Quarterly Journal Fides et Ratio
Issue 59(3)2024, ISSN 2082-7067, Pages 125-140

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

https://doi.org/10.34766/fer.v59i3.1291

Mariusz Karbowski[a], Agnieszka Nowicka[b] ✉

[a] *Mariusz Karbowski, PhD, https://orcid.org/0000-0002-9806-6133,*
Faculty of Pedagogy and Psychology, Department of Psychology, Jan Kochanowski University of Kielce, Poland
[b] *Agnieszka Nowicka, MD, https://orcid.org/0009-0007-5436-7480,*
Psychological and Pedagogical Counseling Center, Independent Public Health Care Center in Kepno, Poland

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

Introduction

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

1 Article in polish language: https://www.stowarzyszeniefidesetratio.pl/fer/59P_Karb.pdf

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

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

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

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

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

Epidemiological studies suggest that migraine is experienced by 4% to 20% of the population of various races, while in Poland, it affects almost 10% of the population. This disease is three times more common among women (about 15-18%), while among men its frequence is 6-7% (Amoozegar, 2017). 90% of people with migraine develop attacks before the age of 40, and only 3% after the age of 60. About 25% of migraine sufferers have four or more attacks per month, 48% up to four, and 38% experience one severe attack per month. Migraine can also manifest itself in periods of remission of varying lengths. Migraine is considered a genetic disease because it has

been observed to run in families over generations (Russell et al., 1996). It is estimated that the heritability of migraine is certain in 70% of cases, but there is no data yet on the exact mechanism of inheritance of this disease (Stępień, 2019). Studies in Canada show a high correlation between the incidence of depressive episodes in migraine patients in the general population of 17.6% and in other chronic diseases from 7.4% to 7.8% (Molgat & Patten, 2005).

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

A complete analysis of the quality of life of patients with headaches, in addition to assessing medical aspects such as reducing the frequency and intensity of headaches, also includes social, emotional, and spiritual assessments. Thanks to questionnaires on quality of life, we can understand to what extent the disease can affect relationships with other people, the ability to express emotions, their intensity and the way they perceive the world (Tobiasz-Adamczyk, 2013). Assessing the quality of life of children with headaches allows us to understand their health status and ability to play an active role in society, including the school environment. Comprehensive assessment of treatment, based on the measurement of quality of life, allows for optimal selection of therapy and may affect the effectiveness of treatment and minimisation of side effects. The choice of medication for patients with headaches, such as tension migraine, may be partly determined by the impact on the patient's quality of life. In the literature, we can also find studies that assess the quality of life of patients with headaches using other general questionnaires, such as the Paediatric Quality of Life Inventory (PedsQL) (Varni et al., 2001). A report by the World Health Organisation places migraine among the twenty most troublesome ailments that significantly affect daily functioning. Migraine headache is one of the most intense and exhausting, often leading to a significant reduction in physical activity. Most people affected try to self-medicate by gradually increasing the dose of painkillers used, which can result in increased frequency and severity of pain. Sometimes, excessive consumption of drugs can lead to some degree of impairment of an individual's functioning. Research conducted in Sweden suggests that migraine attacks can also negatively affect the partners of people suffering from this ailment: "self-medication of people with migraine leads in most cases to an increase in the frequency and intensity of headaches, and over time to their chronication" (Moneta et al., 2018, p. 32). Research conducted in the United States and the United Kingdom suggests that people affected by migraine often experience a deterioration in partner relationships, which may be related to depressive reactions to relationship difficulties. Migraine was observed in 89 women and 19 men, most of whom were in the 20-40 age group. Women with migraine also reported lower libido, greater discomfort during sexual intercourse, and lower levels of satisfaction compared to women without migraine, leading to a decrease in quality of life (Pradeep et al., 2020). Many people with migraine avoid contact with loved ones (24%) and family and social gatherings (12%) for fear of a migraine attack. Moreover, about 90% of migraine sufferers experience some degree of disability, and 50% of them are forced to stay in bed (Stępień, 2020). People with migraine often feel remorse and shame about migraine pain, and most patients face a lack of understanding from partners, family, employers, co-workers, and even doctors (Domitrz, 2018). Although migraine does not last all the time, but occurs in paroxysmal moderation, it significantly affects daily functioning. People with migraine focus on potential triggers of the attack and try to control every activity to prevent migraine. Constantly thinking about avoiding these factors interferes with normal functioning and impairs quality

of life (Moneta et al., 2018). Another aspect that the link between sleep and primary headaches has been known for over a century, especially for headaches that occur at night or early in the morning. Migraine, tension headache, and cluster headache can cause sleep fragmentation, insomnia, and excessive sleepiness, resulting in significant social and economic costs and a deterioration in quality of life. Sleep disorders, on the other hand, can cause headache attacks on their own. Despite this background, there is still no clarity on the mechanism linking the two entities, and their interdependence remains to be determined (Aguggia et al., 2011).

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

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

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

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

where 89 patients aged 18 to 65 were examined, it was found that 14.6% of people had generalised anxiety disorder, 5.6% panic disorder, 6.7% social phobia, 5.6% specific phobias, and 2.2% obsessive-compulsive disorder. In addition, 19.1% of the respondents (17 people) were diagnosed with co-occurrence of two different mental disorders; comorbidity of migraine and major depressive disorder was found in 21.3% and dysthymia in 4.5% of the subjects (Cardona-Castrillon et al., 2007).

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

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

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

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

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

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

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

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

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

2. Own research

2.1. Research Subject and Aim

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

2.2. Research problems and hypotheses

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

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

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

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

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

H3. There is a relationship between the severity of migraine and the occurrence of depression. The greater the severity of migraine and its effects, the more depressive symptoms.
H4. It is assumed that anxiety significantly mediates the relationship between migraine and quality of life.
H5. It is believed that depression significantly mediates the relationship between migraine and quality of life.

