay, the enforced diet caused them additional discomfort. This is consistent with findings from other studies indicating poor eating habits in women with ADHD (Jones et al., 2018). It has also been shown that individuals with ADHD have a different chemosensory profile (characteristics of the body's response to chemical stimuli), which may be one reason for the women's reported difficulties during the study period (Stankovic et al., 2021).

The literature describes the occurrence of additional difficulties resulting in less support from loved ones and more family conflict. Women with ADHD also felt isolated from loved ones and found it more difficult to spend satisfying time with their families Baker et al., 2022; Murray et al., 2022). Similar situations were reported by some of the women in our study, who indicated more frequent arguments with relatives and disappointment caused by their partners' failure to meet their expectations. At the same time, other participants in our study did not report such difficulties and were satisfied with the role their relatives played during the birth. Despite the respondents reporting an increase in challenges related to daily functioning and difficulties in family relationships, only one of them mentioned complications on professional grounds, which is not in line with the results of other studies indicating a higher prevalence of such problems during the period described (Eddy et al., 2019).

During pregnancy, existing problems with planning or attention deficit disorder in women with ADHD may be exacerbated, negatively affecting their appropriate use of medical care (Scoten et al., 2024). Several of the women we interviewed reported such difficulties, mainly related to the

period of childbirth and going to hospital. Women with ADHD often have co-occurring anxiety and emotional disorders. Due to the unpredictable nature of the course of pregnancy and women's concerns about their ability to cope with the changes ahead, they may experience an increase in symptoms of these disorders (Young et al., 2020). At the same time, several of the women we interviewed noted an

excessive focus on pregnancy, which may also be due to the need to control the uncontrollable experience that is pregnancy and childbirth. In the literature, attention in women with ADHD has so far only been described in the context of attention deficit, so excessive focus on a specific topic, referred to as hyperfocus, is an area that needs further investigation.

In our study, women were much more likely to note difficulties arising from hyperfocus, which caused considerable discomfort during pregnancy check-ups and hospital stays. Immobilisation, even of relatively short duration, was difficult for them to bear and they strenuously tried to avoid it. In an article published by Young et al. motor hyperactivity is more often associated with men with ADHD, resulting in such difficulties occurring in women being ignored (Young et al., 2020).

Several of the women interviewed also described situations involving health risk activities during the last trimester of pregnancy. Although these actions appeared to be well planned, they may nevertheless have resulted in risks to the health and life of the baby and themselves. This impression of well-considered decisions may be due to better masking of symptoms and adaptation to social demands in women (Young et al., 2020).

In a study by Matheson et al, people with ADHD described a lack of understanding of their problems and difficulties in communicating with medical staff, among whom stereotypes attributed to women with ADHD persist (Matheson et al, 2013). Such attitudes often lead to the stigmatisation of people with ADHD and their avoidance of interaction with healthcare professionals (Lebowitz, 2016). The lack of cooperation with midwives and doctors, experienced by some of the women we interviewed, may have been partly related to this. They also sensed a lack of respect and a lack of willingness to cooperate on the part of health care staff, which had a very negative impact on their perception of childbirth. This is an issue described by neuroatypical people in other studies as well (Elliott et al., 2024).

The quality of collaboration with the midwife during labour was a frequently raised theme. Women who were given a sense of agency and understanding had significantly better recollections of their births compared to women who lacked this. Such an important role of empowerment by staff may be due to the frequent lack of a sense of control over life events in women with ADHD (Attoe & Climie, 2023). Research shows that both women and physicians perceive difficulties in providing care to people with ADHD, at the same time as both groups see that improving communication and adapting medical facilities to their specific requirements can significantly increase the quality of their care and improve their feelings about interactions with health care (Ward et al., 2024). Similar statements were expressed by female participants in this study. They appreciated situations where staff were able to adapt the way they communicated and the hospital environment to their needs.

Several women interviewed described experiencing psychological problems in the postnatal period and later in life. Several of them experienced postpartum depression, which they link to negative experiences during childbirth. According to a cohort study by Johnson et al. depressive symptoms were more prevalent in women with ADHD both 3 months postpartum and more than a year postpartum (Johnson et al., 2025). ADHD is also independently associated with the occurrence of greater family difficulties in the postpartum period (Joseph, Khetarpal, Wilson, Molina, 2022).

Some women described their perinatal experience as very traumatising, which forced them to abandon further procreative plans for fear of repeating such an experience.

Conclusions

The perinatal experiences of women with ADHD were significantly influenced by symptoms of the disorder such as hypersensitivity to a variety of stimuli and hyperactivity. Women receiving perinatal care reported a lack of understanding of their needs by medical staff and difficulties in communicating effectively with them. However, where staff took into account the personal preferences of the parturients, they described their births as more satisfactory. While some of the participants' statements may represent

women's universal needs for subjectivity and agency, they also manifested co-occurring communication challenges specific to ADHD. Lack of support from medical staff and family can result in long-term negative consequences, mainly of a psychological nature. Our study showing difficulties in the perinatal period in women with ADHD points to the need for changes in the management of their care. In two cases, these experiences led women to abandon further procreative plans. One possible change is the introduction of training of medical staff to take into account the limitations of Attention Deficit Hyperactivity Disorder and to individualise care for pregnant and parturient women. Perinatal care should take into account the special sensory sensitivity to the hospital environment described in the study and avoid immobilising women.

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Attitudes of women with reproductive problems towards pregnancy and childbirth and their life satisfaction[1]

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Klaudia Pałucka,[a] ✉ Wiktoria Dubiel,[b] Agnieszka Bałanda-Bałdyga,[c] Katarzyna Kanadys,[d] Grażyna Stadnicka,[e] Anna Pilewska-Kozak[f]

[a] *Klaudia Pałucka,[4] https://orcid.org/0000-0002-6467-9118*
[a] *Wiktoria Dubiel, [2, 5] https://orcid.org/0009-0008-9085-4398*
[a] *Agnieszka Bałanda-Bałdyga,[1] https://orcid.org/0000-0001-5351-8063*
[a] *Katarzyna M. Kanadys,[3] https://orcid.org/0000-0001-8447-3937*
[a] *Grażyna Stadnicka,[3] https://orcid.org/0000-0002-5850-3247*
[a] *Anna B. Pilewska-Kozak,[3] https://orcid.org/0000-0003-4562-2295*
✉ *Corresponding author: Klaudia Pałucka, claudiapalucka@onet.pl*

[1] *Department of Integrated Medical Care, Faculty of Medicine, Cardinal Stefan Wyszyński University in Warsaw, Poland*
[2] *Department of Obstetrics and Gynaecological Nursing, Faculty of Health Sciences, Medical University of Lublin, Poland*
[3] *Department of Obstetrics and Gynecological Nursing, Chair of Obstetrics and Gynecology, Faculty of Health Sciences, Medical University of Lublin, Poland*
[4] *Institute of Health Sciences, Faculty of Medicine, The John Paul II Catholic University of Lublin, Poland*
[5] *Student Scientific Association "Enthusiasts of Midwifery Art"*

Abstract: *Introduction:* Infertility is defined as the failure to conceive after 12 months of regular unprotected intercourse (3-4 times per week). *Objective:* The aim of this study was to assess life satisfaction and attitudes toward pregnancy and childbirth among women undergoing infertility treatment. *Materials and methods:* The study involved 103 women treated for infertility. Data were collected using a diagnostic survey, including a self-designed questionnaire and two standardized tools: the Test for Assessing Women's Attitudes Toward Pregnancy and Childbirth, and the Satisfaction With Life Scale (SWLS). *Results:* The average score for attitudes toward pregnancy was M = 23.18 (SD = 3.35), with scores ranging from 15 to 32 points. For attitudes toward childbirth, the mean score was higher at M = 26.11 (SD = 4.36), ranging from 10 to 36 points. The mean SWLS score was M = 22.34 (SD = 6.11), with scores between 10 and 35 points. A significant negative correlation was found between duration of attempts to conceive and life satisfaction (r = -0.250; p = 0.011). A weaker but significant negative correlation was observed for attitude toward pregnancy (r = -0.216; p = 0.029). Significant differences were found in attitudes toward pregnancy across groups (H = 13.95; p = 0.003). Differences in attitudes toward childbirth by age groups showed a statistical trend (H = 7.156; p = 0.067). *Conclusions:* Women undergoing infertility treatment showed varied but generally average life satisfaction levels. Most women had positive attitudes toward pregnancy and childbirth. Prolonged infertility treatment was associated with a decrease in overall life satisfaction among respondents.
Keywords: attitude, childbirth, infertility, life satisfaction, pregnancy

Introduction

Infertility is defined as the inability to conceive after 12 months of having regular intercourse (3-4 times a week) without using any contraception. In women over 35 years of age, infertility is diagnosed after 6 months of having regular intercourse without successful conception (Łukaszuk et al., 2018; Szamatowicz and Szamatowicz, 2020; Practice Committee of the American Society for Reproductive Medicine, 2015).

Infertility can be divided into two basic types: primary and secondary. Primary infertility affects women who, despite engaging in regular unprotected sexual intercourse for at least 12 months, have never

1 Article in Polish language: https://stowarzyszeniefidesetratio.pl/fer/63P_Palu.pdf

gotten pregnant. Secondary infertility, on the other hand, refers to situations in which a woman, despite having been pregnant before, encounters difficulties in conceiving again, in spite of having regular intercourse without contraception for at least one year (Waheed, 2019; Vander, 2018).

Infertility is a significant public health problem that affects both men and women around the world. The global strain of infertility is steadily increasing, as evidenced by a significant rise in both its prevalence and disability-adjusted life years (DALY) between 1990 and 2019. This trend is projected to persist between 2020 and 2029 (Huang et al., 2020). Infertility affects approximately 17.5% of the population, with the problem being more prevalent in high-income regions and countries (Bhattacharjee et al., 2024). In Poland, approximately 15-20% of couples struggle with infertility (Koperwas et al., 2017).

Infertility treatment includes a variety of methods, from pharmacological and surgical interventions to assisted reproductive technology (ART) procedures (Łukaszuk et al., 2018; Liu et al., 2021). Treatment is usually long-term and does not always yield the desired results. Ultimately, assisted reproductive technologies often prove to be the most effective solution to infertility. However, it should be remembered that ART are expensive and require complex procedures such as ovarian stimulation, oocyte retrieval and embryo transfer to the uterus, which further increases the psychological burden on couples affected by infertility. The success rate of in vitro fertilisation (IVF) is approximately 30% per cycle (Toftager et al., 2017), with many couples having to face the possibility of failure. For this reason, some women give up treatment or never initiate it (Crawford et al., 2017).

It is worth noting that the mental state of couples affected by infertility can influence the results of treatment. Significant correlations have been demonstrated between levels of depression and anxiety prior to ART treatment and reduced chances of success (Purewal et al., 2017). Attitudes towards assisted reproduction methods also vary greatly. The willingness of couples to attempt in vitro fertilisation and the psychosocial consequences of this choice depend on, for example, the opinions of those around them, general social attitudes, the social support they receive and their religious affiliation (Stankiewicz et al., 2023).

Couples struggling with infertility face many personal problems, the most important of which is the stress associated with unsuccessful attempts to conceive, diagnosis and the long treatment process (Tavousi et al., 2022). Infertility treatment is associated with strong, often negative emotions that can lead to emotional crisis and feelings of unfulfillment. For many couples, having a child is a life goal, and repeated failures lead to frustration and helplessness. The problem of infertility is often associated with reduced self-esteem, guilt, increased stress, depression, and problems in marital and sexual interactions (Alirezaei et al., 2022). Women struggling with infertility are more prone to experience negative emotions than their partners. Comorbidities such as endometriosis or ovarian cancer can be an additional psychological burden, increasing anxiety and reducing quality of life (Gica et al., 2021; Gica et al., 2020). It has been shown that a deterioration in mental health in the form of anxiety and depression can further reduce the chances of conceiving a child (Zhou et al., 2019). These factors significantly affect the overall life satisfaction of women struggling with infertility (Nagórska et al., 2022). Patients may feel either satisfied or dissatisfied with various aspects of their lives, including the quality of medical care. Patient satisfaction is not only an important indicator of the quality of care, but also an integral part of it, as it directly influences compliance with medical recommendations and increases the likelihood of achieving positive treatment outcomes (Galic et al., 2021). Attitudes towards pregnancy are complex and shaped by a variety of cognitive, emotional and socio-cultural factors. In the cognitive sphere, beliefs and knowledge, for example about planning conception or the need to adjust one's lifestyle, are important. The emotional aspect includes feelings such as joy, fears or anxiety related to pregnancy. It is worth noting that many women feel ambivalent in this context, i.e. simultaneous, conflicting emotions towards both the pregnancy itself and its course (Tobey et al., 2020). The attitudes of women who have undergone assisted reproductive treatment towards pregnancy and childbirth vary, as they can be both positive and negative. Some women have a positive attitude towards

pregnancy but a negative attitude towards childbirth, or vice versa. Every pregnancy, even a physiological one, requires a change in lifestyle and, consequently, in attitudes. The attitudes adopted by individual women are influenced by, for example, their age, financial status, the length of infertility treatment, as well as the course of the pregnancy and its outcome. Pregnancies resulting from assisted reproductive technologies are associated with an increased risk of obstetric complications, which necessitates individualised medical care. From a psychological perspective, these procedures can evoke negative emotions that potentially disrupt the natural course of pregnancy (Łepecka-Klusek et al., 2011).

Infertility is not only a medical problem, but also a profound personal and psychosocial experience that requires a holistic, interprofessional approach. A study of attitudes towards pregnancy and childbirth in a group of women with reproductive problems is particularly warranted, as more than a decade has passed since the last Polish study on women's attitudes towards pregnancy and childbirth after assisted reproductive technologies, authored by Łepecka-Klusek et al. (2011). During this time, there have been significant developments in medicine and medical technology, including reproductive medicine, as well as dynamic social changes that may have influenced patients' attitudes. For this reason, it is reasonable to conduct up-to-date research in order to understand the current situation.

Aim of the study

The aim of the study is to assess the level of life satisfaction and attitudes towards pregnancy and childbirth among women undergoing infertility treatment.

1. Research material and tools

The study was conducted using a diagnostic survey method, with a self-designed questionnaire and two standardised tools: a test to examine women's attitudes towards pregnancy and childbirth, and the Satisfaction With Life Scale (SWLS).

The test to examine women's attitudes towards pregnancy and childbirth was developed by Łepecka-Klusek & Jakiel (2011). The test consisted of 16 statements, half of which concerned pregnancy and the other half concerned childbirth. The study used a typical Likert scale with five response options: I completely agree, I agree, I have no opinion, I disagree, I completely disagree. Positive statements (1, 3, 5, 7, 9, 11, 13, 15) were scored as follows: I completely agree – 5 points, I agree – 4 points, I have no opinion – 3 points, I disagree – 2 points, I completely disagree – 1 point. Reverse scoring was used for negative statements. The maximum number of points, both in the section on pregnancy and childbirth, was 40. A score of up to 16 points indicated a negative attitude, and above 16 points a positive attitude. Cronbach's alpha coefficient was 0.76 for pregnancy and 0.82 for childbirth. The average correlation between statements was 0.3 and 0.37, respectively.

The Satisfaction With Life Scale (SWLS) by Diener et al. (1985) from the Department of Psychology at the University of Illinois was based on a questionnaire containing 48 statements concerning various aspects of subjective well-being. Factor analysis revealed three factors, namely: positive affect, negative affect and satisfaction. After eliminating statements related to affect and statements correlating below 0.60 with the satisfaction factor, 10 statements remained. Another 5 statements were eliminated due to their semantic similarity to the remaining ones. The result was a short scale consisting of 5 statements rated on a 7-point scale.

The SWLS scale consists of 5 statements that the respondent rates on a 7-point scale (from 1 – 'strongly disagree' to 7 – 'strongly agree'). The results of each response are added up to obtain an overall score ranging from 5 to 35 points.

The higher the score, the greater the sense of life satisfaction. A sten scale is used to interpret the results:

- 1-4 sten – low life satisfaction
- 5-6 sten – average life satisfaction
- 7-10 sten – high life satisfaction

Comparisons can be made with the results of normative groups (e.g. the general adult population, students, patients). The scale is suitable for assessing quality of life in the general population as well as in clinical populations (Diener et al., 1985).

The study was conducted between January 2025 and April 2025. The data collection process lasted a total of 11 weeks. Purposeful sampling was used. The study included women over the age of 18 who had been diagnosed with primary infertility and had never been pregnant before. Recruitment took place through an advertisement posted on an internet forum. The advertisement included a link to a Google Forms questionnaire and guaranteed anonymity. Candidates were informed about the purpose of the study and the rules of participation. The study was conducted in the form of an online questionnaire, available on the specialist internet forum OvuFriend, dedicated to couples with infertility issues. Participants recruited themselves by clicking on the link to the questionnaire. The respondents gave their informed consent to participate in the study and their GDPR consent by ticking the appropriate box in the questionnaire.

The questionnaire was approved by the Psychological Testing Laboratory in Warsaw due to the use of the SWLS scale. The study was conducted in accordance with the principles of the Helsinki Declaration.

SPSS Statistics V26 and Microsoft Excel were used for the analyses conducted for the study. Excel was used for the initial preparation of the database and its visualisation. Statistical tests and correlation analyses were performed in the SPSS environment.

In order to examine the relationship between quantitative variables, Pearson's correlation coefficient r was used, which allows to determine the strength and direction of the relationship between quantitative variables. On the other hand, the Kruskal–Wallis test H, which is a non-parametric equivalent of the one-way ANOVA, was used to compare multi-category groups in terms of quantitative or ordinal variables.

The analyses adopted the classic level of statistical significance $p < 0.05$ – statistically significant result, $0.05 < p < 0.099$ – treated as a statistical trend, indicating a possible, though uncertain, variation in results. All analyses were two-sided, and the selection of tests was adjusted to the measurement level of the variables and their distribution.

2. Results of the study

2.1. Characteristics of the study group

The study included 103 women undergoing treatment for infertility. The group of women was diverse in terms of age, place of residence, level of education, marital status, nature of work and socio-economic conditions.

The most numerous age group were respondents between 26-30 years of age, who represented 38.8% of the sample (N = 40). Women aged 31-40 were slightly less numerous (35.9%, N = 37). The youngest participants in the study, aged up to 25, accounted for 16.5% (N = 17), while the smallest group were women over 40 (8.7%, N = 9).

The majority of respondents lived in cities (65.0%, N = 67), while 35.0% (N = 36) were rural residents. The vast majority of respondents had higher education (85.4%, N = 88), while the remaining 14.6% (N = 15) had secondary education. Married women dominated among the respondents, accounting for 77.7% (N = 80). Single women accounted for 17.5% (N = 18), and widows or divorcees for 4.8% (N = 5). The largest group consisted of white-collar workers (77.7%, N = 80). Manual labour was performed by 18.4% (N = 19) of respondents, while the remaining 3.9% (N = 4) were unemployed, on leave, on sick leave or studying. Most respondents rated their socio-economic situation as good (49.6%, N = 51). Another 41.7% (N = 43) rated their conditions as very good, while 8.7% (N = 9) rated them as average.

The respondents were most often people who had been trying to conceive for 1 to 2 years (39.8%, N = 41). 16.5% (N = 17) of the respondents had been trying to conceive for less than 1 year. 16.5% (N = 17) of respondents had been trying to conceive for more than 2 to 3 years. Meanwhile, 27.2% (N = 28) of respondents had been trying to conceive for more than 3 years.

Most respondents declared that there were no cases of infertility in their family (57.3%, N = 59), while 18.4% (N = 19) confirmed that this problem had occurred in their family. The remaining 24.3% (N = 25) had no knowledge in this regard. Most of the study participants had already undergone infertility treatment (66.0% (N = 68). Surgical interventions related to infertility treatment were performed in 49.5% (N = 51) of respondents. When it came to psychological support in the context of infertility, the vast majority of respondents (80.6%, N = 83) did not use this form of help. Respondents who used psychological help chose individual consultations (9.7%, N = 10) and meetings with a psychologist together with their partner (9.7%, N = 10). The vast majority of participants (90.3%, N = 93) monitored their menstrual cycle. The most commonly used method of cycle monitoring was hormonal monitoring (60.2%, N = 62). The Billings method (54.4%, N = 56) and the Ogino-Knaus method (44.7%, N = 46) were also frequently used. The thermal method based on body temperature measurement was used slightly less frequently (38.8%, N = 40). Other methods of observation were indicated by 4.8% (N = 5) of respondents.

2.2. Attitudes towards pregnancy and childbirth and life satisfaction

The study assessed attitudes towards pregnancy and childbirth using a test based on 16 statements rated on a five-point Likert scale. The section on attitudes towards pregnancy (8 items) and the section on attitudes towards childbirth (another 8 items) were analysed separately. In each section, the maximum score was 40 points, with a score above 16 points being considered a positive attitude and a score of 16 or below being considered a negative attitude.

The average score for attitudes towards pregnancy was M = 23.18 (SD = 3.35), with values in this group ranging from 15 to 32 points. Considering that the threshold separating a negative and positive attitude was set at 16 points, the average obtained indicates that positive attitudes prevailed among the respondents. At the same time, it should be noted that the lower score range also included borderline values, suggesting that some respondents may have had difficulties in adapting to pregnancy.

With regard to attitudes towards childbirth, the average was even higher, at M = 26.11 (SD = 4.36), with scores ranging from 10 to 36 points. In this case, positive attitudes also prevailed, although the minimum value indicates that some women may have had strongly negative beliefs and emotions related to childbirth. The results are shown in Table 1.

The level of life satisfaction was assessed using the Polish adaptation of the Satisfaction with Life Scale (SWLS). This tool consists of 5 statements rated on a 7-point Likert scale, where 1 indicates complete disapproval and 7 indicates complete approval of a given statement. The final score ranges from 5 to 35 points – the higher the score, the greater the sense of satisfaction with one's life.

In the group of women undergoing infertility treatment, the average SWLS score was M = 22.34 (SD = 6.11), with values ranging from 10 to 35 points. This means that the results of the respondents were within the average range (6), although the spread of results suggests a diversity of individual assessments – from very low to very high. The results are presented in Table 2.

No statistically significant correlations were found in the analysis of the relationship between overall life satisfaction and attitudes towards pregnancy and childbirth (Table 3). The correlation coefficient between life satisfaction and attitudes towards pregnancy was r = 0.087 (p = 0.382), indicating a very weak, insignificant positive relationship. This means that the level of life satisfaction was not related to the perception of pregnancy by the women surveyed. In the case of attitudes towards childbirth, the correlation was almost nonexistent (r = -0.011; p = 0.916), which means that there was no relationship between these variables.

In the analysis of the relationship between the duration of trying to conceive and life satisfaction and attitudes towards pregnancy and childbirth, statistically significant relationships were found in two cases (Table 4). A negative, significant correlation was found between the length of time spent trying to conceive and the level of life satisfaction (r = -0.250;

Table 1. Attitudes towards pregnancy and childbirth in a group of women treated for infertility

Variable	M	SD	Min	Max
Attitude towards pregnancy	23.18	3.35	15	32
Attitude towards childbirth	26.11	4.36	10	36

M – mean, SD – standard deviation, Min – minimum value, Max – maximum value

Table 2. Life satisfaction in a group of women treated for infertility

Variable	M	SD	Min	Max
Life satisfaction	22.34	6.11	10	35

M – mean, SD – standard deviation, Min – minimum value, Max – maximum value

Table 3. The relationship between women's life satisfaction and their attitudes towards pregnancy and childbirth

Variable		Attitude towards pregnancy	Attitude towards childbirth
Life satisfaction	r	0.087	-0.011
	p	0.382	0.916

Table 4. Relationship between the length of time spent trying to conceive and women's life satisfaction and attitudes towards motherhood

Variable	Correlation coefficient r	Significance of correlation p
Life satisfaction	-0.250	0.011
Attitude towards pregnancy	-0.216	0.029
Attitude towards childbirth	-0.086	0.389

p = 0.011). This means that the longer the attempts to conceive lasted, the lower the overall level of life satisfaction reported by the respondents. A similar, albeit slightly weaker, relationship was found in relation to attitudes towards pregnancy – here a significant negative correlation was observed (r = -0.216; p = 0.029), indicating that longer infertility treatment was associated with a more ambivalent or less positive attitude towards pregnancy itself. In the case of attitudes towards childbirth, the correlation with the duration of treatment was minimal and did not reach statistical significance (r = -0.086; p = 0.389), suggesting no clear relationship between these variables.

The level of life satisfaction was analysed according to the age of the respondents (Table 5). The Kruskal-Wallis H test was used for multi-group comparisons, which did not show any statistically significant differences between the analysed age groups (H = 5.049; p = 0.168). The highest average level of satisfaction was recorded in the group of women under 25 years of age (M = 24.29), while the lowest was among participants aged 41 years or older (M = 20.11). Women aged 26-30 (M = 22.23) and 31-40 (M = 22.11) achieved average results that were similar to each other. Although differences in mean values were visible, they did not reach statistical significance, which means that age did not significantly differentiate the level of life satisfaction in the study group.

Significant differences were noted in attitudes towards pregnancy (H = 13.95; p = 0.003). The lowest reported positive attitude was among women aged 31-40 (M = 21.68), while the highest was among respondents aged 41 or older (M = 24.78). High scores were also achieved by respondents up to 25 years of age (M = 23.59) and those aged 26-30 (M = 24.05). This means that middle-aged women showed a relatively less positive attitude towards pregnancy than younger and older respondents.

On the scale of attitudes towards childbirth, the differences between age groups reached statistical significance (H = 7.156; p = 0.067). The highest average score was observed among women aged 26-30 (M = 27.4), while the lowest was in the group of respondents aged 41 or older (M = 23.67). Detailed analyses are presented in Table 6.

3. Discussion

Infertility is not only a medical problem, but also a psychological and social one, as it affects the lives of affected women and their partners. The study confirmed that the longer the time spent trying to

Table. 5. Life satisfaction depending on the age of women

	Age								H	p
	up to 25 years (N = 17)		26-30 years (N = 40)		31-40 years (N = 37)		41 or older (N = 9)			
	M	SD	M	SD	M	SD	M	SD		
Life satisfaction	24.29	6.15	22.23	6.06	22.11	6.46	20.11	4.43	5.049	0.168

Table 6. Attitudes towards pregnancy and childbirth depending on the age of women

Variable	Age								H	p
	up to 25 years (N = 17)		26-30 years (N = 40)		31-40 years (N = 37)		41 or older (N = 9)			
	M	SD	M	SD	M	SD	M	SD		
Attitude towards pregnancy	23.59	3.45	24.05	2.86	21.68	3.59	24.78	1.92	13.950	0.003
Attitude towards childbirth	26.35	5.16	27.40	4.28	25.19	3.91	23.67	3.50	7.156	0.067

N – number of observations, M – mean, SD – standard deviation, H – Kruskal-Wallis test result, p – statistical significance

conceive, the lower the level of life satisfaction reported by women undergoing infertility treatment. A similar relationship was observed in the case of attitudes towards pregnancy: the longer the treatment lasted, the more negative the attitudes declared. However, no relationship was found between the length of treatment and attitudes towards childbirth itself, which means that the duration of treatment did not significantly affect attitudes towards childbirth.

The results indicate that the respondents generally had a positive attitude towards pregnancy and childbirth, which partly coincides with the results of a study by C. Łepecka-Klusek et al. (2011). In the cited study, most women had positive attitudes towards pregnancy, while attitudes towards childbirth were more often negative. The cited study also showed a significant relationship between age and attitudes towards pregnancy and childbirth ($p < 0.01$). A similar correlation was found in this study between the age of the respondents and their attitudes towards pregnancy ($p = 0.003$) and childbirth ($p = 0.067$). The analysis showed that the highest rate of positive attitudes towards pregnancy and childbirth was found among women aged 41 and over. However, these results differ from the data of Łepecka-Klusek et al. (2011), where women over 35 years of age were more likely to have negative attitudes towards pregnancy, affecting almost one in three respondents. This difference may be due to the fact that 15 years have passed since the study by Łepecka-Klusek et al. During this time, there has been intensive development of assisted reproductive technologies, their availability has improved, and the perception of people with reproductive problems in society has changed.

It is worth noting that women's attitudes towards pregnancy and childbirth are complex and depend on many factors, including health, social support, but also previous childbirth experiences and cultural conditions. For example, research conducted by O'Connell et al. (2021) showed that women who feel greater emotional support from their partner and family report a more positive attitude towards childbirth, which translates into lower levels of anxiety during pregnancy. In turn, the European Perinatal Health Report (Euro-Peristat, 2022) points out that fears and negative attitudes towards childbirth are more common in countries with lower levels of access to prenatal education and psychological support. However, these data refer to all women, without taking into account the problem of infertility.

A 2024 qualitative study analysing the experiences of women who became pregnant after long-term infertility treatment identified four main emotional dimensions: enormous emotional burden, overprotectiveness, overthinking and changes in social

relationships. Although the joy of pregnancy was real, it was accompanied by intense anxiety about the course of the pregnancy and delivery, and a need for intensive support from partners, family and medical staff (Hadavibavili et al., 2024).

Prolonged attempts to conceive and long-term infertility treatment can have a negative impact on women's mental health, which is often associated with a deterioration in attitudes towards pregnancy and a decline in overall life satisfaction. The study showed that the relationship between treatment duration and attitudes towards pregnancy and childbirth was statistically significant ($p = 0.029$). This means that the longer the treatment, the more ambivalent or less positive the women's attitudes towards pregnancy were. This result differs from the observations of C. Łepecka-Klusek and G. Jakiel (2007), who found no significant relationship between the length of treatment and adaptation to pregnancy ($p = 0.15$).

The average level of life satisfaction in the study group ranged from low to high, with results indicating a prevalent level of average satisfaction. Similar results were also reported by other authors presenting countries from different cultural circles (Nagórska et al., 2022; Sameer et al., 2023; Adachi et al., 2020). Statistical analysis did not reveal any significant correlations between life satisfaction and attitudes towards pregnancy and childbirth. For attitudes towards childbirth, the correlation was insignificant ($r = -0.011$; $p = 0.916$). Similar results were reported by Polish researchers: Gebuza et al. (2014) found that the level of life satisfaction among women in the perinatal period depended mainly on social support and not directly on perceptions of pregnancy and childbirth. In turn, Skurzak et al. (2019) indicated that the life satisfaction of pregnant women was more related to socio-demographic factors, such as relationship status or education.

In summary, the findings indicate that longer infertility treatment may reduce women's overall life satisfaction, but no significant association was found between life satisfaction and their attitudes towards pregnancy and childbirth. These results highlight the multidimensional nature of the infertility experience and point to the need for further research that takes into account a broader psychological and social context.

4. Limitations of the study

The study was a one-off study conducted online using the author's questionnaire and standardised tools. The use of standardised methods increases the accuracy of the measurement, but the selection of the sample through internet forums may limit the results' representativeness. The participants may have constituted a specific group, more active, seeking support and ready to share their experiences. In addition, the online format made it impossible to control how the questionnaire was completed, which creates a risk of misinterpretation and the influence of the need for social approval. It is also worth noting that participation in the study was based solely on the women's declarations. The lack of formal medical verification means that women have not been clinically confirmed as belonging to the group of women treated for infertility. Therefore, the results should be treated as an approximation of reality and a starting point for more in-depth research involving a more diverse sample and using additional research methods.

5. Conclusions

1. Women treated for infertility are characterised by varying levels of life satisfaction, with a significant decline in overall satisfaction observed as the time spent trying to conceive a child increases. This indicates the need to include regular assessment of patients' mental state in standard medical procedures. The practical implication is to create a psychological screening protocol at various stages of treatment, especially after each unsuccessful treatment attempt. Monitoring mental health after each of these stages will allow for early identification of patients in need of support, which may prevent discouragement and resignation from further efforts.
2. Despite reproductive difficulties, most of the women studied had positive attitudes towards pregnancy and childbirth, indicating an optimistic attitude towards motherhood. At the same time, it was observed that the length of infertil-

ity treatment is associated with an increasingly more ambivalent attitude towards pregnancy, but does not have a significant impact on attitudes towards childbirth itself. This suggests the need for specialist psychological support. This should focus on managing the emotions associated with waiting to conceive a child. It would be good practice to organise workshops and individual therapy sessions to help women cope with negative thoughts and uncertainty. These activities should be available not only to women but also to couples from the moment of diagnosis and should be continued throughout the treatment to facilitate the patients' psychological adaptation.

3. The results obtained indicate the need to integrate psychological care as part of infertility treatment. It is recommended that infertility treatment centres offer: early diagnosis of psychological problems, systematic monitoring of life satisfaction, support programmes tailored to the duration of treatment, with particular emphasis on patients struggling with infertility for a longer period of time. The introduction of these measures may contribute to improving the overall quality of life of patients, increasing their psychological resilience and potentially improving the effectiveness of infertility treatment.

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Children as victims of domestic violence: Effective CBT strategies for treating trauma[1]

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Violence is not a sign of strength but of weakness.

Blessed Father Jerzy Popiełuszko

Valentina Fedorovich[a] ✉, Mirosław Brzeziński[b]

[a] *Valentina Fedorovich,*[1] *https://orcid.org/0009-0004-4757-7920*
[b] *Mirosław Brzeziński,*[1] *https://orcid.org/0000-0001-5012-1626*
[1] *Department of Family Sciences, Faculty of Theology, The John Paul II Catholic University of Lublin, Poland*
✉ *Corresponding author: valentina.fedorovich@kul.pl*

Abstract: A child's experience of domestic violence can be considered interpersonal trauma, as they are harmed by someone they know and are close to. On the other hand, domestic violence is associated with severe and chronic stress, which in the long term can have devastating effects on the child's physical and mental health. The aim of this review paper is to present the problem of domestic violence against children, signaling modern methods of cognitive-behavioral psychotherapy that are highly effective in treating psychological trauma. The article consists of two parts: the first part provides characteristics and a scale of the phenomenon of domestic violence against children, its determinants and its consequences. The second part reviews effective CBT strategies in the treatment of post-traumatic disorders. The subject matter for the first part of this article relates to theoretical models of the causes of violence, in terms of its determinants, and in particular the GAM (General Aggression Model), Albert Bandury's social learning theory, and the theory of intergenerational transmission of violence. As part of the characterization of the consequences of domestic violence, numerous studies confirming the relationship between relation trauma and a range of diverse disorders are cited. In particular, the etiology of PTSD is discussed. The second part of the article addresses effective methods of trauma treatment based on the cognitive-behavioral paradigm. Trauma-focused cognitive-behavioral psychotherapy (TF-CBT), as a practice based on reliable scientific evidence (EBP – evidence-based practice), has been recognized as the first-line therapy for the treatment of post-traumatic stress disorders. The text presents Edna Foa's prolonged exposure method, Patricia Resick's cognitive processing therapy, along with a discussion of the neurobiological basis of PTSD and CPT. The paper also includes a description of an innovative process-based approach. An important research task for the future remains to conduct further scientific research on predictors of the effectiveness of PTSD treatment, with particular emphasis on the therapeutic alliance and factors protecting children from developing trauma.
Keywords: child, domestic violence, cognitive-behavioural psychotherapy, interpersonal trauma, posttraumatic stress disorder (PTSD).

Introduction

The United Nations Convention on the Rights of the Child was adopted by the UN General Assembly on 20 November 1989 and was the first international treaty to stipulate that children have the right to protection, help and special care. The preamble to the Convention, which was ratified in Poland in 1991, states that "the child, for the full and harmonious development of his or her personality, should grow up in a family environment, in an atmosphere of happiness, love and understanding".[2]

1 Article in Polish language: https://stowarzyszeniefidesetratio.pl/fer/63P_Fedo.pdf
2 Sejm Rzeczypospolitej Polskiej. Konwencja o prawach dziecka przyjęta przez Zgromadzenie Ogólne Narodów Zjednoczonych dnia 20 listopada 1989 r. [Convention on the Rights of the Child adopted by the United Nations General Assembly on 20 November 1989]. Dz.U. 1991 nr 120 poz. 526. Retrieved from https://isap.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=wdu19911200526

Family experts claim that violence experienced by children from strangers is not only rarer but also far less harmful than violence experienced from closest family members (Młyński, 2012; Pospiszyl, 2000).

The terms "trauma" and "post-traumatic stress disorder" are often associated with the experiences of military veterans, as they were first defined in relation to wartime experiences (Holiczer, Gałuszko, Cubała, 2007; Zawadzki, Popiel, 2014). In fact, there are many types of trauma, among which relational/interpersonal trauma is of particular significance (Greenberg, 2018). Relational trauma arises as a result of negative childhood experiences related to such things as the experience of family violence, emotional neglect or abandonment by a parent (Froń, Lewandowska, 2023). As a rule, it is associated with exposure to terrifying, life-threatening or dangerous event, and also recurring, prolonged or extreme stressors, and therefore, it can cause PTSD or *complex* PTSD (C-PTSD) (Kowalski, Blaut, Dragan, Farley, Pankowski, Sanna, Śliwerski, Wiśniowska, 2024; Popiel, Pragłowska, 2022; Gałecki, Szulc, 2023b).

1. Characteristics of violence against children in the family

Domestic violence is still present in all societies, regardless of the level of their economic and cultural development. It is alarming to see the prevalence of domestic violence, *strictly speaking*, among the closest relatives. Especially alarming is the fact that violence against children is mostly committed by their parents (Lubińska-Bogacka, 2019b; Młyński, 2012).

Doctors who recognised injuries as the consequence of the cruel treatment of children by their parents played a significant role in identifying the harm caused by acts of violence against children. In 1953, radiologist F. Silverman introduced the term *battered child syndrome*, which was defined as the clinical condition of a small child experiencing serious physical injury that results in permanent damage to the body. In 1961, H. Kempe, President of the American Academy of Pediatrics, organised the first academic conference with the battered child syndrome as the leading theme. A few years later, a new term was coined: *maltreated child*. It meant a child who has suffered various forms of violence, e.g., physical violence, psychological violence or sexual abuse. Today, literature and the media also use the term *child abuse and neglect*; however, *violence against children* remains the most popular one (Lisowska, 2005; Lubińska-Bogacka, 2019a; Młyński, 2012).

According to the amended Act on Counteracting Domestic Violence of 9 March 2023 (Article 2(1)),[3] domestic violence, formerly referred to as family violence, is defined as a single or recurring wilful action or negligence, using physical, psychological, or economic superiority, which infringes upon the personal rights or wellbeing of persons experiencing domestic violence, in particular:

1. exposing that person to the risk of losing their life, health, or property,
2. violating their dignity, bodily integrity or freedom, including sexual freedom,
3. causing harm to that person's physical or psychological health, causing suffering or injury to that person,
4. limiting or depriving that person of access to financial resources or the ability to work or become financially independent,
5. significantly violating that person's privacy or causing them to feel threatened, humiliated, or distressed, including with the use of means of electronic communication.[4]

There are four main types of behaviour classified as violence against children: physical violence, psychological (emotional) violence, sexual violence and neglect. Moreover, violence against children sometimes takes such forms as, for example, giving

3 Sejm Rzeczypospolitej Polskiej. (2023, March 9). *Ustawa z dnia 9 marca 2023 r. o zmianie ustawy o przeciwdziałaniu przemocy w rodzinie oraz niektórych innych ustaw* [Act amending the Act on counteracting family violence and certain other acts]. Dz.U. z 2023 r. poz. 535. Retrieved from https://isap.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU20230000535

4 Sejm Rzeczypospolitej Polskiej. (2005, July 29). *Ustawa z dnia 29 lipca 2005 r. o przeciwdziałaniu przemocy domowej* z późn. zm. [*Act of 29 July 2005 on counteracting domestic violence, as amended*]. Dz.U. z 2024 r. poz. 424. Retrieved from https://isap.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU20240000424

children psychoactive or harmful substances, or substances not intended for children; Münchhausen syndrome *per procuram*/*Münchhausen syndrome by proxy* or exposure to domestic violence (witnessing domestic violence) (Bryńska, 2020; Lubińska-Bogacka, 2019b; Młyński, 2012).

Contrary to popular belief, violence is perpetrated not only by members of dysfunctional families; rather, it occurs in various families. It is committed by all kinds of people regardless of their age, socioeconomic status, education and profession. Families with low social status are more likely to use corporal punishment and neglect children, while families with higher social status apply a wider range of punishments, with emotional punishment being more common (Lubińska-Bogacka, 2019b; Młyński, 2012).

Prosecutorial or court statistical forms include a long list of crimes that may be classified as domestic violence, e.g., abuse, causing bodily harm, unlawful threats, etc. (Lewoc, 2024). It is acause for concern that crimes against the family are among the most frequently committed crimes. They rank third in the overall crime scale (after crimes against property and crimes against life) (Pospiszyl, 2000). It is important to remember that violent behavior is not always a criminal offense under the law, but it is always driven by the perpetrator's intentions and needs, and it always infringes upon the other person's rights to respect, dignity, rest, privacy, or autonomy (Michalska, Jaszczak-Kuźmińska, 2014; Młyński, 2012).

2. Data on the extent of domestic violence against children

It is difficult to assess the actual scale of domestic violence against children in Poland. According to data on the initiation of the *Niebieska Karta* (*Blue Card*) procedure by the Polish Police between 2012 and 2024, presented in Table 1, women constitute the largest group of victims of domestic violence, while minors are the second largest group affected by domestic violence. If we compare the number of minors affected by domestic violence in 2012 and 2024, it is easily noticeable that the number of victims among children went up by about 34%. The number of children found to be affected by domestic violence in 2024 was the highest in the last twelve years. This can certainly be attributed to the change in the reporting criteria in the SEPol system operated by the Police. Since 2012, the only violence-affected minors included in reports were those who were targets of violence (Mende, 2015). Since 2024, minors who witness family violence have also been registered as victims of family violence, pursuant to the amended Act of 6 September 2023 on the *Blue Card* procedure and *Blue Card* form templates[5].

Table 1. Number of victims of domestic violence according to the "Blue Cards" procedure, based on police statistical data from 2012 to 2024. Source: Portal of the Polish National Police and the National Police Headquarters.

Year	*Blue cards* issued	Total number of victims	Women	Men	Minors
2012	51 292	76 993	50 241	7 580	19 172
2013	61 047	86 797	58 310	9 233	19 254
2014	77 808	105 332	72 786	11 491	21 055
2015	75 495	97 501	69 376	10 733	17 392
2016	73 531	91 789	66 930	10 636	14 223
2017	75 662	92 529	67 984	11 030	13 515
2018	73 153	88 133	65 057	10 672	12 404
2019	74 313	88 032	65 195	10 676	12 161
2020	72 601	85 575	62 866	10 922	11 787
2021	64 250	75 761	55 112	9 520	11 129
2022	61 645	75 761	55 112	9 520	11 129
2023	62 170	77 832	51 631	9 162	17 039
2024	59 174	86 920	50 638	10 559	25 723

The wide range of published statistics relating to children affected by family violence is puzzling. Some sources report that the percentage rates are low, while others claim that the percentage of children experiencing domestic violence may be as high

5 Rada Ministrów. (2023, September 6). Rozporządzenie Rady Ministrów z dnia 6 września 2023 r. w sprawie procedury "Niebieskie Karty" oraz wzorów formularzy "Niebieska Karta" [Regulation on the "Blue Card" procedure and "Blue Card" form templates]. Dz.U. 2023 poz. 1870. Retrieved from https://isap.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU20230001870

as 90% (Młyński, 2012). On the one hand, data documenting legal interventions against perpetrators of violence reveal only the tip of the iceberg; based on this data, one might assume that child abuse in the family is a marginal phenomenon. Police and court records generally cover only serious cases of child abuse. On the other hand, sociological studies, revealing violence that is not included in official statistics and often constitutes an element of parenting practices, argue that violence (though in its less drastic forms) is a rather common childhood experience (Siejak, 2016).

The extent of the "dark figure" of undisclosed cases of violence against children remains largely dependent on socio-cultural factors. The society at large still shows a high level of acceptance for corporal punishment. For centuries, educational tradition has recognised children's obedience to adults as a value. In addition, individualism embedded in the European culture makes many modern families embrace the principle of non-interference in their lives and the lives of other families. Yet, the most difficult obstacles to overcome in combating domestic violence seems to be the sense of shame, helplessness and fear in adults. As the child's environment tends to systematically avoid conversations about the trauma, it reinforces the child's belief that he or she has to deal with this area of life alone. Moreover, it reinforces the coping mechanisms based on cognitive, emotional and behavioural avoidance of difficult experiences (Bryńska, 2020; Konowałek, 2020; Lisowska, 2005; Popiel, Pragłowska, 2022; Zagórski, 2017).

3. Risk factors for domestic violence

Academic literature provides numerous theoretical models of the causes of violence against children: psychological, sociological and integrative models (e.g., R. Gelles' model, K. Browne's multifactorial model), the socio-situational model, the exchange theory and social control theory and the concept of violence as the source of gratification (Lisowska, 2005, Pospiszyl, 2000). It is worth mentioning that the phenomenon of violence is inseparably linked to aggression. This is because aggression is the main characteristic of perpetrators of violence. Moreover, studies show that family violence is the most common form of interpersonal aggression (Filipek, 2014; Pospiszyl, 2000). The concept of violence is associated with aggression, brutality, crime and cruelty, while aggression is associated with violent behaviour, hostility, audacity, destructiveness and animosity (Lubińska-Bogacka, 2019b; Młyński, 2012).

According to the *General Aggression Model* (GAM), aggression arises due to social, cognitive, developmental and biological factors. Distal processes provide the basis for an aggressive personality, dependent on the influence of biological factors (e.g., hormones) and environmental factors (dysfunctional family, exposure to violence, difficult living conditions, etc.). At the level of proximal processes, the emergence of aggressive behaviour is determined by the interaction of personal factors (e.g., biological predispositions, temperamental traits, moral justification of violence, violent self-image, personality disorders like narcissism, etc.) and situational factors (including social rejection, provocation, frustration, bad mood, watching violence in the media, intoxication with alcohol, etc.), which impact internal states – thoughts, emotions, arousal – and subsequently influence judgements and decisions. Each cycle of proximal processes, ending in impulsive action, may contribute to the development of an aggressive personality due to multiple repetitions (Allen, Anderson, Bushman, 2018; Huesmann, 2018).

This mechanism of developing a "cognitive script" – a mental record of the course of an event, consolidated as a result of its multiple repetitions – is also described by the theory of social learning developed by Albert Bandura. According to this theory, a child learns new behaviours by observing other people who serve as models. The *intergenerational violence transmission* theory also proves that experiencing parental violence in childhood or witnessing family violence increases the likelihood of aggressive and violent behaviour towards one's children. Sometimes patterns of violence become generalised, which leads an individual to perpetrate multiple types of violence. Statistical data indicate that between 20% and 80% of perpetrators of violence experienced violence in

their families of origin (Bandura, Huston, 1961; Bandura, Ross, Ross, 1961; Bryńska, 2020; Filipek, 2014; Lisowska, 2005; Widera-Wysoczańska, 2010).

It is worth mentioning that, in spite of all, the intergenerational transmission of violence is conditioned by a combination of various factors: social and environmental, familial, personal, biological and genetic. Research and practice in the field of domestic violence prevention emphasise that domestic violence may be the cause as well as the effect of family dysfunction. In addition, therapeutic experience shows that if victims undertake to work to change their behaviour, they can break the chain of violence being passed on to next generations (Allen et al., 2018; Bryńska, 2020; Filipek, 2014; Huesmann, 2018; Lisowska, 2005; Widera-Wysoczańska, 2010).

Family violence is a complex phenomenon influenced by multiple factors. It is important to remember that a family is a group of people who differ in terms of age, gender, temperament, personality, needs, preferences, interests and experiences. Such situations naturally give rise to conflicts (Lubińska-Bogacka, 2019b; Pospiszyl, 2000). The foundation of the family is love, which, nevertheless, requires family members to embrace personal development and acquire various skills, such as skills related to dialogue, correct communication and effective cooperation, solving problems related to the care and upbringing of children, as well as managing negative emotions and stress.

Aaron T. Beck, the founder of cognitive psychotherapy, developed a structured, short-term, and present-oriented psychotherapy for depression, focused on the resolution of current problems and changing dysfunctional (inadequate or unhelpful) thinking and behaviour. He dedicated his professional career to researching disorders of the thinking process and discovered that couples struggling with marital problems exhibited the same thinking aberrations as patients suffering from depression and anxiety. In his book for married couples titled *Love is never enough. How Couples Can Overcome Misunderstandings, Resolve Conflicts, and Solve Relationship Problems*, he referred to the cognitive revolution and suggested that developing the skills of clear thinking and clearly expressing one's thoughts would help prevent misunderstandings from arising (Beck, 2020; Beck, 2021).

4. Consequences of domestic violence against children

The development of psychology (showing that the essential foundations of the future personality are shaped through early family interactions and emotional bonds) and knowledge about traumatic stress contributed to the shift away from the traditional thinking about victims of family violence in terms of individual psychopathology (Resick, Monson, Chard, 2019).

Many researchers describe early attachment as the prototype of all close relationships that an individual will form, also in adult life. Attachment is defined as a *long-term emotional relationship with a specific person* (Schaffer, 2009).

Secure, trusting attachment develops when caregivers provide a child with protection, security and love, which, at the same time, support the development of all physical and psychological functions of the child. Insecure attachment (anxious-ambivalent, anxious-avoidant, disorganised-disoriented) develops in children who experience physical or emotional abuse, neglect or other forms of inappropriate treatment from the caregiver. The most concerning manifestation of insecure attachment is the disorganised pattern, which reflects the child's inconsistent relationship with caregivers. The child's strategy for interacting with others is then disrupted; at times, the child may seek closeness with the parent; at other times, the child may be avoiding closeness or resisting it while experiencing a range of negative emotions, with fear being the most dominant. The child's relationships with peers are often also conditioned by the *fight or flight* principle, which means that they are dominated by a high level of aggression or avoidance and withdrawal (Schaffer, 2009).

In her in-depth study on domestic violence, Professor Irena Pospiszyl highlighed that harming a child has a negative impact on the child's development and is particularly detrimental to his or her emotional well-being. The child's direct reaction to harmful behaviour involves increased aggression, low self-esteem, emotional instability, inability to form interpersonal relationships and hostility towards the environment, combined with a strong attachment to caregivers.

Children who experience harm are often described as:

- unable to relax,
- having no sense of humour,
- unruly,
- prone to entering a state of *frozen watchfulness,*
- or heightened vigilance (Pospiszyl, 2000).

A family in which violence occurs is classified as a dysfunctional family. Domestic violence destroys bonds and has particularly negative consequences for the child's developing personality. The traumatic experiences of children who suffer violence from their parents are associated with chronic tension and emotional overload. Firstly, the parent's aggression directed at the child causes suffering, fear and disintegration of the sense of security and stability in life. Repeated verbal attacks that humiliate, devalue and destroy a child's identity and self-image are equally painful (Mellibruda, 2015; Młyński, 2012; Polok, 2021).

Secondly, a child witnessing frightening and repeated incidents of a parent's aggression towards other household members experiences a paralysing fear for the lives of loved ones and a desperate helplessness in the face of this threat while, at the same time, wanting to protect the relatives against it (Mellibruda, 2015; Młyński, 2012; Polok, 2021). The behavior patterns of children in families with violence are similar to the ways children function in families with alcohol-related problems. Having their needs constantly ignored, children learn to suppress their emotions and adopt a task-oriented approach to problems. They often take on various roles, such as that of a hero, rescuer, mascot, scapegoat or invisible child, which are reinforced by the parents. These children very frequently feel inferior and different (alienated) among their peers at school or even in society at large. Maltreated children lose trust in other people, display feelings of helplessness and anger, show a tendency toward emotional and social isolation, and struggle with problem-solving skills, which stems from low self-esteem (Lubińska-Bogacka, 2019a; Mellibruda, 2015; Młyński, 2012; Polok, 2021, Szmyd, 2008).

There are numerous clinical indications to believe that mistreatment at an early age leads to psychopathology in later life. Results collected from numerous scientific studies prove that negative childhood experiences (e.g. childhood trauma, domestic violence, relational trauma) predispose individuals to somatic and mental health problems (Froń, Lewandowska, 2023). Modern handbooks of clinical psychology and child and adolescent psychiatry cite a long list of mental health issues that arise as a consequence of violence experienced in childhood or adolescence (Bryńska, 2020; Dąbkowska, 2022; Gałecki, Szulc, 2023b; Grzegorzewska, 2020; Konowałek, 2020). The diversity of the psychopathologies that arise from traumatic stress in childhood is striking.

Persons who were mistreated in childhood are more likely to suffer from depression, susceptibility to stress, high emotional sensitivity, eating disorders and suicide attempts (especially as a consequence of sexual abuse), behavioural disorders, addictions or criminal activity. The most common disorder diagnosed as a consequence of experiencing family violence is post-traumatic stress disorder (PTSD), and recently, also *complex* PTSD (C-PTSD) (Greenberg, 2018; O'Connor, Thayer, Vedhara, 2021; Schaffer, 2009; Widera-Wysoczańska, 2010).

In the latest edition of the *International Statistical Classification of Diseases and Related Health Problems* – ICD-11 of 11 February 2022, the *World Health Organization* (WHO) identified the *complex* post-traumatic stress disorder (C-PTSD). The new diagnosis – analogous to DESNOS –was defined as a repeated interpersonal trauma, which is difficult or impossible to escape from, e.g., as in the situation of prolonged domestic violence, repeated sexual or physical abuse in childhood, a genocide campaign, torture, or enslavement (Kowalski et al., 2024; Popiel, Pragłowska, 2022; Gałecki, Szulc, 2023b).

Experts of the American Psychiatric Association (APA) developed the initially theoretical concept of the *disorder of extreme stress non otherwise specified* (DESNOS). However, in the diagnostic system for mental disorders published by APA (*Diagnostic and Statistical Manual of Mental Disorders*, DSM-5), DESNOS ultimately did not obtain the status of a nosological entity (Gałecki, 2024).

Some specialists do accept the diagnosis of complex PTSD. Others believe that the cognitive, emotional and behavioural problems experienced

by children who were victims of adverse experiences result from a pathomechanism other than PTSD. Attempts are still being made to establish the structure of symptoms that distinguish C-PTSD from other disorders, especially PTSD and borderline personality disorders (Cloitre, Garvert, Brewin, Bryant, Maercker, 2013; Cloitre, Garvert, Weiss, Carlson, Bryant, 2014; Konowałek, 2020; Merecz-Kot, 2021; Resick, Bovin, Calloway, Dick, King, Mitchell, Suvak, Wells, Stirman, Wolf, 2012).

The *Traumatic Stress Personality Disorder* (Tr-SPD) and the *Posttraumatic Personality Disorder* (PPD), as well as the *Developmental Trauma Disorder* (DTD) diagnosed in children, are also recognised as consequences of chronic interpersonal trauma experienced in childhood. Moreover, complex PTSD often coincides with dissociation and conversion disorders, affective disorders in the form of depression, dysthymia and dysphoria or borderline personality disorder (Widera-Wysoczańska, 2010).

In his influential work titled *"Anxiety and Its Disorders: The Nature and Treatment of Anxiety and Panic",* Professor David H. Barlow outlined the model of PTSD aetiology. The starting point for his work was the search for an answer to the question about differences between patients in terms of their susceptibility to PTSD following a traumatic life event. It was found that not all people experience PTSD in response to strong stressors. Risk factors for PTSD include the following: generalised biological susceptibility (constitutional and congenital factors, temperament), generalised psychological susceptibility (e.g. a sense of powerlessness and lack of control), as well as the level of exposure to the stressor, number of exposures, strategies for coping with stress (e.g. avoidant behaviours) and access to social support (e.g. weak bonds with significant others) (Keane, Barlow, 2002; Popiel, Pragłowska, 2022; Zawadzki, 2024).

Children are considered more susceptible to all kinds of traumatic life events, due to their limited ability to satisfy their existential needs, and consequently, also to defend themselves and change their situation. In addition, the likelihood of developing PTSD after a trauma is greater in children than in adults; it affects about ¼ of children and adolescents (according to various studies, this percentage amounts to between 15% and 27%). It is also known that whether a child will develop PTSD depends on the type of trauma experienced. Usually, 50–75% of children experience long-term consequences of trauma, and their symptoms persist until adulthood (Dąbkowska, 2022; Gałecki, Szulc 2023a; Konowałek, 2020).

5. Evidence-based CBT strategies for treating trauma

Trauma-focused cognitive-behavioural therapy (TF-CBT) is the dominant therapeutic approach, included in international recommendations as the first-choice psychotherapy for the treatment of PTSD in people of all ages – not only adults but also children and adolescents. The term TF-CBT combines different approaches, based on the cognitive-behavioural model, which simultaneously recognise the significance of processing the traumatic experience. This group includes E. Foa's prolonged exposure; P. Resick's cognitive processing therapy, A. Ehlers' cognitive-behavioural therapy and F. Neuner's narrative exposure therapy (Gałecki, Szulc, 2023b; Kowalski et al., 2024; Popiel, Pragłowska, 2022; Popiel, Zawadzki, 2023).

The latest meta-analysis review of studies on the effectiveness of cognitive-behavioural therapy in relation to PTSD confirms the effectiveness of CBT based on a huge number of studies conducted on adults, as well as on children and adolescents. Recognised international associations, such as the American Psychological Association (APA), the American Psychiatric Association (APA), the National Institute for Health and Care Excellence (NICE), the Australian Psychological Society (APS) and the European Society for Traumatic Stress Studies (ESTSS), clearly point to the verified effectiveness of TF-CBT in the treatment of children, adolescents and adults with PTSD after an experience of incidental trauma. TF-CBT proved to be an effective therapy for children and adolescents with a complex trauma diagnosis. However, it has been recommended that more empirical data be collected, as is the case with third-wave CBT therapies (Kowalski et al., 2024).

Edna Foa i Michael Kozak underline, that PTSD mechanisms are largely related to mechanisms of fear conditioning, sensitisation and calming. The fear structure has an adaptive function, as it prompts us to flee from danger. However, under the influence of trauma, the fear network undergoes modification, turning into a pathological fear structure. In this situation, neutral stimuli can be misinterpreted and associated with threat, which triggers the flight response. The relationships between the different elements of the pathological fear structure are fragmented and incoherent. Avoidance makes it impossible to access that structure, which plays the key role in the persistence of anxiety and PTSD symptoms. Only exposure and emotional processing of fear can help silence false anxiety alarms (Foa, Kozak, 1986; Gałecki, Szulc, 2023b; Pineles, Mostoufi, Ready, Street, Griffin, Resick, 2011; Popiel, Pragłowska, 2022).

At present, there is a single PTSD treatment programme for adolescents in Poland, which is based on the method of prolonged exposure and emotional processing, named *Odzyskaj życie po traumie: przedłużona ekspozycja w terapii PTSD nastolatków. Poradnik pacjenta (Reclaiming your life after a trauma: prolonged exposure in the treatment of PTSD in teenagers. Patient's handbook)* and *Przedłużona ekspozycja w terapii PTSD nastolatków. Emocjonalne przetwarzanie traumatycznych doświadczeń. Podręcznik terapeuty (Prolonged Exposure Therapy for Adolescents with PTSD. Emotional Processing of Traumatic Experiences. Therapist Guide)* by Edna Foa, Eva Gilboa-Schechtman and Kelly Chrestman (Chrestman, Gilboa-Schechtman, Foa, 2014; Foa, Gilboa-Schechtman, Chrestman, 2014). It is worth remembering that the therapy of a child who experienced interpersonal trauma requires establishing the therapeutic alliance via taking multiple aspects into account, including acknowledging the victim's experience, understanding the changes that occurred due to the traumatic event; restoring trust; reinforcing the victim's autonomy; developing a sense of strength and control and shaping a healthy personality (Dąbkowska, 2022; Foa et al., 2014; Resick et al., 2019).

If children or teenagers who experienced trauma undertake therapy in adulthood, they may, for many years, rely on cognitive processes shaped at a time when their executive functions were not fully developed. Neurobiology can help us understand why younger people are more likely to suffer from PTSD. The prefrontal cortex (which is the centre for decision making and control over the amygdala, which triggers strong emotions) can only reach full development in persons older than 20. Young people are often not only more susceptible to trauma but, above all, have fewer resources to deal with it (Johnson, Blum, Giedd, 2009; Resick et al., 2019).

Professor Patricia A. Resick and her team researched traumatic stress over many years, developing the *cognitive processing therapy* (CPT). The biological model of PTSD proposed by the author reflects the latest research on how the brain responds to psychological trauma (Resick et al., 2019).

PTSD symptoms co-occur with changes in the neurochemical functioning of the entire brain or its specific structures. Studies involving individuals with PTSD have shown that the amygdala exhibits increased reactivity, while the prefrontal cortex demonstrates significantly reduced activity. According to S.B. Johnson and his colleagues, the prefrontal cortex coordinates higher-level cognitive processes. Executive functions are a set of cognitive processes that oversee goal-directed behaviour and include planning, response inhibition, working memory and attention. These abilities allow an individual to pause for long enough to make an accurate assessment of a situation, consider potential options, plan a course of action and then act. Poor cognitive functioning leads to difficulties in planning, concentrating, taking feedback into account and a lack of mental flexibility, which can hinder judgment and decision making (Gałecki, Szulc, 2023b; Johnson et al., p. 217).

This is likely why so many PTSD patients who experienced psychological trauma in childhood hold extreme beliefs – especially if they experienced the trauma multiple times. CBT practitioners emphasise that people with exceptionally rigid cognitive patterns are predisposed to develop PTSD. One of the objectives of cognitive therapy is to teach patients to think in more flexible ways (Foa et al., 2014; Popiel, Pragłowska, 2022; Resick et al., 2019).

One significant discovery confirmed by neuroimaging studies was the positive impact of CPT on brain neurochemical processes: an increase in prefrontal cortex activity, which interrupts the fight-or-flight response modulated by the amygdala. As expected, it was proven that CPT can help individuals develop affect (emotion) regulation, increase cognitive flexibility and alter many assumptions and beliefs that were developed during the period of cognitive immaturity and were never verified due to avoidance symptoms (Resick et al., 2019, p. 31).

Work is still ongoing to understand and clarify the neurophysiological mechanisms linked to PTSD. Its progress will determine the possibilities for effective prevention and treatment of disorders related to traumatic stress (Gałecki, Szulc, 2023b).

Cognitive-behavioural therapy focuses on processes that perpetuate the disorder. For a long time, post-traumatic stress disorder was categorised as an anxiety disorder. Current classifications, both DSM-5 and ICD-11, distinguish a group of disorders specifically related to stress. It has been found that various negative emotions experienced by patients with PTSD, such as guilt, anger, shame, disgust and sadness, mean that PTSD goes beyond an anxiety disorder (Gałecki, Szulc, 2023b; Popiel, Pragłowska, 2022; Resick et al., 2019).

The dynamically developing knowledge of psychopathology, as well as on the processes and mechanisms determining the effectiveness of therapy, has been reflected in the concept of process-based cognitive-behavioural psychotherapy. For example, the inability to regulate emotions is considered one of the fundamental processes maintaining psychopathological symptoms of not only PTSD but also many other disorders. Leading representatives of the process-based approach within the "third wave" of CBT, Steven Hayes and Stefan G. Hofmann, postulate that psychological processes are not connected in a linear way, and therefore, effective treatment should take into account multilevel connections. The authors emphasize that the main assumption of process-based therapy is the combination of strategies tailored to achieving specific, intended goals (Hofman, Curtiss, Hayes, 2020; Ong, Hayes, Hofmann, 2022; Popiel, Pragłowska, 2022).

Violence is recognised as a complex and chronic traumatic event. Apart from therapy for the child, psychological treatment often involves crisis intervention, individual therapy for the caregivers and/or addiction treatment, family psychotherapy and participation of the perpetrators of violence in therapeutic programmes, for example, on developing social skills and conflict resolution, aggression management, etc. (Widera-Wysoczańska, 2010). Dysfunctional couples may also benefit from couples therapy.

Research on the predictors of the effectiveness of PTSD treatment is ongoing. Considering the three dimensions: cognitive, emotional and behavioural, the way the individual experiences events and difficulties, the way the individual cognitively processes and interprets information related to them and what actions the individual takes in response to them, we need to conclude that all these factors taken together condition the individual's level of psychological resilience (Cyniak-Cieciura, Zawadzki, 2019; Dąbkowska, 2022; Franczok-Kuczmowska, 2022). Identifying the sources of children's resilience to the experience of violence, interpersonal trauma and chronic stress remains a research challenge for the future (Lisowska, 2005).

Conclusions

On the one hand, this paper is concerned with identifying the characteristics of domestic violence against children. On the other hand, it includes a review of CBT strategies that are empirically proven to be effective in treating traumatic experiences. Due to the broad scope of the topic, the article presents selected CBT strategies, focused chiefly on the treatment of PTSD and C-PTSD.

Diagnosing PTSD/C-PTSD in children and adolescents causes multiple problems for a variety of reasons. The main reasons include differences in diagnostic criteria identified in current classifications. Moreover, the symptoms of PTSD and C-PTSD often overlap with other disorders, such as GAD. Furthermore, developmental changes characteristic of a specific age and the developmental stage that the young patients are at play a significant role,

too, and may make diagnosis more difficult. It is worth remembering that symptoms of PTSD and C-PTSD in children and adolescents may take the form of non-specific manifestations. In many cases, it is not easy to link a child's ailments to trauma and diagnosing PTSD, as the patient, unless asked by the clinician about particular symptoms, will avoid recalling unwanted memories (Dąbkowska, 2022; Gałecki, Szulc 2023a; Konowałek, 2020; Popiel, Pragłowska, 2022).

While planning a psychotherapeutic intervention for a child who is a victim of domestic violence, one needs to remember that the child is closely attached to his or her family. Helping a child entangled in family problems requires a comprehensive approach, as it is usually the parents – the child's legal guardians – who need help and support in various areas. As in the case of a natural disaster, effective help and protection for children in cases involving domestic violence depend on the engagement and coordinated cooperation of specialist services. Educational activities that raise public awareness and knowledge about the threat of domestic violence and ways of combating it are extremely important in this regard. The most important thing is to help a child with interpersonal trauma restore trust and faith in people.

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Silence as a support for adolescent mental health[1]

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Lidia Marek[a] ✉

[a] *Lidia Marek, https://orcid.org/0000-0002-8705-2510,*
Institute of Pedagogy, University of Szczecin, Poland
✉ *Corresponding author: lidia.marek@usz.edu.pl*

Abstract: Contemporary youth is growing up in a reality shaped by noise, excess, and acceleration – both technologically and culturally. This noise is not confined to the acoustic dimension; it encompasses informational, emotional, and social overload that leads to disorientation, fatigue, and a diminished capacity for reflection and mindfulness. Drawing on Byung-Chul Han's (2022) conceptual framework, this article explores the conditions of youth within the paradigms of the society of exposure, control, dopamine, and intimacy – contexts in which young people are subjected to constant pressure to remain visible, reactive, and permanently present. Particular emphasis is placed on analyzing noise as a phenomenon that transcends sound, manifesting also as informational, emotional, and existential disturbance. Such pervasive noise destabilizes identity development and weakens the ability to engage in self-reflection. In this context, silence is proposed as both a pedagogical and existential alternative – a space that not only offers respite from overstimulation but also enables profound experiences of presence, relationality, and meaning. The text presents silence as a developmental resource that can serve regulatory, supportive, and transformative functions – psychologically as well as educationally. Drawing on contemporary pedagogical theories and a psychosocial-cultural framework, the article highlights silence's potential in cultivating resilience, grounded subjectivity, and emotional robustness. Silence is depicted as a space for pause, internal organization, and contact with personal experience – thereby supporting the development of reflectivity, agency, and emotional competence. Practices of silence are described as a tool for educational mental health prevention, not only at the individual level but also within communal dimensions. From a pedagogical standpoint, silence is not a lack of action but rather an intentional educational environment which – within a world of incessant noise, excess, and digital stimulation – facilitates cognitive, emotional, and existential processes. It enables deeper learning, the development of self-awareness, and the creation of spaces for encountering the Other without the violence of words or the pressure of constant communication. The article advocates for recognizing silence as an integral element of educational practice, particularly within the context of youth mental health promotion. It argues for the implementation of silence not only as a concrete pedagogical strategy but also as a shift in educational paradigm – towards greater attentiveness, presence, and humanistic care.
Keywords: , mental health, silence, silence practices, youth

Introduction

Modern youngsters are growing up in a reality dominated by over-stimulation, constant acceleration and digital presence. Their daily experiences are shaped by noise, and not only in an acoustic sense, but also in an informational, emotional and social sense. We live in an age in which silence is increasingly treated as a disturbance, a glitch, something unusual, and quiescence as a void that needs to be filled immediately with sound, movement, images or interaction. In such a world, young people in particular experience difficulties regulating their emotions, maintaining their attention and building a lasting identity for themselves. They increasingly suffer from anxiety, depression and a sense of emptiness, the sources of which cannot be reduced to individual or clinical factors alone, as they are also rooted in profound cultural, technological and educational changes (Haidt, 2025; Twenge, 2019).

This text offers and attempt to understand the role of silence as an existential experience, a psychic resource and an educational practice in a world that constantly demands response, presence and exposure. The analysis will focus on the challenges faced by today's "restless generation", young people

1 Article in Polish language: https://stowarzyszeniefidesetratio.pl/fer/63P_Mare.pdf

functioning in conditions of information overload, addiction to stimulation and the disappearance of intimacy (Haidt, 2025). The importance of silence in the formation of resilience, identity and the relational and reflective dimensions of education shall also be presented. In the face of dopamine culture, algorithmic control and the pressure of exposure, silence ceases to be a lack and turns out to be a necessity and an act of pedagogical concern.

1. Culture of ruckus, excess and dopamine as a space for youth functioning

Modern youth live in a world dominated by constant noise – multidimensional, insistent and ubiquitous. This noise is not limited to physical sounds, but becomes an existential experience that exhausts, distracts and destroys the ability to reflect. The social and cultural changes of recent years have transformed the way young people function relationally and in terms of identity.

One of the key phenomena affecting the experiences of young people described is the subordination of social life to the logic of acceleration (Gleick, 2003; Han, 2022), which prevents a deeper experience of reality and leads to chronic exhaustion (Han, 2022). In such a world, it is difficult to find inner peace – every pause seems like a loss, and every break – a risk of being overlooked. The rhythm of life in a society of constant acceleration has radically intensified. Young people are constantly in pursuit of relevance, novelty, real-time presence. The future is gradually losing its importance as a planning space, what matters most is the 'here and now', the constant reacting and updating (Gleick, 2003).

Closely linked to the acceleration phenomenon outlined is also functioning in an information society, in which information has become the dominant value, not so much as content carrying meaning, but above all as an impulse, a stimulus, data for immediate processing. Young people function in a space saturated with communication stimuli – notifications, messages, headlines – which leads to "infotoxicity" and cognitive overload (Han, 2022; Twenge, 2019; Ledzińska 2002; Ledzińska, Postek, 2017). Their minds work in a mode of constantly jumping between topics, constantly reacting, without the possibility (and necessity) of deeper concentration. The described "phenomena of information overproduction and the onslaught of acceleration can be put in terms of psychological stress" (Ledzinska, 2002, 89) and can increase a relevant risk of development especially among children and young people, as Maria Ledzińska points in her texts (Ledzińska, 2002; Ledzińska, Postek, 2017). Information stress disrupts not only the daily functioning of young people, but also significantly reduces their ability to contemplate and build a lasting identity (Ledzińska, 2002; Haidt, 2025). Psychological literature increasingly emphasizes that chronic overstimulation can lead to the depletion of attentional resources and a reduced capacity for emotional self-regulation. These phenomena carry long-term developmental consequences, affecting the quality of interpersonal relationships, psychological resilience, and even cognitive functioning (Ledzińska, 2002). In extreme cases, information overload may contribute to psychological burnout, anxiety disorders, and depression – effects that are particularly evident among adolescents who engage intensively with digital technologies (Haidt, 2025; Twenge, 2019).

Building a permanent identity is also not conducive to functioning in a space created by the need or compulsion of constant exposure, even obscene transparency (Han, 2022). The society of exposure, which is a radical development of the society of transparency, requires constant self-disclosure – physically, emotionally, biographically. Young people are growing up in a culture of exposure, where it has become the norm to share every aspect of life, every photo, opinion, mood, reaction. Lack of exposure means nonexistence. In this society, silence – understood as absence, withdrawal, privacy – becomes suspicious and even socially exclusionary. "What is missing (...) is any kind of breakthrough that could provoke some kind of reflection, a look back, a thoughtfulness. (...) transparency goes hand in hand with a vacuum of meaning, accompanied by a sensual emptiness' (Han, 2022, p.107). This is why noise becomes an everyday experience – without it, the individual loses touch with his or her surroundings.

In the society of intimacy described by Han (2022), the traditional boundary between private and public domain is disappearing. Young people, by "living" online, make their emotions, relationships and experiences public in a digital space that enforces performativity and shortens the distance. Intimacy, which used to be based on silence, trust and time, is now becoming a superficial exchange of emotional signals. In this context, noise is also an external pressure to make public what should remain internal – emotions, experiences, reflections (Han, 2022). Young people lose the space to be alone with themselves, resulting in confusion and existential anxiety.

Finally, we also function in a control society (Han, 2022) that no longer operates through prohibitions and restrictions, but through algorithms, data, and "invisible" behavior management mechanisms. Young people live under constant surveillance, not in the sense of traditional oppression, but as participants in systems that track, analyse and model their activities. It is control that ostensibly offers freedom, but in fact limits choices, reinforces conformity and creates an internal sense of pressure (Han, 2022). The noise of this society is not so much a scream of power as a murmur of data, algorithms and digital impulses that affect the decisions of a young person, without giving him space for autonomous reflection.

The analytical categories cited by Han (2022) to describe contemporary societies (society of fatigue, society of exposure, society of information, society of intimacy, society of control) provide a better understanding of why young people today live in constant tension, are overstimulated, distracted, distracted and tired. The noise of modernity is not only the result of modern technology, but also a manifestation of profound cultural changes, a shift away from narrative, a blurring of identity, a redefinition of privacy and a lack of space for tranquillity. Jonathan Haidt (2025) and Jean Twenge (2019) point out that this state of affairs results in a sharp increase in anxiety, depression and loneliness among young people. In the reality of excess, where everything is in plain sight, young people increasingly feel invisible – even to themselves.

The modern culture in which young people are growing up is also a dopamine culture – the culture of instant reward, constant stimulation and compulsive pleasure-seeking. Mobile apps, social media and streaming platforms are designed to induce rapid ejections of dopamine, the neurotransmitter responsible for motivation, attention and feelings of satisfaction. In practice, this means that young people are exposed to constant microaggressions, i.e. likes, notifications, scrolling, which keep their attention in a state of tension and attachment (Lembke, 2021; Alter, 2019).

The absence of silence in such a context is no accident – it is part of the systemic design of the digital environment. For silence does not bring immediate gratification; on the contrary, it can provoke restlessness, boredom and even existential anxiety. Adolescents, whose nervous system functions under constant stimulation, begin to experience emptiness in moments of stimulus deprivation (Twenge, 2019; Alter, 2019). A space free of notifications, screens and sounds becomes difficult to endure, not because it is objectively unpleasant, but because it requires deeper contact with oneself. Unaccustomed to being 'offline', not only technologically but also existentially, young people avoid tranquillity because it requires them to subject their own thoughts, emotions and perhaps the emptiness masked by the noise of digital excess to reflection (Twenge, 2019).

The dopamine reality is that pleasure replaces meaning and distraction replaces attentiveness. As Lembke (2021) notes, modern youth function in a state of almost permanent behavioural addiction, where every moment without a stimulus triggers a kind of micro-abstinence. The lack of silence is thus becoming not only a result of technological change, but also a neurobiological effect resulting from the constant need for stimulation. These mechanisms reinforce a culture of noise, strengthening mechanisms of control and acceleration, while at the same time weakening the capacity for self-reflection and inner grounding (Han, 2022).

Silence, which was once a prerequisite for understanding oneself and the world, is now becoming unattainable. The life of young people in noise is not only an individual problem, but a sign of a deep cultural crisis. A lack of space in which to really 'be' and not just 'function' and 'react'. In this context, silence may be the only space in which a person – especially

a young person – can realistically rest from forced (incessant) performance and excess. It is difficult because it requires putting up with oneself without stimulation, but at the same time it can be the beginning of a process of reclaiming oneself and one's identity. In a world that requires constant activity, silence becomes an act of resistance and courage.

2. Silence as a developmental, therapeutic and existential resource in the life of the "restless generation"

In the era of constant information noise, overloading with stimuli and digital presence, silence becomes a rare good, and at the same time increasingly necessary for maintaining mental and existential balance. For the so-called 'restless generation', i.e. children and young people growing up in the age of the digital revolution, silence is not only disappearing from everyday experience, but is sometimes misunderstood and even rejected as something alien, uncomfortable. Meanwhile, as modern research in the field of developmental psychology, neurobiology and existential psychotherapy indicates, silence can play a fundamental role in shaping mental resilience, deepening (crystallising and consolidating) identity and supporting mental well-being (Haidt, 2025).

Jonathan Haidt (2025) describes young people as victims of the 'great reprogramming of childhood', a process in which free play, contemplative space and real relationships have been replaced by shallow digital interaction, constant online presence and exposure to social evaluation (ibidem). Lack of silence, understood not only as a lack of sound, but also as a state of mental calmness and reflexivity, is one of the most overlooked deficits in this context. As a result, young people show difficulty in regulating emotions, thinking more deeply and critically and constructing an internal narrative, which negatively affects their ability to cope with stress and crisis (Odgers, 2024).

Silence, in psychological terms, creates the conditions for the integration of experience, allows one to stop, experience emotions, arrange thoughts and regain a sense of agency. In this context, one can speak of its existential significance. Silence enables you to get in touch with yourself as a thinking, feeling, active and decisive person. As T. Radcliffe (2016) points out, silence is not an emptiness but rather a 'fullness of expectation' – a space in which people can find meaning and sometimes experience transcendence.

Developmental psychology emphasises that adolescents need the space to temporarily withdraw from social and digital interactions in order to be able to recognise and process their own emotions, form autonomy and identity, and strengthen their ability to mentalise (Fonagy & Campbell, 2017). Lack of access to silence can lead to chronic sensory overload, exacerbated anxiety and difficulties in affect regulation, which is associated with the increasing number of depressive and anxiety disorders observed in young people (UNICEF, 2025; NIK, 2024).

Resilience, understood as an individual's ability to adapt in the face of difficulties and stress, develops under conditions that foster self-reflection, a sense of control and internal integration (Masten, 2018). Silence, as an environment that enables distance from experiences, can support the formation of narrative self-understanding and allows for the construction of constructive coping strategies (Kinnunen et al., 2021). Neuroscience research shows that calming practices – such as meditation, mindfulness and reflective practices – positively influence the activity of brain structures responsible for emotional self-regulation, memory and empathy (Koole et al., 2019; Siegel, 2020). At the same time, silence enables the experience of separation from social pressures, comparisons and judgements, allowing young people to regain a sense of identity independent of external narratives.

In existential terms, silence is associated with the experience of presence, loneliness, transcendence and meaning. For a young person experiencing an identity crisis, questions about meaning, the value of life and interpersonal relationships take on particular meaning. Here, silence can act as a 'container' (emotionally stabilising) for boundary experiences – such as existential anxiety, emptiness or bereavement – allowing them to be symbolised and tamed (Frankl, 2009).

At the same time, silence allows for the experience of deep being, unproductive, non-imposed, devoid of social pressure. In such a context, silence becomes a space for authentic encounters with self and the world, which for young people at an age of intense comparison and group positioning can be a liberating and formative (formative) experience (Brown & Ryan, 2015).

In crisis situations – such as sudden social change, trauma, isolation or peer violence – silence can have a protective and stabilising function, can offer a refuge from over-stimulation and create the conditions for rebuilding mental resources. The communal aspect is also not insignificant: group silence practices (e.g. silence before class, meditation together) foster a sense of safety and co-presence, completely without the use of words (Brown & Ryan, 2015).

Silence, although undervalued in today's digital world, can be understood as a developmental, therapeutic and existential resource. Its presence in the lives of young people can significantly support the development of mental resilience, deepen contact with oneself and counteract emotional overload. Incorporating silence into prevention and therapy, however, requires not only individual work, but also a systemic approach in education, health and culture. Silence in the life of the 'restless generation' should not be regarded as a lack of activity, but as a condition for psychological and spiritual development. It is a space where it becomes possible to regain inner balance, integrate experiences and build resilience to external tensions. In times of permanent noise and over-saturation of stimuli, silence is no longer just a luxury – it is becoming a necessity.

3. Silence in educational practices to support adolescent mental health

In the face of a growing mental health crisis for children and young people, school cannot be seen solely as a place of knowledge transmission. It is becoming increasingly responsible for supporting the mental, emotional and social development and well-being of students (UNICEF, 2021; Odgers, 2024). One of the untapped resources in this respect is silence, which in pedagogical terms can have a regulatory, supportive and transformative function.

From a pedagogical perspective, silence is not just a lack of verbal communication, but a quality of presence – a space of experience, attentiveness and encounter. In the pedagogy of presence and reflective pedagogy, silence plays a role enabling internal formation, strengthening subjectivity and developing the ability to self-reflect. It gives student the opportunity not only to learn 'about the world', but above all to learn 'themselves in the world'. Silence as an affective and existential experience allows the learner to build distance from the stimuli that condition his or her responses and thus supports the development of self-regulation and mentalization (Fonagy et al., 2017).

In school reality, silence can be treated as a pedagogical space of respite, allowing students to temporarily get out of the pressure of learning, assessment and exposure, which makes it possible to suspend cognitive, performative and social pressure. Moments of silence create a space of 'pedagogical hesitation' – a moment in which teacher and student can enter into relationship not through transmission, but through co-presence (Meiklejohn et al., 2012). This kind of silence is relational and ethical – it is not a silence of coercion, but of openness, acceptance and recognition of the Other as an autonomous subject.

In social-emotional education (SEL) and mindfulness approaches, silence is a tool to enhance students' well-being, reducing stress and supporting emotional competence (Jennings, 2015; Roeser et al., 2012). Practices such as mindful silence and 'transformational silence' are increasingly being used successfully in schools, with proven potential to influence concentration and well-being (Meiklejohn et al., 2012).

From the perspective of critical pedagogy, silence can also serve as an emancipatory tool. In a world where young people are constantly subjected to external narratives, judgements and exposure – silence becomes a space of resistance to the hegemony of productivity and visibility. It is an act of breaking conformity, in which the student can withdraw from the role of 'always present' and 'always active'

to reclaim the right to be outside the narrative of success, efficiency and adaptation (Giroux, 2011). In this context, silence is not a pedagogical "absence", but a structure enabling the creation of meaning. It enables education in the spirit of deep listening – not only to others, but also to oneself. It contains ethical (relationship with the Other), cognitive (integration of knowledge with experience) and existential (confronting one's own questions about meaning, purpose and identity) potential.

A school that adopts silence as a pedagogical value ceases to be merely a space for the transmission of knowledge and becomes a space for the formation of humanity. Learning ceases to be merely a process of knowledge accumulation and becomes a process of grounded being, rooted in the body, emotions, time and relationships (Van der Maren & Tupper, 2022; Edling, 2021). The practical application of silence in the educational prevention of mental health can take the form of daily rituals of silence (e.g. the beginning the day in silence) or mindfulness and self-reflection workshops (Jennings, 2015; Meiklejohn et al., 2012). Silence can be part of an educational lesson or a reflective break (Zelazo & Lyons, 2012). It is possible to create spaces of silence in the architecture of the school (e.g. sensory zones), or to use shared silence as an element of group integration (Roeser et al., 2012).

Implementing these practices requires adequate teacher preparation, including the development of emotional competence, mindfulness and the ability to create safe learning relationships (Jennings, 2015). A school should not only teach silence, but be a place of its facilitation, a place that protects it and integrates it with other aspects of education – cognitive, emotional and social. From a pedagogical point of view, silence does not mean abandoning an action, but it conditions its quality. It is a space in which education becomes not only effective, but deeply humanistic. In times of overstimulation, restlessness and disintegration of youth, silence becomes not an alternative but a necessity – an act of care, presence and deep listening that enables the development not only of knowledge but also of subjectivity.

Conclusion

In the face of increasing sensory overload, cultural acceleration and a growing mental health crisis among young people, silence appears not as a luxury, but as a fundamental developmental and educational resource. Its pedagogical value lies not only in providing a counterbalance to noise and excess, but above all in enabling a deeper experience of self and the world. Silence is not neutral, it carries the potential for change, resistance and regeneration. Introducing it into educational practice can help to redress the balance between action and reflection, between exposure and privacy, between impulse and awareness.

From an educational perspective, silence promotes the formation of emotional maturity, supports self-regulatory processes and builds a space for dialogue, which does not always have to be filled with words. In a world dominated by a permanent online presence, silence becomes not only a form of rest, but also a form of resistance to the dominant narratives of productivity, efficiency and visibility. The text's proposed framing of silence as a tool for mental health education and prevention, and as part of a paradigm shift in education, points to the need to redefine the role of school, from a place of knowledge transmission to a space of attentive presence and humanity formation. Integrating silence into the daily educational rhythm is an act of pedagogical care and courage that can have a profound impact on the psychological, relational and existential development of the young generation.

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Maladaptive emotion regulation strategies as mediators in the relationship between gaming disorder and psychological pain, depression, and anxiety[1]

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Agnieszka Demianowska,[a] Julia Ostęp,[b] Maria Ryś,[c] Katarzyna Kucharska[d] ✉

[a] *Agnieszka Demianowska,*[3] *https://orcid.org/0000-0002-8362-6265*
[b] *Julia Ostęp,*[1] *https://orcid.org/0009-0005-0893-8858*
[c] *Maria Ryś,*[2] *https://orcid.org/0000-0003-4287-1261*
[d] *Katarzyna Kucharska*[1]*, https://orcid.org/0000-0002-6130-0520*
[1] *Institute of Psychology, Cardinal Stefan Wyszyński University in Warsaw, Poland*
[2] *School of Human Sciences, VIZJA University in Warsaw, Poland*
[3] *Statistical Analyses Lab, Warsaw, Poland*
✉ *Corresponding author: Katarzyna Kucharska, k.kucharska@uksw.edu.pl*

Abstract: Video game use disorder, classified in the ICD-11 as a behavioral addiction (code: 6C51), is characterized by impaired control over gaming, prioritization of gaming over other activities, and continuation despite negative consequences. Affecting an estimated 3.3% of the global population and 3.7% in Poland, it has been linked to symptoms of depression, anxiety, and psychological distress. Individuals struggling with this disorder often exhibit difficulties in emotion regulation, which may lead to the adoption of maladaptive coping strategies such as rumination, self-blame, or catastrophizing. These strategies not only reinforce problematic gaming behaviors as a means of escaping negative emotional states but may also intensify symptoms of mental health issues. The aim of this study was to examine the role of maladaptive emotion regulation strategies in the relationship between video game use disorder and psychological pain, anxiety, and depression. *Methods:* The study included 201 Polish computer game players who completed five standardized self-report measures: the IGD-20 (symptoms of Internet Gaming Disorder), HADS (symptoms of anxiety and depression), PAS (psychological pain), and the Cognitive Emotion Regulation Questionnaire (KPRE; emotion regulation strategies). Mediation models were analyzed in R (version 4.5.1) using the *lavaan* package with bootstrap confidence interval estimation (5000 samples, 95% CI). *Results:* Mediation analysis showed that catastrophizing mediated the relationship between Internet Gaming Disorder and all psychopathological variables. Rumination was a significant mediator only for anxiety, while self-blame mediated the relationship with psychological pain. Blaming others did not serve *as a significant mediator. Conclusions:* The findings confirmed the mediating role of maladaptive self-blame, rumination, and catastrophizing strategies in the relationship between computer game use disorder and depression, anxiety, and psychological pain. A stronger mediating effect was observed in the case of psychological pain, suggesting the particular importance of maladaptive emotion regulation in the context of intense emotional suffering. These results highlight the need to address self-blame, rumination, and catastrophizing strategies in the treatment of IGD, as well as in the diagnosis and assessment of co-occurring emotional symptoms and suicide risk among gamers. Further exploration of the identified issue is needed.

Keywords: anxiety, depression, emotion regulation, Internet Gaming Disorder, psychological pain

1. Introduction

The video game industry, which has been developing since the 1960s, has become one of the most dynamic and profitable sectors of the entertainment industry (Patterson, 2020). Globally, the number of players exceeds 3 billion, constituting over 27% of the world's population. According to Turner (2024), 52% of gamers are men, 36% are individuals aged 18-34, and 55% are users from Asia. In Poland, over 20 million people play games regularly, of whom approximately 80% are adults

1 Article in Polish language: https://stowarzyszeniefidesetratio.pl/fer/63P_Demi.pdf

(Marszałkowski et al., 2023). It is estimated that symptoms of problematic gaming occur in 3.3% of the general population (Zhou et al., 2024) and 8.6% of adolescents (Satapathy et al., 2025). Among Polish gamers in early adulthood, this percentage is 3.7%, with significantly higher rates in men (5.8%) than in women (1.8%) (Cudo et al., 2020).

Video games can serve recreational purposes, fulfill identity-related needs, and compensate for social and emotional deficits, helping to reduce stress (Kardefelt-Winther, 2014; Pontes et al., 2014). However, increasing attention is being paid to their potentially problematic nature, especially in the context of maladaptive emotion regulation mechanisms and the accompanying psychological distress (Morales et al., 2022). Excessive, impulsive, and compulsive gaming – particularly aimed at avoiding negative affective states – is considered a clinically significant phenomenon. Consequently, problematic gaming has been included in international classifications of mental disorders as a form of behavioral addiction.

1.1. Gaming Disorder in DSM-5 and ICD-11

Internet Gaming Disorder (IGD) is included in Section 3 of DSM-5 (*Diagnostic and Statistical Manual of Mental Disorders, 5th Edition*) as a condition requiring further study (American Psychiatric Association, 2013). Subsequently, ICD-11[2] (*International Statistical Classification of Diseases and Related Health Problems, 11th Edition*) introduced Gaming Disorder (code: 6C51) under the category of disorders due to addictive behaviors (World Health Organization, 2023).

For the diagnosis of IGD, DSM-5 outlines nine diagnostic criteria, of which at least five must be present in the last 12 months. These include: preoccupation with gaming, withdrawal symptoms, increasing tolerance (needing to spend more time gaming), unsuccessful attempts to limit gaming, loss of other interests, continuing to game despite negative consequences, gaming as a way to regulate emotions, and escalating problems in relationships and responsibilities (American Psychiatric Association, 2013). ICD-11 defines Gaming Disorder as a persistent or recurrent pattern of behavior characterized by impaired control over gaming, increasing priority given to gaming over other activities, and continuation of gaming despite negative consequences. Symptoms must persist for at least 12 months, although this duration may be shortened if symptom severity is extreme (WHO, 2022).

1.2. Psychopathological correlates of gaming disorder

Self-destructive use of video games is associated with deterioration in basic life functions such as sleep, nutrition, and physical activity (Griffiths et al., 2009; World Health Organization, 2023). Numerous studies indicate that IGD co-occurs with symptoms of anxiety, depression, ADHD, and aggression, as well as difficulties in emotion regulation and a high level of psychological pain (Buiza-Aguado et al., 2018; González-Bueso et al., 2020; T'ng et al., 2020; Concerto et al., 2021; Murray et al., 2022; Chang et al., 2023; Feledyn et al., 2024). It is emphasized that gaming disorder is not merely a consequence of excessive time spent gaming, but results from the interaction of neuropsychological factors, interpersonal deficits, maladaptive emotion regulation strategies, and escapist motivations (Yen et al., 2018; Amendola et al., 2019; Brand et al., 2019; Bäcklund et al., 2022). Identified risk factors include impulsivity, compulsivity, difficulty in recognizing and expressing emotions (alexithymia), introversion, neuroticism, low emotional intelligence, low self-esteem, and sensation seeking (Mehroof et al., 2010; Jeong et al., 2011; Gervasi et al., 2017; Buiza-Aguado et al., 2018; Bonnaire et al., 2019).

Maladaptive strategies for coping with emotions – such as avoidance, rumination, and compensatory strategies – play a particularly significant role by fostering escapist gaming and intensifying psychopathological symptoms (Amendola et al., 2019; Yen et al., 2018; Feledyn et al., 2024). The compensatory model of Internet use suggests that individuals with deficits in emotion regulation more often turn to video games to reduce psychological discomfort and restore or

2 World Health Organization. (2023). *International Statistical Classification of Diseases and Related Health Problems* (ICD) (11th revision). Retrieved from https://www.who.int/standards/classifications/classification-of-diseases

achieve emotional balance (Caplan, 2010; Feledyn et al., 2024). In light of research, gaming disorder is strongly correlated with depression, anxiety, and psychological pain, and these relationships can be mutual and complex (Yen et al., 2018; Bonnaire et al., 2019; González-Bueso et al., 2020; Alhamoud et al., 2022; Feledyn et al., 2024). In the following sections of this article, the relationships between gaming disorder and depression, anxiety, and psychological pain will be discussed in detail, with particular attention to the role of maladaptive emotion regulation strategies.

1.3. The role of emotion regulation in the psychopathology of gaming disorder

Emotion regulation, understood as an individual's ability to influence how they experience and express emotions, may play a crucial role in the development and maintenance of gaming addiction (Walenda et al., 2021; Wojtczak et al., 2024). Emotion regulation encompasses processes that affect which emotions one has, when one has them, and how one experiences or expresses them (Gross, 2008). This ability can be adaptive (e.g., cognitive reappraisal, acceptance, distancing) or maladaptive (suppression, rumination, catastrophizing, self-blame) (Kökönyei et al., 2019). Regular gaming is associated with more frequent emotion regulation and less frequent expression of emotions, despite experiencing emotions more intensely, as well as with an impairment of executive functions that hinders flexible emotional management (Villani et al., 2018; Garcia et al., 2024). Dysfunctional emotion regulation – encompassing difficulties in acceptance and limited access to strategies for coping with emotions – correlates with gaming addiction, and gamers often use games as a form of escape (Amendola et al., 2019; Bäcklund, 2022). Individuals with gaming addiction exhibit deficits in interpersonal emotion regulation, engage less in social relationships, and have reduced emotional awareness, and the highest levels of gaming disorder symptoms are typically found in gamers seeking emotional escape (Müller et al., 2021; Bäcklund, 2022).

Gamers with more severe gaming disorder symptoms more frequently employ maladaptive emotion regulation strategies such as suppression, avoidance, rumination, catastrophizing, or self-blame, which is associated with heightened depressive, anxious, and psychotic symptoms (Garnefski et al., 2007; Aldao et al., 2010; Kuss et al., 2018). These strategies play a key role in explaining the psychopathological consequences of problematic gaming, and their use may mediate the relationship between gaming disorder and increased psychological pain (Amendola et al., 2019; Müller et al., 2021; Bäcklund et al., 2022; Garcia et al., 2024). Research indicates that difficulties in emotion regulation contribute to the persistence of negative emotional states, which exacerbates symptoms of depression, anxiety, and psychological distress in individuals with a problematic gaming pattern (Yen et al., 2018; Wong et al., 2020; Liao et al., 2023; Vallejo-Achón et al., 2024). Emotion regulation is thought to function as a mediating variable, since individuals with more intense gaming disorder symptoms more often resort to maladaptive strategies, which are directly associated with higher levels of depressive and anxious symptoms (Yen et al., 2018; Liao et al., 2023; Vallejo-Achón et al., 2024). Moreover, the use of these strategies impedes effective processing and reduction of unpleasant emotions, leading to the persistence and intensification of psychological suffering (Yen et al., 2018; Wong et al., 2020).

1.4. Summary of theoretical analyses and aim of the study

Existing studies indicate significant links between gaming disorder and affective symptomatology and psychological pain, with maladaptive emotion regulation strategies playing a role. Although these relationships have been analyzed separately, there is a lack of a comprehensive model integrating gaming disorder symptoms, psychological pain, depression, anxiety, and emotion regulation into a single framework of relationships. Such integration is particularly needed in research on the psychopathological mechanisms connecting problematic gaming with emotional suffering.

The aim of the present study was to analyze the relationship between gaming disorder severity and symptoms of depression, anxiety, and psychological

pain, and to identify the role of maladaptive emotion regulation strategies as mediators in the relationship between gaming disorder severity and these symptoms. The analysis aimed to empirically test whether dysfunctional emotion regulation explains the co-occurrence of gaming disorder with these psychopathological components.

2. Materials and Methods

2.1. Participants

In an online study, 215 video game players participated, regardless of preferred game genre or time spent gaming. Exclusion criteria included: psychoactive substance addiction, schizophrenia, bipolar disorder, and organic damage to the central nervous system. Data from 201 individuals were included in the analyses (35.82% women, 63.18% men, 1.00% identifying as another gender), ranging in age from 18 to 52 years (M = 27.72; SD = 6.80). The majority of participants had secondary education (47.76%) or higher education (45.76%), and years of education ranged from 9 to 18 (M = 15.09; SD = 2.80). The vast majority of participants were employed (74.63%). The most frequently chosen game genres were RPG (74.75%), survival (58.08%), FPS (59.09%), and RTS (48.48%).

The study received approval from the University Research Ethics Committee (No. 9/2023).

2.2. Measures

Participants completed a sociodemographic questionnaire and the following standardized psychometric instruments:

- *Internet Gaming Disorder-20 (IGD–20)* Test – a tool for assessing symptoms of gaming disorder over the last 12 months, according to DSM-5 criteria (Pontes & Griffiths, 2014; Polish adaptation: Grajewski & Dragan, 2021). The scale consists of 20 items and provides an overall gaming disorder score, as well as six theoretical subscales (not analyzed in this study): preoccupation, mood modification, tolerance, withdrawal symptoms, conflict, and relapse. Cronbach's α for the total score was 0.93.
- *Hospital Anxiety and Depression Scale (HADS)* – 14 items measuring symptoms of depression and anxiety (Zigmond & Snaith, 1983; Polish adaptation: Czerwiński et al., 2020). Cronbach's α reliability: depression = 0.74; anxiety = 0.85.
- *Psychache Scale (PAS)* – 13 items assessing the intensity of psychological pain (Holden et al., 2001; Polish adaptation: Chodkiewicz et al., 2017). Reliability: $\alpha = 0.93$.
- *Cognitive Emotion Regulation Questionnaire (CERQ)* – developed by Garnefski et al. (2002), Polish adaptation by Marszał-Wiśniewska & Fajkowska (2010). It consists of 36 items measuring nine emotion regulation strategies: self-blame, acceptance, rumination, positive refocusing, planning, positive reappraisal, putting into perspective, catastrophizing, and blaming others. Cronbach's α for the respective subscales in the Polish adaptation ranges from 0.68 to 0.83.

3. Results

Statistical analyses were conducted in R (version 4.5.1) using the *lavaan* package (Rosseel, 2012). Distributions of variables were evaluated for normality; skewness and kurtosis values fell within an acceptable range (±2). Means, standard deviations, and Pearson correlation coefficients were calculated. Mediation analyses were performed using regression models with bootstrap confidence interval estimation (5000 resamples). A significance level of $\alpha = 0.05$ was adopted.

3.1. Relationships among the study variables

Table 1 presents the means, standard deviations, and Pearson *r* correlations among the variables. Significant positive correlations were found between gaming disorder severity and anxiety ($r = 0.26$, $p < 0.001$), depression ($r = 0.37$, $p < 0.001$), psychological pain ($r = 0.30$, $p < 0.001$), as well as maladaptive emotion regulation strategies: self-blame ($r = 0.17$, $p < 0.05$),

Table 1. Means, standard deviations, and Pearson correlation coefficients among the variables (N = 201).

	M	SD	1	2	3	4	5	6	7	8	9	10	11	12
IGD-20: Overall score (ZUG)	41,25	12,83												
HADS: Anxiety	7,55	4,34	0,26***											
HADS: Depression	5,25	3,86	0,37***	0,61***										
PAS: Overall score	31,37	15,31	0,30***	0,76***	0,60***									
KPRE: Self-blame	12,01	3,54	0,17*	0,45***	0,34***	0,54***								
KPRE: Acceptance	12,85	3,62	-0,02	0,09	-0,03	0,08	0,21**							
KPRE: Rumination	13,37	3,7	0,17*	0,55***	0,29***	0,55***	0,52***	0,27***						
KPRE: Positive redirection	11,26	4,03	-0,07	-0,33***	-0,25***	-0,37***	-0,23**	0,05	-0,21**					
KPRE: Planning	13,9	3,79	-0,18**	-0,17*	-0,40***	-0,25***	-0,05	0,34***	0,18*	0,28***				
KPRE: Positive rephrasing	13,34	3,67	-0,17*	-0,35***	-0,42***	-0,43***	-0,19**	0,23**	-0,13	0,57***	0,63***			
KPRE: Broader perspective	12,62	3,43	-0,01	-0,16*	-0,17*	-0,21**	0,03	0,23***	-0,02	0,47***	0,22**	0,52***		
KPRE: Catastrophising	9,27	3,11	0,23***	0,52***	0,38***	0,55***	0,36***	0,05	0,52***	-0,24***	-0,17*	-0,34***	-0,14	
KPRE: Blaming others	8,06	3,32	0,23**	0,12	0,07	0,07	-0,07	0,00	0,26***	0,11	0,11	0,03	0,12	0,34***

Annotation. N – number; M – mean; SD – standard deviation. *** $p < 0{,}001$; ** $p < 0{,}01$; * $p < 0{,}05$.

rumination ($r = 0.17$, $p < 0.05$), catastrophizing ($r = 0.23$, $p < 0.001$), and blaming others ($r = 0.23$, $p < 0.01$). For the adaptive strategies, gaming disorder severity correlated significantly and negatively with positive reappraisal ($r = -0.17$, $p < 0.05$) and planning ($r = -0.18$, $p < 0.01$). Maladaptive emotion regulation strategies showed strong, positive associations with symptoms of anxiety and psychological pain. The highest correlations were observed for rumination ($r = 0.55$ with anxiety, $r = 0.55$ with psychological pain), catastrophizing ($r = 0.52$ with anxiety, $r = 0.55$ with psychological pain), and self-blame ($r = 0.54$ with psychological pain); all significant at $p < 0.001$. In the case of depressive symptoms, the relationships with these strategies were moderate (r ranging from 0.29 to 0.38; $p < 0.001$). In contrast, strategies considered adaptive – such as planning, positive reappraisal, and positive refocusing – correlated significantly and negatively with symptoms of depression, anxiety, and psychological pain. The correlation coefficients ranged from $r = -0.17$ to $r = -0.43$ ($p < 0.05$).

3.2. Maladaptive emotion regulation strategies as mediators of the relationship between gaming disorder and symptoms of depression, anxiety, and psychological pain

Consistent with the aim of the study, a mediation analysis was conducted to identify the role of maladaptive emotion regulation strategies (self-blame, rumination, catastrophizing, blaming others) as mediators in the relationship between gaming disorder severity and symptoms of depression, anxiety, and psychological pain.

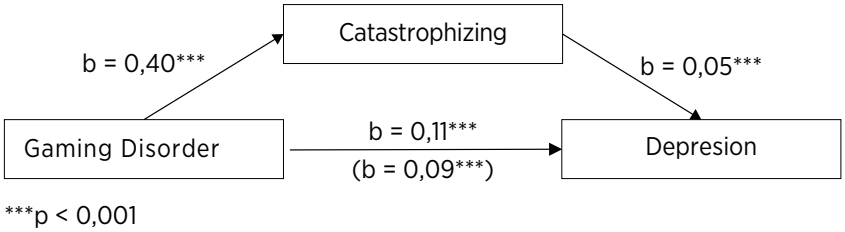

Figure 1. Maladaptive emotion regulation strategies as mediators of the relationship between gaming disorder and depressive symptoms.

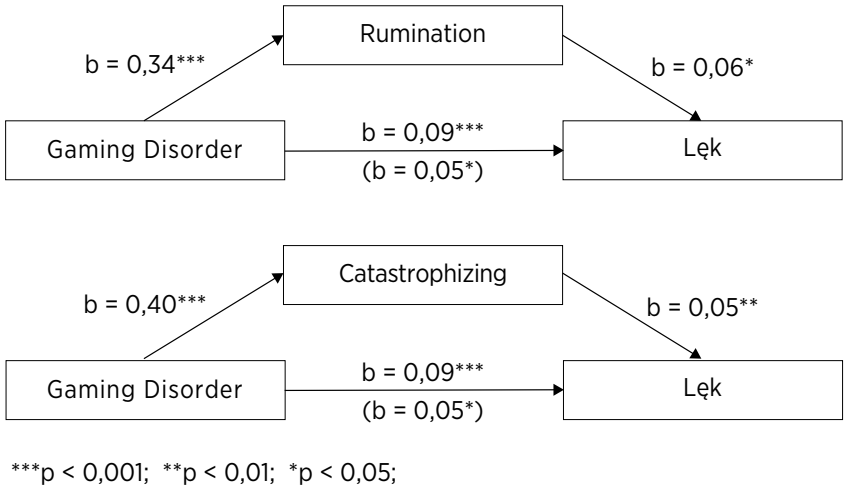

Figure 2. Maladaptive emotion regulation strategies as mediators of the relationship between gaming disorder and anxiety symptoms.

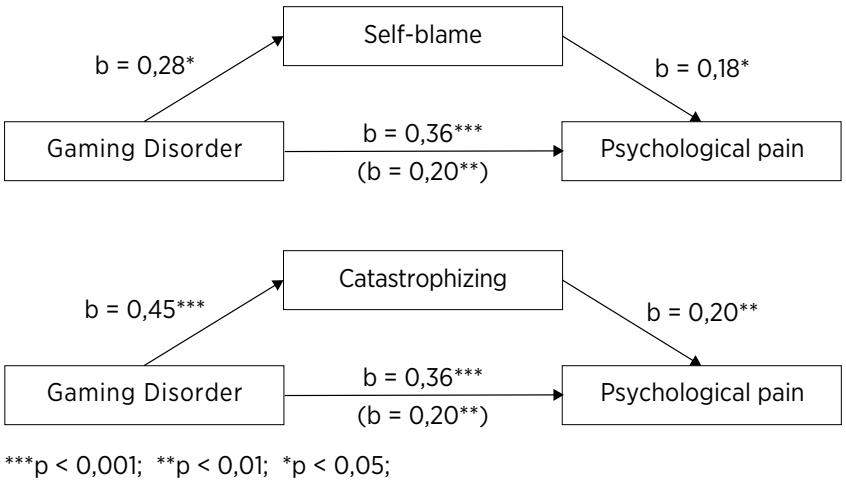

Figure 3. Maladaptive emotion regulation strategies as mediators of the relationship between gaming disorder and psychological pain.

In the model where the dependent variable was depression, a significant total effect of gaming disorder on the level of depressive symptoms was found (b = 0.11; SE = 0.02; 95% CI [0.07, 0.16]; $p < 0.001$), as well as a significant direct effect after including the mediators (b = 0.09; SE = 0.03; 95% CI [0.04, 0.14]; $p = 0.001$), indicating partial mediation. A significant indirect effect was observed only for the catastrophizing strategy (b = 0.02; SE = 0.01; 95% CI [0.01, 0.03]; $p < 0.001$; see Figure 1).

In the model predicting anxiety levels, a significant total effect of gaming disorder on anxiety symptoms was found (b = 0.09; SE = 0.02; 95% CI [0.05, 0.13]; $p < 0.001$), as well as a significant direct effect (b = 0.05; SE = 0.02; 95% CI [0.01, 0.08]; $p = 0.021$), indicating partial mediation. The indirect effects were significant for rumination (b = 0.02; SE = 0.01; 95% CI [0.003, 0.039]; $p = 0.046$) and catastrophizing (b = 0.02; SE = 0.01; 95% CI [0.008, 0.044]; $p = 0.012$). The other strategies were not significant ($p > 0.05$; see Figure 2).

In the model where the dependent variable was psychological pain, gaming disorder showed a significant total effect (b = 0.36; SE = 0.08; 95% CI [0.20, 0.51]; $p < 0.001$) and a significant direct effect (b = 0.20; SE = 0.06; 95% CI [0.07, 0.32]; $p = 0.002$), also indicating partial mediation. Significant indirect effects were noted for catastrophizing (b = 0.09; SE = 0.03; 95% CI [0.04, 0.16]; $p = 0.003$) and self-blame (b = 0.05; SE = 0.02; 95% CI [0.01, 0.10]; $p = 0.024$). Rumination and blaming others did not reach significance ($p > 0.05$; see Figure 3).

4. Discussion

The analysis of the relationship between gaming disorder and symptoms of depression, anxiety, and psychological pain – together with the identification of the mediating role of maladaptive emotion regulation strategies – represents an innovative aspect of the present study due to its comprehensive approach.

The results of the study clearly indicate significant positive associations between gaming disorder severity and symptoms of depression, anxiety, and psychological pain. Both the total effects and direct effects consistently confirm that gaming disorder is a strong predictor of these variables, underscoring the significance of this disorder in the context of mental health.

The study demonstrated a significant influence of gaming disorder on the severity of depressive symptoms, which is consistent with literature emphasizing that individuals struggling with problematic gaming often use this activity as an escape mechanism from negative emotional states (Sepede et al., 2016; Coyne et al., 2020; Pallavicini et al., 2022). The nature of this relationship is often described in the literature as bidirectional: individuals with higher levels of depression are more likely to engage in gaming aimed at emotional escape, which in turn is associated with a worsening of clinical symptoms. However, the more commonly observed pattern is a tendency toward problematic gaming when depressive symptoms are elevated (Burkauskas et al., 2022). It has been observed that for many people with depression, games serve as a mechanism of emotional self-regulation, but excessive gaming leads to a deterioration of mental state.

Similarly, gaming disorder is associated with heightened anxiety symptoms, such as increased tension, irritability, and avoidance of social situations. Our findings confirm that anxiety symptoms can both facilitate the development of gaming disorder and be a consequence of it. Existing literature corroborates this dual relationship between problematic gaming and anxiety (Lavoie et al., 2023; Feledyn et al., 2024). Empirical studies indicate that problematic gaming is related not only to increased tension and greater irritability, but also to social factors, including a tendency to avoid social situations (Bonnaire et al., 2019; Lavoie et al., 2023).

The strongest association was observed between gaming disorder and psychological pain, defined as subjective, intense emotional suffering (Shneidman, 1993). Prior literature provides evidence of a significant relationship between psychological pain and the clinical symptoms of depression and anxiety (Mills et al., 2005; Olié et al., 2010; Yen et al., 2018) but has not confirmed its link with gaming disorder symptoms. The results of the present study therefore underscore, for the first time in the research literature,

that psychological pain is an important component of the psychopathology of gaming disorder and should be considered in the diagnosis and treatment of individuals with problematic gaming.

Regarding the relationship between gaming disorder and emotion regulation strategies, the results clearly showed that more severe problematic gaming is associated with greater use of maladaptive strategies such as rumination, catastrophizing, and self-blame. In contrast, the strategy of blaming others was not significantly associated, in line with earlier studies indicating its limited importance in the context of gaming disorder (Yen et al., 2018; Amendola et al., 2019). This pattern confirms the compensatory model of game use (Caplan, 2010), which posits that individuals with deficits in emotion regulation turn to games as a way to reduce psychological discomfort. The findings highlight the role of maladaptive strategies – especially catastrophizing, rumination, and self-criticism – as key mechanisms sustaining gaming disorder. Furthermore, the literature indicates that maladaptive emotion regulation strategies are linked to escapist gaming and the intensification of psychopathological symptoms (Wang et al., 2017; Amendola et al., 2019).

In light of the presented results, an increase in gaming disorder severity is closely linked with greater use of maladaptive emotion regulation strategies. These findings suggest that such strategies could serve as an important therapeutic target in psychological interventions for individuals with problematic gaming.

The novel application of mediation analyses in this study demonstrated the significant role of maladaptive emotion regulation strategies in mediating the relationships between gaming disorder severity and symptoms of psychological pain, depression, and anxiety. In the relationship with psychological pain, the mediators were catastrophizing and self-blame, whereas for depression the mediation involved only catastrophizing, and for anxiety both rumination and catastrophizing were mediators. The strategy of blaming others did not show a significant mediating effect. The absence of this effect suggests that this strategy, although often classified as maladaptive, may have limited importance in the context of gaming disorder.

The results may imply a dominance of self-critical mechanisms over external attribution among gamers with gaming disorder, which is consistent with previous literature (Orbach et al., 2003; Mills et al., 2005). In contrast, the catastrophizing strategy showed a significant mediating role in the relationships between gaming disorder and all the psychopathological indicators analyzed – psychological pain, depression, and anxiety. These conclusions are reflected in other research findings (Garnefski & Kraaij, 2007; Aldao et al., 2010). Although the direct effect remained significant (indicating partial mediation), the results point to the crucial importance of this strategy in the psychopathological mechanism of gaming disorder. In this context, catastrophizing may amplify feelings of helplessness and anxiety, prompting escape into video games as a short-term way to alleviate emotional suffering, which in the long run may exacerbate the problem (Feledyn et al., 2024).

Rumination served to amplify negative thoughts, mediating only the relationship between gaming disorder and anxiety. In gaming disorder, ruminative thoughts can heighten feelings of threat and helplessness, making it difficult to break away from problematic gaming patterns and increasing anxiety, which is itself a risk factor for the persistence of the addiction. A similar interpretation has been suggested by Nolen-Hoeksema et al. (2008) and Yen et al. (2018). The last strategy examined, self-blame, was associated with feelings of hopelessness and internal suffering, mediating only the relationship between gaming disorder and psychological pain. This interpretation is supported by previous studies (Orbach et al., 2003; Mills et al., 2005). In individuals with gaming disorder, self-critical self-blame may lead to increased emotional suffering, which can reinforce the short-term self-medication mechanism of alleviating symptoms through gaming, albeit with negative long-term consequences.

Emotion regulation is a fundamental factor explaining the co-occurrence of gaming disorder with affective disorders and psychological suffering (Yen et al., 2018; Amendola et al., 2019). The present findings confirm this, indicating that greater gaming disorder severity is associated with increased use of maladaptive strategies that impede adaptive emotional coping. In light of our results, higher levels of gaming disorder are closely

linked to greater use of maladaptive emotion regulation strategies, which underscores their potential role as therapeutic targets in individuals with problematic gaming.

5. Summary, limitations, and directions for future research

This study confirms that gaming disorder is associated with heightened psychological pain and symptoms of depression and anxiety, and that maladaptive emotion regulation strategies – particularly catastrophizing, rumination, and self-blame – serve as key mediators in these relationships. Emotion regulation proves to be a fundamental mechanism sustaining gaming disorder and the accompanying emotional difficulties.

Among the most important limitations of the study is its cross-sectional design, which prevents conclusions about the directionality of relationships, and the use of self-report data, which may affect the reliability of the results. Furthermore, the sample consisted mainly of young adults, which limits the generalizability of the findings to other age and cultural groups.

In view of these limitations, it is necessary to conduct longitudinal and experimental studies to more precisely explain the causal mechanisms among gaming disorder, emotion regulation, and psychological suffering. It would also be worthwhile to expand the range of mediators studied to include other psychological and environmental factors, such as social support or personality traits (Casale et al., 2021).

In clinical practice, these results point to the need to integrate therapeutic approaches focused on emotional regulation and the treatment of co-occurring affective disorders in individuals with gaming disorder, which may contribute to more effective help and prevention. In the diagnostic and therapeutic process for people with gaming disorder, it is advisable to include an assessment of co-occurring depression, anxiety, and psychological pain, as well as the emotion regulation strategies they employ (Ock et al., 2025). Augmenting cognitive-behavioral therapies with metacognitive support to enhance emotional flexibility may effectively reduce IGD, depression, and anxiety symptoms, according to evidence (Casale et al., 2021; Kim et al., 2025).

In conclusion, these findings expand our knowledge of the psychopathological mechanisms associated with gaming disorder, highlighting the multidimensional nature of its relationship with depression, anxiety, and psychological pain, and underscore the need for a comprehensive therapeutic approach.

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Factors influencing the regularity of the menstrual cycle in Polish university female students[1]

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Katarzyna Kanadys[a] ✉, Karolina Kościuszko[b], Grażyna Stadnicka[c], Katarzyna Piasecka[d], Ewa Ślizień-Kuczapska[e], Anna Pilewska-Kozak[f]

[a] *Katarzyna Maria Kanadys[2, 4], https://orcid.org/0000-0001-8447-3937*
[b] *Karolina Kościuszko[3], https://orcid.org/0009-0004-7151-9034*
[c] *Grażyna Stadnicka[4], https://orcid.org/0000-0002-5850-3247*
[d] *Katarzyna Piasecka[2, 5], https://orcid.org/ 0000-0002-3717-5926*
[e] *Ewa Ślizień-Kuczapska[1, 2], https://orcid.org/0000-0002-2227-3849*
[f] *Anna Bogusława Pilewska-Kozak[4], https://orcid.org/0000-0003-4562-2295*
✉ *Corresponding author: Katarzyna Maria Kanadys, kanadysk@wp.pl*

[1] *Childbirth in the Żelazna Medical Center, St. Sophia's Specialist Hospital in Warsaw*
[2] *Scientific Committee of the Polish Association of Natural Family Planning Teachers*
[3] *Independent Public Health Care Facility in Siedlce*
[4] *Department of Obstetrics and Gynaecology Nursing, Chair of Obstetrics and Gynaecology, Faculty of Health Sciences, Medical University of Lublin. Poland*
[5] *Department of Family and Geriatric Nursing, Chair of Integrated Nursing Care, Medical University of Lublin, Poland*

Abstract: *Introduction:* The regularity of the menstrual cycle is one of the key indicators of procreation health. The frequency of menstruation disorders in young women, including students, may result from various socio-demographic and lifestyle-related factors. The aim of the study was to examine whether the regularity of Polish female students' menstrual cycles depended on selected socio-demographic variables and their lifestyle. *Material and method:* The study involved 490 Polish female university students over the age of 18, representing various fields of study. The study was carried out in the form of an anonymous online questionnaire from November 2022 to March 2023. A diagnostic survey method was used, employing a bespoke questionnaire. Socio-demographic data, lifestyle (for example, sleep, physical activity, stress, drugs), characteristics of the menstrual cycle and the occurrence of accompanying symptoms were analysed. Statistical analysis was performed (chi-square test, $p < 0.05$). *Results:* 30% of participants reported irregular menstrual cycles. Among the analysed variables, only the year of studies ($p = 0.024$), smoking ($p = 0.006$) and eating breakfast every day ($p = 0.014$) showed a statistically significant relationship with the cycle regularity. Students in higher years of their studies, non-smokers and those who ate breakfast every day were more likely to report regular menstruation. *Conclusions:* Nearly one in three students had irregular menstruation cycles, which may indicate actual and potential health problems. Therefore, it is necessary to identify factors related to irregular menstruation to determine appropriate preventive and remedial strategies. Irregular menstrual cycles were significantly more common among respondents who were in their first years of studies. The rest analysed socio-demographic variables did not differentiate the group of study participants. Smoking tobacco and skipping breakfast were strongly associated with irregular menstruation, which highlights the importance of modifiable lifestyle factors in the prevention and promotion of procreation health.

Keywords: lifestyle, irregular menstrual cycle, risk factors, university female students

1. Introduction

Menstrual cycle is a complex physiological process of transformation taking place in a woman's body, which covers dynamic hormonal changes within the hypothalamic – pituitary–ovarian axis and the endometrium. As a result, every month there is bleeding, called a period or menstruation, which is an external manifestation of cyclical changed of the endometrium (Pawelczyk, Banaszewska 2020). The first menstrual

1 Article in Polish language: https://stowarzyszeniefidesetratio.pl/fer/63P_Kana.pdf

cycles occurring during adolescence may be irregular and anovulatory – it is a physiological phenomenon related to the maturing of the neuroendocrine regulatory system. The age of menarche and cycle regularity at that time may be influenced by genetic, family, ethnic, environmental, socioeconomic, and lifestyle factors, such as diet, physical activity, sleep, stress, and disease. Over time, usually in five years from menarche, the cycle stabilizes and ovulation becomes regular (Carlson, Shaw, 2019; Drosdzol-Cop, Orszulak, Wilk, 2020; Saei Ghare Naz, Farahmand, Dashti, Ramezani Tehrani, 2022). According to the classic definition, regular menstruation (*eumenorrhoea*) means cycles of 28 ± 5 days, with the loss of 30-70 ml of blood, and duration of 3-4 days (Jarząbek-Bielecka, Sowińska-Przepiera, Kędzia, Kędzia, 2019). In turn, experts from the International Federation of Gynecology and Obstetrics (FIGO) have defined a regular menstrual cycle as one that occurs every 24–38 days, lasts no longer than 8 days, and varies in duration by no more than 10 days throughout the year (Munro, Critchley, Fraser, Committee FMD, Haththotuwa, Kriplani, et al., 2018). A regular menstrual cycle is considered to be one of the major indicators of reproduction health and the overall well-being of a woman (Alhammadi, Albogmi, Alzahrani, Shalabi, Fatta, AlBasri, 2022).

Menstrual cycle irregularities – including disorders of rhythm, volume, or the presence of additional bleeding – are classified as menstrual disorders and may be the result of hypothalamic-pituitary-ovarian axis dysfunction, metabolic diseases, or the effect of iatrogenic interventions. It is estimated that even 75% of girls and young women in the developmental age experience at least one menstrual disorder, which makes the problem one of the most common reasons for visits to gynecologists in this age group (Alhammadi et. al., 2022; Jarząbek-Bielecka i in., 2019; Podfigurna, Męczekalski, 2020). Irregular menstrual cycles, if chronic, may be a risk factor for serious health complications in the future, such as osteoporosis, polycystic ovarian syndrome (PCOS), infertility, type 2 diabetes, cardiovascular diseases or endocrine disorders (Jeon, Baek, 2023; Mittiku, Mekonen, Wogie, Tizazu, Wake, 2022; Rostami Dovom, Ramezani Tehrani, Djalalinia, Cheraghi, Behboudi Gandavani, Azizi, 2016). Identification of the risk factors that contribute to the development of the menstrual cycle disorders is therefore of considerable preventive and clinical importance.

Contemporary research indicates that lifestyle plays a key role in the etiopathogenesis of menstruation disorders. Students in particular are a group of women who are highly vulnerable to risk factors such as emotional stress, sleep disorders, insufficient physical activity, poor diet, substance abuse, and environmental changes associated with moving and adapting to a new lifestyle (Alhammadi, et. al. 2022; Demeke, Zeru, Tesfahun, Mohammed, 2023; Nguyen, Le, 2024; Mittiku et. al., 2022; Negi, Mishra, Lakhera, 2018; Shantha, Roselin, Srisanthanakrishnan, 2020). High academic expectations, pressure to achieve and lack of emotional stability may lead to the HPA (hypothalamic-pituitary-adrenal) stress axis activation, which disrupts hormonal regulation of the reproductive system if chronically active.

More and more research emphasizes the necessity to educate young women in menstruation disorders prevention by promoting healthy eating habits, proper sleep hygiene, stress management, and regular physical activity (Fujiwara, Ono, Iizuka, Sekizuka-Kagami, Maida, Adachi, Fujiwara, Yoshikawa, 2020; Jha, Bhadoria, Bahurupi, Gawande, Jain, Chaturvedi, Kishore, 2020; Maekawa, Miyamoto, Ariyoshi, Miura, 2023; Negi et, al., 2018). Educational measures of this type may not only improve the quality of life, but also prevent more serious health implications in the future (Fernández-Martínez, Fernández-Villa, Amezcua-Prieto, Suárez-Varela. Mateos-Campos, Ayán-Pérez, Molina de la Torre, Ortíz-Moncada, Almaraz, Blázquez Abellán, Delgado-Rodríguez, Alonso-Molero, Martínez-Ruíz, Llopis-Morales, Valero Juan, Cancela Carral, Martín-Peláez, Alguacil, 2020). What is more, implementing programmes to encourage self-observation of the menstrual cycle in schools and at universities which would allow early diagnosis and treatment of occurring disorders (Jha, et. al., 2020; Piasecka, Łyszczarz, Pytka, Ślizień-Kuczapska, Kanadys, 2021).

Given the above, it seems reasonable to conduct in-depth research aimed at identifying and assessing risk factors associated with irregular menstrual cycles among Polish students. This would not only make

it possible to understand the scale of the problem in this population, but would also serve as a starting point for developing effective educational and preventive measures.

Aim of the study: The aim of the study was to examine whether the regularity of Polish female students' menstrual cycles depended on selected socio-demographic variables and their lifestyle.

2. Material and method

The study involved 490 female students from universities located in Poland. The study was conducted between November 2022 and March 2023. The criteria for inclusion in the study group were: female gender, age over 18, university student, regardless of the type of studies. The criteria for exclusion from the study group were hormonal contraception, pregnancy, and breastfeeding. The study was carried out online, using a Google form. The respondents consciously agreed to participate in the survey, which was voluntary and anonymous. Before participating in the study, students were informed about its aim, nature, and course.

The study was conducted using a diagnostic survey method with a questionnaire designed specifically for this research. The questionnaire consisted of 30 closed questions. The first questions concerned the socio-demographic data of the respondents (1-8). The following questions referred to the students' lifestyle (9-15) and health problems and perceived stress (16-19). The remaining questions concerned the characteristics of the menstrual cycle (20-30).

The collected research material was statistically processed using the IBM SPSS Statistics, version 27, package. First, the number and percentage of response categories for each question are given. Appropriate statistical procedures were used to verify the hypotheses. The relationship between qualitative variables was tested using the chi-square test of independence. This test is based on a comparison between observed (empirical) values and theoretical (expected) values, that is, values calculated assuming that there is no relationship between the variables. The results of the analysis obtained were assumed to be statistically significant at a significance level lower than 0.05 ($p < 0,05$).

3. Results of the study

The study involved 490 women, from which 51.6% were 23 years old or more, and 48.4% were 18-22 years old. The majority of participants in the study (77.6%) stated that they lived in a city during their studies, while 22.4% lived in the countryside. Looking at the major, 41.6% of respondents studied medicine or biology, 30.8% studied humanities, and 27.6% studied technical or mathematical subjects. An analysis of the distribution of years of study showed that 17.1% of respondents were first-year students, 14.5% were second-year students, 13.7% were third-year students, and the largest group consisted of fourth- and fifth-year students (54.7%). The majority of respondents (93.1%) remained unmarried, with 6.9% married. The financial situation was assessed as very good by 19% of respondents, as good – 49%, with 32% assessing it as mediocre or bad. In relation to the body mass index (BMI), it was within the normal range for 72% of respondents. 9.8% of respondents were underweight, while 18.2% of them was overweight or obese. The majority of women (68.6%) had menarche when they were 12-14 years old, for 25.7% the first period took place when they were 11 years old or younger, and for 5.7% – when they were 15 years old or older. Regular menstruation was reported by 70% of respondents and 30% reported irregular cycles. The majority of women (60.2%) described the intensity of bleeding as moderate, 33.9% as light, and 5.9% as heavy. Painful menstruation was reported by 66.1% of participants, while 33.9% did not experience any pain. The most commonly reported pain intensity was between 4 and 6 on a scale of 0 to 10 (45.1%). In 35.3% of respondents, pain was rated between 0 and 3, and in 19.6% between 7 and 10. Painkillers were used by 64.3% of respondents in connection with menstrual discomfort.

The following part of the presentation of the study results shows the analysis of the relationships between selected socio-demographic factors and the cycle regularity in respondents, the results obtained are shown in Table 1.

Based on our own research, it was found that women aged 23 and older who were surveyed had regular menstrual cycles more often (71.5%) than those aged 18-22 (68.4%). Women living in rural areas had regular menstrual cycles (70.9%) slightly more often than women living in a city (69.7%). Moreover, students of medicine/biology had regular menstrual cycles more often (73.5%) than respondents studying humanities (68.2%) and technical/mathematical subjects (66.7%). When it comes to the year of studies, the research indicated significant differences because fourth- and fifth-year students were statistically more likely to have regular menstrual cycles (74.6%) than first-year (57.1%), second-year (69%), and third-year students (68.7%). Moreover, the respondents who were underweight had regular menstrual cycles more often (77.1%) than those with the proper BMI (68.8%) and those who were overweight/obese (70.8%), but the differences were not statistically important. The statistical analysis of the examined variables did not show any statistically significant relationship ($p > 0.05$) between

Table 1. Socio-demographic factors and regularity of the cycle of examined students

Socio-demographic factors			Menstrual cycle regularity		Total	χ^2
			Yes	No		p
Age	18-22 y.o.	n	162	75	237	0.45
		%	68.40%	31.60%	100.00%	0.502
	23 y.o. or more	n	181	72	253	
		%	71.50%	28.50%	100.00%	
Place of residence during studies	Urban areas	n	265	115	380	0.014
		%	69.70%	30.30%	100.00%	0.906
	Rural areas	n	78	32	110	
		%	70.90%	29.10%	100.00%	
Field of study	Medicine /biology	n	150	54	204	2.145
		%	73.50%	26.50%	100.00%	0.341
	Humanities	n	103	48	151	
		%	68.20%	31.80%	100.00%	
	Technical / mathematics	n	90	45	135	
		%	66.70%	33.30%	100.00%	
Year of study	I	n	48	36	84	9.435
		%	57.10%	42.90%	100.00%	0.024
	II	n	49	22	71	
		%	69.00%	31.00%	100.00%	
	III	n	46	21	67	
		%	68.70%	31.30%	100.00%	
	IV and V	n	200	68	268	
		%	74.60%	25.40%	100.00%	
BMI	Underweight	n	37	11	48	1.4
		%	77.10%	22.90%	100.00%	0.497
	Right BMI	n	243	110	353	
		%	68.80%	31.20%	100.00%	
	Overweight / obesity	n	63	26	89	
		%	70.80%	29.20%	100.00%	
Total		n	343	147	490	
		%	70.00%	30.00%	100.00%	

Table 2. Lifestyle-related factors and regularity of the menstrual cycle of examined university female students

Elements of female students' lifestyle			Menstrual cycle regularity		Total	χ^2
			Yes	No		p
Smoking	Yes	n	55	40	95	7,524
		%	57,90%	42,10%	100,00%	0,006
	No	n	288	107	395	
		%	72,90%	27,10%	100,00%	
Frequency of feeling stressed	Rarely	n	105	37	142	2,001
		%	73,90%	26,10%	100,00%	0,368
	Quite often	n	153	75	228	
		%	67,10%	32,90%	100,00%	
	Often	n	85	35	120	
		%	70,80%	29,20%	100,00%	
Eating breakfast every day	Yes	n	235	83	318	6,041
		%	73,90%	26,10%	100,00%	0,014
	No	n	108	64	172	
		%	62,80%	37,20%	100,00%	
Sleeping time	6 hours or less	n	108	51	159	0,554
		%	67,90%	32,10%	100,00%	0,758
	7-8 hours	n	201	81	282	
		%	71,30%	28,70%	100,00%	
	More than 8 hours	n	34	15	49	
		%	69,40%	30,60%	100,00%	
Frequency of physical activity	I do not exercise	n	98	43	141	0,04
		%	69,50%	30,50%	100,00%	0,98
	Less than 3 times a week	n	176	74	250	
		%	70,40%	29,60%	100,00%	
	3-5 times a week	n	69	30	99	
		%	69,70%	30,30%	100,00%	
Total		n	343	147	490	
		%	70,00%	30,00%	100,00%	

the regularity of menstrual cycles and age, place of residence, major, and BMI of the respondents. Only the year of studies turned out to be the variable that differentiates the surveyed women ($p = 0{,}024$). Therefore, our own research showed that the year of study determined the regularity of the menstrual cycle, which occurred more frequently in the group of women in their fourth and fifth years of study than in lower years, especially in the first year.

The analysis of the menstrual cycle regularity depending on selected lifestyle-related factors in the respondents is shown in Table 2.

The obtained results of our own research showed that non-smokers had statistically more regular menstrual cycles (72.9%) than smoking women (57.9%). Women eating breakfast every day had statistically more regular menstrual cycles (73.9%) than women not eating breakfast every day (62.8%). Students who slept 7-8 hours a day had slightly more regular menstrual cycles (71.3%) than the respondents who slept more than 8 hours (69.4%) or 6 hours and less (67.9%). Women who exercised more than 3 times a week had slightly more regular menstrual cycles (70.4%) than those exercising 3-5 times a week

(69.7%) or not at all (69.5%). Students who were rarely stressed had slightly more regular menstrual cycles (73.9%) than the respondents who were stressed quite often (67.1%) or often (70.8%).

The statistical analysis of the examined lifestyle-related variables did not show any statistically significant relationship ($p > 0.05$) between the regularity of menstrual cycles and physical activity, sleep duration, and stress. Variables that showed statistical significance were smoking ($p = 0.006$) and eating breakfast every day ($p = 0.014$). Thus, our own research showed that smoking cigarettes and eating breakfast determined regular menstruation, which occurred more frequently in the group of students who did not smoke and ate breakfast every day.

4. Discussion

Menstrual cycle disorders are one of the most frequent problems reported by young women. In the group of students who were in the time of intense biological and psycho-social changes, the irregularity of the menstrual cycle may be both temporary and chronic, often affecting the quality of life, ability to learn, well-being, and reproductive health (Fernández-Martínez, Onieva-Zafra, Abreu-Sánchez, Fernández-Muñóz, Parra-Fernández, 2020; Shimamoto, Hirano, Wada-Hiraike, Goto, Osuga, 2021). This issue is attracting increasing interest among the medical community, as evidenced by numerous studies analysing the impact of somatic, psychological, and environmental factors on the reproductive system of young women.

This study aimed at assessing the frequency of irregular cycles and identifying selected risk factors in Polish students. The analysis covered socio-demographic variables (age, place of residence, major and year of studies), body mass index (BMI), and elements of lifestyle, such as smoking, eating breakfast, sleep, stress, and physical activity.

The criteria for cycle regularity in the presented study were adopted from Jarząbek-Bielecka et al. (2019) as bleeding occurring at regular intervals of 28 ± 5 days. The results obtained in the group of Polish students showed that the majority (30%) of the students surveyed had irregular menstrual cycles. A similar result to the one from our own research (29.1%) on the regularity of cycles was achieved by Abreu-Sánchez, Parra-Fernández, Onieva-Zafra, Ramos-Pichardo, Fernández-Martínez, (2020), who examined students in southern Spain. Moreover, Negi et. al. (2018), who, based on research conducted in a group of girls from India, found the cycle irregularity in 28.7% of respondents. Also Zeru, Gebeyaw, Ayele (2021), when analysing cycles in a group of students from the Debre Berhan University in Ethiopia, found that irregular cycles occurred in 32.6% of the respondents. In research conducted by Maekawa et. al. (2023) in a group of 200 students, irregular cycles were found in 24% of the respondents. Moreover, Aber (2018) examined a group of 86 fourth- and fifth-year students of medicine and showed that 20.6% of them had irregular cycles. In contrast, the smallest percentage of women examined (14.2%) had irregular menstruation in studies conducted by Kwak, Kim, and Baek (2019). While the largest percentage of irregular cycles concerned around 48.3% of Taiwanese students of a medical major (students of nursing, obstetrics) compared to other medical majors, this disparity probably results from the nursing curriculum's emphasis on extensive clinical practice compared to medical technology programs (Nguyen, Le, 2024).

The analysis of socio-demographic variables showed that only the year of studies was significantly related to the cycle regularity. Female students in their fourth and fifth years of study were statistically more likely to menstruate regularly compared to first-year students ($p = 0.024$). This can result from a better adaptation to the student life, greater emotional stability, and a proper stress management strategy. Even though in our own research major did not determine the respondents' cycles, the literature shows that it is justified to analyse this variable. Medical major students are often burdened with intellectual demands, an intensive curriculum and constant exposure to stress – both academic and emotional. Numerous studies show that medical major students, especially nursing and obstetrics, are characterised by more frequent menstruation disorders compared to their peers from other majors (Alhammadi et. al. 2022; Nguyen, Le, 2024; Shantha et. al. 2020).

Our study analysed the age of female students, and even though it was not statistically significant, the literature on the subject indicates that it is one of the major factors affecting the cycle regularity. Mittiku et. al. (2022) , in a study involving 420 students in Ethiopia, showed that women below the age of 20 are 3.88 times more likely to have irregular cycles compared to women aged 25+. The phenomenon may relate to the immaturity of the hormonal axis and greater susceptibility of younger women to environmental and stress factors. Aber (2018) has similar observations, indicating that 85% of cases of irregular menstruation concerned students aged 21-25, with symptoms predominantly beginning before the age of 23. In the context of academic functioning, the cycle irregularity may negatively impact concentration, motivation to learn, and attendance, which directly translates into learning outcomes (Demeke et. al., 2023). Therefore, younger students, during the time of intensive hormonal and environmental changes, are particularly susceptible to the cycle rhythm disruption.

The place or residence due to going to the university may be a significant factor influencing the functioning of the hormonal system of young women, the change in environmental conditions may result in new psycho-social burdens, such as the necessity to adapt to the academic life, change in the circadian rhythm, loss of the family support or an increase in stress level. When examining an international group of students studying in China, Ansong, Arhin, Cai, Xu, Wu (2019) showed that 49.1% of them experienced the menstrual cycle disorders after starting their studies. They indicated that the major risk factors were the language barrier, social isolation, academic stress, as well as changing the diet and circadian rhythm. Similar results were presented by Shantha et.al. (2020) pointing to the impact of environmental changes on the destabilisation of the hypothalamic-pituitary-adrenal axis. However, our study did not show a significant relationship between the place of residence and cycle disorders.

In terms of somatic parameters, the impact of the BMI was analysed. Although there were no statistically relevant relationships, the results are consistent with research that shows that both overweight and underweight may disrupt the hormonal axis function. Body fat is metabolically active and affect the production of leptin, oestrogens and SHBG. In women with excessive body weight, more anovulatory cycles are observed, while underweight may lead to secondary hypogonadism and no menstruation (Deborah, Priya, Swamy, 2017; Mittiku et. al. 2022; Singh, Rajoura, Honnakamble, 2019). It is confirmed by research by Deborah et.al. (2017) conducted in India in a group of 399 students that showed that the frequency of irregular cycles was significantly higher in obese people than in people with normal body weight, which was linked by the authors to the excessive body fat and its impact on hormone balance. Similar results were shown by Nguyen and Le (2024), who indicated that, among medical major students, people who were overweight or obese more often experienced irregular cycles than those with the BMI in normal range. It is also worth noting that such chronic hormonal disorders may predispose to gaining body weight. This complex relationship is also confirmed by Korean research (Bae, Park, Kwon, 2018), which showed a statistically significant relationship between the BMI, stress, and smoking and the frequency or irregular menstruation in 4700 women. The impact of being underweight on menstrual disorders is also significant. Singh, et.al. (2019), when analysing a group of 210 teenagers from Delhi, showed that the BMI below 18.5 results in a clearly increased frequency of irregular menstruation, intensification of the PMS symptoms and hypomenorrhoea. Given these observations, measures to bring the BMI to a normal level, both by losing weight and preventing undernourishment, should be an integral part of strategies to prevent menstrual cycle disorders in young women.

Also some lifestyle elements were significant for the cycle regularity. Smoking proved to a significant variable affecting the menstruation rhythm – non-smoking women had significantly more regular periods ($p = 0{,}006$). Zafar (2020) confirmed the five-time greater risk of irregular cycles in smoking women. Nicotine disrupts the rhythmic release of GnRH, lowers oestrogen levels and has a negative effect on the endometrium. Data from the Korea National Health and Nutrition Examination Survey

(KNHANES) conducted by Bae, et. al. (2018) in a group of 4788 women in reproductive age indicated a significant relationship between smoking tobacco and increased frequency of irregular periods. This relationship was particularly strong in case of women who simultaneously experienced high levels of stress or were underweight, which suggests a synergic effect of environmental factors on the reproductive system functioning.

Also eating breakfast showed a significant relationship with the cycle regularity ($p = 0.014$). Students eating breakfast every day has clearly more regular cycles. Fujiwara et. al. (2020) and Negi et al. (2018) showed that skipping breakfast affects hormonal disorders by changes in the secretion of leptin, insulin, and circadian rhythm. Authors emphasised that not only the lack of breakfast, but also the habit of consuming highly processed products rich in saturated fat may influence the progesterone metabolism disruption and increase the risk of PMS symptoms.

Regular physical activity is widely considered one of the overall health foundations, but its impact on the menstrual cycle may be complex and depend on intensity, frequency, and energy balance. In relation to physical activity, our own research showed no significant statistical relationships. However, it is worth emphasising that the literature on the subject indicates that both the lack of activity and an intensive activity (especially in sportswomen) may disrupt the menstrual cycle (Miyamoto, Hanatani, Shibuya, 2021a; Miyamoto, Shibuya, 2024). Moreover, research conducted by Negi et.al. (2018) in a group of 470 girls aged 13-19 in India showed a positive correlation between regular physical activity and a lower risk of painful and irregular periods. Miyamoto, Shibuya (2024) indicated that, in women who actively practice sports, energy deficiencies – especially carbohydrates and vitamin D – play a key role in the pathogenesis of irregular cycles. Whereas Maekawa et. al. (2023), when examining 200 students, did not find a clear correlation between the menstrual condition and the level of physical activity.

Sleep is an essential aspect of the daily life and is closely linked to overall health. It plays an important role in the strengthening of immunological functions and guarantees overall well-being. Moreover, melatonin, the main hormone secreted when sleeping, regulates biorhythms. Lower melatonin concentrations correlate with irregular menstruation as well as higher anxiety level and psychological tension in physically active young women (Miyamoto, Shibuya, (2024). In our own research presented, sleep did not show a statistically significant relationship with the cycle regularity, but many papers (Jeon, Baek, 2023; Kim, Nam, Han, Cho, Kim, Eum, Lee, Min, Lee, Han, Park, 2018; Mittiku et. al. 2022; Nam, Han, Lee 2017) explicitly indicate that short or low quality sleep destabilises the HPO axis by disrupting the melatonin, cortisol and GnRH secretion. Sleep shorter than 5-6 hours a day increases the risk of irregular cycles twice. Sleep disorders not only directly affect the hormonal regulation, but also exacerbate other negative factors, such as the mental stress, anxiety, which increase the risk of irregular cycles.

Stress is one of the most commonly indicated factors that disrupt the correct functioning of the hypothalamic-pituitary-ovarian axis, and thus the menstrual cycle regularity. Despite the fact that no statistically significant relationship between stress and irregular cycles was shown in our own study, the contemporary literature involved many studies that conform this relationship. Mittiku et. al. (2022) showed that students experiencing chronic stress had an increased risk of irregular menstruation. It was identified that variables significantly linked to the irregular cycle were: young age, early menarche, and stress, which may lead to the hypothalamic-pituitary-ovarian (HPO) axis deregulation. This mechanism involves increased activation of the hypothalamic-pituitary-adrenal (HPA) axis, which results in increased secretion of cortisol and adrenaline. The hormones disrupt the secretion of GnRH and, secondarily, of FSH and LH, which may lea to inhibition of ovulation, shortening of phases, or secondary amenorrhea. Research by Natt, Khalid, Sial (2018) conducted among students of medicine in Pakistan showed that even short-term stress related to exams was linked to temporary irregular cycles, which is confirmed by the susceptibility of the menstrual

cycle to mental factors. Whereas Kim et. al. (2018), in a big population study involving more than 4400 Koreans, showed that women reporting high levels of mental stress, symptoms of depression or suicidal thoughts had a significantly higher risk of irregular menstruation, especially those with intervals between bleeding exceeding 3 months. The analysis also showed that short sleep worked in synergy with stress, increasing the risk of cycle disorders. Chronic stress impacts not only the neuroendocrine system, but also women's health behaviours, such as poor eating habits, decline in physical activity, increased consumption of substances or sleep pattern disruption. In the study conducted by Jha et. al. (2020) among 200 teenage girls, it was observed that greater stress intensity, insufficient amount of sleep, and low level of mother's education were significantly linked to improper menstruation rhythm and exacerbation of menstrual symptoms.

The results obtained show that even though many factors may affect the menstrual cycle of students, only some of them proved to be statistically significant: year of studies, smoking, and regular breakfast consumption. All other variables, which did not reach the level of significance, remain consistent with the current state of knowledge and may play an indirect or coexisting role. The results emphasise the necessity to implement educational and preventive measures among young women, promoting a healthy lifestyle as part of the menstrual cycle disorders prevention and procreation health promotion.

5. Study limitations

Study limitations may result from the fact that they were based on subjective statements made by participants, which may affect the reliability of the data. Another limitation is the lack of standardized tools for assessing stress, sleep, and physical activity. The use of a deliberately selected sample limits the possibility of generalizing the results to the entire population of Polish students. Therefore, it is recommended that further research be conducted using an improved research tool and carried out among a randomly selected group.

Conclusions

1. Nearly one in three students (30.0%) had irregular menstruation cycles, which may indicate actual and potential health problems. Therefore, it is necessary to identify factors related to irregular menstruation to determine appropriate preventive and remedial strategies.
2. Irregular menstrual cycles significantly more often occurred in respondents who were students of first years of studies, and the remaining socio-demographic variables did not differentiate the respondents.
3. Smoking tobacco and skipping breakfast were strongly associated with irregular menstruation, which highlights the importance of modifiable lifestyle factors in the prevention and promotion of procreation health.

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Professional independence of midwives: Analysis of determining factors[1]

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Beata Szlendak[a], Grażyna Bączek[b], Hanna Mierzejewska[c], Oksana Stępień[d], Urszula Tataj-Puzyna[e] ✉, Barbara Baranowska[f]

[a] *Beata Szlendak[1], https://orcid.org/0000-0002-8227-8166*
[b] *Grażyna Bączek[2], https://orcid.org/0000-0001-7897-9499*
[c] *Hanna Mierzejewska[3], https://orcid.org/0009-0005-7854-2699*
[d] *Oksana Stępień[2], https://orcid.org/0000-0002-3993-5458*
[e] *Urszula Tataj-Puzyna[1], https://orcid.org/0000-0001-9800-3434*
[f] *Barbara Baranowska[1], https://orcid.org/0000-0003-2723-9604*
✉ *Corresponding author: Urszula Tataj-Puzyna, urszula.tataj-puzyna@cmkp.edu.pl*

[1] *Department of Midwifery, Centre of Postgraduate Medical Education in Warsaw, Poland*
[2] *Department of Gynecology and Obstetrics Didactics, Medical University of Warsaw, Poland*
[3] *Medical University of Warsaw, Poland*

Abstract: The professionalisation of the midwifery profession is a key process both from the perspective of the professional group itself and the quality of healthcare provided to women and their families. By definition, professionalisation is a collective strategy undertaken by a professional group to achieve recognised status and autonomy. The World Health Organisation (WHO) and the International Confederation of Midwives (ICM) emphasise the importance of education, legal regulations and strong professional organisations as pillars of this process. Despite global efforts, the pace of professionalisation is uneven – midwives in highly developed countries often function as independent specialists, while in many lower-income countries they lack access to formal education, licensing and systemic recognition. One of the most important indicators of professionalisation is professional autonomy, understood as the ability to make clinical decisions, provide continuous care and assume professional responsibility. The development of this autonomy is influenced by both systemic (legal, organisational) and psychosocial factors, including internal motivation, self-efficacy and the work environment. Generational differences also play an important role – younger generations of midwives (e.g. Generation Z) have higher expectations of autonomy and work-life balance, but also a higher risk of burnout and job insecurity. The aim of this article is to analyse the professional autonomy of midwives as a key factor in the professionalisation process, taking into account educational, psychological, generational and systemic conditions, with particular reference to the situation in Poland.
Keywords: generational differences, midwife, professionalisation, professional autonomy

Introduction

The professionalisation of midwifery is a crucial process not only for midwives themselves but also for women and society at large, as it is linked to delivering high-quality care in line with established standards (Prosen, 2022). Professionalisation is a collective and complex strategy pursued by an occupational group to attain recognised professional status (Vermeulen et al., 2019).

The World Health Organization (WHO), in cooperation with the International Confederation of Midwives (ICM), has long underscored the pivotal role of midwives in improving the health of mothers, newborns, and families (Kemp et al., 2021; Renfrew et al., 2014). It further emphasises that every woman and newborn should be cared for by a midwife who is educated and trained to international standards

1 Article in Polish language: https://stowarzyszeniefidesetratio.pl/fer/63P_Szle.pdf

and authorised to practise (The State of the World's Midwifery 2021: Building a Health Workforce to Meet the Needs of Women, Newborns and Adolescents Everywhere, 2021). When discussing professionalisation, these organisations identify three key domains: education, regulation, and professional organisations responsible for building professional identity (Kemp et al., 2021).

One indicator of midwifery professionalisation is growing professional autonomy, understood as the ability to make clinical decisions, provide continuity of care, and assume professional and legal responsibility. The autonomy of any professional, including midwives, is shaped by multiple factors-economic-legal conditions, health-system organisation, and midwives' psychological resources, which themselves are influenced, among other things, by generational differences.

The pace of midwifery professionalisation is uneven worldwide. In highly developed countries, midwives operate as independent specialists, whereas in many low- and middle-income countries they continue to face limited access to formal education, barriers to licensing, and a lack of recognition within health-system structures (Vermeulen et al., 2018).

In the United States, midwifery autonomy is determined by state law, and due to differences in education and certification, the scope of practice varies. In most states, midwives have full autonomy and independent prescribing rights (Yang et al., 2016). In New Zealand, midwives' competencies include prescribing and administering medicines, ordering and interpreting diagnostic and screening tests, carrying out comprehensive newborn assessments, and repairing most perineal trauma (Crowther et al., 2021).

In Europe, the drive to build midwifery autonomy gathered momentum in the 1980s and 1990s (Vermeulen et al., 2019). A cornerstone was the shift of education to the higher-education sector. The Bologna Process, launched in 1999, played a key role by standardising education across Europe through the three-cycle model (bachelor's, master's, doctorate) and by strengthening mobility among students and health professionals (Pop-Tudose & Radu, 2023). Differences nevertheless remain. In Belgium, midwives may prescribe medications and perform functional obstetric ultrasound examinations, but while prescribing is clearly regulated, implementing acts for functional ultrasound have not been issued (Nagórska, 2024; Vermeulen et al., 2016, 2019). In Greece, the perinatal care system positions midwives primarily under obstetrician-gynaecologists. Their role is often reduced to the technical execution of medical orders, limiting independent practice-especially in hospital settings (Kontoyannis et al., 2025). In Croatia, professionalisation began after 2008; consequently, comprehensive care during pregnancy, birth, and the postpartum period largely falls within the remit and responsibility of obstetrician-gynaecologists (Nagórska, 2024).

Midwives' professional autonomy depends not only on legal and systemic regulations but also on psychosocial factors such as intrinsic motivation and self-efficacy. High perceived professional efficacy supports independent clinical decision-making, enhances psychological resilience, and reduces stress and burnout- particularly among early-career midwives. Moreover, intrinsic motivation and a strong sense of meaning in the profession foster engagement, job satisfaction, and readiness for autonomous practice. The work environment is also decisive: recognition, autonomy, social support, and organisational culture positively influence midwives' capacity to function independently in clinical practice (Jasiński et al., 2021; Tzamakos et al., 2024).

Age diversity within the profession influences how the role is perceived, approaches to autonomy and teamwork, and the uptake of new technologies. Younger cohorts-especially Generation Z (born after 1995)- tend to be more open to change, place a higher value on work–life balance, and have stronger expectations regarding autonomy and development, while also showing increased risks of isolation, anxiety, uncertainty, and depression (Chicca & Shellenbarger, 2018).

This article analyses midwives' professional autonomy as a key driver of professionalisation, considering educational, psychological, generational, and systemic contexts. It is based on a non-systematic review of Polish and international literature and seeks to identify the main determinants of and barriers to developing midwives' autonomy in Poland.

1. Professional autonomy of midwives in Poland

In Poland, professionalisation began after the country regained independence, but the decisive transformation occurred in the 1990s. A milestone was the Act of 5 July 1996 on the Professions of Nurse and Midwife,[2] which granted midwives the right to independently provide health services in obstetric, gynaecological, and neonatal care (Bączyk-Rozwadowska, 2019; Karkowska, 2007; Wyrębek et al., 2024). The Act also opened the way for private practice and introduced a duty to maintain up-to-date knowledge through postgraduate education, thereby underpinning professional standards of care[3] (see also: Szlendak, 2000). The legal recognition of independent practice laid the groundwork for the Regulation of the Minister of Health and Social Welfare of 2 September 1997 on the scope and types of preventive, diagnostic, therapeutic and rehabilitative services performed independently by nurses and by midwives without a physician's order.[4] This regulation defined the range of services and procedures that midwives may perform autonomously, specified required qualifications, and noted that physicians should recognise midwives as co-participants in the care process (Karkowska, 2007). These changes, in turn, led to the Regulation of the Minister of Health and Social Welfare of 17 December 1998 on postgraduate education for nurses and midwives.[5] It established a new postgraduate training system with four forms: specialist training programmes, qualification courses, specialist courses, and continuing-education courses. For the first time in midwifery education, a state examination was introduced as the final element of specialist training. Postgraduate education became a key lever of autonomy, enabling midwives to acquire new competencies with a fundamental impact on care quality and women's safety (Regulation of the Minister of Health and Social Welfare, 1998; Szlendak, 2000). The first and crucial enhancement concerned physical assessment skills; the initial specialist curricula were prepared and approved by the Minister in 2000.[6] Another major step was granting rights to prescribe selected medicines, issue prescriptions, and refer for specified diagnostic tests (Grabowska et al., 2018; Zarzeka et al., 2018).

With regard to education, in line with EU requirements, since 2003 the only path to qualification as a midwife has been a three-year bachelor's degree at a medical university. Graduates may then pursue a master's degree or continue education through courses and specialisations, or via postgraduate programmes such as the Executive Master of Business Administration (EMBA) in healthcare (Wyrębek et al., 2024).

Under the Regulation of the Minister of Health of 28 June 2019 on education standards for the midwifery profession, first-cycle (bachelor's) studies in midwifery last at least six semesters and include no fewer than 4,600 teaching hours, of which at least 2,300 are practical.[7] Core areas include obstetrics and gynaecology, neonatology and paediatrics,

2 Sejm Rzeczypospolitej Polskiej. (1996). *Ustawa z dnia 5 lipca 1996 r. o zawodach pielęgniarki i położnej* [Act of 5 July 1996 on the professions of nurse and midwife]. *Dziennik Ustaw*, 1996(91), poz. 410. Retrieved from https://isap.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=wdu19960910410

3 Ibidem.

4 Ministerstwo Zdrowia i Opieki Społecznej. (1997). *Rozporządzenie Ministra Zdrowia i Opieki Społecznej z dnia 2 września 1997 r. w sprawie zakresu i rodzaju świadczeń zapobiegawczych, diagnostycznych, leczniczych i rehabilitacyjnych, wykonywanych przez pielęgniarkę samodzielnie, bez zlecenia lekarskiego, oraz zakresu i rodzaju takich świadczeń wykonywanych przez położną samodzielnie* [Regulation of the Minister of Health and Social Care of 2 September 1997 on the scope and type of preventive, diagnostic, therapeutic and rehabilitation services performed independently by a nurse without a physician's referral, and the scope and type of such services performed independently by a midwife]. *Dziennik Ustaw*, 1997(116), poz. 750. Retrieved from https://isap.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU19971160750

5 Ministerstwo Zdrowia i Opieki Społecznej. (1998). *Rozporządzenie Ministra Zdrowia i Opieki Społecznej z dnia 17 grudnia 1998 roku w sprawie kształcenia podyplomowego pielęgniarek i położnych* [Regulation of the Minister of Health and Social Care of 17 December 1998 on postgraduate education of nurses and midwives]. *Dziennik Ustaw*, 1998(161), poz. 1110. Retrieved from https://isap.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU19981611110

6 Ibidem.

7 Ministerstwo Nauki i Szkolnictwa Wyższego. (2019). *Rozporządzenie z dnia 26 lipca 2019 r. w sprawie standardów kształcenia przygotowującego do wykonywania zawodu lekarza, lekarza dentysty, farmaceuty, pielęgniarki, położnej, diagnosty laboratoryjnego, fizjoterapeuty i ratownika medycznego* [Regulation of 26 July 2019 on education standards preparing for the practice of physician, dentist, pharmacist, nurse, midwife, laboratory diagnostician, physiotherapist and paramedic]. *Dziennik Ustaw*, 2019, poz. 1573. Retrieved from https://isap.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU20190001573

fundamentals of health care and health promotion, pharmacology, pathophysiology, diagnostics, and the basics of law, ethics, and communication.

Upon completion of the bachelor's degree, a midwife is qualified to independently, among other things: manage physiological labour and birth and provide intrapartum care; recognise abnormalities in pregnancy, labour, and the puerperium and refer the woman to a physician; deliver antenatal and postnatal education and provide preventive services and newborn care. Second-cycle (master's) studies last four semesters and are intended for bachelor-qualified midwives. They broaden knowledge and skills and prepare graduates to act as leaders of perinatal care, health educators, researchers, and clinical consultants.

The curriculum includes advanced obstetric and neonatal care, research methodology and biostatistics, organisation and management of health services, and professional ethics and legal aspects. A master-qualified midwife is prepared to conduct research and implement evidence-based practice (EBP), take on managerial roles in health-care teams, provide advanced health education, develop and implement care standards, and engage in population-level prevention and health promotion.[8] The transformation of midwifery education and the evolving scope of practice are closely aligned with the postgraduate training system, allowing midwives to gain new competencies in line with labour-market needs and their own ambitions and capacities. While Poland's educational system prepares midwives for autonomous practice, the health-care system-both inpatient (hospital) and community/family care-does not fully utilise their competencies or recognise their potential. Although autonomy is not restricted by law, its exercise is hampered by organisational barriers, limited systemic support, and public scepticism (Bączek et al., 2023). As shown in a study published in the European Journal of Midwifery, women's awareness in Poland of midwives' professional competencies is limited. The roles most often indicated were lactation education (78.7%) and perinatal care (78.9%). Far fewer women knew that midwives may prescribe medicines (23.1%) or collect cervical cytology samples (24.4%) (Wyrębek et al., 2024). In a study on the role of midwives in infertility care in Poland by Neneman et al. (2019), only 4.95% of couples believed a midwife was competent to perform ultrasound. Moreover, just 22.77% of respondents considered menstrual-cycle observation part of a midwife's remit, and 21.78% believed lifestyle education fell within the role. Only 7.92% of women reported that a midwife had performed cytology or a swab, and 6.93% of couples confirmed being referred for tests by a midwife (Neneman et al., 2019).

2. Psychological resources and professional autonomy

Psychological resources such as resilience, self-confidence, reflective capacity, empathy, and emotion regulation underpin midwives' professional autonomy. Developing these resources affects not only the quality of care for women but also midwives' own well-being.

Resilience-defined as the capacity to adaptively respond to adversity, stress, and workplace pressures-plays a particularly important role. Caiazzo et al. report that midwives with higher resilience exhibit markedly better subjective well-being (SWB), encompassing both life satisfaction and emotional well-being. In Italian maternity settings, moderate or high resilience correlated with greater job satisfaction and lower negative affect. Resilience thus not only supports coping with pressure but also protects against burnout and the emotional impact of stressors (Caiazzo et al., 2019). These personal skills help midwives remain calm and confident in daily practice, especially in difficult and unpredictable clinical situations (Sabzevari & Rad, 2019).

8 Ministerstwo Nauki i Szkolnictwa Wyższego. (2019). *Rozporządzenie z dnia 26 lipca 2019 r. w sprawie standardów kształcenia przygotowującego do wykonywania zawodu lekarza, lekarza dentysty, farmaceuty, pielęgniarki, położnej, diagnosty laboratoryjnego, fizjoterapeuty i ratownika medycznego* [Regulation of 26 July 2019 on education standards preparing for the practice of physician, dentist, pharmacist, nurse, midwife, laboratory diagnostician, physiotherapist and paramedic]. *Dziennik Ustaw*, 2019, poz. 1573. Retrieved from https://isap.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU20190001573

Perceived self-efficacy-defined by Albert Bandura as a person's belief in their capacity to achieve desired outcomes-also shapes professional autonomy (Bandura, 1997). Strong self-efficacy helps individuals face challenges and persist toward goals; low self-efficacy can have the opposite effect, fostering avoidance behaviours that undermine outcomes (Waddington, 2023). In eastern Iran, Azmoude et al. found a strong association between knowledge, self-rated competence, and actual implementation of evidence-based practice (EBP): midwives with higher self-efficacy more frequently engaged in guideline-concordant actions (Azmoude et al., 2017). In a cross-sectional study from China, Jiang et al. observed that moderate self-efficacy may be associated with burnout risk. Low self-appraisal and a weak sense of agency negatively affected both care quality and decisions to remain in the profession (Jiang et al., 2020). Polish research likewise links self-efficacy with autonomous decision-making: midwives with higher self-efficacy more often undertake independent clinical interventions (e.g., use of upright positions in labour), report higher job satisfaction, and experience less burnout (Guzewicz & Sierakowska, 2022).

The ability to cope with stress is another resource that may influence autonomous practice. A meta-analysis by Gheshlagh et al. showed that 71% of Iranian midwives experience high occupational stress, regardless of age or tenure. Such widespread exposure to chronic stress raises the risk of professional errors and reduces job satisfaction. The authors call for programmes to strengthen stress-management competencies, which could support autonomy and care quality alike (Gheshlagh et al., 2021). Moran et al.'s review also details links between coping, well-being, and professional resilience. Many workplace stressors-systemic barriers, workload, lack of organisational support-can become developmental opportunities when midwives possess adaptive mechanisms. Supportive team relationships, opportunities for independent decision-making, and mentorship were identified as protective factors that enhance resilience and job satisfaction (Moran et al., 2023).

Taken together, the evidence suggests that professional autonomy is closely intertwined with psychological resources. Resilience, belief in one's capabilities, and stress-coping skills reinforce one another and support autonomous decision-making, improve care quality, and protect against burnout. Strengthening these resources should be an objective of individual professional development and a deliberate priority of educational and managerial policy in the health system.

3. Generational differences and perceptions of autonomy among midwives

Contemporary midwifery brings together multiple generations-from those just starting their careers to those with decades of experience. Generation Z (born after 1995) is only beginning to assume active roles in the profession, bringing new values, expectations, and competencies that can significantly affect team functioning and how autonomy is understood and enacted in clinical practice (Chicca & Shellenbarger, 2018). As Singh et al. note, this generation came of age in a technology-saturated world shaped by digitalisation, social media, and rapid information flow. They are comfortable with multitasking and instant access to knowledge but may approach work differently from previous cohorts. Without recognising their needs and characteristics, organisations-including health care-will struggle to retain them (Singh & Dangmei, 2016).

In midwifery specifically, Kool et al. describe the experiences of newly qualified Generation Z midwives in the Netherlands. The first years of practice are particularly demanding due to the autonomous nature of the role and the responsibility it entails. The importance of being part of a team and of relationship-building within midwifery practice was not necessarily perceived as a value. Younger midwives also reported a strong need for work–life balance-something not always understood by more experienced colleagues (Kool et al., 2023). Tan and Chin likewise found marked intergenerational differences in nurses' professional attitudes and values. Younger cohorts emphasise work–life balance, whereas for older colleagues work more often defines a good life. Younger generations also seek greater power and autonomy at work, along with recognition and respect (Tan & Chin, 2023).

By contrast, older generations-such as Generation X (born 1965–1980)-grew up under different socio-economic and cultural conditions. Work was often viewed as a duty, sometimes embedded in family tradition, with success equated with advancement, prestige, and stability. Gümüşdaş et al. show that Generation X midwives were less likely to have chosen the profession voluntarily compared with Generation Y (born 1981–1994) and tended to adopt a more conservative stance toward professional power. Younger cohorts displayed higher professional development and motivation, which can create tension when differing work styles meet within one team (Gümüşdaş et al., 2021).

Understanding the specificity of Generation Z-now entering midwifery in greater numbers-is essential not only for building cohesive teams but also for the future of the profession itself. Their drive for self-realisation, digital fluency, openness to change, and ethical sensitivity can be powerful assets-provided workplaces recognise and support this potential. At the same time, older generations offer stability, experience, and valuable organisational perspective. Well-functioning midwifery teams combine youthful energy and freshness with experience and wisdom-regardless of generational differences.

At the individual level, autonomy also hinges on psychological resources such as resilience, self-efficacy, and stress-coping skills. Strong personal resources enable midwives to meet clinical challenges, make independent decisions, and shield themselves from burnout. Supporting these competencies should therefore be a priority for midwives themselves, leadership, and the education system.

Additionally, today's midwifery teams face challenges stemming from generational differences. Younger midwives from Generation Z bring fresh perspectives, openness to change, and digital fluency but often need stability and mentorship that current working conditions may not provide. Older generations, while sometimes more conservative in outlook, offer invaluable experience and organisational insight. Harnessing these complementary assets presents a major opportunity for the profession's development.

Poland now has the chance to fully realise the professional potential of midwives-thanks to a well-designed education system and clear legal frameworks. This will require a shift in how the midwife's role is perceived-both socially and within the health-care system-and the creation of work environments that actively support autonomy, development, and well-being.

4. Conclusion

The professional reality of Polish midwives is shaped by systemic, educational, psychological, and generational factors that together determine the degree of professional autonomy. Although, since the 1990s, the legal and formal frameworks have steadily expanded midwives' scope of practice, autonomy in day-to-day care remains underutilised. Legislation allows midwives to manage physiological birth, prescribe medicines, order diagnostic tests, and run independent practice, while the EU-aligned education system prepares them to perform these tasks at a high standard.

In practice, however, real-world independence is constrained by organisational barriers, limited systemic support, and low public awareness of midwives' competencies. Many women-and at times other health-care team members-do not perceive midwives as fully autonomous professionals.

Limitations

This article is based on a non-systematic literature review, which limits the representativeness of available scientific evidence. The cited sources offer valuable insights into midwives' autonomy and its determinants, yet selection was driven by availability and currency. To robustly assess the real impact of psychological, systemic, and generational factors on the level of midwives' autonomy in Poland, empirical studies are needed to provide objective data that can inform health-policy changes supporting the development of midwives' professional identity.

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Communicative impulsivity, benevolence and the success of interpersonal communication of older adults

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Olena Kovalenko[a]

[a] *Olena Kovalenko, https://orcid.org/0000-0001-5395-2329,*
Institute of Management and Social Affairs, University of the National Education Commission, Krakow, Poland.
Corresponding author: kleoolena@gmail.com

Abstract: The aim of the study was to explore the features of communicative impulsivity and benevolence among older adults and to compare these features in individuals with different socio-demographic and psychological characteristics, specifically focusing on those whose communication is more or less successful. Communicative impulsivity and benevolence are personality traits that influence the success of older individuals in social interactions. The study included 263 participants aged 57 to 86. The Communicative Impulsivity Level Questionnaire by V.A. Losenkov and the Benevolence Scale by W.K. Campbell were used, alongside additional data collection on respondents' personal characteristics. The findings revealed that most older individuals exhibit moderate levels of communicative impulsivity and benevolence, maintaining positive but selective social interactions. A statistically significant correlation was found between communicative impulsivity and success in interpersonal communication, with lower impulsivity linked to greater social engagement and life satisfaction. However, no significant correlation was found between benevolence and communication success, as communication opportunities and life satisfaction remained consistent regardless of benevolence levels. Factors such as loneliness, attitude toward life, and living conditions influence both communicative impulsivity and benevolence. Those experiencing loneliness tend to be less benevolent and more reactive to external circumstances, while older adults living with family and actively communicating demonstrate greater self-control and positivity in interactions. Employed individuals, older men, and those satisfied with their lives also exhibit better communication regulation. No significant correlations were found between these traits and age, education, place of residence, or the desire to change one's life. A significant negative correlation was found between communicative impulsivity and benevolence, with higher impulsivity linked to lower benevolence. These findings highlight the importance of self-regulation in fostering effective interpersonal communication in old age.
Keywords: benevolence, communicative impulsivity, interpersonal communication, older adults, success of interpersonal communication

1. Introduction

Late adulthood represents an important stage of human life, characterized by significant changes. Interpersonal communication becomes the leading activity during this period, as older adults address vital tasks and challenges through social interactions. The achievement of participants' goals is the primary aim of any communication. When this occurs, a consensus is reached among the participants, indicating that the communication has been successful. Several factors contribute to the success of communication in late adulthood, with personality traits being particularly important. The issues surrounding the success of interpersonal communication have gained considerable interest among psychology researchers. However, the factors and conditions that facilitate successful interpersonal communication in late adulthood have not been sufficiently studied.

1.1. Success of interpersonal communication

Interpersonal communication among older adults is a process that forms emotional relationships with the people around them. It consists of mutual processes involving emotional attitudes, social cognition, and actions. Success is an important characteristic of interpersonal communication, as it reflects the quality of interpersonal relationships and individuals' satisfaction with them.

The success of interpersonal communication is manifested through the achievement and main-

tenance of psychological contact with a partner, which helps stabilize relationships at an ideal stage of development. This success relies on compatibility, mutual adaptation, and satisfaction achieved through the flexible adjustment of skills, states, goals, and methods of influence as circumstances change. Older adults who communicate successfully tend to be psychologically more prosperous, possess higher self-esteem, enjoy a greater sense of existential completeness, and experience a meaningful life along with the realization of their potential.

1.2. Factors influencing the success of interpersonal communication

The success of interpersonal communication is determined by technical, psychophysiological, and socio-cultural factors. Technical factors include the strength and speed of mutual information transfer, as well as the availability of means for transmitting and receiving information, such as phones, smartphones, computers, and the Internet. Psychophysiological factors pertain to the participants' states, including mood (such as cheerfulness), the absence of strong pain or excitement, and other emotional conditions. Socio-cultural factors encompass the symbols used in communication, the language and system of concepts, communication rules, and the roles and positions of the participants, along with the feedback provided during interactions.

The success of interpersonal communication is influenced by both external and internal factors (Kovalenko, 2015). External factors include the communication situation and environment, the personality of the communication partner, and the proximity of the partners to each other. Internal factors consist of the psychological characteristics of the partners, such as listening skills, observation, truthfulness, empathy, and authority.

1.3. Criteria and indicators of interpersonal communication success

There are various criteria for the success of interpersonal communication, including psychological closeness, trusting relationships, satisfaction with life and existing communication, and the absence of difficulties, tension, and shyness. Psychological indicators of successful informal communication include spontaneity, ease of interaction, contact skills, and communicative compatibility.

Communicative creativity is also important for successful interpersonal communication. It is a stable personality trait that encompasses intellectual, emotional, and behavioral components. These components contribute to non-standard solutions in communication situations, fostering creativity, generating original ideas and methods of communication, and developing ideal behavioral strategies. Indicators of communicative creativity include ease of communication, a propensity for self-presentation, independence, a low level of conflict, emotional stability, a tendency to manipulate, expressiveness, and communicative competence. Individuals who are creative in communication typically exhibit higher levels of sociability, social intelligence, and other communicative qualities (Carter, 2015).

The quality of relationships formed during interpersonal communication and the fulfillment of relational needs serve as evidence of the success of such communication (Danziger, 2016; Walker, 2023). Additionally, the ability to find productive ways to resolve conflicts that may arise in interpersonal communication is crucial (Perrone-McGovern et al., 2014; Walker, 2023). The way conflicts are managed is also important; well-managed conflict can lead to more rewarding and satisfying relationships (Rahim, 2023).

The success of interpersonal communication is influenced by certain psychological properties that can act as mechanisms of communication, such as identification, decentralization, empathy, and self-reflection. These properties help individuals overcome "clamps" that interfere with their active communication (Perrone-McGovern et al., 2014).

1.4. Communicative personality traits and the success of interpersonal communication

The success of interpersonal communication is deeply rooted in an individual's communicative potential – a complex system of socio-psychological characteristics that define a person's communicative capabilities.

This potential determines not only the manner and effectiveness of interactions but also the ability to foster meaningful relationships.

Social skills and abilities are particularly critical. As goal-directed and situationally appropriate behaviors, these skills are consciously regulated and tailored to specific contexts (Hargie, 2021). In older adulthood, these abilities support the formation of new connections and enhance communication quality. Mutual understanding forms the core of successful interpersonal exchange. It serves as both the internal foundation and the ultimate goal of communication. Rational comprehension of others, facilitated by speech and supported by awareness of interpersonal attitudes and relationship dynamics, is central to achieving mutual understanding.

Focusing on others – placing people at the center of one's value system – is another important condition for effective communication (Kovalenko, 2015). It involves cognitive and emotional processing, the ability to choose appropriate modes of interaction, and the capacity to recognize the individuality of others. Affective-oriented skills, such as offering emotional support, managing conflicts, and fostering a sense of calm, are especially valued in close interpersonal interactions. These factors tend to be more significant for women than for men (Danziger, 2016; Perrone-McGovern et al., 2014).

Communicative competence stands out as a pivotal determinant of interpersonal success. It comprises a multidimensional system that includes cognitive elements (awareness, psychological insight, perceptual ability), behavioral skills, and emotional components (attitudes, personal experiences, and relationship patterns). A particularly important aspect of this competence is the capacity to perceive and express non-verbal cues accurately (Eaves & Leathers, 2017; Hargie, 2021).

Sociability, a stable personality trait, also plays a key role in communication. It is expressed through the desire to interact, ease of initiating and maintaining conversations, social initiative, extroversion, and the expressive quality of interactions (Kovalenko, 2015). This disposition facilitates more frequent and more fulfilling interpersonal engagements.

Recent empirical research further enriches the theoretical framework of communicative personality traits. Pocnet et al. (2021) offer an in-depth review linking personality configurations with successful ageing, while Cone and Lee (2023) demonstrate how communication modes – particularly ICT versus face-to-face contact – impact emotional well-being in older adults during the COVID-19 pandemic. Lindner et al. (2022) underscore the dynamic nature of personality traits and their behavioral expressions in late life. Lombard's (2021) scoping review highlights the importance of person-centered communication in promoting well-being within long-term care contexts. Liao et al. (2025) show that social support mediates the relationship between personality and mental health, and Fu et al. (2024) document the transformation of personality profiles during the pandemic, with implications for psychological adaptation.

This emphasize the multifaceted and evolving nature of communicative personality traits in successful interpersonal communication, particularly in older adulthood.

1.5. Other personality traits and the success of interpersonal communication

Life experience, similarity in certain characteristics, self-understanding, the ability to step back and view a situation impartially, complexity (intellectual, moral, emotional, etc.), aesthetic inclinations, and social intelligence are important qualities for successful communication. A higher degree of personality fit contributes to the happiness and generally harmonious life of elderly spouses, as well as to their success in interpersonal communication (Brudek et al., 2018).

Activity is crucial for successful interpersonal communication. Activity refers to personal engagement and a certain (creative) attitude toward a communication partner and all structural elements of communication. Criteria for activity in communication include the initiative of the partners, their positive attitude toward communication, independence, awareness of self-regulation, volition, creativity, dynamic interaction, and the achievement of desired

results. The specificity of activity in informal interpersonal communication is that it lacks strict regulations regarding the roles that determine behavior.

Volitional qualities are also important for successful interpersonal communication, as deficiencies in volition often lead to an inability to communicate effectively and to control oneself (Kovalenko, 2015).

In a psychological sense, volition refers to conscious desire that translates into action. The presence of impulse and the absence of delays are essential for this desire to manifest. The reasons for wanting arise from objects that inspire desire: ideas that transform into personal desires. For example, "I want to improve my mood, which is why I want to communicate" reflects the desire of an elderly person. This desire generates an impulse, which is acted upon if no obstacles are present.

1.6. Communicative impulsivity, benevolence and the success of interpersonal communication

Communicative impulsivity and benevolence are linked to a person's communicative properties and volitional qualities. Communicative impulsivity refers to the personality trait characterized by a person's tendency to act under the influence of unstable external factors, circumstances, and emotions; it involves rapid changes in intentions. This trait can lead to low self-control in communication and activities, uncertainty regarding life goals, and instability in orientations and interests. It stands in contrast to purposefulness, perseverance, and self-control. A person may become more impulsive in communication when tired, emotionally affected, or experiencing issues with their nervous system. T. Abakirova (Kovalenko, 2015) analyzed communicative impulsivity in the context of communicative properties that depend on a person's temperament. These properties relate to the characteristics of individuals' verbal and non-verbal interactions and are manifested through vulnerability, emotionality, and anxiety.

Benevolence, on the other hand, is a personality trait associated with a person's positive emotional attitude toward others and is expressed through inner affection, a desire to communicate, attentiveness, cooperation, and assistance. It reflects an intention or a good deed toward others and is closely related to trust in interpersonal relationships, which facilitates easier and more effective communication (Levin et al., 2016). McCann (2017) found that the more positively younger people perceive older adults as benevolent, the less they tend to avoid communication with older individuals. This perception significantly impacts the success of interpersonal communication among older adults. The elderly value benevolence in communication, making this trait essential for those who provide various services to them (Kourkouta & Papathanasiou, 2014).

2. Own research

2.1. Aims of the research

The dynamics of benevolence and communicative impulsivity are influenced by various factors, particularly age. However, the characteristics of these traits in older adults have not been sufficiently studied. Therefore, the aims of this research are to explore the features of communicative impulsivity and benevolence among older adults and to compare these features in individuals with different socio-demographic and psychological characteristics, specifically focusing on those whose communication is more or less successful.

2.2. Research questions

Based on the literature on the subject addressed in this article, we formulated the following research questions related to the communicative impulsivity and benevolence of older adults:

Q 1. What is the level of communicative impulsivity and benevolence of older adults?

Q 2. Are there correlations between communicative impulsivity and the success of interpersonal communication of older adults? The latter refers to the ability to communicate effectively with others and overall life satisfaction.

Q 3. Are there correlations between benevolence and the success of interpersonal communication of older adults?

Q 4. Do communicative impulsivity and benevolence vary among older adults of different ages, genders, educational levels, places of residence, living conditions, employment statuses, levels of everyday communication, social activities in public life, desire for life changes, feelings of loneliness, opportunities to connect with friends, and satisfaction with life?

Q 5. Are there correlations between communicative impulsivity and benevolence of older adults?

2.3. Participants

The study analyzed 263 individuals aged from 57 to 86 years, with an average age of 67.2 years. All participants are residents of Ukraine. Among them, 70 are men and 193 are women. In terms of education, 163 participants have secondary education, while 100 have higher education. At the time of the study, 190 individuals were not working, and 73 were employed. Regarding residence, 119 participants live in cities, 141 live in villages, and 3 did not specify their place of residence. Some participants were single and lived alone (67 individuals), while 187 lived with relatives (spouses, children, grandchildren, sisters, or parents); 9 participants did not provide information on this matter. 89 participants reported having relationships with relatives, friends, and neighbors, whereas 174 did not mention any communication or relationships with others in their daily lives, primarily engaging in housework, relaxation, or watching TV. 105 participants are active in social life, engaging in activities such as charity and volunteering, attending concerts and meetings, participating in various social service center groups, taking part in amateur performances, or getting involved in politics and local government. In contrast, 158 participants are not socially active. Among the participants, 67 assessed their level of loneliness as below zero, 186 rated it above zero, and 10 did not provide an assessment. 90 participants indicated that their opportunities to communicate with friends are insufficient, while 163 stated they have adequate opportunities; 10 participants did not respond. Lastly, 56 participants expressed dissatisfaction with their lives, while 197 reported being satisfied; 10 did not provide an answer.

2.4. Measures

The Communicative Impulsivity Level Questionnaire by V. A. Losenkov and the Benevolence Scale by W. K. Campbell (adapted into Russian by Labunskaja, Mendzheritskaya, and Breus, 2001) were utilized in the study. The first method consists of 20 items rated on a 4-point scale, which helps identify three levels of communicative impulsivity: high, average, and low. The Communication Impulsivity Level Questionnaire developed by Losenkov is a standardized diagnostic tool designed to measure levels of communicative impulsivity. The instrument demonstrates good internal consistency with Cronbach's alpha ranging from 0.78 to 0.84. Test-retest reliability was confirmed over a 3-week interval ($r = 0.81$), indicating temporal stability. Convergent validity was established through correlations with the Barratt Impulsiveness Scale (BIS-11), assertiveness scales, and measures of verbal aggression, supporting the theoretical foundations of the construct.

The second method includes 8 paired items and is designed to assess three levels of benevolent attitudes toward others: high, average, and low. The Benevolence Scale, developed to assess prosocial tendencies and interpersonal goodwill, also shows strong psychometric properties. Reliability indicators exceed 0.80 (Cronbach's α), and construct validity has been supported through positive correlations with agreeableness (as measured by Big Five tools), as well as negative associations with hostility and cynicism, confirming convergent validity.

Additionally, data regarding respondents' age, sex, place of residence, living conditions, employment status, daily activity patterns, social activity in public life, level of real communication ability, feelings of loneliness, and life satisfaction were recorded. Participants were also asked what they would like to do at that moment and what they would change in their lives if given the opportunity. Satisfaction with life

and existing relationships (specifically communication with friends) were used as indicators of older adults` success in interpersonal communication.

Research data were processed using mathematical statistics, including descriptive statistics (mean value and standard deviation), Pearson correlation coefficient, and Student's t-test. All calculations were performed using SPSS version 20.

The research was conducted between October 2018 and March 2021.

3. Research results

The success of interpersonal communication is associated with a person's desire to change something in their life. When asked what they would like to do if given the opportunity, 24 participants (9.13%) did not answer; 14 participants (5.32%) indicated they would like to do nothing or were unsure of what they would like to do; and 11 participants (4.18%) expressed a desire to continue doing what they are currently engaged in. The responses from the remaining 214 individuals (81.37%) were categorized as follows (some participants provided multiple answers):

1. Travel: 44 participants (16.73%) would like to travel within Ukraine and abroad or go on vacation. For example, L.V., a 76-year-old retiree, expressed a desire to vacation in an exotic location, while P.I., a 75-year-old retiree, wants "to see the world and to show himself".
2. Work in Specialty: 43 participants (16.35%) expressed a desire to work in their field of expertise, emphasizing the importance of employment. M.V., a 60-year-old woman, wishes to run a private clinic.
3. Hobbies and Favorite Activities: 39 participants (14.38%) want to spend time enjoying their hobbies, including needlework, drawing, fishing, hunting, playing the piano, flower farming, and pigeon fancying. I.P., a 62-year-old man, would like to restore old cars.
4. Rest and Relaxation: 31 participants (11.79%) desire rest, wanting to relax, sleep, watch TV shows, visit a sanatorium, or go on vacation.
5. Communication and Care: 24 participants (9.13%) wish to communicate and take care of others, expressing a desire to connect with friends and family, help their children, and raise their grandchildren. L.V., a 75-year-old retiree, wants to spend more time in society.
6. Household Management: 13 participants (4.94%) expressed interest in managing a household, enjoying activities such as gardening, farming, and working on their country cottage. S.I., a 78-year-old retiree, would like to care for goats, sheep, and ostriches.
7. Learning and Intellectual Work: 12 participants (4.56%) wish to learn new things and engage in intellectual pursuits, such as acquiring new knowledge (learning foreign languages or using a computer) and reading books.
8. Sports and Physical Activity: 11 participants (4.18%) are interested in sports and physical activities, including swimming, diving, and cycling.
9. Art Appreciation: 5 participants (1.90%) expressed interest in art, wanting to visit art exhibitions, museums, theaters, and cinemas.
10. Creative Writing: 4 participants (1.52%) are interested in writing, wishing to create their own books.
11. Other Interests: 6 participants (2.28%) provided varied responses. They expressed desires to volunteer, have more children, learn computer skills, and engage in politics. For instance, V.S., a 76-year-old retiree, wants to preach the good news of God's Kingdom.

The next question addressed the participants' desired changes in their own lives. Eleven participants (4.18%) did not answer the question; 3 participants (1.14%) were unsure about what to change; and 93 participants (35.36%) indicated that they would like to change nothing in their lives. The responses from the remaining 156 individuals (59.32%) were categorized as follows:

1. Desire for Family and Social Connections: 32 participants (12.17%) would like to have more meetings with family and improve their communication with others. For instance, V.I.,

a 69-year-old retiree, expressed a desire to make more friends.

2. Health Improvement: 21 participants (7.98%) wish to improve their health. T.S., a 77-year-old woman, wants to rid herself of bad habits.
3. Job or Occupational Change: 20 participants (7.60%) would like to change their job or occupation, seeking to continue working, run a business, or find higher-paying employment.
4. Change of Residence: 20 participants (7.60%) expressed a desire to change their place of residence. L.S., a 74-year-old woman, would like to return to the village, while S.T., a 66-year-old woman, wishes to change her country of residence.
5. Travel Aspirations: 19 participants (7.22%) expressed a desire to travel, wanting to see the world and visit different places.
6. Improvement of Living Conditions: 18 participants (6.84%) would like to enhance their own and their family's living conditions, such as buying a house for their children or grandchildren or acquiring a larger home. V.P., a 71-year-old man, would like to move from an apartment to a private house.
7. Lifestyle Changes: 15 participants (5.70%) wish to change their way of life, seeking a more active lifestyle, more time for relaxation, and opportunities to attend art events, fish, and take care of themselves. S.P., a 61-year-old woman, expressed a desire to return to life in the USSR.
8. Relationship Changes: 7 participants (2.66%) would like to improve their relationships with relatives, wanting to be more attentive to their children, return to a former spouse, or have a second child. M.S., a 62-year-old woman, noted that she would not have married for the first time, while P.P., a 67-year-old man, expressed that he would have married earlier.
9. Desire to Change Age: 7 participants (2.66%) wish to change their age, wanting to regain their youth, stop aging, or look younger.
10. Education Changes: 5 participants (1.90%) would like to further their education, aiming to obtain secondary or higher education or enroll in a different university.
11. Financial Aspirations: 5 participants (1.90%) expressed a desire for more money, seeking a better retirement pension or additional income.
12. Other Responses: 10 participants (3.80%) provided varied responses. K.M., a 77-year-old retiree, desires peace and tranquility; P.I., a 63-year-old man, wishes to see a change in government to better serve the country and its people; and H.S., a 60-year-old man, wants to increase salaries for teachers.

Figure 1. illustrates the levels of communicative impulsivity among older adults. Average level was 46.43

Most older participants (239 individuals, 90.87%) exhibit an average level of communicative impulsivity, while 21 (7.99%) individuals have a low level, and 3 (1.14%) individuals have a high level.

Figure 2. illustrates the levels of benevolence of older adults.

Among the older participants, 84 (31.94%) are considered benevolent, 143 (54.37%) are somewhat less benevolent, and 36 (13.69%) are categorized as the least benevolent.

We found a correlation between the levels of communicative impulsivity and benevolence among older participants, using the data obtained from the Communicative Impulsivity Level Questionnaire by V. A. Losenkov and the Benevolence Scale by W. K.

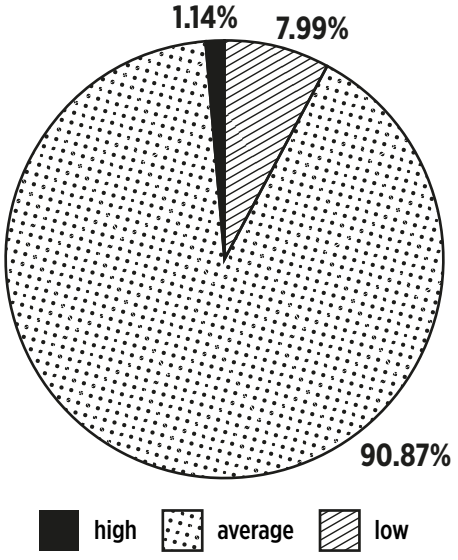

Figure 1. High, average and low levels of communicative impulsivity of older adults. Source: own research.

Campbell, analyzed with the Pearson correlation coefficient. The correlation coefficient (r_s) was -0.361, which is significant at the 0.01 level (2-tailed). This indicates a moderate negative correlation between these two data series, suggesting that as the level of communicative impulsivity increases, the level of benevolence tends to decrease. The strength of the correlation is considered average.

We compared the features of communicative impulsivity and benevolence among older adults of different ages (up to 67 years and over 68 years), sexes (men and women), educational levels (secondary or higher), employment status (currently working or not), places of residence (city or village), living conditions (alone or with relatives), existence of communication in everyday life (existing or not), social activities in public life (active or not active), desire to change their lives (present or absent), feelings of loneliness (lonely or not), real opportunities to communicate with friends (sufficient or insufficient), and satisfaction with life (dissatisfied or satisfied).

Research data were processed using Student's t-test. The null hypothesis (H0) posits the absence of differences between variables (the levels of communicative impulsivity and benevolence among older adults with different characteristics), while the alternative hypothesis (H1) suggests that significant differences do exist.

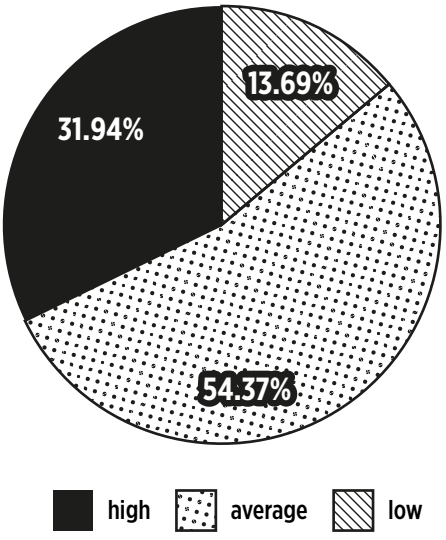

Figure 2. High, average and low levels of benevolence of older adults Source: own research.

Table 1 presents the means and t-values for the variables based on the indicator of communicative impulsivity.

The null hypothesis (H0), which posits the absence of differences between the levels of communicative impulsivity among older adults based on indicators such as age, educational level, place of residence, living conditions, existence of communication, and social activity in public life, is confirmed. Conversely, the alternative hypothesis (H1), which suggests significant differences in the levels of communicative impulsivity based on indicators such as sex, employment status, feelings of loneliness, opportunities to communicate with friends, and satisfaction with life, is also confirmed. The level of communicative impulsivity among older adults is higher among the following groups: women, retirees,

Table 1. Communicative impulsivity of older adults (N=263)

FACTOR		MEAN	*t-crit.*
Age	Up to 67	46.67	0.663
	Over 68	46.02	
Sex	Men	44.09	3.011
	Women	47.27	
Educational level	Secondary	46.62	0.462
	Higher	46.17	
Employment	Work	44.68	2.289
	Retiree	47.09	
Place of residence	City	46.53	0.034
	Village	46.49	
Living conditions	Alone	47.47	1.274
	With relatives	46.07	
Existence of communication	Not exist	46.88	1.336
	Exist	45.54	
Social activity in public life	Not active	46.95	1.354
	Active	45.64	
Desire to change their lives	Not have	46.19	0.480
	Have	46.68	
Feeling of loneliness	Lonely	49.00	3.099
	Not lonely	45.69	
Opportunity to communicate with friends	Not enough	47.90	2.033
	Enough	45.86	
Satisfaction with life	Dissatisfied	50.18	4.107
	Satisfied	45.55	

α=0.05, crit. value=1.97. Source: own research

Table 2. Benevolence of older adults (N=263)

FACTOR		MEAN	*t-crit.*
Age	Up to 67	4.62	0.065
	Over 68	4.64	
Sex	Men	4.70	0.405
	Women	4.60	
Educational level	Secondary	4.59	0.348
	Higher	4.67	
Employment	Work	4.85	1.279
	Retiree	4.54	
Place of residence	City	4.53	0.886
	Village	4.72	
Living conditions	Alone	4.24	2.174
	With relatives	4.77	
Existence of communication	Not exist	4.42	2.731
	Exist	5.03	
Social activity in public life	Not active	4.41	2.558
	Active	4.96	
Desire to change their lives	Not have	4.44	1.135
	Have	4.70	
Feeling of loneliness	Lonely	4.24	2.192
	Not lonely	4.78	
Opportunity to communicate with friends	Not enough	4.49	0.919
	Enough	4.71	
Satisfaction with life	Dissatisfied	4.29	1.764
	Satisfied	4.74	

α=0.05, crit. value=1.97. Source: own research

those who feel lonely, individuals who lack sufficient opportunities to communicate with friends, and those who are dissatisfied with life. In contrast, the level of communicative impulsivity is lower among men, working individuals, those who do not feel lonely, participants with adequate opportunities to communicate with friends, and those who are satisfied with life. Older adults who are dissatisfied with their lives have the highest level of communicative impulsivity (mean score of 50.18), followed closely by those who feel lonely (mean score of 49.00). Conversely, older adults who are employed have the lowest level of communicative impulsivity (mean score of 44.68), along with men (mean score of 44.09).

Table 2 presents the means and t-values for the variables based on the indicator of benevolence.

The null hypothesis (H0), which posits the absence of differences between the levels of benevolence among older adults based on indicators such as age, sex, educational level, employment status, place of residence, desire to change their lives, opportunities to communicate with friends, and satisfaction with life, is confirmed. In contrast, the alternative hypothesis (H1), which suggests significant differences in the levels of benevolence based on indicators such as living conditions, existence of communication, social activity in public life, and feelings of loneliness, is also confirmed. The level of benevolence among older adults is higher for participants who live with relatives, do not feel lonely, engage in daily communication and relationships, and are socially active. Conversely, the level of benevolence is lower for those who live alone, feel lonely, lack daily communication and relationships, and are socially passive. Older adults who engage in daily communication and relationships have the highest level of benevolence (mean score of 5.03), followed closely by those who are socially active (mean score of 4.96). In contrast, older adults who live alone and feel lonely both have the lowest level of benevolence, with a mean score of 4.24.

Analysis using a Chi-squared test and component loadings derived from a factor analysis, aimed at understanding the relationship between impulsivity and benevolence has been made.

The Chi-squared test result indicates a value of 207.630. However, it is important to note that the degrees of freedom (df) are reported as -1, which suggests that the model is unidentified. This means that there may be an issue with the model specifications or data, preventing a valid interpretation of the Chi-squared statistic.

Component Loadings. Applied rotation method is promax.

Impulsivity: This variable has a loading of -0.827, indicating a strong negative relationship with the underlying component. The uniqueness value of 0.316 suggests that approximately 31.6% of the variance in impulsivity is not explained by the component.

Benevolence: Conversely, benevolence shows a loading of 0.827, reflecting a strong positive re-

lationship with the same underlying component. Like impulsivity, the uniqueness value for benevolence is also 0.316, indicating that a similar portion of its variance remains unexplained by the component.

These loadings suggest that impulsivity and benevolence are inversely related within the context of the factor being analyzed. The strong loadings indicate that these constructs are significant contributors to the underlying factor.

Component Characteristics. The component characteristics are summarized in both the unrotated and rotated solutions:

Eigenvalue: In both cases, the eigenvalue for Component 1 is 1.368. This indicates that this component explains more variance than what would be expected by chance (which is typically 1.0 for random noise).

Proportion of Variance: The proportion of variance explained by Component 1 is 0.684 (68.4%), signifying that this single component accounts for a substantial amount of the variability in the data.

Cumulative Variance: The cumulative variance is also 0.684, indicating that all the explained variance is concentrated in this single component, reinforcing its significance in the analysis.

So, the results indicate a strong relationship between impulsivity and benevolence as captured by the single component identified in the factor analysis. However, the issues with the Chi-squared test highlight potential problems with the model that should be addressed in future analyses. Further investigation into the data and model specifications may be necessary to clarify these relationships and ensure robust conclusions.

4. Discussion of the results

The success of interpersonal communication is a key indicator of its quality. Among older adults, it is influenced by various external factors (technical, psychophysiological, and socio-cultural) as well as the internal characteristics of communication partners (such as their socio-psychological traits, individual psychological qualities, and communication skills). Interpersonal communication success depends on multiple personality traits and qualities, including mutual understanding, attentiveness to others, decentralization, empathy, self-reflection, tolerance, aggressiveness, shyness, anxiety, communicative competence, sociability, life experience, similarity in certain characteristics, self-awareness, and volitional qualities. Two personality traits particularly associated with successful interpersonal communication in older adults are communicative impulsivity and benevolence. Additionally, this success depends on an individual's desire to change their life.

Our research revealed that more than half of older adults would like to change certain aspects of their lives. However, a significant portion – approximately one-third of the participants – expressed no desire for change. This group may consist of individuals who are satisfied with their lives. These results align with qualitative studies on successful aging, which indicate that older adults often balance acceptance of past experiences with a desire for engagement and personal growth (Reichstadt et al., 2010). However, older adults who do not wish to change their lives may also be dissatisfied and/or believe that it is too late to make meaningful adjustments. The most common areas in which older adults seek change include communication and relationships with relatives, health, work, place of residence, living conditions, and overall lifestyle. Additionally, many older adults express a desire to engage in new activities or modify existing ones. A majority of them aspire to travel, continue working, or explore various forms of relaxation and personal fulfillment. These activities include pursuing hobbies, engaging in sports, maintaining their households, acquiring new knowledge, and expressing themselves through artistic endeavors. Social interaction plays a crucial role in their well-being. Maintaining communication within both their immediate and extended social circles is highly valued. Activities such as traveling and working not only provide opportunities for engagement but also contribute to a sense of purpose and belonging in later life.

Our study identified a small number of older adults with a low level of communicative impulsivity. These individuals tend to be purposeful, possess well-defined value orientations, demonstrate perseverance in achieving their goals, and strive to complete

tasks they have started. Their communication style is measured and deliberate, reflecting a preference for thoughtful interactions rather than spontaneous or emotionally driven exchanges. Conversely, we found very few older adults with a high level of communicative impulsivity. Those in this category struggle with self-regulation in conversations, often reacting quickly without much deliberation. Their impulsiveness in communication may lead to misunderstandings or difficulties in maintaining stable social interactions. The majority of older adults fall into the category of having a moderate level of communicative impulsivity. This suggests a balanced approach to communication, where they exhibit self-control in typical interactions while maintaining a degree of spontaneity when necessary. It also indicates a level of stability in their interests and communication patterns, which have been shaped over a lifetime of experiences. These findings may be attributed to the tendency of older adults to focus more on their current existence or reflect on their past life rather than actively adapting to new and unfamiliar situations. These results are consistent with developmental theories such as Baltes' Selective Optimization with Compensation, which describes how older adults strategically select and optimize social goals while compensating for declined capacities (Baltes & Baltes, 1990). With age, individuals often develop habitual ways of interacting and may find it challenging to adjust their communicative behavior to rapidly changing social contexts. Additionally, cognitive and emotional changes in later life can influence their ability to manage interactions in novel or unpredictable circumstances.

In old age, women, individuals who feel lonely, and those dissatisfied with life tend to experience greater difficulties with self-control in relationships and joint activities. These findings align with research by Stavrova, Ren, and Pronk (2021), which indicates that low self-control is often associated with negative intrapersonal outcomes and can have significant interpersonal consequences, particularly in relation to loneliness. Such individuals often lack purposefulness, and their interests remain unstable. This may be attributed to a decline in volitional self-regulation, a tendency to focus primarily on immediate personal concerns, and an inability to envision a meaningful future for themselves. A higher level of communicative impulsivity in older adults is significantly associated with stronger feelings of loneliness and increased dissatisfaction with life. Conversely, two-thirds of older men demonstrate greater purposefulness and perseverance in communication. These tendencies may stem from the influence of gender stereotypes and lifelong socialization, which shape expectations of typical male behavior. Purposefulness and perseverance in communication among older adults manifest in their active pursuit of meaningful engagements – such as seeking employment, maintaining family ties, expanding social networks, and participating in various communication communities. As a result, socially active older adults tend to maintain a more positive outlook on life, striving to remain engaged and purposeful. Moreover, older individuals with lower levels of communicative impulsivity are generally more successful in interpersonal interactions, as they have ample opportunities to communicate with friends and acquaintances. This social engagement contributes to higher life satisfaction and well-being, reinforcing the importance of maintaining strong social connections in later life.

More than half of the older participants exhibit selectivity in their social interactions – they are sincere and kind toward those who treat them well, provide care to those around them, and offer support to their closest social circle. However, they initially approach strangers with caution and suspicion, though this attitude tends to change with time and repeated interactions. The tendency of seniors to selectively engage with trustworthy others and to be cautious with strangers supports the Socioemotional Selectivity Theory, which posits that older adults prioritize emotionally meaningful relationships as time horizons shrink (Carstensen et al., 1999). Almost a third of the older participants demonstrate a consistently positive attitude toward others, including strangers. Nevertheless, we also identified a group of older adults who display a predominantly negative attitude toward others. This negativity may stem from various factors, such as living alone, lack of professional employment, dissatisfaction with life and health, and overall social isolation. Social

isolation and inactivity can lead to increased distrust and suspicion, thereby restricting their opportunities for relationship-building (Tan et al., 2024).

Social and socio-psychological factors are strongly linked to benevolence in old age. Older adults who are more positive toward others tend to have higher education, active employment, a sense of involvement in others' lives, cohabitation with family or friends, and greater social engagement. Those accustomed to frequent social interactions and diverse communication experiences are less likely to feel lonely and maintain a more favorable perception of others. In contrast, social isolation, living alone, and persistent loneliness are associated with a more negative perception of others, leading to a lack of willingness to give or expect mutual support and approval. Such individuals are often more suspicious and distrustful. Interestingly, benevolence is not directly linked to success in interpersonal communication among older adults, suggesting that effective social interaction does not necessarily depend on an individual's positive disposition toward others.

Additionally, communicative impulsivity and benevolence in old age are not associated with age as a demographic factor. This indicates that an older person's attitude toward others and ability to regulate their communication style remain stable over time and are not significantly affected by age-related changes in the nervous system. While some degree of cognitive or emotional change is expected with aging, our findings suggest that these transformations do not related to communicative impulsivity. This supports previous research that considers communicative impulsivity as a stable personality trait closely related to temperament and align with the Continuity Theory, which emphasizes consistency in behavior and personality over the life course despite biological aging (Atchley, 1989).

According to our study, higher levels of communicative impulsivity correspond to lower levels of benevolence (the relationship was confirmed by Chi-squared Test). Conversely, less impulsive older adults tend to demonstrate a more positive and accepting attitude toward others. Furthermore, purposefulness, perseverance, and self-control in words, behavior, and emotions are associated with greater empathy and a more positive approach to interpersonal relationships. These findings highlight the importance of self-regulation in fostering constructive social interactions among older adults.

5. Conclusion

1. Most older individuals exhibit average levels of communicative impulsivity and benevolence. They generally respond positively to others and regulate their behavior in normal social situations, displaying kindness but with a selective approach toward interpersonal relationships. A small number of older adults demonstrated low levels of communicative impulsivity, while very few had high impulsivity. Nearly one-third of the older participants displayed the highest levels of benevolence, while individuals with low benevolence were extremely rare.
2. A statistically significant correlation was found between communicative impulsivity and success in interpersonal communication. Older adults with lower levels of communicative impulsivity tend to have more opportunities for social interactions and report greater satisfaction with their lives.
3. No statistically significant correlation was found between benevolence and success in interpersonal communication. The availability of communication opportunities and life satisfaction remained consistent across older individuals, regardless of their level of benevolence.
4. Loneliness, attitude to life, and certain living conditions influence communicative impulsivity and benevolence in old age. Those who experience loneliness tend to be less benevolent and more susceptible to external circumstances and emotions. A more positive attitude toward others was observed among older individuals who live with family rather than alone and who actively communicate with relatives and acquaintances. Older men, employed individuals, those with sufficient communication opportunities, and those satisfied with their lives demonstrate greater self-control in communication. No statistically

significant correlations were found between benevolence and communicative impulsivity on the one hand and age, education level, place of residence, or desire to change one's life on the other hand.

5. A statistically significant negative correlation was found between communicative impulsivity and benevolence of older adults. Higher levels of their communicative impulsivity correspond to lower levels of their benevolence, while lower impulsivity is associated with greater benevolence.

6. Limitations and future research

While our study provides valuable insights, certain limitations must be acknowledged. One of them is the absence of a standardized psychometric tool to assess the structure and intensity of success in interpersonal communication. Although we included a detailed conceptual framework supported by empirical literature and used open-ended questions to capture participants' experiences, this qualitative approach does not allow for precise correlational analysis between communication success, communicative impulsivity, and benevolence. Future research should consider integrating validated instruments to quantitatively operationalize communication success in older adults and enable more robust statistical analyses.

The sample consisted exclusively of older adults from Ukraine and was not randomly selected. Therefore, the findings on communicative impulsivity and benevolence may not be fully generalizable to broader populations. Additionally, it is crucial to consider variability in mental development as a characteristic of aging. Future research should replicate this study on a larger, more diverse sample across different countries, utilizing robust sampling techniques to enhance the reliability and applicability of the findings. However, we assert that the revealed correlations in this study are reliable and contribute to the understanding of social interactions in old age.

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Coping styles and pain level in lung cancer patients: The mediating role of stress level and the moderating role of place of residence and gender[1]

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Agata Poręba-Chabros,[a] ✉ Magdalena Kolańska-Stronka[b]

[a] *Agata Poręba-Chabros*[1], *https://orcid.org/0000-0001-9322-4019*
[b] *Magdalena Kolańska-Stronka*[2,3], *https://orcid.org/0000-0003-2521-2950*
✉ *Corresponding author: agata.poreba-chabros@kul.pl*
[1] *The John Paul II Catholic University of Lublin, Poland*
[2] *SWPS University, Warsaw, Poland*
[3] *University of Zielona Góra, Poland*

Abstract: *Introduction:* Lung cancer is a type of cancer that negatively and strongly affects mental and physical functions. It is characterized by specific symptoms, including emotional ones, i.e. high levels of stress, feelings of insecurity and loss of security. These emotional effects can directly debilitate individuals, thereby increasing the risk of depression and anxiety disorders. The present study examined the variables that determine the psychological functioning of people with lung cancer. *Aim of the study:* This study examined the relationships between coping styles, stress levels and pain levels in lung cancer patients and whether these relationships were moderated by place of residence. *Methods:* A sample of 97 lung cancer patients completed questionnaires measuring coping styles (the Coping with Stress Inventory), perceived stress levels (the Perceived Stress Scale) and pain levels (the McGill Brief Pain Questionnaire). *Results:* Emotion-focused coping style was positively associated with higher levels of stress and pain, while task-focused coping style was negatively associated with it. Stress level fully mediated the association between emotion-focused coping and pain. The associations between emotion-focused coping, stress and pain were stronger in patients living in small towns than in patients from larger cities. *Conclusions:* An emotion-focused way of coping increases patients' stress levels, which in turn increases pain perception. This relationship is clear among patients from rural areas and small towns. The task-oriented approach is associated with lower stress. Stress acts as an explanatory mechanism for how different coping strategies affect pain perception. The results underscore the importance of interventions to improve coping skills, especially for rural patients who may have less access to medical resources and support. Shifting from an emotion-focused coping style to a task-focused coping style may help reduce stress and alleviate pain in patients with lung cancer.
Keywords: coping styles, lung cancer, stress

1. Introduction

Lung cancer is a type of cancer that negatively and strongly affects mental and physical functions (Malhotra, Malvezzi, Negri, La Vecchia & Boffetta, 2016). It is difficult to detect, and due to its location, it is characterized by specific symptoms, including emotional ones, i.e. high levels of stress, feelings of insecurity and loss of security (Zabora, Brintzenhofeszoc, Curbow, Hooker & Piantadosi, 2001). These emotional effects can directly weaken an individual's defense mechanisms, thus increasing the risk of depression and anxiety disorders (Van Den Hurk, Schellekens, Molema, Speckens & Van Der Drift, 2015). The literature notes that depression and anxiety in the course of cancer can exacerbate cancer symptoms (Chen, Tsai, Wu & Lin, 2015).

Studies show that coping styles mediate between perceptions of a situation as stressful (Surman & Janik, 2017) or stressful life events before cancer and perceptions of distress (Biggs, Brough & Drummond, 2017). Cancer pain has a significant impact

1 Article in Polish language: https://stowarzyszeniefidesetratio.pl/fer/63P_Pore.pdf

on cancer patients' quality of life, affecting physical, psychological and spiritual aspects (Chen et al., 2015). Much of the interest in coping stems from the observation that patients, when faced with persistent cancer pain, exhibit quite varied responses. In contrast, other patients cope poorly, report high levels of pain and feel depressed (Prasertsri, Holden, Keefe & Wilkie, 2011).

One approach to studying coping involves focusing on coping strategies, i.e., the specific efforts individuals make to cope with a particular stressful event (such as pain) (Prasertsri et al., 2011). Studies have shown significant differences between groups in terms of preoccupation with anxiety, denial/avoidance, fighting spirit, and feelings of hopelessness. In fact, in line with previous studies (Erhunmwunsee, Joshi, Conlon & Harpole, 2012), patients with low pain levels showed a significantly greater presence of fighting spirit, a strategy defined by optimism and determination to overcome the disease (Szymona-Pałkowska i in., 2016). The perception of pain control reduces pain-related stress and subsequently leads to improved functional status (Postolica, Iorga, Petrariu & Azoicai, 2017). Milfont and team (2021) showed that certain coping styles were associated with pain intensity (Milfont, Abrahamse & MacDonald, 2021).

A second, more recent approach to studying stress coping is to focus on coping styles. The findings of Prasertsri and team (2011) revealed a consistent pattern of between-group differences in pain quality, coping strategies and depression through coping styles. Compared to patients in the high anxiety group, patients in the repressive coping style group reported significantly less pain across multiple pain quality indicators and fewer depressive symptoms. Another important finding of this study was that patients in the repressive pain coping style group reported significantly less involvement in catastrophizing pain than patients in the defensive high anxiety group. Based on this, the following hypothesis is formulated:

H1. Coping styles are associated with pain levels:
- H1.1: Task-oriented coping reduces pain levels,
- H1.2: Emotion-oriented coping increases pain levels,
- H1.3: Avoidance-oriented coping increases pain levels.

Coping styles are related to the process by which stress occurs, as well as to a number of other factors that modify the relationship with stress and which are often treated as variables (Postolica et al., 2017). Studies have shown that coping styles related to fighting spirit, acceptance and positive evaluation were the most adaptive to recovery among cancer patients (Ellis, Lloyd, Wagland, Bailey & Molassiotis, 2013). The concept of coping style does not emphasize total constancy or rigidity in the process of coping with stress. Therefore, in the context of cancer, coping style should be understood as a type of disposition that is flexible and allows the individual to change strategies and adapt them to specific conditions (Wright i in., 2020). A recent study of patients diagnosed with lung cancer indicates that they most often activate adaptive coping methods to cope with the stress caused by the disease (van Montfort i in., 2020). A task-focused style predominates, while an avoidance- or emotion-focused style is less common. It is indicated that patients who use task-focused strategies are less likely to feel helpless. Other studies have shown that the coping style used by people cured of cancer can be a predictor of their quality of life (Wenninger i in., 2013). Thus, it can be assumed that:

H2: Coping styles are related to stress levels:
- H2.1: Task-oriented coping reduces stress levels,
- H2.2: Emotion-oriented coping increases stress levels,
- H2.3: Avoidance-oriented coping increases stress levels.

Research points to the complexity of the pain phenomenon and its relationship to stress. According to the "gate control" theory, pain is a complex phenomenon involving sensory-discrimination, cognitive-motivational and affective-motivational dimensions that are processed in parallel (Katz & Rosenbloom, 2015). It directly affects an individual's functioning through impairment. In the transactional model, pain can be both a negative effect of the stress coping process and its cause (Obbarius, Fischer, Liegl, Obbarius & Rose,

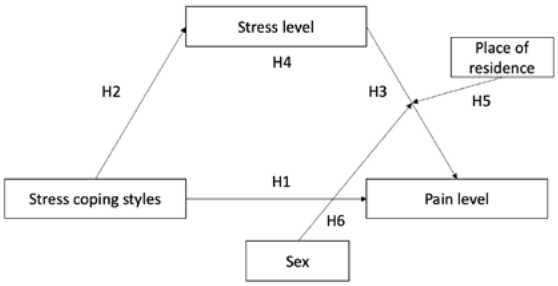

Figure 1. Stress level as a mediator of the relationship between coping styles and pain levels, and place of residence, and sex as moderators of mediation.

2021). By the authors of the concept, pain is treated as a somatic manifestation of difficulties resulting from psychological tension (Lazarus & Folkman, 1987). Research indicates that pain is associated with the experience of emotional states (Dueñas, Ojeda, Salazar, Mico & Failde, 2016). Emotions such as anxiety or sadness lower the pain threshold (Li, Liu, Hu & Meng, 2020), whereas a sense of security can raise it (Yang & Chang, 2019). Undoubtedly, cancer causes significant psychological suffering in patients (Dueñas et al., 2016). Previous studies have shown that the presence of pain in cancer patients is associated with mood disturbances (Šprah & Šoštarič, 2004) and constitutes both suffering in itself and a reflection of the significance of the disease (Khemiri et al., 2019). It can therefore be postulated that:

H3: Stress level is related to pain level.
H4: Stress level mediates the relationship between coping styles and pain.

Sociodemographic factors may also be significant. Patients from rural areas are less likely to receive radiotherapy and chemotherapy (Koopman, Hermanson, Diamond, Angell & Spiegel, 1998), and place of residence affects access to surgical treatment (Johnson, Hines, Johnson & Bayakly, 2014). Research indicates that people living in rural areas more frequently experience depression and anxiety (Forrest, Adams, Wareham, Rubin & White, 2013; Tsaras et al., 2018), which partly explains their limited access to healthcare (Ell et al., 2005). Furthermore, it has been shown that cancer patients living in rural areas and small towns have lower levels of disease acceptance compared to those living in larger cities (Arcury, Preisser, Gesler & Powers, 2005) and are less well-adjusted to their illness (Czerw, Religioni, Deptała & Walewska-Zielecka, 2016). However, the significance of place of residence in relation to pain in cancer patients remains unclear. A study conducted by Krajewski and colleagues found that patients from rural areas had significantly higher pain relief scores compared to patients from larger cities, while other studies suggest the opposite (Krajewski et al., 2018). Considering these conflicting reports, it is assumed that:

H5. Place of residence moderates the indirect relationship between coping styles and pain through stress.

Considering these diverse findings, it is evident that gender may moderate the indirect relationship between coping styles and pain through stress. Previous research consistently shows that women with cancer report higher levels of psychological distress, more frequently use emotion-focused coping strategies, and experience greater pain intensity compared to men (Miaskowski, 2004; Zhou, Wang, Chen & Li, 2023). In contrast, men are more likely to engage in task-focused strategies, which are associated with lower emotional reactivity and better pain adaptation (Gazerani, Aloisi, & Ueda, 2021). These gender differences in coping tendencies may influence the strength and direction of the indirect effect of coping style on pain through stress. For example, emotion-focused strategies are linked to heightened physiological arousal and increased pain perception, particularly in women (Unruh, 1996), whereas task-focused strategies may more effectively attenuate the stress–pain relationship in men. Consequently, it is hypothesized that:

H6. Gender moderates the indirect effect of coping styles on pain through stress.

Taking into account both psychological variables, such as coping styles and stress levels, and sociodemographic factors, such as gender and place of residence, the presented research model (see Figure

1) allows for a better understanding of the mechanisms influencing pain perception in patients with lung cancer.

2. Methodology of the present study

The aim of the study was to determine the relationship between coping styles and pain levels in patients with lung cancer. The independent variable was coping style (task-oriented, emotion-oriented, avoidance-oriented), while the dependent variable was pain level. Stress was assigned the role of mediator, whereas place of residence and gender served as moderators.

The study used a diagnostic survey method, using the following research tools:

1. *Stress coping styles.* This variable was measured using Endler and Parker's (1990) Coping with Stress Inventory (CISS). The Coping Inventory for Stressful Situations (CISS; Endler & Parker, 1990) measures three coping styles – task-oriented (TOS), emotion-oriented (EOS), and avoidant style (AS) – via 48 items (16 per subscale, scored 16–80). In the present study, Cronbach's α ranged from 0.84 (EOS) to 0.90 (TOS), indicating high internal consistency.
2. *Level of stress.* This variable was measured using the Perceived Stress Scale (PSS-10; Cohen et al. 1983), a 10-item instrument scored from 0 to 40, with higher scores reflecting greater perceived stress. In this study, Cronbach's α was 0.91, indicating high internal consistency.
3. *Pain level*. This variable was measured using the Short-Form McGill Pain Questionnaire (SF-MPQ; Melzack, 1987), comprising 15 descriptors rated on a 4-point scale (0–3). Total scores are obtained by summing all item ratings. In this study, Cronbach's α was 0.91, indicating high internal consistency.

The study included oncology patients diagnosed with lung cancer who were hospitalized at the Independent Public Clinical Hospital No. 4 in Lublin.. Ninety-seven respondents participated in the study, including 50 men (51.5%) and 47 women (48.5%). The respondents ranged in age from 35 to 84 years (SD: 7.822, min: 35, max: 84), and the mean age was 64.84 years. The differentiating factor among respondents was the time since diagnosis (up to 36 months: 19.3%; 37–60 months: 71.6%; more than 60 months: 9.1%). Regarding the type of cancer, the majority were diagnosed with non-small cell lung cancer (83.5%), while the remaining 16.5% had small cell lung cancer. Almost all participants had undergone at least one course of chemotherapy (96%), whereas a minority had not received this type of treatment (4%). Only a subset of respondents received radiotherapy (16.5%) and surgical treatment (9%), while the majority had not undergone radiotherapy (83.5%) or surgical treatment (91%). On average, participants received 4.47 courses of chemotherapy (SD = 2.26, range: 1–9). Regarding smoking status, half of the respondents reported being current smokers (50.5%), while the other half were non-smokers.

Data were collected during individual and direct contact with cancer patients. The survey lasted between 30 and 60 minutes.

3. Results

The multiple mediation model (Figure 1) was tested using Hayes' (2022) PROCESS macro (Model 16) with summary scores for the items of Stress Coping Styles, Stress Level, Pain Level. The analysis assessed (1) the effect of Stress Coping Styles on Pain Level, (2) the effect of the dimensions of Stress Coping Styles on Stress Level, and (3) the effect of Stress Level on Pain Level. A 95% confidence interval with bias correction from 5000 resamples was generated using the initial loading method with bias correction to assess the statistical significance of correlations and effects.

Analysis of the data showed that stress levels were statistically significantly correlated with coping styles, in aspects other than task-oriented style (95% CI = [-0.49; -0.13]), emotion-oriented style (95% CI = [0. 60; 0.80]), which partially supports hypothesis H2. As expected, a positive correlation

Table 1. Means, standard deviations, and Pearson's r correlations between variables for the whole sample

	Variable	M	SD	1	2	3	4
Whole sample	1. TOS	56.70	9.43	-			
	2. EOS	38.29	9.25	-.25**	-		
	3. AS	44.65	5.83	.06	.03	-	
	4. Stress level	17.33	6.64	-.32**	.72**	-.06	
	5. Pain level	5.99	12.07	-.16	.30**	-.06	.30**
Small city and village	1. TOS	54.30	9.80	-			
	2. EOS	38.75	9.25	-.02	-		
	3. AS	44.45	5.90	.10	.13	-	
	4. Stress level	18.15	6.89	-.13	.70**	-.22	
	5. Pain level	7.70	13.41	-.13	.47**	.02	.47**
Large city	1. TOS	60.20	7.87	-			
	2. EOS	37.48	9.37	-.64**	-		
	3. AS	45.03	5.84	-.04	-.09	-	
	4. Stress level	16.20	6.23	-.57**	.74**	.20	
	5. Pain level	2.50	6.22	-.06	-.16	-.21	.-22

p <0.05; ** p <0.01; TOS- task-oriented style, EOS- emotion-oriented style, AS- avoidant style

was found between emotion-oriented style and pain level (95% CI = [0.11; 0.48]), partially supporting hypothesis H1. Positive correlations were also obtained between the level of stress and the level of pain (95% CI = [0.10; 0.47]), supporting hypothesis H3.

We also tested whether there were differences between residents of smaller and larger towns in the variables measured in this study. The results of the t-test showed that residents of smaller and larger cities did not differ significantly in terms of emotion-oriented style ($t(96) = 0.66$, $p = 0.510$), avoidant style ($t(96) = -0.48$, $p = 0.635$), stress level ($t(96) = 1.41$, $p = 0.142$). We observed a higher task style in residents of large cities (6.20 (SD = 7.87) vs. 54.30 (SD = 9.40), $t(96) = -3.15$, $p < 0.01$, d = 0.65), and a higher pain level in residents of rural areas and small towns (7.70 (SD = 13.41) vs. 2.50 (SD = 6.22), $t(96) = 2.28$, $p < 0.05$, $d = 0.47$.

Independent samples *t*-tests were conducted to examine sex differences across various variables. Results showed no significant difference in task-focused style between women (M = 55.34, SD = 10.44) and men (M = 57.98, SD = 8.27), $t(95) = -1.38$, $p = .085$, with a small effect size, $d = -0.28$. In contrast, women scored significantly higher than men in emotion-focused style (M = 41.11, SD = 9.81 vs. M = 35.62, SD = 7.89), $t(95) = 3.04$, $p = .003$, $d = 0.62$, indicating a medium effect. No significant difference was observed for avoidance style, with women (M = 43.72, SD = 4.96) and men (M = 45.52, SD = 6.47), $t(95) = -1.53$, $p = .13$, $d = -0.31$. Women reported significantly higher pain levels (M = 10.11, SD = 15.59) than men (M = 2.12, SD = 5.06), $t(95) = 3.44$, $p < .001$, $d = 0.70$, reflecting a medium to large effect. Similarly, women had significantly higher overall stress scores (M = 19.63, SD = 6.95) compared to men (M = 15.22, SD = 5.63), $t(95) = 3.43$, $p < .001$, $d = 0.70$, indicating a medium effect.

The next step was a mediation analysis, in which we examined the mediation effect using the bootstrap method. The mediation effect was tested only for significant relationships between aspects of coping styles and pain levels. We investigated whether stress level mediates the relationship between emotion-oriented coping styles and patients' pain levels. A moderated mediation analysis was conducted using PROCESS Model 16 (Hayes, 2022) to test whether stress medi-

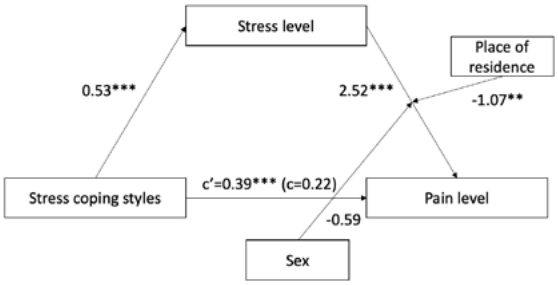

Figure 2. Mediation model of the relationship between emotion-oriented style and pain level. Annotation. The figure shows unstandardized coefficients; c'–direct effect of X to Y; c–direct effect of X to Y with mediator in the model; *p < 0.05; **p < 0.01; ***p < 0.001.

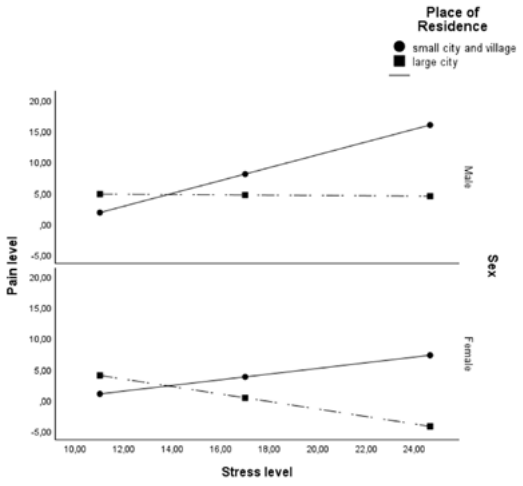

Figure 3. Moderating role of place of residence in the relationship between stress and pain levels.

ates the relationship between the emotion-focused coping style (SSE) and pain level, and whether this mediation is moderated by place of residence and sex.

First, SSE significantly predicted stress, $b = 0.5274$, $SE = 0.0533$, $t(93) = 9.89$, $p < .001$, explaining approximately 51.3% of the variance in stress, $R^2 = .513$, $F(1, 93) = 97.86$, $p < .001$. Next, the overall model predicting pain level from SSE, stress, place of residence, sex, and their interactions was significant, $R^2 = .307$, $F(6, 88) = 6.49$, $p < .001$. Stress significantly predicted pain, $b = 2.52$, $SE = 0.65$, $t(88) = 3.89$, $p = .0002$, as did place of residence, $b = 14.79$, $SE = 5.72$, $t(88) = 2.58$, $p = .011$. The interaction between stress and place of residence was significant, $b = -1.07$, $SE = 0.32$, $t(88) = -3.37$, $p = .0011$, indicating moderation. The interaction between stress and sex was marginally significant, $b = -0.59$, $SE = 0.33$, $t(88) = -1.80$, $p = .076$. The direct effect of SSE on pain was not significant, $b = 0.20$, $SE = 0.16$, $t(88) = 1.24$, $p = .22$. Conditional indirect effects of SSE on pain via stress varied depending on place of residence and sex. Significant positive indirect effects were found for males living in small cities or villages (*indirect effect* = 0.45, 95% CI [0.08; 0.80]), whereas for males in large cities, the indirect effect was significant and negative (*indirect effect* = -0.42, 95% CI [-0.84; -0.09]). For females, indirect effects were non-significant regardless of place of residence. Indices of moderated mediation confirmed significant moderation by place of residence (*index* = -0.57, 95% CI [-0.91; -0.20]) and a marginal effect for sex (*index* = -0.31, 95% CI [-0.67; 0.01]). These results suggest that stress mediates the effect of the emotion-focused coping style (SSE) on pain levels, but this mediation is moderated by place of residence and, to a lesser extent, sex. Specifically, the indirect effect of SSE on pain via stress is significant and positive for rural males but reverses for urban males, indicating a complex interaction. The direct effect of SSE on pain is not significant, highlighting the importance of stress as a mediator. Overall, the moderated mediation model is supported, confirming that the relationship between SSE, stress, and pain depends on both place of residence and sex.

4. Discussion

The present study provides compelling evidence that coping strategies and subjective pain perception play a significant role in shaping stress levels among lung cancer patients. Consistent with hypothesis H1.2, pain levels increased with greater reliance on emotion-oriented coping, whereas no relationship emerged between pain and either task-oriented or avoidance-oriented coping (H1.1, H1.3). Emotion-focused coping is widely regarded as a less adaptive strategy because it emphasizes managing emotions rather than addressing the source of distress, which can exacerbate the subjective perception of pain. Our results are consistent with the findings of Ośmiałowska and colleagues (Ośmiałowska, Misiąg,

Chabowski & Jankowska-Polańska, 2021), who showed that cancer patients use maladaptive coping strategies more frequently the greater the pain they experience. In contrast, regarding adaptive coping strategies, the level of pain did not show statistically significant differences regardless of the extent to which the adaptive strategy was employed.

With regard to stress, levels decreased with higher scores for task-oriented coping (H2.1) and increased with higher scores for emotion-oriented coping (H2.2), while no statistically significant association was observed for avoidance-oriented coping. These results are consistent with previous research, which indicates that patients using task-oriented strategies feel less helpless (Katz & Rosenbloom, 2015) and exhibit lower levels of depressive symptoms (Kulpa & Stypuła-Ciuba, 2014). In contrast, emotion-oriented coping is associated with avoidance of helplessness and preoccupation with anxiety (Du, Lin, Johnson, & Altekruse, 2011). Similarly, Di Giuseppe et al. (2018) found that lung cancer patients who perceived their illness as a threat, loss, harm, or significant event experienced elevated stress levels, which may be related to defensive mechanisms.

The positive association between stress and pain (H3.1) confirms that pain and elevated stress are mutually reinforcing, which intensifies their subjective impact and diminishes patients' quality of life (Du et al., 2011). It was observed that higher levels of pain are associated with increased stress among patients. Studies in breast cancer populations have similarly shown that persistent pain is linked to depressive symptoms and negative affect (Biparva et al., 2023; Leeuw et al., 2007). A key finding of the present study is the significant moderated mediation effect of place of residence (H5) in the pathway from emotion-focused coping to pain through stress. Specifically, the mediation effect was stronger among patients living in rural areas or small towns than among those in urban settings, where the relationship was no longer significant. These results are consistent with research indicating that rural cancer patients more frequently experience higher psychological distress and lower acceptance of illness, likely due to limited access to psychosocial support and healthcare resources (Sharp, Poulaliou, Thompson, White, & Wood, 2014). Such disparities highlight the potential role of structural and environmental factors in shaping the stress–pain relationship.

The results also provide partial support for hypothesis H6, which proposed that sex would moderate the mediation process. Although the moderation effect of sex did not reach conventional statistical significance, the pattern of conditional indirect effects suggests potentially meaningful trends. Among men, the indirect effect of emotion-focused coping on pain via stress was positive in rural areas but reversed in urban settings. Among women, no significant indirect effects were observed, regardless of place of residence. These trends are consistent with the literature showing that women typically report higher levels of stress and pain and more frequent use of emotion-focused coping (Gazerani, Aloisi, & Ueda, 2021; Unruh, 1996), whereas men may benefit more from task-oriented coping, particularly in urban environments rich in resources.

Overall, these findings point to a complex, context-dependent interplay between coping strategies, stress, pain, sex, and place of residence in lung cancer patients. They underscore the need for personalized psychosocial interventions that not only promote adaptive coping but also address structural and demographic factors that shape psychological and physical outcomes.

5. Limitations and future directions

Several limitations of this study should be acknowledged. First, the cross-sectional design precludes causal inferences about the relationships among coping styles, stress, and pain. Longitudinal research is needed to clarify the temporal sequence of these variables and to determine whether changes in coping styles lead to measurable improvements in stress and pain outcomes. Second, all variables were assessed through self-report measures, which may be subject to recall bias and social desirability effects. Incorporating objective indicators of stress (e.g., cortisol levels) and clinical pain assessments could enhance the validity of future research.

Third, although the sample size was sufficient for the planned analyses, it limits the generalizability of the findings – particularly for subgroup analyses by sex and place of residence. Larger, more diverse samples are needed to confirm the observed interaction patterns and to explore potential cultural or regional variations. Fourth, the study did not control for potential confounding variables such as comorbidities, cancer stage, or ongoing treatment regimens, all of which could influence coping, stress, and pain perception.

Future research should adopt multi-method, longitudinal designs to investigate the dynamic interplay between coping strategies, stress, and pain over the course of the disease trajectory. It would also be valuable to assess the effectiveness of targeted psychological interventions – such as cognitive-behavioral therapy or mindfulness-based stress reduction – tailored to patients' coping profiles and socio-demographic contexts. Finally, given the potential moderating effects of structural factors such as healthcare accessibility, future studies should integrate geographical and socioeconomic data to inform the development of equitable, context-sensitive supportive care strategies.

6. Conclusion

The present study, together with evidence from previous research, indicates that among lung cancer patients, elevated stress levels are associated with greater pain intensity. A noteworthy finding is the moderating role of place of residence – an often-overlooked demographic factor in psychosocial oncology research – suggesting that contextual and environmental variables may meaningfully shape the stress–pain relationship.

Results of own research also point to a potential moderating role of sex, although this effect was marginally significant. Women in our sample reported significantly higher stress and pain levels, as well as greater use of emotion-focused coping strategies, compared to men. These differences are consistent with prior studies showing that women tend to exhibit stronger affective responses to illness-related stressors, which may heighten pain perception, whereas men are more likely to adopt task-focused coping, which can buffer stress-related pain. Although the interaction effects in our analysis did not reach full statistical significance, the observed trends highlight the importance of considering sex differences when developing psychosocial interventions for cancer patients.

Among the patients in the study group, the majority received at least four cycles of chemotherapy. Numerous authors have indicated that lung cancer patients are particularly susceptible to chemotherapy-related adverse somatic symptoms. This may be associated with the occurrence of pain as a side effect of chemotherapy on the gastrointestinal, skeletal, circulatory, or urinary systems. Pain clearly manifests as an effect of disease-related stress. Social support plays a crucial role in coping with cancer (Usta, 2012). Early contributions to this understanding of social support came from Cassel and Cobb (Carveth & Gottlieb, 1979), who highlighted that this variable acts as a buffer against stress levels. They also emphasized the importance of interpersonal relationships as a moderator of the potential threatening effects of stress on an individual's functioning. Social support sustains or encourages actions that promote beneficial adaptation.

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Andrzej Kobyliński[a] ✉

[a] *Andrzej Kobyliński, https://orcid.org/0000-0003-2252-8634,*
Institute of Philosophy, Cardinal Stefan Wyszyński University in Warsaw, Poland
✉ *Corresponding author: a.kobylinski@uksw.edu.pl*

Abstract: The main purpose of the article is to present an ethical and legal analysis of the dispute over medically assisted suicide in Italy. In early July 2025, a bill was submitted to the country's Parliament to regulate the termination of life on request. The legislative initiative represents yet another stage in the intense public debate over medical aid in dying that has been going on in Italy for several decades. One of its major milestones was the enactment in 2017 of the Law on living wills, which consists of an anticipatory expression of will by an adult or legal guardian – made while enjoying full mental capacity – concerning the possible undertaking or abandonment in the future of various medical therapies and treatments which the individual wishes or does not wish to consent to. The adoption of the Living Will Law has significantly revived the debate on the criteria for terminating life on request. In 2019, the Italian Constitutional Court ruled that Italian residents have the right to receive medical assistance in suicide. In order to gain access to such a medical procedure, several requirements must be met: the person must suffer from an irrecoverable disease that causes physical or mental suffering qualifying as unbearable; he or she must be fully capable of making free and informed decisions; and ultimately must receive life-sustaining treatment. In recent years, some circles in Italy have been pushing for the liberalization of these regulations, advocating for the abolition of the life-sustaining treatments criterion. In 2024, the Constitutional Court and the National Committee for Bioethics spoke out on the matter. The Italian bioethics dispute over medically assisted suicide touches on a number of important issues at the intersection of law and ethics. Analyses presented in the article demonstrate that the most important elements of this debate concern the understanding of the dignity of human life, the relationship that exists between law and morality, and the limits of our freedom.
Keywords: aid in dying, assisted suicide, bioethics, dignity, euthanasia, medical ethics

Introduction

On July 2, 2025, a bill entitled *Implementing Provisions for Constitutional Court Ruling No. 242 of November 22, 2019* was submitted to the Justice and Social Affairs Committee of the Senate of the Italian Republic. The bill was tabled by two senators from the centre-right government coalition: Pierantonio Zanettina of Forza Italia and Ignazio Zullo of the Italian Brothers party. The bill, which seeks to legalize medically assisted suicide in accordance with Constitutional Court Ruling No. 242/2019, is very concise and consists of four articles. The first one emphasizes the inviolability of the right to life, which is a fundamental human right and the basis of the entire legal order. The other three articles, on the other hand, contain many detailed amendments to regulations governing the national healthcare system (Senato della Repubblica, XIX Legislatura, 2025).

The legislative initiative to legalize medically assisted suicide represents yet another stage in the very intense public debate over various forms of terminating life on request that has been going on in Italy for several decades. The ethical and legal dispute over aid in dying for the sick and suffering has become most heated in this country following the passage of Law 219 in 2017, which stipulates that a patient may make a personal decision to die by asking for the discontinuation of life-sustaining

1 Article in Polish language: https://stowarzyszeniefidesetratio.pl/fer/63P_Koby.pdf

treatment and continuous deep sedation that renders the patient unconscious until death (Dovico, 2025; Kobyliński, 2023; Stajano, 2021).

The entry into force of Law 219/2017 meant that some elements of Italy's legal system had to be amended, including the repeal of Article 580 of the Penal Code which provided for a prison sentence for assisting suicide. In addition, a number of difficult questions have arisen in the medical community regarding the treatment of patients who request the termination of their own lives when the conditions set forth in the Law of 2017 are not met. Various aspects of medically assisted suicide were addressed by the Italian Constitutional Court in the following rulings: 207/2018, 242/2019, 135/2024 and 66/2025. The Court accused the legislator of inertia and called on the Parliament to pass a law regulating the procedure for terminating life on request. Therefore, the bill proposed to the Senate in early July 2025 should be considered an implementation of the recommendations of the Constitutional Court.

What is the proper meaning of life-sustaining treatments? What position has the National Committee for Bioethics taken on the issue? How did the legalization of medically assisted suicide in the Tuscany region come about in March 2025? Who should create legal norms concerning matters of bioethics: the Parliament, the central government, or the local governments of particular regions? Why is the issue of legalizing medically assisted suicide a subject of fierce philosophical and theological dispute in Italy, including among various Catholic circles?

The main purpose of the article is to analyse the ethical and legal dispute over the legalization of medically assisted suicide in Italy and to present the main elements of this intense bioethical debate in the years 2024-2025.

1. Dispute over the understanding of life-sustaining treatment

In 2019, with its Ruling No. 242, the Italian Constitutional Court legalized medically assisted suicide – not only decriminalizing it, but *de facto* recognizing it as an actual civil right. The Court's judges concluded that in order to be eligible for assisted suicide, several criteria must be met: the person must be suffering from an irrecoverable disease that causes physical or mental suffering deemed unbearable; he or she must be fully capable of making informed and free decisions; and he or she must receive forms of therapy that are considered life-sustaining treatment. Following the publication of this ruling, circles promoting the legalization of terminating life on request began to push for the elimination of this last criterion, so as to expand the pool of potential candidates who intend to use assisted suicide (Pasquale, 2023; Prokofieff, Selg, 2024).

In June 2024, the National Committee for Bioethics spoke out on the issue, publishing a comprehensive document (22 pages) entitled *A Response*: *Question Posed by the Umbria Region Territorial Ethics Committee of November 3, 2023* (Comitato Nazionale per la Bioetica, 2024). Since there is no single, universally accepted definition of life-sustaining treatment in the medical literature, the Territorial Ethics Committee of the Umbria Region resolved to ask the National Committee for Bioethics to provide specific criteria for such medical procedures. In particular, an opinion was requested "on the criteria to be used to distinguish between ordinary healthcare and life-sustaining care, thus enabling local ethics committees to correctly apply the provisions of Constitutional Court Ruling No. 242/2019 and providing guidance to patients on the validity of their requests" (Comitato Nazionale per la Bioetica, 2024, 5).

It is worth noting at this point that not only is there no universal medical term for life-sustaining treatments, but there is no legal definition of the term either. The difficulties are further exacerbated by the ongoing development of technology, as well as medical and clinical research to protect patients' lives and search for new forms of treatment. The National Committee for Bioethics' document states that the term "life-sustaining treatment" was used by the European Court of Human Rights in its ruling of June 13, 2024 in Daniel Karsai v. Hungary (No. 32312/23). It asserts that assisted suicide provided to patients who are not dependent on life-sustaining treatment may give rise to further challenges and a risk of abuse (Comitato Nazionale per la Bioetica, 2024, 6).

The National Committee for Bioethics acknowledged in its response that life-sustaining medical treatments are intended to treat life-threatening conditions in the short or even very short term (when it is not a matter of mere "support" but of actually "replacing" a vital function that the body can no longer perform on its own). Such medical treatments often use advanced technologies and specialized procedures, and can be highly invasive and long-lasting. They should not be confused with life-saving treatments or the administration of drugs (including epinephrine for anaphylactic shock). Discontinuation of life-sustaining medical treatments results in immediate or rapid fatal consequences, depending on the type of treatment and the patient's clinical condition. The understanding of this type of treatment developed by the National Committee for Bioethics should be considered limiting (restrictive) compared to some of the interpretations presented in the public debate. Consequently, it narrows down the scope of practical application of Constitutional Court Ruling No. 242 of 2019.

According to this understanding of life-sustaining treatment, chemotherapy, dialysis, pacemakers, antibiotics for burn victims, cardiac medications or assistance for severely disabled people, etc., cannot be considered as such medical treatments and procedures, since their discontinuation leads to death, but not rapidly. In the document of the National Committee for Bioethics, the criterion adopted to differentiate between ordinary and life-saving therapies is twofold: the minimum survival time if therapy is discontinued, and the nature of the therapy, which must replace vital functions and not be merely supportive treatment. Invasiveness, continuity over time, the advancement of technology involved, and specialized procedures are optional rather than necessary criteria. Thus, all treatments that replace respiratory and cardiac functions, renal functions, and biochemical and metabolic functions provided by the digestive and detoxification systems will be considered life-sustaining treatments. On the other hand, meeting the basic life needs by providing water, food, and air are not part of this type of treatment (Caporale, Palazzani, 2024; Moń, 2009; Tasciotti, 2020). It is also worth noting two points in the National Committee for Bioethics document that seem fundamental from the bioethical perspective.

"The first – crucial to dispelling doubts about what is meant by life-sustaining treatment in this context – is a reference to limited life expectancy after the discontinuation of all life-sustaining therapies. The second is the guarantee of the principle of equality for all patients on life "support", which may or may not be particularly invasive, in conditions of great suffering, often caused by a loss of autonomy that affects the most intimate aspects of a person's life" (Comitato Nazionale per la Bioetica, 2024, 11).

In July 2024, the Constitutional Court also spoke out on the understanding of life-sustaining treatments. The Court's ruling and its substantiation constitute an extensive document containing 25 pages (Corte Costituzionale, 2024) and provide a definitive resolution to the widely debated ethical and legal case in Italy whose origins date back to December 2022. It was then that a Tuscan resident suffering from advanced multiple sclerosis, Massimiliano Scalas, travelled to Switzerland to end his life at the famous "Dignitas" clinic which carries out medically assisted suicide procedures. The procedure took place on December 8, 2022. Earlier, "the patient confirmed his final decision and, using the hand he could still control, took the lethal drug orally, and died a few minutes later" (Corte Costituzionale, 2024, 27). Scalas reached the medical facility with the help of three activists from the Italian Radicals party, which had been actively campaigning for years to promote the legalization of medical procedures designed to terminate life on request. After returning to Italy, the activists reported to the prosecutor's office to file a notice of suspected crime committed by themselves by taking part in bringing about the termination of the sick man's life.

At this point, it is important to add the extremely important information that Scalas was not receiving life-sustaining treatment, which means that one of the criteria for medically assisted suicide set forth in the Constitutional Court's Ruling 242/2019 was not met. Activists from the Italian Radicals party reported to the prosecutor's office because they wanted to initiate legal proceedings and open a public debate that could ultimately lead to eliminating from the

Italian legal order the requirement for life-sustaining treatments as a necessary criterion for patients to access medically assisted suicide procedures. The prosecutor and defense attorneys asked the investigating judge to dismiss the case, but the judge refused to do so since, as the requirement of life-sustaining treatment had not been met, the assistance provided by the three activists constituted the crime of assisting suicide. As a result, the case was initially tried by a common court in Florence, which then filed a motion with the Constitutional Court regarding the constitutionality of that criterion. In the applicant's view, the requirement contradicted the constitutional principles of equality, therapeutic self-determination, human dignity, and the right to respect for private life, as recognized in the European Convention on Human Rights.

In Ruling No. 135/2024, the Court rejected the Florence court's conclusion, reaffirming its earlier position that life-sustaining treatment is a prerequisite for assisted suicide. On the one hand, the Court affirmed the non-criminality, according to Ruling No. 242/2019, of a person who facilitates the execution of an intent to commit suicide under the conditions and using the methods specified therein. On the other hand, the Court ruled that the requirement for the person being assisted to be kept alive through life-sustaining treatment, specified as one of the conditions for performing such a medical procedure, must be fulfilled as well. The Court also reiterated its hope for a legislative intervention to ensure specific and timely implementation of the principles established in its earlier rulings, as well as an urgent appeal to ensure that all patients, including those eligible for assisted suicide procedures, are guaranteed effective access to adequate palliative care throughout the country (Corte Costituzionale, 2024, 48-49).

2. Characteristics of the Law in Force in Tuscany

On March 17, 2025, the Chairman of the Regional Council of Tuscany promulgated a document entitled *Regional Law of March 14, 2025, No. 16. Organizational methods for the implementation of Constitutional Court Rulings No. 242/2019 and No. 135/2024* (Il Consiglio regionale, 2025). Earlier, on February 11, 2025, the Law had been approved by the Tuscany Regional Council. The Council is the legislative body of the region which decides about its political and program directions and oversees their implementation. Currently, the Tuscany Regional Council is made up of 41 members. Twenty-seven councillors voted in favour of the Law, 13 voted against, and one abstained from voting.

The Law consists of a Preamble and nine articles. The Preamble primarily indicates the legal basis for the published document. Tuscany's local government concluded that this type of legal regulation is a legitimate way to exercise its powers in the area of healthcare and implement immediately enforceable Constitutional Court rulings. The regional legislature states that by implementing the Law, as well as otherwise, Tuscany protects – in accordance with applicable regulations – the dignity of life by guaranteeing the necessary healthcare even in the terminal phase, as well as, in public facilities, psychological support and spiritual or secular assistance, if requested.

The first two articles of the Law set forth its purpose and the requirements for access to medically assisted suicide. The Law aims to regulate organizational methods for implementing Constitutional Court Rulings No. 242/2019 and No. 135/2024. Pending the entry into force of statewide legislation in Italy, persons who meet the requirements set forth in the two rulings may benefit from medically assisted suicide in accordance with the procedures set forth in Articles 1 and 2 of Law 219 of December 22, 2017.

Article 3 states that local healthcare facilities must establish a Standing Multidisciplinary Commission to verify compliance with the requirements for access to medically assisted suicide, as well as to determine and check implementation procedures. The Commission consists of the following members: a palliative care physician; a psychiatrist; an anesthesiologist; a psychologist; a forensic physician; a nurse. The Commission is joined, on a case by case basis, by a physician who specializes in the condition which the person seeking access to assisted suicide suffers from. Members are elected, on a voluntary basis, from among the employees of the local healthcare facility. "In the absence of in-house staff, members

of the Committee may be recruited from among the staff of other institutions or regional healthcare facilities" (Il Consiglio regionale, 2025, 7).

Article 4 outlines procedures for accessing medically assisted suicide. According to the Law in effect in Tuscany, the person concerned or their legal representative must submit an application to the competent local health authorities to verify compliance with the requirements for access to the procedure for termination of life on request. The application must be accompanied by available medical records, possibly also designating a trusted physician. The local health authorities must immediately forward the application and the attached documentation to the Standing Multidisciplinary Committee and the Clinical Ethics Committee.

Article 5 regulates the procedure for verifying compliance with the stipulated requirements. The review procedure must be completed within twenty days of receiving the application. The time limit may be suspended only once, for a period not exceeding five days, in order to carry out a clinical and diagnostic evaluation. The Commission initially verifies that the applicant has received clear and adequate information about access to palliative care. The applicant is also informed of his or her right to refuse or withdraw consent to any treatment, including life-sustaining treatment, and the possibility of continuous deep palliative sedation in accordance with Law 219/2017. If the applicant confirms his or her desire to terminate their own life, the Commission proceeds to verify compliance with the requirements. For this purpose, the compiled documentation is reviewed and all necessary investigations are carried out, including with the support of the regional health service, ensuring personal and direct communication with the person concerned, after consultation with the physician they have designated. In any case, consent to medically assisted suicide must be free and informed. "The Committee asks the Clinical Ethics Committee for an opinion on the ethical aspects of the case under investigation, providing the Committee with documentation of the discussions and investigations carried out. The Committee expresses its opinion within seven days of receiving the documentation" (Il Consiglio regionale, 2025, 8).

Article 6 specifies how to terminate life on request. The entire procedure for medically assisted suicide should be completed within ten days of the Commission's notification to the patient that the previously submitted application has been approved. The person concerned may ask the Commission to approve a protocol drawn up by a trusted physician, including specific technical and pharmacological information on terminating life on request. Procedures for implementing medically assisted suicide must include the assistance of a physician and should be such as to avoid abuse of the sick and vulnerable, guarantee the dignity of the patient, and spare him or her suffering. The Commission then seeks the opinion of the Clinical Ethics Committee on the adequacy of the protocol in which the form of life termination on request is specified. The Committee expresses its opinion within five days of receiving the documentation submitted by the Commission. The local health authorities then inform the applicant of the outcome of the entire procedure.

Article 7 discusses support for the process of terminating life on request. Within seven days of the notification to the applicant referred to in the preceding article of the Law, the local healthcare facility must provide technical and pharmacological tools and medical assistance in preparation for self-administration of the authorized medical preparation. This assistance is provided by medical personnel on a voluntary basis and is considered an institutional activity, performed during working hours. In practice, the principle of voluntariness means respect for the medical conscience clause which is present in the Italian legal order (Kućko, 2020; Campanelli, 2023; Beretta, 2024). Since the services and treatments regulated by the Law constitute a non-basic level of healthcare, the Tuscany region covers the financial expenditure associated with these services and treatments from its own funds (Il Consiglio regionale, 2025, 9).

Detailed regulations on the financial aspects of the procedure for terminating life on request are set forth in the last two articles of the Law. In Tuscany, all services and treatments provided by the regional health service as part of the therapeutic process and medically assisted suicide are free of charge to patients, and the cost of the benefit borne by healthcare facilities between 2025 and 2027 has been valued at €10,000.

The first case of medically assisted suicide, carried out in accordance with the legal regulations in force in Tuscany, took place on May 17, 2025 and involved 64-year-old Daniele Pieroni, a Siena resident suffering from Parkinson's disease. The condition caused him to develop severe dysphagia, a swallowing disorder, forcing him to live with a PEG tube for 21 hours a day. The use of a PEG tube, a method that allows a patient to be fed through a cannula inserted into the abdominal cavity, is one of the eligibility criteria for assisted suicide.

It is worth mentioning at this point that a few days before his death by suicide, the government of the Italian Republic had challenged the Tuscan Law on assisted suicide in the Constitutional Court. In the view of the central authorities in Rome, the establishment of such laws was not the responsibility of the regions, but the exclusive prerogative of the national Parliament. In the Italian legal order, the state alone is responsible for determining the basic level of services related to civil and social rights, which must be guaranteed throughout the country's territory. Healthcare is a civil right. In Italy, state and regional governments share responsibility for healthcare. This means that the state establishes regulations with regard to civil and social rights, and the regions are responsible for their enactment in practice. With an end-of-life bill pending in the Italian Parliament since the beginning of July 2025, it is difficult to predict when and how the Constitutional Court will address the challenged Law currently in effect in Tuscany.

3. Tommaso Scandroglio v. Domenico Menorello

The legalization of medically assisted suicide is the subject of fierce philosophical and theological disputes in Italy, including among various Catholic circles. Proponents of a liberal vision of Catholicism generally acknowledge the need for this type of legal regulation, while conservative Catholic circles take a different view. In early July 2025, the Catholic daily Avvenire, owned by the Italian Bishops' Conference, published an article titled *Do we need a law? Let us strive together for the greatest good* (Menorello, 2025). The article was authored by the well-known and respected politician and lawyer Domenico Menorello, member of the National Committee for Bioethics. It offers an insight into the views of very many liberal Catholic circles in Italy on the bill concerning medically assisted suicide, which is similar to the position of some Protestant circles in the country (Savarino, 2021).

Menorello's take on the end-of-life bill is a positive one. In his argumentation, he refers to Pope John Paul II, 1995 encyclical *Evangelium Vitae*. On the one hand, Menorello cites those passages in the Vatican document that recognize euthanasia and voluntary suicide as one of the manifestations of violating the integrity of the human person and questioning the dignity of human life. Such ways of shortening human life undermine the foundations of our civilization and contradict the honour due to the Creator. Menorello agrees with Pope John Paul II that in the current cultural situation, various forms of assaults on the dignity of the human person are increasingly justified by a significant portion of public opinion. The main basis for this kind of position is the right to unrestricted individual freedom. Starting from this premise, many people demand not only that such actions as euthanasia or voluntary suicide should not be punishable, but even that the state should approve them so that they can be carried out with complete freedom and even with free assistance of the health service (Beguinot, 2022).

The author of the article argues that in view of the current cultural situation, dominated by the pursuit of radical moral autonomy, when evaluating the end-of- life bill, it is necessary first of all to refer to the passage of the encyclical *Evangelium Vitae* which refers to the acceptance of legal regulations that offer only partial protection of the inviolable dignity of human life, while preventing the adoption of laws even more unfavourable to the goal of defending the value of the human individual. In the encyclical, John Paul II draws attention to certain situations related to the proceeding of abortion laws, where a parliamentary vote would be decisive for the passage of a more restrictive law aimed at reducing the number of human embryos being destroyed, and which would be an alternative to a more permissive law already in force or being voted on.

"In a case like the one just mentioned," claims John Paul II, "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).

Menorello believes it is primarily this passage from the encyclical *Evangelium Vitae* that should be applied to the evaluation of the end-of-life bill under consideration in the Italian Parliament. The author believes that Catholic circles in Italy should fully and strongly support the efforts of the current parliamentary majority to prevent this bill from being distorted in the legislative process. Menorello argues that this kind of support will help MPs and senators from the ruling center-right coalition to boldly push for as much improvement of the bill as possible, and to stop other – very likely in the future – entirely negative legislative proposals that radically question the value and dignity of human life advocated by center-left parties (Menorello, 2025).

Menorello stresses that the legislator must not continue its inertia in this area. Indeed, this kind of attitude could lead to the adoption of national or regional laws that are potentially aggressive towards the lives of the ill and suffering in the terminal stage of their existence. In his opinion, this could happen primarily for two reasons. First, the notion that there is a right to die is reinforced in the public mind. A growing number of Italians are expressing the belief that sick, suffering and elderly people should make their own decisions about the form and time of their death. This kind of social change means that it is necessary to pass a law that precisely defines the conditions for terminating life on request, while eliminating the various forms of potential abuse in this area. Second, in the public debate, the opposition center-left parties are drawing attention to the responsibilities incumbent on the national healthcare system, which should provide care and protection primarily to the most vulnerable and defenceless. The author comments on the mainstream ideology pervasive in Italy which considers the lack of legalization of medically assisted suicide as a sign of mistreatment of the ill and suffering and neglect of the most vulnerable. Menorello says that given the entrenchment of the belief in the right to die and the prospect of further deterioration of legislation and judicial decisions in this area, Catholic circles should support the end-of-life bill currently considered by the Parliament.

The journalist Tommaso Scandroglio, who covers bioethical issues for the conservative Catholic daily La Nuova Bussola Quotidiana, disagrees with this kind of reasoning and strongly rejects most of the arguments presented by Menorello. He has presented his position in an article titled *Avvenire Supports the Assisted Suicide Bill, Misrepresenting Wojtyla* (Scandroglio, 2025). In his view, Menorello misinterprets the passage in the encyclical *Evangelium Vitae* mentioned above, which speaks of the possibility of supporting an unjust law in order to avoid adopting legislative solutions that further negate the value and dignity of human life. The Vatican document, Scandroglio notes, implicitly states that an action aimed at limiting harm must be morally licit in itself. In his view, this is not the case with the end-of-life bill.

Scandroglio concurs with the reasoning presented by Menorello that, in a broad sense, the current debate in Italy regarding the medically assisted suicide bill essentially meets the criteria of the situation described in the encyclical *Evangelium Vitae*, in which it is morally permissible to support an unjust law. It is difficult to argue, Scandroglio adds, that such a law on assisted suicide can be avoided, especially since if the center-right had not voted in favour of it, the center-left would have voted for a much worse law. Thus, there is a state of necessity. Scandroglio adds, however, that even in a state of necessity, the actions that are taken should be morally licit. Doing evil is not morally permissible even in such a situation. In his view, it is not permissible, even for the most serious reasons, to do evil for a good cause, even in order to protect essential goods or values. Never, not even in a state of necessity, or for a good cause, such as mitigating damage. Consequently, Scandroglio argues, an unjust law must not be passed – even to

improve the current situation and/or prevent the passage of an even more unjust law that will surely be enacted in the future (Ruggiero, Kaczmarek, Spiezia, 2024; Scandroglio, 2020).

If the current end-of-life bill is approved, Scandroglio considers it a moral evil that violates the duty incumbent on those in power to protect the common good. One form of such protection is the prohibition of actions that could compromise the common good. Killing an innocent person or taking a life are acts that clearly undermine the social order and should therefore never be tolerated, but always punished. Therefore, it is the moral duty of parliamentarians to oppose the legalization of medically assisted suicide. A law that expresses a desire not to prohibit this form of suicide, and therefore allows assisted suicide, is "inherently unjust precisely because it fails to meet the moral obligation to protect the lives of innocent people. It would therefore constitute a morally unlawful omission" (Scandroglio, 2025).

The author strongly emphasizes that any action aimed at mitigating damage must always be morally licit in itself. It is not morally right to commit evil in order to mitigate damage, and the end never justifies the means. As an example, Scandroglio describes a situation in which a criminal threatens me, saying he will kill three innocent people unless I kill one. Am I allowed to kill one person to save the three? Such an action would certainly mitigate the damage, but would be a wrongful act in itself. Scandroglio says that the consideration of the end-of-life bill should be analysed in analogical terms. In his view, voting for the bill is a morally wrong action, regardless of whether it objectively mitigates any existing or future damage. "It remains an evil action, and therefore must not be chosen even for a good cause or in a state of necessity. It is never acceptable to choose a lesser evil to avoid a greater one" (Scandroglio, 2025).

Conclusion

The main cognitive contribution of the article is a synthetic presentation of the most important elements of the debate on medically assisted suicide in Italy in the years 2024-2025, as well as an analysis of selected ethical and legal aspects of the issue. The investigations conducted in this study entitle us to make the following five conclusions.

First, the Italian dispute over terminating life on request is an important part of the global bioethical debate around issues related to the end of human existence. Opponents of legalizing assisted suicide argue that sick, suffering, weak and vulnerable people should be protected first and foremost. Therefore, new initiatives and actions are needed to respect the life and health of every person. In this context, palliative medicine, as well as home and inpatient hospices, have a special role to play.

Second, central to the dispute between proponents and opponents of legalizing the termination of one's own existence is the understanding of human life (Fornero, 2020; Tigrino, 2024). Advocates of assisted dying argue that our lives belong to us, which means we can decide what level of quality of life – in situations of illness and old age – we deem necessary to make it worth living. Opponents, on the other hand, defend the belief that ultimately our lives do not belong entirely to us, because the deepest foundation of life's dignity transcends what is merely human. This is the attitude of Socrates in Plato's dialogue *Phaedo*, when he claims that we, humans, are the property of the gods.

Third, the dispute over medically assisted suicide confirms the now increasing role of the law in bioethical debates. In Italy, four Constitutional Court rulings were passed on terminating life on request between 2018 and 2024. Arguments presented in the debate concerning aid in dying are increasingly not so much ethical as legal.

Fourth, the legalization of terminating life on demand in the Tuscany region in March 2025 has highlighted a major competency dispute. Who should create legal norms concerning bioethical issues: the Parliament, the central government in Rome, or the local governments of particular regions? How do we reconcile political regionalization in Italy with the diversity of the citizens' bioethical views? It seems that these kinds of questions, which also concern the implementation of EU law, will pose a serious challenge across our continent in the coming decades (Kobyliński, 2024, 286-287; Raspanti, 2025).

Fifth, an important issue in the Italian bioethics debate is the definition of criteria for life-sustaining treatment. In 2024, the Constitutional Court and the National Committee for Bioethics spoke out on the issue. The development of such rules is necessary first of all for the sake of the patients, but also for healthcare professionals who should be guaranteed respect for the conscience clause.

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Psychometric evaluation of the family APGAR Scale in a Polish population: Reliability, validity, and factor structure[1]

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Roman Szałachowski[a], Wioletta Tuszyńska-Bogucka[b] ✉

[a] *Roman Szałachowski, https://orcid.org/0000-0002-4864-8717,*
Faculty of Social Sciences, University of Szczecin, Poland
[b] *Wioletta Tuszyńska-Bogucka, https://orcid.org/0000-0001-7101-5267,*
Faculty of Human Sciences, University of Economics and Innovation in Lublin, Poland
✉ *Corresponding author: wioletta.tuszynska-bogucka@wsei.lublin.pl*

Abstract: The main objective of the study was to adapt the Family APGAR by Smilkstein to the Polish reality and check its reliability and validity for the purpose of the diagnostic properties of this tool and scientific research. FAPGAR is a self-descriptive, paper-pencil type questionnaire. It consists of five statements concerning the functioning of the family in five domains: Adaptability, Partnership, Growth, Affection and Resolve. 312 adults (156 women and 156 men) in married couples from one year to 35 years of married life were studied. The studies also used the Spanier's Dyadic Adjustment Scale (abbr. DAS) and the Family Rating Scale (abbr. SOR) based on Flexibility and Cohesion Evaluation Scales (abbr. FACES-IV) by Olson. The validity and reliability of the scale were analysed by appropriate statistical methods. The results obtained with its assistance are significantly correlated with the results of measuring the functioning of the family by other methods. It can be concluded that FAPGAR has obtained satisfactory indicators of reliability and relevance. The results showed that FAPGAR can be used in the Polish market for both scientific research and clinical work. It may be particularly useful for physicians and health care professionals for screening and initial diagnosis of the functioning of patients.
Keywords: Family APGAR, polish, questionnaire, reliability, validity

1. Introduction

The functioning amongst the closest people has not only a significant impact on the sense of satisfaction of the above-mentioned domains and the overall sense of life satisfaction, but also has a link to the general health (Blum et al., 2000; Gau et al., 2012; Goodwin, 1992; Hang & Steinbach, 2018; Kim & Mitriani, 2019; Nan et al., 2013; Santesteban-Echarri et al., 2018; Wang & Huang, 2016). For the health system to function effectively, the correct and timely assessment of the family functioning facilitates the diagnosis and a professional assistance planning. The Family APGAR (FAPGAR), was presented by Smilkstein (1978) and in retrospect it seems that its design and theoretical scope have passed a practical application. The name of the test as Family APGAR, refers to the design of the test, which allows to evaluate the functioning of the family in five domains: (1) Adaptability – understood as the use of family and from outside the family resources to solving problems and addressing stressful and critical situations; (2) Partnership – understood as joint decision-making and taking responsibility for those decisions by all members of the family; (3) Growth – understood as physical and emotional self-realization achieved through mutual support and assistance; (4) Affection – relationship of mutual love and care and exhibition of love and care, and (5) Resolve – spending time with the family – understood as a commitment to dedicate and protect time to other family members.

1 Article in Polish language: https://stowarzyszeniefidesetratio.pl/fer/63P_Tuszy.pdf

FAPGAR was created in 1978 and the author's intention was to enable a quick assessment of the current family functioning. The author foresaw the use of this questionnaire both to assess the family situation as a whole as well as the relationship between spouses, with another important person, with the parent or parents, with the child or with the children (Smilkstein, 1978). FAPGAR therefore can be applied to the assessment of one's functioning in relation to the person or persons whom the person concerned consider being close to oneself. The author deliberately applied simplicity of form and easiness of application to allow family doctors and other specialists to be able to use it as an early diagnostic tool. In Poland, there are many tools to study the functioning of the family system in Poland, including both Polish and adapted tools, e.g. based on the Circumplex Olson Model, SOR (based on FACES IV) or Spanier's DAS, but it does not seem that they were suitable for screening diagnosis and for a brief evaluation for use e.g. by a physician. FAPGAR is a dedicated tool to be used in such situations, hence the efforts made to implement it in Poland.

However, there is a dispute in the literature regarding the legitimacy of further work on this tool and its further use in screening diagnostics. Based on the research, also from recent years, it can be said that other authors (Benitez & Caballero, 2017; Castilla et al., 2014; Gutierrez-Mata et al., 2017; Lim et al., 2012; Nan et al., 2014; Odume, 2015; Okeafor & Chukwujekwu, 2017; Özcan et al., 2011; Penserga et al., 2012; Shapiro et al., 1987; Silva et al., 2014; Takeda et al., 2017; Takenaka & Ban, 2016) confirm usefulness of this diagnostic tool. However, many researchers have not found consistency of the score with assessment of family functioning by therapists and did not find support for using the measurement tool (Gardner et al., 2001; Mengel, 1987; Smucker et al., 1995). Gardner et al. (2001) argue that this method is not sufficiently accurate to warrant its application to the assessment of the family situation. Amongst reports there are analyses questioning accuracy of FAPGAR (Gardner et al., 2001; Murphy et al., 1998; Smucker et al., 1995; Yaphe, 2013). The main allegations are the lack of compatibility between the FAPGAR result and results obtained through other methods used by family doctors or paediatricians to assess family dysfunctions. At the same time, it should be emphasised that the use of this method to assess marital dyadic or other close relationships is not criticised by them and is justified from the clinical practice point of view and theoretical assumptions. Also, Murphy et al. (1998) identified FAPGAR as a tool 'insensitive' to children's psychosocial problems and Smucker et al. (1995) suggest that the relationship between FAPGAR results and the physician's detection of children's psychosocial problems was poor. Yaphe (2013) stated that there is evidence that FAPGAR has neither diagnostic nor predictive value but there are no metanalysis of research results that could support this thesis. According to him, several studies in large research networks showed that FAPGAR results have little relevance to family dysfunctions and are weak predictors of family outcomes over time. In this way, he began discussing the diagnostic value of FAPGAR by formulating a provocative question, 'is FAPGAR a dead tool'? In summary, he found that this tool did not fit the reality of the diagnosis of the 21st century Portuguese family, while encouraging researchers to verify it in various research situations: 'I will be happy to share my collected references with any researcher willing to systematically review this topic' (p. 15). In conclusion, it can be said that in recent years, doubts have been raised in subject literature as to the diagnostic value of FAPGAR. On the other hand, some studies emphasize its usefulness and satisfactory psychometric properties, especially in screening studies of family functioning. These are works from the last century (Bellón Saameño et al., 1996; DelVecchio Good et al., 1979; Foulke et al., 1988; Hilliard et al., 1986; Smilkstein et al., 1982) and new studies made after 2000 (Castilla et al., 2014; Mayorga-Muñoz et al., 2019; Powazki & Walsh, 2020; Silva et al., 2014; Takenaka & Ban, 2016). FAPGAR correlates with other indices of family functioning, such as the Pless-Satterwhite FF Index (DelVecchio Good et al, 1979; Smilksten et al., 1982; Ko et al., 2015).

Due to divergent opinions regarding the usefulness and diagnostic value of FAPGAR, there are two objectives of this paper: firstly, to present the results of adapting the tool to the Polish conditions; secondly to contribute to the ongoing discussion concerning the legitimacy of the continued use of the scale in the study of the functioning of the family system.

2. Methods

2.1. Study design

In order to achieve the goals, the reliability of FAPGAR was analyzed and the results were compared with other measures of the functioning of the family system. 312 people took part in the studies (N = 312, NW = 156, NM = 156). The full socio-demographic characteristics of the test group are presented in table 1. Group selection was carried out using the snowball method, which is a recognized procedure in exploratory research. Due to the fact that the aim of the project was not to test the theory but to test the tool, it is a method acceptable in this type of research (Babbie, 2016). Volunteers did not receive any remuneration for participating in the study.

The studied male and female groups were very similar in terms of number of children, marital duration, and financial situation assessment (the Pearsons Chi-Square Test did not demonstrate the differences between these groups). There was a statistically significant difference in education level between women and men ($\chi 2 = 15.94$, $p = .003$). In a group of women, the vast majority had academic education, whereas amongst men there was also a group of people with secondary and vocational education.

The studies used an adapted method, i.e. FAPGAR (Smilkstein, 1978). In the original version, the questionnaire consists of five test items, and the answers are evaluated on the 3 – stage scale of Likert, where: 0 – *almost never*, 1 – *sometimes*, 2 – *almost always*. In the instructions, the investigator is asked to respond to the statements given, assessing the satisfaction of his family. The overall score is the sum of the points earned in each question. Each of its five questions is ranked from 0 to 10 points, and the final score, translated by the sum of the partial scores, classifies families as being *severely dysfunctional* – 0 to 3 points, *moderately functional* – 4 to 6 points and *highly functional* – 7 to 10 points. In addition, the answers to the individual questions give results in specific, five scales such as: adaptability, partnership, growth, affection and resolve (Smilkstein, 1978; Smilkstein et al., 1982). In Poland, this method was rarely used so far and there was no clear version of the translation and adaptation (Pytlińska, 2010). The original version has good psychometric properties. The *C*ronbach's α coefficients for individual scales and overall result are within the range .80 to .85 (Smilkstein et al., 1982). At the same time, the authors indicate that the questionnaire has a single-factor design (Kroplewski et al., 2019).

Table 1. Characteristics of the research group

	Women		Men		Test Value	p
	M	SD	M	SD		
age	41.6	11.65	42.4	11.85	.061	.541
number of children	*N*	*%*	*N*	*%*		
none	28	17.95	28	17.95		
1	36	23.08	38	24.36		
2	45	28.85	44	28.21		
3	21	13.46	20	12.82	.09	.999
4	13	8.33	13	8.33		
5	4	2.56	4	2.56		
6	9	5.77	9	5.77		
level of education	*N*	*%*	*N*	*%*		
primary	2	1.28	1	0.64		
vocational	12	7.69	23	14.74		
secondary	28	17.95	49	31.41	15.94	.003
post-secondary	18	11.54	8	5.13		
academic	96	61.54	75	48.08		
marital duration	*N*	*%*	*N*	*%*		
0-5 years	33	21.15	30	19.23		
6-10 years	23	14.74	23	14.74		
11-20 years	46	29.49	50	32.05	.33	.988
21-30 years	33	21.15	33	21.15		
31 & more	21	13.46	20	18.82		
financial situation	*N*	*%*	*N*	*%*		
very good	0	0	2	1.28		
good	4	2.56	2	1.28		
average	51	32.69	53	33.97	2.78	.594
poor	72	46.15	69	44.23		
very poor	29	18.59	30	19.23		

2.2. Measures

In relevance studies, FAPGAR was used by Spanier's DAS in the Polish adaptation, a useful measure of adjustment in relation (Gottman & Silver, 2000; Graham et al., 2006; Hunsley et al., 1995). DAS is a method of measuring the quality of a close relationship developed by Spanier (1976) and is readily used in numerous studies. This self- applied scale has 32 related items measuring the degree of

partner satisfaction. High scores indicate greater satisfaction, and low scores indicate conflict between the couple. High reliability was confirmed for the overall scale. Spanier (1976) reports the range of coefficients of integrity from .73 to .94. In Polish studies, the coefficient of integrity varies from .67 to .89 (Cieśla, 1989). This scale consists of 32 items, to which a respondent applies himself/herself on the Likert scale and allows the study of four aspects of adaptation in the dyad i.e.: Dyadic Consensus, Dyadic Satisfaction, Affectional Expression, Dyadic Cohesion and general result. The extent of the Spanier's DAS in the Polish adaptation of Cieślak (1989) has a rather diverse form, which, however, proves to be a favourable feature of the tool, not allowing automating the selection of answers. The test allows the obtaining a general result included as the sum of points for answers given to individual questions. This result is in the range of 0 to 151 points and temporary Polish standards in the stens were established. In addition, results can be viewed on the following subscales: (1) Dyadic Consensus – from 0 to 65 points; (2) Dyadic Cohesion from 0 to 24 points; (3) Dyadic Satisfaction from 0 to 50 points; (4) Affectional Expression – from 0 to 12 points. The method has satisfactory psychometric indicators. Spanier (1976) says that the reliability coefficients are within the range of *C*ronbach's α within the limits .73-.94. In Polish studies, the reliability coefficient varies from .67 to .89 (Cieślak, 1989).

The selection of the second relevance test tool – Family Rating Scale (SOR) by Margasiński (2009), a tool based on the Circumplex Model by Olson and the FACES IV [Olson, 2011), powerful tool in both research and clinical settings, designed to be administered to families across the life cycle, was determined by the results of the analysis of literature, suggesting that the dimensions measured by both tools can be linked (Foulke et al., 1988; Clover et al., 1989). FACES IV is administered to assess the particular strength and growth areas of the family (Olson, 2019). Since such attempts have not yet been undertaken in Poland, the authors of the work have decided to use this tool in the analysis of the theoretical relevance of FAPGAR. The questionnaire consists of 62 claims to which the responder applies himself/herself in the 5-stage Likert scale, starting with *completely disagree* and finishing with *completely agree* These assertions form eight scales. Six of them are the main scales of the Olson (2011) Circumplex Model, concerning the two dimensions of the family's functioning – (1) Cohesion and (2) Flexibility (balanced cohesion, balanced flexibility, disengagement, enmeshment, rigidity and chaos). The other two scales measure (3) Communication (which is the third dimension of the circumplex model); and (4) Family Life Satisfaction. In addition to the specific scales' results there can also be achieved three complex indicators: cohesion, flexibility and general, which is a measure of the proper family functioning. The *C*ronbach's α ratios for the original FACES IV scales are within the limits .77 to .89 (Olson & Gorall, 2003). The reliability indicators for SOR scales are somewhat lower, however satisfactory as they are within the range .70 to .93 by *C*ronbach's α (Olson, 2011).

2.3. Procedure

In the first stage, an experimental version of the tool was created. To this end, the tool was translated by three independent translators, including one native speaker, from English to Polish. Three other translators then made the required correct methodological approach to reverse translation. Finally, the versions were compared and the final wording of the items (Van de Vijver & Poortinga, 1997) was determined. In the second stage, studies were carried out to estimate the structure of the experimental tool version, its internal compatibility and theoretical relevance.

2.4. Statistical analysis

Pearson's Chi-Square test (except for the age variable) was used to test the significance of differences between the sociodemographic variables. In the following, the *C*ronbach's α method, confirmatory factor analysis (abbr. CFA) and correlation analysis were used. The calculations were made using the SPSS and Statistica programs. CFA was performed at Amos 18.

Table 2. FAPGAR – descriptive statistics.

GROUP	M			SD			Q1			Q3			R			As			K		
	Total	W	M	Total	W	M	Total	W	M	Total	W	M	Total	W	M	Total	W	M	Total	W	M
Adaptability	1.73	1.67	1.79	.48	.53	.4	1.50	1.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	-1.50	-1.37	-1.47	1.23	.94	.17
Partnership	1.57	1.51	1.62	.54	.56	.51	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00	-.72	-.6	-.82	-.64	-.67	-.65
Growth	1.67	1.62	1.71	.53	.56	.49	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00	-1.30	-1.16	-1.46	.73	.38	1.15
Affection	1.42	1.37	1.46	.59	.62	.56	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00	-.47	-.48	-.4	-.66	-.63	-.84
Resolve	1.46	1.36	1.55	.61	.64	.55	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00	-.66	-.51	-.76	-.52	-.65	-.45
General Result	7.85	7.55	8.15	2.02	2.19	1.78	7.00	6.00	7.00	10.00	10.00	10.00	10.00	10.00	10.00	-.91	-.87	-.8	.71	.78	-.29

R – range, As – skewness, K – kurtosis.

3. Results

3.1. Averages and Standard Deviations

Based on the studies carried out the average results and standard deviation for the individual scales and the general score were determined. All analysis results are shown in Table 2.

The average overall result (General Result) obtained by the studied persons is 7.85 (SD = 2.02). The results in each scale are: adaptability – M = 1.73, SD = .48, partnership – M = 1.57, SD = .54, growth – M = 1.67, SD =. 53, affection – M = 1.42, SD = .59, resolve – M = 1.46, SD = .41. For the overall result, the skewness indicator is .92 and the kurtosis – .71.

3.2. Internal consistency (α – Cronbach)

In order to estimate the reliability of FAPGAR, the internal consistency method *C*ronbach's α was used. The results of the internal consistency analysis are presented in Table 3.

The coefficient of reliability of *C*ronbach's α for the adaptive FAPGAR is .78 (Table 3), suggesting acceptable level of reliability measured by the internal compliance method (Nunnally, 1978).

The following examination was carried out to check whether there is an item who has a higher coefficient when one is excluded. The reliability of the individual items is presented in Table 4.

The results of the internal consistency analysis of each item (Table 4) indicate a significant contribution of each item to the scale structure and the

Table 3. FAPGAR – Internal consistency and Scale statistics / Summary of scale statistics.

GROUP	Total	Women	Men
M	7.85	7.55	8.15
Sum	2450	1178	1272
SD	2.02	2.19	1.78
Variance	4.09	4.81	3.2
Skewness	-.91	-.87	-.8
Kurtosis	.71	.78	-.29
Min	0	0	4
Max	10	10	10
*C*ronbach's α	.78	.8	.74
Standardized Cronbach's α	.78	.8	.75
Average correlation between headings	.42	.45	.38

Table 4. FAPGAR – Reliability statistics – item statistics.

	R			R2			α		
GROUP	Total	W	M	Total	W	M	Total	W	M
Adaptability	.52	.47	.48	.28	.26	.24	.75	.77	.71
Partnership	.63	.62	.55	.4	.45	.33	.72	.72	.68
Growth	.51	.55	.53	.28	.35	.29	.75	.74	.69
Affection	.58	.53	.53	.34	.35	.31	.73	.75	.69
Resolve	.55	.62	.47	.32	.42	.24	.74	.72	.71

R-Correlation Position-whole (discriminatory power of position), R2-Multiple R-squared (co-efficient of multiple determination), α – Cronbach scale after the removal of a given position/Item.

Table 5. Goodness of Fit Statistics – general (Total) and gender specific (W & M).

		Total	W & M
Default model	AIC	25.429	57.329
Saturated model	AIC	30.000	60.000
Independence model	AIC	201.041	362.891
Normed Fit Index	NFI	.993	.961
Comparative Fit Index	CFI	1.000	.983
Relative Fit Index	RFI	.975	.903
Critical N	CN	744	331
Standardized RMR	SRMR	.0151	.0324
RMSEA (confidence interval 90%)		.000 (.000-.108)	.049 (.000-.093)
Goodness of Fit Index	GFI	.996	.982
Adjusted Goodness of Fit Index	AGFI	.979	.931
relative chi-square (χ2/df)	CMIN/ DF	.476	1.666

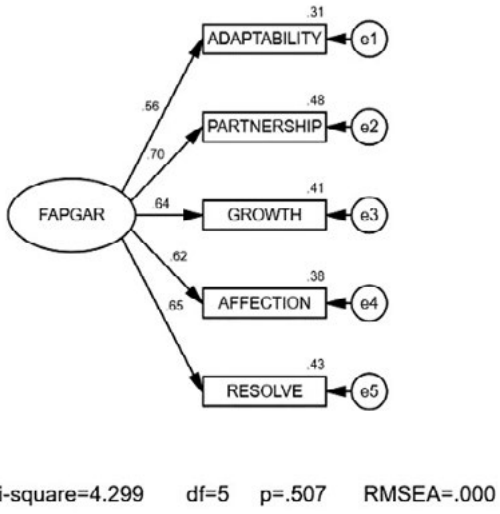

Figure 1. FAPGAR – Confirmatory Factor Analysis.

removal of any of them would reduce the reliability of the scale. Each item has a good discriminatory effect (above .5), and the Partnership and Affection positions have proved particularly relevant to the internal coherence of the tool.

3.3. Theoretical relevance – factorial analysis

A confirmation analysis was conducted to verify the factor structure of the questionnaire. The results of the CFA confirm the accuracy of the method, indicating its single factor theoretically assumed structure (Figure 1). CFA results testify to a good match of the hypothetical model to input data (Table 5).

Including the gender variable in the model showed that the model did not fit the data (significant chi-square and insufficient values of other goodness of fit indices). Detailed analysis of the calculations for the initial (basic) model, especially taking into account the corrections suggested by the computational program (modification index – AMOS) for the model – showed the introduction of correlation between errors (residuals, specific variance – unique variables) of the Growth and Affection variables, (e3 and e4 in the model) in the group of women, but this correlation turned out to be statistically insignificant in the group of men. The specific variance covariance of these variables (e3 and e4) allowed us to obtain satisfactory indicators of the model fit (taking into account the gender variable) to the data. All factor loadings (standardized regression weights – path coefficients in the model) assume satisfactory values (above .5) and are statistically significant in both groups (Figure 2).

The Chi-Square test results (χ2 = 4.30, df = 5, p = .507) as well as the individual match of fit indicators (SRMR = .019, RMSEA = .000, GFI = .994, AGFI = .981, CFI = 1) confirm the good fit of the hypothetical model to the data and the single-factor scale structure. The factor loadings of the individual observable variables range between .56 (adaptability) and .70 (partnership), which can be considered satisfactory, relevant to the scale. Attention should be paid to the results of women, which indicate the need for further research on the scale in this group. The CFA results in the studied group of women suggest that the Affection and Growth subscales may be related to each other. The broader sociodemographic profile should also be taken into account in further research.

3.4. Criteria relevance

The FAPGAR criteria relevance was assessed by determining the strength of the correlations between its results and the results of other tools that measure the functioning of the family. The results are summarised in Tables 6-8.

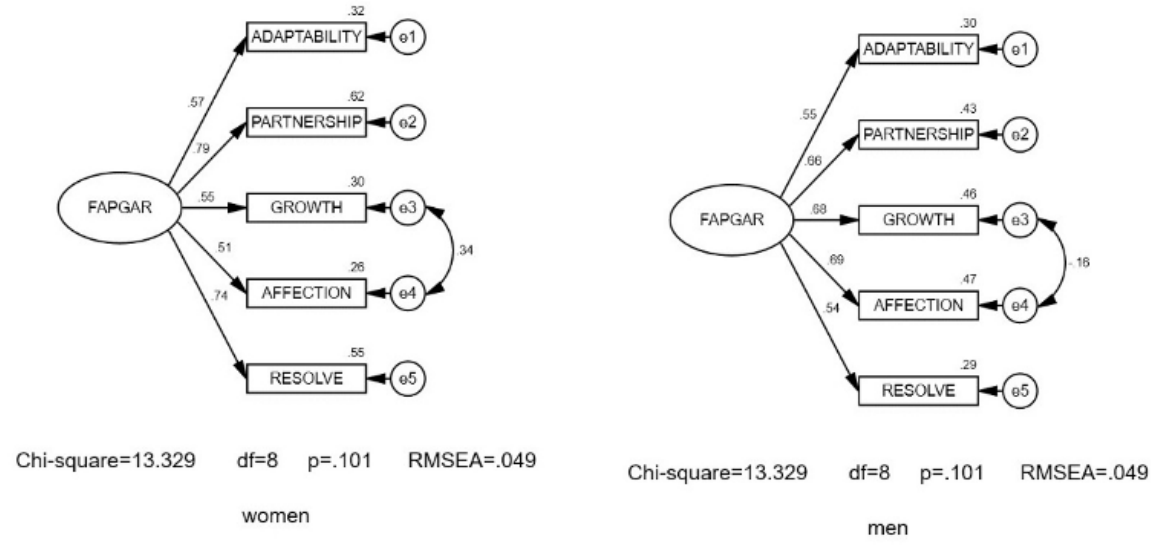

Figure 2. FAPGAR – Confirmatory Factor Analysis in women and men groups

According to the concept of Spanier (1976) and assuming a one-way construction of the tested FAPGAR, it was mainly expected that there would be significant correlations between the overall result of the DAS (measuring overall satisfaction) and the FAPGAR. The results confirmed that the most distinct (fair) relationships occurred in this area (Table 6).

Statistically significant links were observed between the FAPGAR score and the majority of the variables analysed for the functioning of the family, measured by SOR. The strongest compounds for the FAPGAR General Result are from Family Satisfaction, Family Communication, Balanced Cohesion (Table 7), and SOR General Result (Table 8).

It should be noted that although a significant part of the analyzed variables with individual FAPGAR scales indicate a weak correlation (below .3), the overall result of the FAPGAR scale (as the tool is intended for screening purposes) correlates with most other variables(general results) at the fair to moderate level – .3 to .6 (Han, 2003). It is worth adding that the relatively weak relationships between FAPGAR and tools based on system theory (SOR) in the research were explained by the curvilinear nature of the subscales (Takenaka & Ban, 2016). In other words, moderate levels of adaptability and coherence are optimal, but too much or too little are dysfunctional under normal circumstances. This is in line with the characteristics of the Circumplex model, in which avoiding extremes for any of the dimensions is of great importance for optimizing the functioning and well-being of an individual in the family system. Therefore, in the long term, the most effective for the functioning of the family is to regulate cohesion and flexibility so that it is at the average level of the intensity of these features (Olson & Gorall, 2003), which models specific (and therefore not necessarily high and having a specific sign / character) FAPGAR scales (an example here may be relationships with scores on the D, E, R and CH subscales) or their absence. This is indirectly confirmed by higher (fair to moderate) coefficients on communication scales (FC and FS), which additionally also seem to be more meaningfully related to FAPGAR (if we assume that communication in the Circumplex Model is understood as a facilitating dimension that helps the family to make changes in the level of cohesion and flexibility of family relationships, which seems to be most directly related to the perceived satisfaction with the relationship). This also applies to Balanced Cohesion, which mainly refers to the emotional ties between family members (Olson, 2011), which seems to be a dimension directly related to the sense of satisfaction.

Table 6. Correlation coefficients between Family APGAR and DAS.

	DC			DS			AE			DC			DAS GR		
Gender	r_w	r_m	r_t	r_w	r_m	r_t	r_w	r_m	r_t	r_w	r_m	r_t	r_w	r_m	r_t
AD	.16*	.19*	.19**	.22**	.22**	.23***	-.01	.34**	.14*	.06	.2*	.13*	.18*	.29**	.23***
P	.27**	.27**	.28***	.44**	.07	.27***	.15*	.22**	.19**	.19*	.02	.12*	.37**	.19*	.30***
G	.35**	.34**	.35***	.44**	.20*	.34***	.41**	.26**	.35***	.28**	.26**	.28***	.46**	.36**	.42***
AFF	.31**	.32**	.32***	.32**	.33**	.33***	.30**	.34**	.32***	.15	.25**	.2***	.35*	.41**	.38***
R	.27**	.22**	.26***	.33**	.09	.23***	.166	.22**	.2***	.24**	.094	.18**	.34**	.2*	.29***
FAPGAR GR	.37**	.38**	.39***	.47**	.26**	.38***	.28*	.39**	.33***	.25**	.23**	.25***	.46**	.41**	.44***

* p ≤ .05; ** p ≤ .01; *** p ≤ .001. DC – Dyadic Concensus, DS – Dyadic Satisfaction, AE – Affectional Expression, DC – Dyadic Cohesion, DAS GR – DAS General Result, AD – Adaptability, P – Parthership, G – Growth, AFF – Affection, R – Resolve, FAPGAR GR – FAPGAR General Result; r_w – r coefficient for women, r_m – r coefficient for men, r_t – r coefficient for total group

Table 7. Correlation coefficients between Family APGAR and SOR.

	A			P			G			AFF			R			FAPGAR GR		
	r_w	r_m	r_t	r_w	r_m	r_t	r_w	r_m	r_t	r_w	r_m	r_t	r_w	r_m	r_t	r_w	r_m	r_t
BC	.35**	.51**	.42***	.22**	.33**	.28***	.41**	.38**	.41***	.26**	.38**	.32***	.2*	.19*	.22***	.38**	.5**	.44***
BF	.22**	.25**	.24***	.2*	.2*	.21***	.39**	.2*	.31***	.28**	.22**	.25***	.12	.21**	.18**	.32**	.3**	.32***
D	-.25**	-.33**	-.28***	-.2*	-.09	-.14*	-.25**	-.22**	-.23***	-.25**	-.28**	-.26***	-.28**	-.03	-.15**	-.33**	-.26**	-.29***
E	.07	-.18*	-.03	-.15	-.08	-.10	-.27**	-.25**	-.24***	-.25**	-.21**	-.21***	-.1	-.02	-.04	-.19*	-.2*	-.17**
R	.04	-.05	.03	-.07	.02	.00	-.03	-.2*	-.08	-.05	-.22**	-.11	-.06	-.02	-.01	-.05	-.13	-.05
CH	-.1	-.28**	-.18**	-.29**	-.03	-.16**	-.27**	-.21**	-.24***	-.23**	-.21**	-.22***	-.22**	-.09	-.15**	-.3**	-.22**	-.26***
FC	.19*	.39**	.28***	.31**	.45**	.38***	.39**	.33**	.38***	.45**	.61**	.53***	.26**	.26**	.28***	.43**	.58**	.50***
FS	.17*	.46**	.30***	.32**	.45**	.39***	.36**	.38**	.38***	.34**	.59**	.45***	.32**	.31**	.34***	.41**	.62**	.51***

* p ≤ .05; ** p ≤ .01; *** p ≤ .001. BC – Balanced Cohesion, BF – Balanced Flexibility, D-Disengagement, E – Enmeshment, R – Rigidity, CH – Chaos, FC – Family Communication, FS – Family Satisfaction; r_w – r coefficient for women, r_m – r coefficient for men, r_t – r coefficient for total group

Table 8. Correlation coefficients between FAPGAR and SOR complex indicators.

	A			P			G			AFF			R			FAPGAR GR		
	r_w	r_m	r_t	r_w	r_m	r_t	r_w	r_m	r_t	r_w	r_m	r_t	r_w	r_m	r_t	r_w	r_m	r_t
CF	.27**	.37**	.32***	.27**	.254*	.27***	.4**	.31**	.35***	.37**	.33**	.35***	.27**	.19*	.24***	.42**	.4**	.41***
FF	.17*	.25**	.21***	.27**	.18*	.24***	.37**	.28**	.33***	.31**	.26**	.29***	.2*	.24**	.23***	.35**	.34**	.35***
SOR GR	.26**	.37**	.32***	.3**	.25**	.28***	.42**	.334*	.38***	.38**	.35**	.36***	.27**	.22**	.26***	.43**	.42**	.43***

* p ≤ .05; ** p ≤ .01; *** p ≤ .001. CF – Cohesion Factor, FF – Flexibility Factor, SOR GR – SOR General Result; r_w – r coefficient for women, r_m – r coefficient for men, r_t – r coefficient for total group

4. Discussion

The main objective of the study was to analyse the psychometric properties of the appropriated FAPGAR on the Polish group. Additionally, there was a desire to clarify what aspects of the family's functions are measured by FAPGAR, examining its correlation with SOR scales (based on FACES IV) and DAS. Verification of the suitability of the FAPGAR family in general diagnostic practice was sought. The results indicate that the FAPGAR is a psychometrically sound instrument.

The statistical analysis showed a satisfactory validity and reliability of the version translated into Polish. The results indicate that the FAPGAR short scale, measuring family functionality, is suitable for use in clinical practice and research. For example, it can help the physician determine how to take advantage of the current strengths of the family and identify areas of development that may be beneficial in promoting the effective functioning of the family. Family assessment can be used for early identification of patients at risk of poor family functioning and screening tests to identify families experiencing problems, and it can also facilitate adherence to treatment recommendations by working with the family in specific areas of family functioning (Supphapitiphon et al., 2019).

The results are in line with several published surveys. In addition to the already classic studies by Smilkstein (1978; Smilkstein et al., 1982), confirming the usefulness of the tool, a number of other studies were also carried out confirming its advantages, such as the studies by Del Vecchio Good et al. (1979), Hilliard et al. (1986), Foulke et al. (1988), Gutiérrez-Mata et al. (2017), Ko et al. (2015); Lim et al. (2012), Nan et al. (2013), Okeafor and Chukwujekwu (2017), Odume et al. (2015), Powazki and Walsh (2020), Takeda et al. (2017), Takenaka and Ban (2016), Shapiro et al. (1987), Wang et al. (2016), confirm usefulness of this diagnostic tool. The FAPGAR scale appears to be an appropriate instrument for measuring family functionality, especially with reference to young people and young adults (DelVecchio Good et al., 1979).

In our research, the Cronbach's α coefficient was .78. A value of total-α indicates acceptable reliability. Over the years, studies around the world have obtained *C*ronbach's α values: Smilkstein et al. – .82 (1978), Silva et al. – .73 – .78 (2014), Benítez Molina and Caballero Badillo – .87 (2017), Castillo et al. – .78 (2014), Gómez-Clavelina et al. – .84 (2010), Ko et al. – .84 – .72 (2015), Özcan et al. – .79 (2011), Mayorga-Muñoz et al. – .99 (2019), Bellón Saameño et al. – .84 (1996), Kroplewski et al. – .88 (2019), Supphapitiphon et al. – .87 (2019), Lima-Rodríguez et al. – .93 (2015), Nan et al. – .91 (2014) confirm usefulness of this diagnostic tool. The results of the FAPGAR studies providing further support for construct validity. It seems, however, that research should be continued on larger groups of people (because, for example, group 156 – after being separated into sex, does not fully meet the CFA requirements).

The specific results obtained by women are somewhat puzzling. It is worth considering whether this is the result of their more careful approach to research and a more analytical view of their relationship compared to men. This thread is worth taking up in future studies, including the control of appropriate moderating variables.

Has the FAPGAR tool deserved such a harsh assessment as expressed by Yaphe (2013)? The results presented in the paper indicate an acceptable reliability and relevance in measuring the family functionality. Combined with the constructs of popular research tools (SOR, based on FACES IV and DAS), it shows the compounds certifying its diagnostic nature. All of this suggests that it is still a living tool, especially in diagnostic situations requiring rapid assessment of family functionality.

5. Limitations

Our research has some limitations. It is worth noting that the study was based on a relatively undifferentiated age group, namely adults, and therefore before passing the final judgment it might be worth including more diverse groups in the future studies – i.e. youth groups, young adults, etc.

We also did not verify the relationship of FAPGAR result, with for example an occurrence of family dysfunction or illness, and therefore we are unable to reliably answer the question of whether it is a tool that

can be used to evaluate the relationship between those variables. However, it seems that sufficient psychometric properties of Polish adaptation and confirmed accuracy of the method are optimistic that this kind of correlations can be measured in the future.

We are aware that the system tools used to analyze the accuracy (mainly the SOR) may not fully coincide with the FAPGAR compactness. In Poland, however, we do not have any other standardized, short family screening technique that could be combined with FAPGAR, therefore our choice was somewhat limited. We are also aware that this may have an impact on the results of the analysis of the relevance of the presented tool.

It also needs to be remembered that the tool belongs to the so-called short diagnostic tools and therefore has some limitations. However, although short timescales tend to have weaker psychometric properties than longer ones, often the possibility of using a shorter measure is a better option than completely dropping the measurement, especially if they have good psychometrics parameters (Tuszyńska-Bogucka, 2019). This does not change the fact that, as it stands, this instrument can be useful in assessing how families cope with the disease or the disability of their members, especially in clinical practice, considering the importance of the family as the primary guardian. It can also be used to carry out epidemiological research and management, planning and assistance, both of an individual and their family environment.

6. Conclusions

1. The FAPGAR is a less complex but enough reliable tool to measure the family functionality. Results show acceptable psychometric properties of the Polish scale adaptation of FAPGAR. It has both satisfactory reliability and relevance.
2. There is the potential of FAPGAR in family diagnostics. The fact that the scale has the acceptable characteristics – a acceptable validity and reliability indicated that family physicians can use FAPGAR in Poland to identify people's perceptions regarding their families functioning.
3. The reliability, measured by using Cronbach's α's, allows to conclude, given the acceptable values of the indices that were obtained, that there is an internal cohesion in each of the subscales of the total scale. Our data are in line with the scores obtained by other researchers, signalling the diagnostic value of FAPGAR.
4. It seems that it should be (in accordance with the original intention of the creators) dedicated to family doctors and other specialists who, by using the FAPGAR test, can conduct a preliminary assessment of the marital and family situation rather than aim for in-depth research
5. In conclusion of the pros and cons of the project, it can be said that more than 30 years after its creation, FAPGAR is still a popular and often used measure in studying intimate and close relationships. Measuring the quality of relationships is important because the correlations and the consequences of the quality of the relationship are so widespread. Although this field will certainly continue to create new measurement methods and perfect the current ones, FAPGAR remains a quite viable diagnostic force.

Data availability

All the data supporting the findings is contained within the manuscript, when there is in need the data-set used for the present study's conclusion can be accessible from the corresponding author on reasonable request.

Compliance with ethical standards

Ethical Approval The study was approved by the appropriate institutional research Ethics Committee and performed in accordance with the ethical standards laid down in the 1964 Declaration of Helsinki and its later amendments, or comparable ethical standards.

Informed consent

Informed consent was obtained from all individual participants included in the study.

Conflicts of interest

The authors have no competing interests to declare.

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The Polish adaptation of the Blood Donor Identity Survey[1]

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Paweł Kosowski[a] ✉

[a] *Paweł Kosowski, https://orcid.org/0000-0002-6552-2729,*
Department of Psychology, Faculty of Pedagogy and Psychology, Jan Kochanowski University in Kielce, Poland
✉ *Corresponding author: pawel.kosowski@ujk.edu.pl*

Abstract: The present study aimed to culturally adapt and validate the Polish version of the Blood Donor Identity Survey (BDIS-PL), a multidimensional tool grounded in Self-Determination Theory (SDT) for assessing motivational profiles of blood donors. Despite increasing public health concerns over declining donor numbers in Poland, psychological research in this area remains limited. The BDIS fills a critical gap by capturing six types of motivational regulation: amotivation, external, introjected, identified, integrated, and intrinsic regulation. A total of 665 Polish participants completed the BDIS-PL, along with personality and prosocial orientation measures (NEO-PI-R subscales and the Light Triad Scale). Confirmatory factor analysis confirmed the original six-factor structure (CFI = .93; RMSEA = .08), and all subscales demonstrated acceptable to high internal consistency (α = .66–.88). Metric, but not scalar, measurement invariance was supported across gender. Convergent and discriminant validity were confirmed via multitrait–multimethod matrix analyses, showing expected correlations between motivation types and personality traits. Motivational profiles significantly differentiated between active donors, former donors, and non-donors: active donors displayed significantly higher levels of internalized motivation (identified, integrated, intrinsic) and lower amotivation. These findings support the psychometric robustness of the BDIS-PL and highlight the importance of internalized motivation for sustained blood donation. The tool offers valuable insights for designing targeted interventions to enhance donor retention and recruitment in Poland, particularly by fostering autonomous forms of motivation. This study provides cross-cultural validation of the BDIS and reinforces the utility of SDT in health-related behavior research.
Keywords: blood donation, donor motivation, Self-Determination Theory, Polish adaptation, psychometric validation

1. Introduction

Psychological research on blood donors in Poland has been very limited and remains a niche area (Kosowski, 2023a, 2024). To date, most Polish studies have focused only on basic knowledge and attitudes toward blood donation, without examining deeper psychological factors of donors. For example, surveys by Markowska and Węglińska (2018) and Orzeł-Nowak and Wcisło (2011) assessed university students' knowledge about honorary blood donation but did not investigate donors' personality or motivational profiles. The newest and first psychological studies of blood donors in Poland notes a *"lack of psychological research on blood donors and the donation system in the country"* (Kosowski, 2024). To this end, that studies has begun to fill this gap by exploring donors' personality traits and motivations. For instance, some of these studies have examined prosocial personality characteristics (e.g. empathy vs. narcissism) among Polish blood donors (Kosowski, 2021, 2023a) and the role of social support and personality in donors' well-being. That studies also addressed psychological barriers to donation, such as fear – recently adapting the Blood Donation Fears Inventory into Polish (Kosowski, 2024) – to better understand factors that deter or encourage donation. This stands in contrast to the more extensive body of international research on blood donor behavior and motivation (Bednall & Bove, 2011; Masser et al., 2008), underscoring the need for more focused studies in the Polish context.

1 Article in Polish language: https://stowarzyszeniefidesetratio.pl/fer/63P_Koso.pdf

Research on blood donor psychology is both socially and scientifically important for Poland, especially given current demographic and public health challenges. Like many countries, Poland faces an aging population alongside a worrying decline in the donor base (Kosowski, 2024). Over the past decade, the number of active blood donors and donations in Poland has been decreasing annually (Kosowski, 2023b) . This trend is alarming because an aging society is likely to *increase* the demand for blood transfusions while simultaneously *shrinking* the pool of eligible donors (older donors "age out" of donation eligibility) (Hyde et al., 2025). Notably, in developed countries including Poland, the largest group of blood transfusion recipients are individuals over 60 years old, foreshadowing a growing demand for blood as the population ages (Siekierska et al., 2023). At the same time, Poland's rate of blood donation is currently suboptimal: in 2021 only about 1.6% of the Polish population donated blood, whereas an estimated ~2.5% is needed for the nation to be self-sufficient in blood supply (Siekierska et al., 2023). This shortfall raises concerns about meeting future healthcare needs. In response, policymakers have initiated campaigns (e.g. the nationwide "Your Blood, My Life" program for 2021-2026) to encourage blood donation and recruit new donors (Siekierska et al., 2023). From a scientific perspective, understanding the motivations, identities, and barriers of blood donors is crucial to inform such interventions. Studying blood donor psychology can reveal what drives people to donate or to refrain from donating, which in turn can guide more effective donor recruitment and retention strategies. In the context of Poland's demographic trends, this research has high societal relevance: improving donor engagement will help secure a stable blood supply for an aging population. Conversely, as Kosowski (2023b) cautions, a continued lack of research and evidence-based action on donor motivation "may have serious and negative consequences in the coming decades"(Kosowski, 2023b). Therefore, expanding scholarly attention to blood donor psychology in Poland is both timely and necessary.

1.1. The Blood Donor Identity Construct

Considering these needs, the concept of "blood donor identity" has gained prominence to understand blood donor motivation and behavior. The construct *Blood Donor Identity* refers to the degree to which individuals internalize the role of a blood donor as part of their self-concept, along with the motivations that underlie their decision to donate (or not donate) blood. In other words, it reflects *why* a person donates blood, ranging from purely external reasons to deeply internalized, identity-driven reasons. Evidence shows that having a strong blood donor identity – essentially, seeing blood donation as part of "who I am" – is an important predictor of sustained donation behavior (Kermani et al., 2024; Ryan et al., 2008; Ryan & Deci, 2008; Williams et al., 2019). However, prior studies often measured this identity/motivation with one-dimensional or ad hoc scales, which had limited psychometric support. To address this, France et al. (2014) developed the Blood Donor Identity Survey (BDIS) as a multidimensional measure of blood donor motivations grounded in self-determination theory. The BDIS conceptualizes blood donor identity as a spectrum of motivational orientations toward donation, from lack of motivation to highly internalized motivation. In their original study, France and colleagues identified six distinct dimensions of donor motivation corresponding to this spectrum. Confirmatory factor analyses in two samples (blood center donors and college students) supported a six-factor model, indicating that blood donor identity is not a single trait but comprises multiple components of motivation. The final BDIS provides a psychometrically sound, multidimensional instrument for assessing why people donate blood, suitable for both current donors and non-donors with varying experience levels. In essence, the BDIS captures how fully an individual has internalized the donor role – from feeling no personal drive to donate, up to identifying strongly as a blood donor who donates out of intrinsic commitment (France et al., 2014)

This multidimensional "donor identity" construct is valuable because it allows researchers to distinguish, for example, a person who donates only due to external pressures from one who donates out of genuine altruistic identity. Such nuance is critical

for understanding and predicting donation behavior. By adapting the BDIS for use in Poland, we can for the first-time measure *blood donor identity* in Polish samples and explore how these various motivational dimensions manifest in Poland's cultural and social context.

1.2. Self-Determination Theory and donor motivation

The theoretical foundation of the BDIS is Self-Determination Theory (SDT), a broad framework for human motivation developed by Deci and Ryan (2000, 2008a; 2008b; 2008c). SDT differentiates types of motivation along a continuum from non-self-determined to fully self-determined, emphasizing how motivations become internalized (or not) into one's identity (France et al., 2014). In the context of blood donation, SDT helps explain the multidimensional nature of donor motivation captured by the BDIS. Specifically, the BDIS assesses six forms of regulation that correspond to the SDT continuum, ranging from amotivation (no motivation) to intrinsic motivation. These can be defined as follows (Deci & Ryan, 2000; France et al., 2014):

- Amotivation: A state of lacking any motivation or intent to donate blood. The individual does not see value in donating or feels incapable of doing so, and thus has no drive to engage in blood donation (This reflects the non-self-determined end of the spectrum, where donating is not pursued at all.).
- External regulation: Donating blood due to external contingencies such as rewards or pressures. The behavior is regulated by outside influences – for example, donating solely to receive free gifts, get a day off work, or because of direct social pressure. Motivation here is *exclusively external*, driven by compliance with demands or the desire for tangible incentives. The act of donating is not internalized; it is a means to an end imposed from outside.
- Introjected regulation: Donating blood due to internal pressures and feelings, such as guilt, obligation, or to boost one's ego. In this case, the motivation is partly internal – the person donates to avoid feeling ashamed or to maintain self-esteem – but it is still a *controlled* form of motivation. For instance, a person might donate because they "would feel bad about themselves if they didn't," indicating an internal coercion (guilt or ego involvement) rather than true personal endorsement. Introjected motivation is thus internalized to some extent, but not fully accepted as one's own values.
- Identified regulation: Donating blood because one has *identified* with the personal importance of the act. The individual consciously values blood donation and accepts it as meaningful, even if it is not inherently enjoyable. In this case, the motivation is relatively autonomous: the person donates out of a belief in the significance of helping others or contributing to society. For example, a donor might say, "I donate blood because I know it saves lives and I feel it's important to do my part." The behavior is driven by personal convictions and values – the person has internalized the reasons for donating, making it a chosen goal.
- Integrated regulation: Donating blood because the behavior is fully integrated with oneself and core values. This represents the most autonomous form of extrinsic motivation, where the individual has not only identified with the value of blood donation but also aligned it with their broader sense of identity. Being a blood donor becomes part of who they are – their self-image and life goals. For instance, an integrated motive is when someone considers blood donation as a natural expression of their personal values or as an integral aspect of their identity as a caring, socially responsible person. Although the act of donating is still done for its value (and not purely for enjoyment), it is self-determined because it coheres with the person's ideals, and they freely endorse it. Integrated regulation is very close to intrinsic motivation in terms of autonomy.
- Intrinsic regulation: Donating blood for the inherent satisfaction, interest, or enjoyment derived from the activity itself. This is the far-right end of the SDT continuum, indicating fully self-determined motivation. An intrinsically

motivated blood donor finds the act of giving blood rewarding in itself – for example, they *enjoy* the experience of helping others or feel genuine pleasure and fulfillment from the process of donation. Here the behavior is propelled by interest and personal gratification, with no need for external incentives or self-imposed pressures. In practice, pure intrinsic motivation may be less common in blood donation (since donating blood is not typically "fun" in the way a hobby is). Nonetheless, some long-term donors do report an intrinsic satisfaction or positive emotion associated with the act of donating, beyond any external reward.

According to SDT(Deci & Ryan, 2000, 2008), these six regulation types lie on a continuum of internalization: amotivation represents a lack of self-determination, the four types of extrinsic regulation (external, introjected, identified, integrated) represent progressively greater internalization of the behavior, and intrinsic regulation represents full self-determination. The BDIS was explicitly designed to measure all these motivational dimensions in the context of blood donation. France et al.(2014) found that donors' responses indeed clustered into six factors corresponding to the above regulations, consistent with SDT's theoretical structure. This multidimensional approach recognizes that not all blood donors are motivated by the same reasons – for example, one donor might be primarily externally motivated (seeking a reward), while another donates out of identified or intrinsic motives – and the same individual's motivation can evolve over time from extrinsic to more intrinsic forms.

Importantly, motivations on the more autonomous end of the spectrum (identified, integrated, intrinsic) are associated with more stable and self-endorsed behavior, and thus are thought to better sustain long-term donation behavior(Deci & Ryan, 2000). In contrast, controlled motives (external, introjected) might lead to less consistency or greater risk of dropout once the external pressure or guilt is removed. By assessing a donor's position on this continuum, the BDIS provides insight into how strongly a person has internalized the blood donor role. In practical terms, this information is valuable because it can inform interventions: for instance, strategies that help shift donors from external to more internalized motives (e.g. highlighting personal values, fostering identification with the donor role) could improve donor retention and satisfaction. Self-Determination Theory thus offers a robust framework for understanding the quality of blood donor motivation, not just the quantity.

The Polish adaptation of the BDIS will enable researchers to examine these motivational dimensions among Polish donors, opening the door to comparisons with the original findings and to culturally tailored donor recruitment strategies. Ultimately, by measuring *blood donor identity* in a nuanced way, we can better understand what motivates Poles to give blood and how to cultivate more enduring, self-determined donation behaviors – an essential step toward addressing the country's blood supply challenges.

2. Method

2.1. Specific aim of the study

The main objective of this study was the cultural adaptation and psychometric validation of the Polish version of the Blood Donor Identity Survey (BDIS-PL). The study aimed to evaluate: (a) construct validity using confirmatory factor analysis (CFA), (b) internal consistency (Cronbach's α, McDonald's ω), (c) measurement invariance across gender, (d) convergent and discriminant validity using a multitrait–multimethod matrix (MTMM), and (e) the relationship between motivational types and actual blood donation status (active donor, former donor, non-donor).

2.2. Participants

The final sample comprised 665 individuals recruited from diverse regions across Poland. The gender distribution was as follows: 446 participants (67.1%) identified as female, 215 (32.3%) as male, and 4 (0.6%) as "other," which included individuals iden-

tifying as non-binary or asexual. Participants ranged in age, with a mean age of 27.31 years (SD = 10.90). In terms of residential location, 224 participants (33.7%) reported living in large urban areas (i.e., cities with over 100,000 inhabitants), 98 (14.7%) resided in small towns (with fewer than 20,000 inhabitants), 89 (13.4%) lived in medium-sized towns (20,000-100,000 inhabitants), and 254 (38.2%) were from rural areas. Regarding educational and occupational status, the sample included 246 non-working students (37%), 221 full-time employees (33.2%), 88 students engaged in part-time or full-time work (13.2%), 57 adult high school students (8.6%), 16 unemployed individuals (2.4%), 23 officers from the prison service (3.5%), and 7 retirees (1.1%). As for blood donation history, 89 participants (13.4%) were classified as regular voluntary blood donors, 70 (10.5%) had donated blood in the past but had since discontinued, and the remaining 506 (76.1%) had never donated blood.

2.3. Measures used

To evaluate the external consistency of the adapted instruments, two measures was used: (1) The Light Triad Scale (TLS) and (2) The Revised NEO Personality Inventory (NEO-PI-R) subscales.

1. The Light Triad Scale (Kaufman et al., 2019; Gerymski & Krok, 2019) is a 12-item Likert-type questionnaire assessing three benevolent personality traits – Faith in Humanity, Humanism, and Kantianism – reflecting a caring and altruistic orientation towards others. Reliability coefficients for the present study were: Cronbach's α = .82 and McDonald's ω = .83.
2. The Revised NEO-Personality Inventory (NEO-PI-R) (Costa Jr & McCrae, 2000; Siuta, 2006) is a comprehensive inventory that measures five major domains of personality – Neuroticism, Extraversion, Openness to Experience, Agreeableness, and Conscientiousness – providing a detailed profile of an individual's personality traits. The following subscales were extracted from the NEO-PI-R: Kindness from the Extraversion scale, Feelings, Actions, and Ideas from the Openness to Experience scale, and Altruism from the Agreeableness scale. Reliability coefficients for the present study were: Cronbach's α = .85 and McDonald's ω = .88.

2.4. Translation procedure

Prior to initiating the validation and adaptation process, the corresponding author of the original scale, Christopher France, was contacted to obtain formal permission, which was duly granted.

The translation procedure involved four independent experts: two academic researchers in psychology and two certified professional English translators. Each expert independently translated the original instrument into Polish. To verify semantic and conceptual equivalence, a separate professional translator performed a back-translation into English. The versions produced by both the psychologists and professional translators demonstrated a high degree of consistency. The finalized Polish translation is presented in Table 1.

2.5. Data collection procedure

Data collection was carried out remotely using the Google Forms platform. Prior to participation, individuals were required to confirm their understanding of the study's purpose and procedures, acknowledge that they were of legal age, and provide informed consent.

The survey was administered between early December 2024 and the end of January 2025. Completion of the questionnaire took approximately 15 minutes. Consent was obtained by having participants select the appropriate response at the beginning of the survey. They were also informed that they could withdraw from the study at any time by closing the survey window, in which case their responses would not be saved or included in the dataset.

2.6. Methodology and statistical analyses

This study employed a cross-sectional survey design, and a comprehensive set of statistical procedures was conducted to evaluate the psychometric properties of

Table 1. The final translation of the BDIS-PL

Nr	Original version	Final Polish translation
1	I really do not think about donating blood.	Naprawdę nie myślę o oddaniu krwi.
2	I donate blood for thank-you gifts, such as T-shirts or water bottles.	Oddaję krew w zamian za upominki, takie jak koszulki, butelki na wodę itp.
3	I would feel guilty or ashamed of myself if I did not donate blood.	Czuł(a)bym się winny/a lub zawstydzony/a, gdybym nie oddał/a krwi.
4	Donating blood is an important choice I really want to make.	Oddawanie krwi to ważny wybór, którego naprawdę chcę dokonać.
5	I have carefully thought about it and believe donating blood is very important for many aspects of my life.	Dokładnie to przemyślałem/am i uważam, że oddawanie krwi jest bardzo ważne dla wielu sfer mojego życia.
6	I enjoy donating blood.	Oddawanie krwi sprawia mi przyjemność.
7	Blood donation is something I rarely even think about.	Oddawanie krwi to coś, o czym rzadko myślę.
8	I donate blood for the refreshments, such as drinks or snacks.	Oddaję krew dla poczęstunku, takiego jak napoje lub czekolady.
9	I would feel bad about myself if I did not donate blood.	Czuł(a)bym się źle, gdybym nie oddał/a krwi.
10	Donating blood is very important for the health of others.	Oddawanie krwi jest bardzo ważne dla zdrowia innych.
11	Donating blood is consistent with my life goals.	Oddawanie krwi jest zgodne z moimi celami życiowymi.
12	For me, being a blood donor means more than just donating blood.	Dla mnie bycie krwiodawcą oznacza coś więcej niż tylko oddawanie krwi.
13	I really do not have any clear feelings about blood donation.	Naprawdę nie mam jasnych odczuć co do oddawania krwi.
14	I donate blood to get a donor sticker.	Oddaję krew, aby otrzymać odznaczenia
15	I would regret it if I did not donate blood.	Żałował(a)bym, gdybym nie oddał/a krwi.
16	Blood donation is an important thing to do.	Oddawanie krwi to ważna rzecz.
17	Donating blood is very important to me.	Oddawanie krwi jest dla mnie bardzo ważne.
18	Blood donation is an important part of who I am.	Krwiodawstwo jest ważną częścią tego, kim jestem.

the Polish version of the Blood Donor Identity Survey. Confirmatory factor analysis (CFA) was used to assess the proposed six-factor structure, with model fit evaluated using χ^2/df, RMSEA, CFI, TLI, and SRMR indices, and model comparisons based on AIC values. Internal consistency was examined through Cronbach's alpha and McDonald's omega, with 1,000 bootstrap samples used to estimate confidence intervals. Measurement invariance across gender was tested using multigroup CFA, with configural, metric, and scalar invariance assessed by examining changes in $\Delta\chi^2$ and ΔCFI values. Convergent and discriminant validity were evaluated using Pearson's correlation coefficients and visualized through heatmaps. Differences in motivational profiles based on donor status were analyzed using Welch's ANOVA, followed by Games–Howell post hoc comparisons when appropriate. All analyses were performed using R version 4.3 (with packages including lavaan, psych, and ggplot2) and Jamovi version 2.3.28. A significance level of $\alpha = .05$ was adopted, and results were reported with relevant test statistics, 95% confidence intervals, and effect size estimates (η^2) where applicable.

3. Results

3.1. Confirmatory factor analysis

In first step, a confirmatory factor analysis was performed ($\chi2 = 636.96$; df = 110; p <.001). The goodness-of-fit indicators revealed that the model with six factors included was adequately fitted to the data: RMSEA =.08; CFI =.93; TLI =.90; SRMR =.07; AIC = 41029.35; 90% CI [.08; .09]. The results (with beta weights) are shown in figure 1.

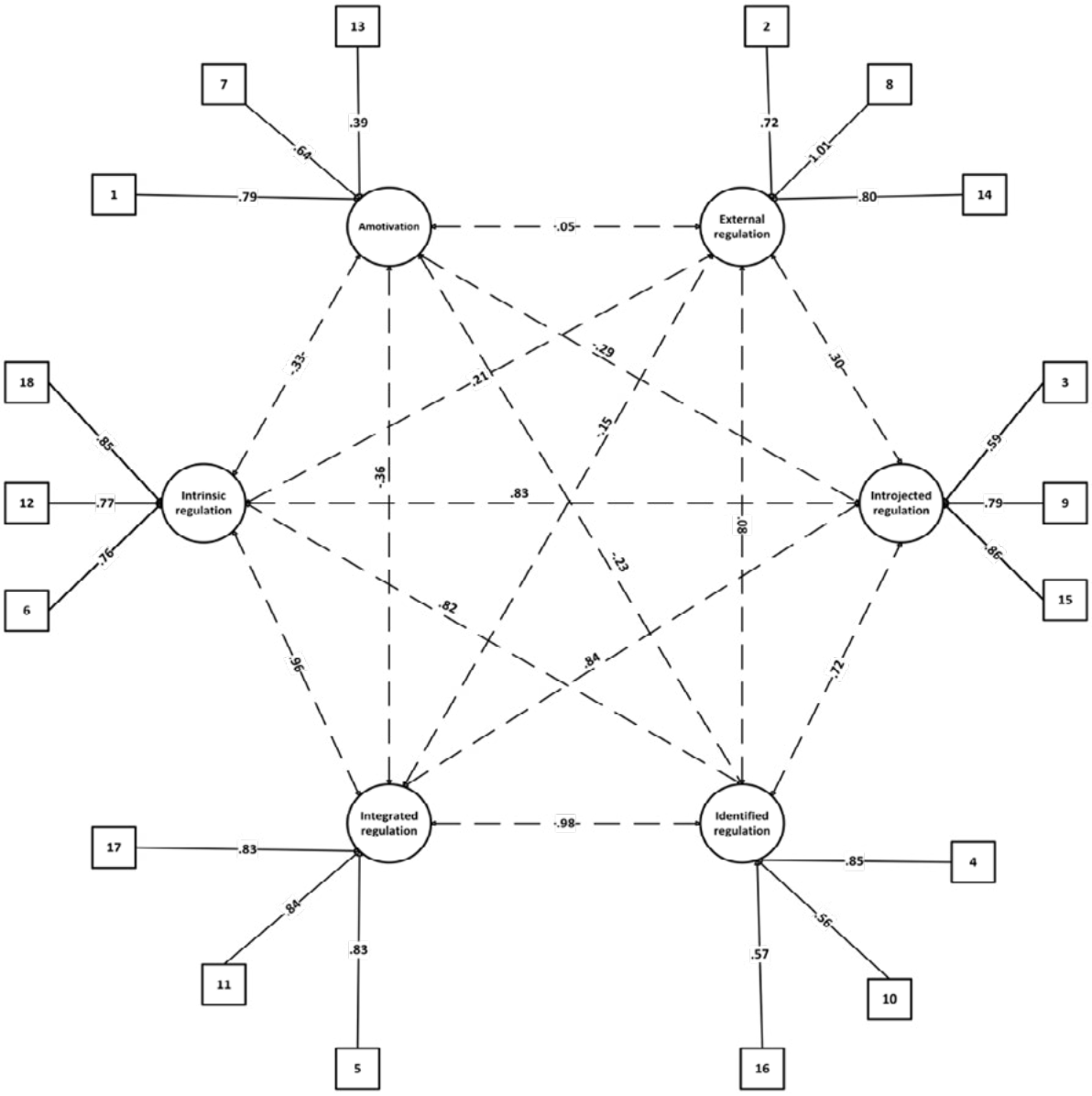


Figure 1. Model of confirmatory factor analysis of the subscales with correlations and corresponding items with beta weights for the Polish adaptation of the BDIS. Double-headed arrows indicate the correlations between the subscales. Single-headed arrows indicate the factor loadings for each item with its subscale.

3.2. Reliability analysis

In the next step, the reliability of the Polish version of the Blood Donor Identity Survey was assessed with two indicators – Cronbach's α and McDonald's ω. Reliability coefficients of Polish adaptation and from original version are shown in Table 2.

3.3. Gender invariance

To examine whether the factor structure of the adapted instrument was invariant across gender, a series of multigroup confirmatory factor analyses (MG-CFA) was conducted using maximum likelihood estimation (see: Table 3.). Three hierarchically nested models were evaluated: a configural model (no equality constraints), a metric invariance model (factor loadings constrained to be equal), and a scalar invariance model (loadings and item intercepts constrained).

The configural model demonstrated acceptable fit, $\chi^2(240) = 1149.0$, AIC = 40328, BIC = 40944. Imposing equality constraints on factor loadings did not significantly degrade model fit, $\Delta\chi^2(12) = 17.37$, $p = .136$, RMSEA = .037, supporting metric invar-

Table 2. The internal consistency of BDIS in the Polish adaptation compared to the original version

Scale			Polish version		Original version	
	M	*SD*	*α*	*ω*	α_1	α_2
Amotivation	3.18	1.56	.66	.67	.70	.75
External regulation	1.59	1.09	.84	.84	.74	.85
Introjected regulation	2.59	1.48	.81	.82	.84	.90
Identified regulation	5.11	1.70	.81	.84	.63	.68
Integrated regulation	3.77	1.88	.88	.88	.76	.89
Intrinsic regulation	3.17	1.73	.82	.83	.77	.79

M – mean, *SD* – standard deviation, *α*–Cronbach's alpha, *ω* – McDonald's omega, α_1– NYBC sample, α_2– Ohio sample

iance across gender. However, constraining both loadings and intercepts significantly worsened model fit, $\Delta\chi^2(12) = 30.39$, $p = .002$, with RMSEA increasing to .069 and a drop in CFI exceeding the recommended cutoff of .01. These results indicate that full scalar invariance was not supported.

Taken together, these findings provide evidence for configural and metric invariance, indicating that the factorial structure and item loadings are comparable between men and women. However, scalar invariance was not achieved, suggesting that comparisons of latent means across gender should be interpreted with caution.

3.4. Convergent and discriminant validity–Multitrait-Multimethod (MTMM) Matrix: Correlational Analysis

To examine the convergent and discriminant validity of the measured constructs, a multitrait-multimethod (MTMM) approach was applied (see correlation heatmap in graph 1. The analysis included three conceptual domains: motivation to donate blood (based on Self-Determination Theory), prosocial value orientations (the Light Triad: faith in humanity, humanism, Kantianism), and selected personality traits (facets from the NEO-PI-R inventory).

A Pearson correlation matrix was computed to evaluate the pattern of relationships among variables within and across theoretical domains. According to the MTMM framework (Campbell & Fiske, 1959), high correlations within traits measured by the same method indicate convergent validity, whereas low correlations between distinct traits support discriminant validity. The resulting correlation matrix is presented as a heatmap to visually illustrate the strength and direction of associations between variables.

The correlation matrix revealed strong positive associations among variables within the same theoretical domains. Motivation variables based on Self-Determination Theory showed moderate to high intercorrelations, particularly between Integrated regulation and Identified regulation (r = .72) and between Integrated and Introjected regulation (r = .84), indicating conceptual coherence within the continuum of internalized motivation. Similarly, the three Light Triad traits – faith in humanity, humanism, and Kantianism – were highly interrelated (rs > .91), supporting their shared underlying structure. In con-

Table 3. Multigroup confirmatory factor analysis for gender invariance

Model	χ^2	df	$\Delta\chi^2$	Δdf	p	RMSEA	AIC	BIC
Configural	1149.0	240	–	–	–	–	40328	40944
Metric (loadings)	1166.4	252	17.37	12	.136	.037	40321	40884
Scalar (loadings + intercepts)	1196.8	264	30.39	12	.002 **	.069	40327	40836

AIC = Akaike Information Criterion; BIC = Bayesian Information Criterion; RMSEA = Root Mean Square Error of Approximation; p-values reflect the chi-square difference tests comparing each nested model with the less constrained model.
RMSEA is reported only for nested models.
**–p < .01

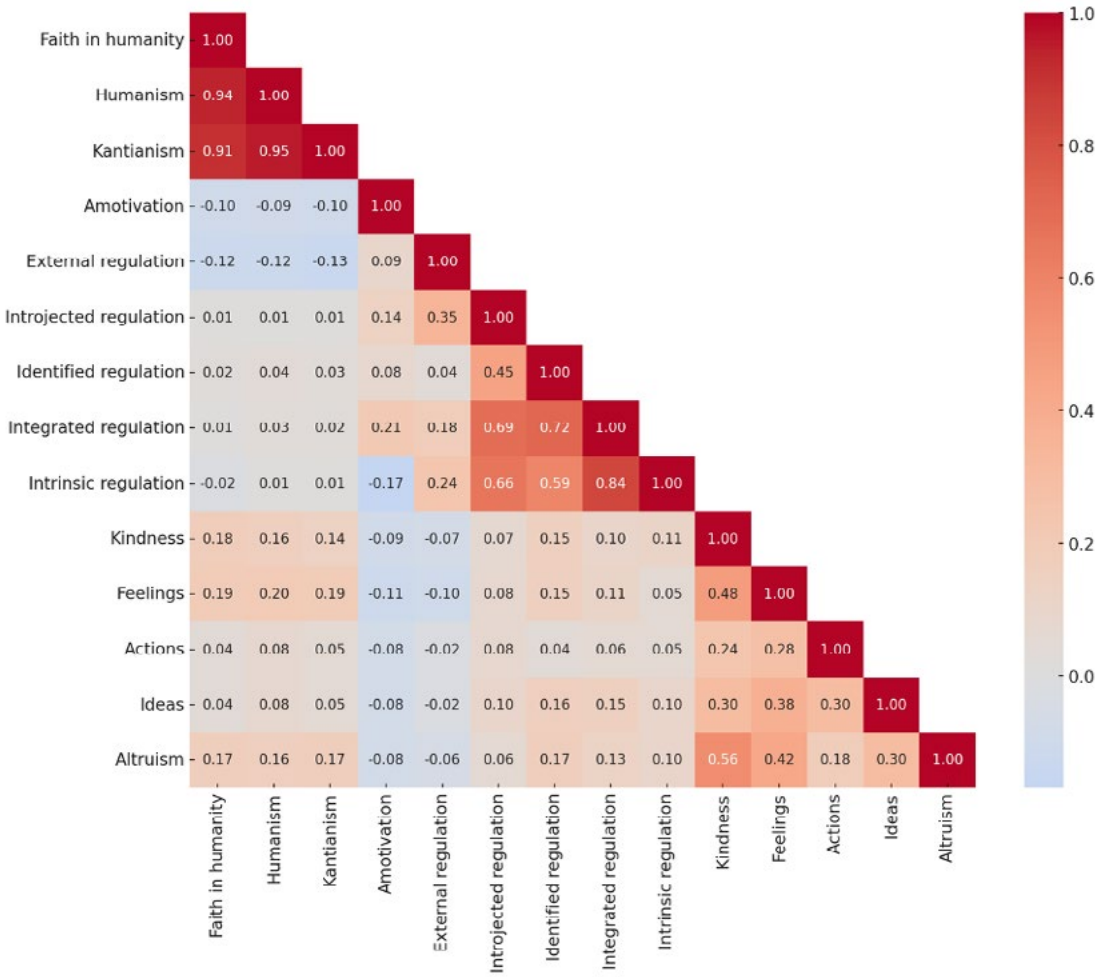


Figure 2. Correlation heatmap of psychological variables (n=665). Positive values indicate direct relationships, while negative values indicate inverse relationships. The color gradient reflects the strength and direction of the correlations (red = positive, blue = negative).

trast, correlations between different constructs (e.g., motivation vs. personality or Bright Triad traits) were generally low, suggesting good discriminant validity. For instance, amotivation was weakly and negatively correlated with faith in humanity (r = –.10), and external regulation showed negligible associations with NEO-PI-R traits (Emotions: r = –.02). Overall, the correlation pattern supports the expected structure of convergent and discriminant validity within the MTMM framework.

3.5. Blood donor identity and blood donator status

A one-way Welch's ANOVA was conducted to examine differences in motivation to donate blood across three donor groups (current donors, non-donors, and former donors). Significant between-group differences were found for all motivational types except external regulation. Specifically, significant effects were observed for amotivation, $F(2, 144.21) = 20.22$, $p < .001$; introjected regulation, $F(2, 128.10) = 19.85$, $p < .001$; identified regulation, $F(2, 132.97) = 10.49$, $p < .001$; integrated regulation, $F(2, 134.08) = 51.05$, $p < .001$; and intrinsic regulation, $F(2, 123.79) = 63.20$, $p < .001$. The difference in external regulation approached significance, $F(2, 129.62) = 2.49$, $p = .087$. Post hoc Games–Howell tests indicated that current donors reported significantly lower amotivation and significantly higher introjected, identified, integrated, and intrinsic regulation compared to non-donors, with former donors generally scoring between the two groups. These findings suggest that current donors are more autonomously motivated than non-donors,

supporting the importance of internalized forms of motivation in sustaining blood donation behavior. The distribution of motivation scores by donor status is illustrated in boxplots (Graphs 1-5), providing a visual representation of group differences and score variability.

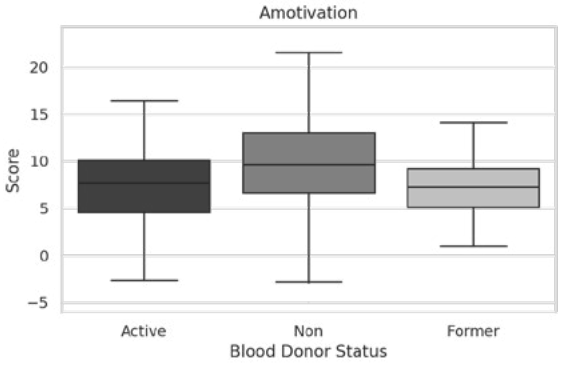
The boxplot Graph 1. presents the distribution of amotivation scores across three groups based on blood donor status: Active donors, Non-donors, and Former donors. The central line in each box represents the median score, the box itself shows the interquartile range (IQR), and the whiskers extend to the minimum and maximum values within 1.5×IQR.

- Non-donors exhibit the highest median and widest spread in amotivation scores, suggesting greater variability and generally higher levels of amotivation.
- Active donors have a lower median and more compact distribution, indicating relatively lower amotivation.
- Former donors show intermediate values but are closer to the active group in terms of central tendency.

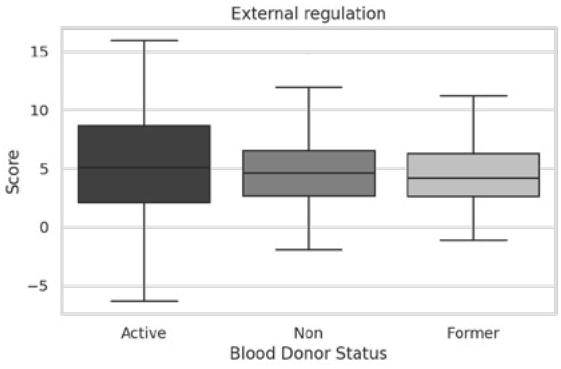
The boxplot Graph 2. illustrates the distribution of external regulation scores – a type of extrinsic motivation – across three groups defined by blood donor status: Active donors, Non-donors, and Former donors. The central line in each box represents the median score, the box itself shows the interquartile range (IQR), and the whiskers extend to the minimum and maximum values within 1.5×IQR.

- Active donors display the highest median and widest range of external regulation scores, indicating greater variability and a higher tendency to act based on external incentives or pressures.
- Non-donors and former donors show lower and more similar median scores, with narrower distributions, suggesting less reliance on external motivators.

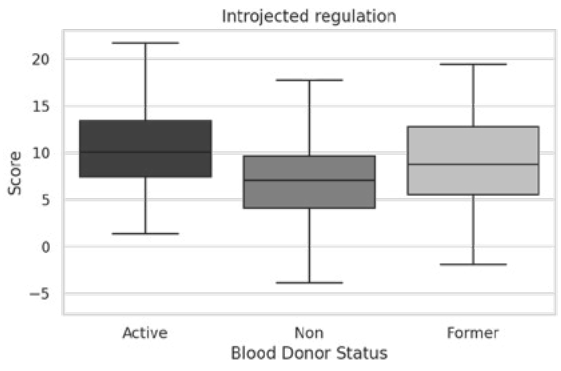
The boxplot Graph 3. illustrates the distribution of introjected regulation scores – a form of motivation driven by internal pressures such as guilt or ego enhancement – across three groups based on blood donor status: Active donors, Non-donors, and Former donors. The central line in each box represents the median score, the box itself shows the interquartile range (IQR), and the whiskers extend to the minimum and maximum values within 1.5×IQR.



Graph 1. Amotivation by Blood Donor Status



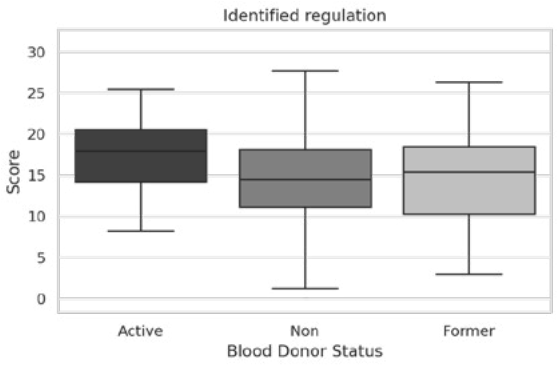
Graph 2. External regulation by Blood Donor Status



Graph 3. Introjected regulation by Blood Donor Status

- Active donors show the highest median and relatively high variability in introjected regulation, suggesting that internal pressures may play a substantial role in their motivation to donate.
- Former donors have a slightly lower median than active donors but still higher than non-donors, with a wide range indicating varied internal motivational experiences.
- Non-donors show the lowest median scores, suggesting they are less likely to be influenced by internalized social norms or self-evaluation.

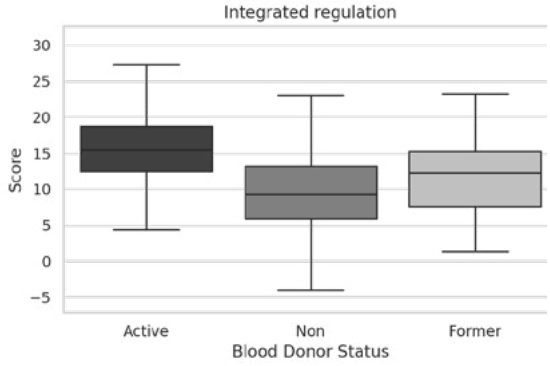
The boxplot Graph 4. shows the distribution of identified regulation scores – a form of autonomous motivation where behavior is aligned with personal values – across three groups based on blood donor status: Active donors, Non-donors, and Former donors. The central line in each box represents the median score, the box itself shows the interquartile range (IQR), and the whiskers extend to the minimum and maximum values within 1.5×IQR.



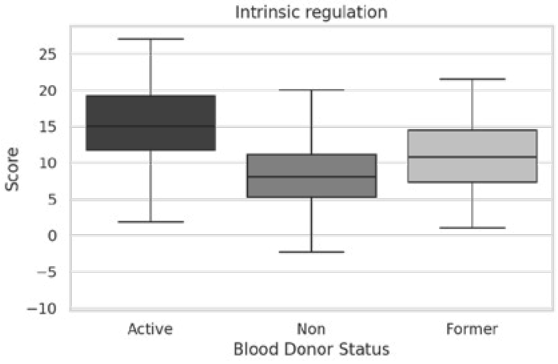
Graph 4. Identified regulation by Blood Donor Status

- Active donors report the highest median identified regulation, suggesting a strong internal endorsement of the value and importance of donating blood.
- Former donors show slightly lower median scores but with a similarly wide range, indicating variability in how strongly they continue to value blood donation.
- Non-donors have the lowest median, implying that donating blood may be less integrated into their personal value system.

The boxplot Graph 5. presents the distribution of integrated regulation scores – a form of autonomous motivation in which donating blood is fully integrated with one's identity and core values – across three blood donor status groups: Active donors, Non-donors, and Former donors. The central line in each box represents the median score, the box itself shows the interquartile range (IQR), and the whiskers extend to the minimum and maximum values within 1.5×IQR.



Graph 5. Integrated regulation by Blood Donor Status



Graph 6. Intrinsic regulation by Blood Donor Status

- Active donors exhibit the highest median and a relatively high range, suggesting that for many, blood donation is deeply aligned with their self-concept.
- Former donors show slightly lower median scores than active donors but higher than non-donors, indicating that integrated motivation may still influence their identity to some extent.

- Non-donors have the lowest median and a wide range of scores, implying that blood donation is less commonly seen as part of their self-definition.

The boxplot Graph 6. illustrates the distribution of intrinsic regulation scores, which reflect the degree to which individuals are motivated to donate blood for inherent satisfaction or enjoyment, across three groups based on blood donor status: Active donors, Non-donors, and Former donors. The central line in each box represents the median score, the box itself shows the interquartile range (IQR), and the whiskers extend to the minimum and maximum values within 1.5×IQR.

- Active donors display the highest median and the widest range of intrinsic motivation, indicating that enjoyment and internal satisfaction are key drivers of their behavior.
- Former donors show moderately high median scores, suggesting that intrinsic motives may still be relevant to them, although possibly to a lesser extent than for active donors.
- Non-donors have the lowest median scores, implying that they are least likely to donate blood for reasons of pure personal satisfaction.

4. Discussion

The primary aim of the present study was to adapt the Blood Donor Identity Survey (BDIS) to the Polish context and evaluate its psychometric properties, including its factorial structure, reliability, validity, and measurement invariance across gender. The psychometric findings of the Polish Blood Donor Identity Survey (BDIS-PL) largely support its validity and mirror results from the original BDIS and related research.

The confirmatory factor analysis (CFA) reinforced the six-factor structure of donor motivation derived from Self-Determination Theory (SDT). The CFA model with six latent factors (Amotivation, External, Introjected, Identified, Integrated, Intrinsic regulation) showed an adequate fit (e.g., CFI ≈ .93, RMSEA ≈ .08), indicating that the Polish adaptation captures the same multidimensional motivation spectrum as the original instrument. This replicates France et al.'s (2014) finding that a six-factor model best represents blood donor motivations. It also aligns with other studies applying SDT to donation contexts – for example, an Iranian adaptation identified six comparable regulation factors in blood donors (Kermani et al., 2024) also a Chinese (Hong Kong) adaptation, whose CFA likewise supported the amotivation-to-intrinsic continuum in 542 undergraduates (Suen et al., 2020). The robustness of the six-factor structure across cultures suggests that the SDT motivational continuum (from amotivation to intrinsic motivation) is a universal framework for understanding why people donate blood. Each motivation type emerged as a distinct construct in BDIS-PL, underscoring that "blood donor identity" is not unitary but composed of multiple internal and external regulations. This multidimensional view is theoretically important: it recognizes, for instance, that a person who donates from guilt or pressure (introjected motive) is psychologically different from one who donates out of true altruistic identity (integrated motive). Our CFA results confirm that BDIS-PL can differentiate these nuances in the Polish context, providing a solid foundation for further theoretical and practical applications.

The reliability analyses indicate that the BDIS-PL subscales have acceptable to good internal consistency. Cronbach's α and McDonald's ω for five of the six subscales were well above the .70 benchmark (ranging from about .81 to .88), with only one subscale (Amotivation) slightly lower ($\alpha \approx .66$). This reliability profile is comparable to that of the original BDIS: in the U.S. samples, most subscales showed α between ~.70 and .80, apart from one lower-reliability subscale (e.g., identified regulation, $\alpha \approx .63$) (France et al., 2014). Notably, the Polish version's identified regulation scale achieved $\alpha = .81$, which is substantially higher than in the original validation (perhaps reflecting cultural or sample differences in how consistently this construct is endorsed). Overall, the consistency of BDIS-PL scores aligns with prior research showing that the BDIS is psychometrically sound. Minor differences in reliability across subscales (with external or

identified motives sometimes showing lower α) have been observed in other adaptations as well (Kermani et al., 2024). These differences likely stem from the small number of items per subscale (e.g. 3 items) and the heterogeneous nature of certain constructs (e.g. "identified regulation" can manifest diversely). Importantly, none of the BDIS-PL scales showed reliability problems severe enough to undermine their use. The results suggest that the Polish items cohere well and measure their intended motivational constructs with stability, providing confidence in the scale's use for research and diagnostic purposes.

The BDIS-PL demonstrated partial measurement invariance across gender. Multi-group CFA results supported configural invariance (the same six-factor model structure held for men and women) and metric invariance (factor loadings were equivalent across gender). This indicates that males and females in Poland interpret the BDIS-PL items and construct their donor identity along the same conceptual framework and with similar item-to-factor relationships. Such a finding is encouraging, as it suggests the survey is capturing underlying motivations in a comparable way for both genders. However, full scalar invariance was not achieved, as constraining item intercepts led to a significant model misfit. In other words, some items yielded systematically different scores between men and women even at the same trait level, meaning that direct comparisons of raw scores or latent factor means between genders should be made cautiously. This result is not entirely unexpected. Prior literature on gender and blood donation has noted that men and women often differ in their motivational emphases – women tend to report more altruistic, other-oriented reasons, whereas men more often cite individualistic or tangible benefits. For instance, a recent review found that health benefits and incentives are stronger motivators for male donors, while altruistic appeals resonate more with females (Suen et al., 2020). Such differences could cause slight biases in how certain BDIS items are calibrated (e.g., an item about helping others might naturally score higher for women on average). The lack of scalar invariance in BDIS-PL likely reflects these genuine gender-based differences in motivation rather than a flaw in the instrument. Importantly, configural and metric invariance still permit meaningful use of the scale across gender – the construct has the same meaning and measurement unit for men and women. Our findings simply imply that observed score differences between genders may partly reflect these differing baseline motivations, not just true score differences. Future research could explore modifying or parceling items that showed intercept bias, or use procedures like alignment optimization, to achieve scalar invariance if comparing latent means is a key goal. Nonetheless, within each gender group the BDIS-PL is reliable and valid, and the partial invariance result highlights an interesting substantive point: the motivational profiles of male and female donors are not identical, consistent with broader donation research (Bani & Giussani, 2010).

Convergent and discriminant validity evidence further supports the BDIS-PL. As expected, BDIS-PL scores showed clear, theory-consistent relationships with external criteria. Participants with more autonomous motivation (higher identified, integrated, intrinsic scores or a higher overall self-determination index) also reported more favorable donation-related outcomes – for example, stronger intentions to donate blood and a higher likelihood of being an active donor – whereas those with high amotivation had low donation intentions and were more often non-donors. These patterns are in line with SDT's predictions and have been observed in other studies. France et al. (2014) originally found that non-donors reported significantly less identified, integrated, and intrinsic motivation than donors, and subsequent research has confirmed that internalized motives correlate positively with donation willingness and behavior (Suen et al., 2020). For instance, a recent Australian study integrating SDT with the Theory of Planned Behavior reported that autonomous motivation had both direct and indirect positive effects on blood donation intention, while amotivation had a significant negative effect (Williams et al., 2019). Our findings echo these results: those who view blood donation as part of their values or identity are more inclined to follow through and donate, whereas those who feel no motivation or feel controlled are likely to abstain. In terms of discriminant validity, the BDIS-PL subscales were only moderately in-

ter-correlated and followed a logical "simplex" pattern consistent with SDT (Kermani et al., 2024). Adjacent motivation types on the continuum (e.g., External and Introjected, or Identified and Integrated) had positive correlations, whereas motivation forms at opposite ends (e.g., Amotivation vs. Intrinsic) were weakly or negatively correlated (Kermani et al., 2024). This indicates that each subscale captures a distinct facet of motivation that is related yet not redundant with the others, which matches SDT's idea of a gradually shifting continuum. Furthermore, the MTMM correlational analysis in our study showed that the BDIS-PL factors related differently to other constructs (prosocial values, personality traits), providing additional evidence of both convergent and discriminant validity (e.g., more self-determined motivations correlated positively with prosocial orientations, whereas controlled motivations had weaker or negative relations, a pattern also noted in prior donor studies)(Kermani et al., 2024; Suen et al., 2020) . Taken together, these results demonstrate that BDIS-PL behaves as theory would predict: it correlates strongly with measures it should be related to (supporting convergent validity) and remains distinguishable from measures or dimensions that it should not overlap with (supporting discriminant validity). In practical terms, this means the BDIS-PL is not only internally consistent but also meaningfully connected to real-world donor attitudes and behaviors, reinforcing its utility as a research and diagnostic tool.

The between-group comparisons (ANOVA) by donor status provide substantive validation for the BDIS-PL and offer insights through the lens of SDT. We observed significant differences in motivational profiles between current donors, former donors, and non-donors for all motivation types except External regulation (which showed no significant group difference, $p = .087$; if anything, active donors reported slightly higher external motivation on average than non-donors) (Livitz, 2016). Current active donors reported markedly lower amotivation and higher levels of introjected, identified, integrated, and intrinsic regulation compared to non-donors, with ex-donors falling in between on most dimensions (Livitz, 2016). The effect sizes were particularly large for the most self-determined motives: for example, Integrated regulation differed very strongly across groups ($F \approx 51$, $p < .001$) and Intrinsic regulation showed the largest difference ($F \approx 63$, $p < .001$). This indicates that active blood donors are far more likely to internalize the donor role – they donate because it aligns with their personal values or brings them satisfaction – whereas non-donors lack such internal motivation and often simply feel unmotivated to give blood (Gyuris et al., 2021). Interestingly, external regulation (donating due to rewards or pressure) did not significantly differ between groups; in fact, external incentives or prompts *do* play a role for some donors (through recruitment campaigns, employer encouragement, etc.), but those external motives alone are insufficient to distinguish donors from non-donors (Gyuris et al., 2021). Prior research has noted that while material incentives can help induce first-time donations, they do not foster the kind of sustained commitment seen in regular donors and may even undermine intrinsic motives if overemphasized (Gyuris et al., 2021). Instead, what really sets regular donors apart is the presence of strong internal motives and the absence of amotivation. These findings align closely with the original BDIS study and decades of donation research. For instance, France et al. (2014) similarly reported that non-donors scored higher on amotivation and lower on all forms of regulated motivation relative to donors, reflecting that non-donors have neither the internal drive nor even the external push to donate. Likewise, other studies have shown that non-donors are less guided by internalized moral norms or personal values to give blood, whereas regular donors overwhelmingly cite altruistic or value-driven reasons (e.g. "doing the right thing") for their donations (Gyuris et al., 2021). Over time, repeated donors tend to internalize the act of blood donation as part of their self-concept – a process predicted by both SDT and classic role-identity theory (Livitz, 2016). Classic studies have long suggested that after a few donation experiences, individuals begin to see themselves as "blood donors," which in turn reinforces autonomous motivation to continue donating (Livitz, 2016). Indeed, one longitudinal study noted that a clear blood-donor identity typically crystallizes after approximately 3-5 donations,

and those who develop such an internalized donor identity (i.e. strong intrinsic or integrated motives) are far more likely to become repeat donors (Livitz, 2016). Our results provide empirical support for this: current donors are significantly more autonomously motivated (and less amotivated) than former and never-donors, underscoring the importance of internalized motivation in sustaining donation behavior (Livitz, 2016). From an SDT perspective, this highlights that the quality of motivation (not just the quantity) is key for long-term engagement – donors who give blood because it resonates with their values or identity are indeed more likely to stick with the behavior over time (France et al., 2017). By contrast, those who lack internal motives or who donate only out of obligation/pressure often lapse once the triggering reward or pressure is removed (Gyuris et al., 2021). These group differences not only confirm that the BDIS-PL can distinguish meaningful categories of people, but also carry practical implications. Interventions to convert first-time or lapsed donors into regular donors should focus on fostering internal motives (e.g., emphasizing the personal meaning and satisfaction of donation) rather than relying solely on external inducements – an approach supported by experts who caution that extrinsic incentives must be used carefully so as not to undermine an altruistic donor identity (Gyuris et al., 2021). This idea is bolstered by recent intervention studies: for example, motivational interviewing techniques that strengthen autonomous motivation have been shown to significantly improve donor retention. France et al. (2017) demonstrated that a single motivational interview not only increased donors' self-determined motivation (amotivation dropped, while internal regulation rose), but also led to higher one-year return rates – particularly among those who already had some internal motive to give. In summary, our ANOVA results strongly support the criterion validity of BDIS-PL and illustrate a central tenet of SDT in the donation domain: as individuals progress in their "donor career," their motivations shift from controlled to autonomous, and this shift is crucial for sustaining long-term donation behavior (France et al., 2017; Gyuris et al., 2021). Each additional donation experience appears to deepen the donor's internal commitment, making them more likely to keep donating – a pattern that has been observed in diverse populations and across many studies, underpinning the importance of cultivating autonomous motivation for enduring blood donation engagement (Livitz, 2016).

5. Limitations

This study has several limitations that should be considered. First, the sample was recruited online and consisted primarily of younger, educated individuals, which may reduce the generalizability of the findings to the broader population. However, online data collection has become a widely accepted and efficient method in psychological research, particularly for motivational and attitudinal studies involving digitally connected populations (Buhrmester et al., 2018). Second, the cross-sectional design limits causal inferences about the directionality between motivation and donation behavior. Nonetheless, cross-sectional designs are appropriate for initial psychometric validation, especially when adapting instruments to new cultural contexts (France et al., 2014; Netemeyer et al., 2003). Third, scalar invariance across gender was not achieved, which restricts the interpretability of latent mean differences. While this is a common issue in psychological scale development, partial measurement invariance is considered sufficient for meaningful group comparisons in structural modeling (Milfont & Fischer, 2010; Vandenberg & Lance, 2000). Finally, the findings are context-specific to Poland and may not generalize to other cultural settings. At the same time, cultural specificity enhances the ecological validity of the tool and supports the development of tailored national interventions (Van de Vijver & Leung, 2021).

6. Conclusion

In conclusion, the present findings demonstrate that the Polish adaptation of the BDIS is a reliable and valid instrument, capturing the nuanced spectrum of blood donation motives in line with SDT.

The pattern of results – from the solid six-factor structure to the predicted correlations and group differences – consistently reflects the theoretical expectations and replicates findings from the original BDIS (France et al., 2014) and other contemporary studies. This not only confirms the applicability of the donor identity construct in Poland but also contributes cross-cultural evidence to the literature on blood donor motivation. Interpreted through SDT, our outcomes reinforce the importance of fostering *autonomous* motivation: donors who internalize the act of giving blood (making it "part of who they are") are the most likely to continue donating and contribute to a stable blood supply. By providing a tool to measure where individuals stand on this motivation continuum, the BDIS-PL can help researchers and practitioners identify those donors who might need additional support (e.g., those high in controlled motives or amotivation) and tailor interventions accordingly. Overall, this study extends prior research by validating the BDIS in a new language and cultural setting, and the findings bolster the idea that the motivation to donate blood is fundamentally similar worldwide – it ranges from external to internal, and the more internal it becomes, the more powerful and enduring its influence on behavior. Future research can build on these insights to further explore how to effectively shift donors toward the internal end of this spectrum, in order to improve donor retention and ensure a safe, sufficient blood supply. The present study lays the groundwork for such efforts in Poland, while adding to the global evidence base on the psychology of blood donation and the utility of Self-Determination Theory in health-related behaviors.

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