2.3. Variables and their indicators

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

2.4. Data collection method and research tools

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

1. *Headache Impact Test* (HIT-6) – is a tool used to assess the impact of headaches on the life of the person experiencing it.
2. *Migraine Disability Assessment* (MIDAS) – a questionnaire assesses the disability of a person who experiences migraine. The respondent evaluates by giving the number of days – the effects caused by migraine in the last three months, such as life activities such as: professional work, productivity, work at home, social and family meetings, entertainment.
3. *General Health Questionnaire – Goldberg* (GHQ-28) – is based on the basic version of David *Goldberg's General Health* questionnaire GHQ-28 is used to assess mental health in adults.

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

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

4. *World Health Organisation Quality of Life Test-Bref* (WHOQOL-BREF) – is used to assess the quality of life of sick and healthy people.
5. *State-Trait Anxiety Inventory* (STAI) – a questionnaire to study anxiety as a transient, situational state of a person, but also anxiety as a permanent personality trait.
6. *The Beck Depression Scale* is a screening tool, a short one. This questionnaire indicates the presence and severity of depressive features.
7. *Ressentiment questionnaire* – to explain and formalise the key variables included in the questionnaire, an introductory instruction to the pentabase method is presented.

2.5. Characteristics of the Study Group

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

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

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

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

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

with migraine and type of migraine and 16.7% with unspecified migraine. The percentage distribution of results specific to the study group is shown in Table 1.

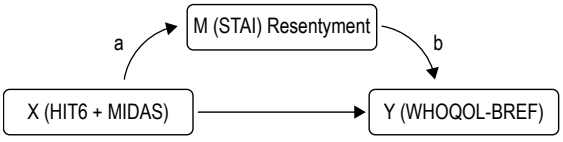

Figure 1. A conceptual diagram of the mediation model capturing the mediating role of anxiety on the relationship between the experience and effects of migraine and quality of life in the conceptualisation of ressentiment

3. Research results

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

For most variables, the K-S test and the Shapiro-Wilk test are not statistically significant, as shown in Table 3. It points out that the distribution of results of a given variable is significantly different from the normal one, which is why non-parametric tests were used in further statistical analyses. For correlations between the variables, rhoSpearman was used for these statistical analyses using the SPSS 26 tool. Study of mediating compounds based on simple and multiple regression analysis used the medmod module in the JAMOVI program.

In my project, a conceptual model was built, which is shown in Figure 1. In order to verify the hypothesis of the mediating role of *fear* in the rela-

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

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

**. Correlation significant at 0.01 (bilateral)

tion of *migraine's* experience to the *quality of life* in the conceptualisation of ressentiment. This model contains the following variables:

- Independent variable X – *migraine* – HIT6 questionnaire on the effects of headaches, MIDAS questionnaire assessing the impact of migraine attacks on functional efficiency; the results of both these variables were aggregated (summed) into one *migraine* variable.
- Dependent variable Y – *quality of life* – the WHOQOL-BREF questionnaire for assessing the quality of life, which contains 26 questions analysing four areas of life and separately the perception of quality of life and self-assessment of health. For this study, a variable summing the results from all subscales of this questionnaire (WHOQOL.sum) was created.
- Mediator M – *anxiety* – STAI *Anxiety Inventory and Anxiety traits* (in this study, the STAI X1 and X2 scales were aggregated into one variable: *anxiety* and *ressentiment*.

3.1. Analysis of correlations between variables

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

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

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

- Strongly and negatively with a theorised mediator, i.e., the severity of depressive symptoms (*Beck Depression Scale*) rs = -0.77, p<0.01. Higher scores on the *Beck Depression Scale* are associated with lower scores on quality of life.
- Strongly and negatively with the theorised mediator, i.e., anxiety (STAI.sum) rs = -0.74, p<0.01 and with its two components, i.e., anxiety-state rs = -0.64, p<0.01 and anxiety-trait (STAI.X2) rs = -0.71, p<0.01. The lower the intensity of anxiety, the better the assessment of the quality of life. Anxiety as a trait is more strongly correlated with the assessment of the quality of life than anxiety as a state.
- Moderately and negatively with the independent variable, i.e., the severity and effects of migraine (*migrena*) rs = -0.57, p<0.01. The more severe the migraine experience, the lower the quality of life rating. Correlations were also tested separately for the components of the *migrena* variable. The results show that the scores obtained in the MIDAS questionnaire are more strongly negatively correlated with the quality of life (rs = -0.57, p<0.01) than the scores obtained in the HIT6 questionnaire (rs = -0.41, p<0.01).
- Anxiety, which is a mediator in this study, correlates significantly:
- Strong and positive with severity of depressive symptoms (*Beck Depression Scale*) rs = 0.77, p<0.01. The greater the intensity of anxiety, the greater the intensity of depressive symptoms.
- Weak and positive with the independent variable, i.e., severity and effects of migraine (*migrena*) rs = 0.43, p<0.01. The greater the severity of the migraine, the greater the anxiety.

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

4. Discussion of results

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

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

The research shows that:

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

- The severity and effects of migraine significantly affect the severity of depressive symptoms, while the severity of depressive symptoms significantly affects the assessment of quality of life.

The verification of the research hypotheses is described below.

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

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

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

A regression analysis model was performed to verify this hypothesis. Hypothesis 5 was confirmed – the results showed that the severity of depressive symptoms acts as a mediator between the severity of migraine and the assessment of quality of life. The greater the severity of migraine and its effects, the greater the severity of depressive symptoms, and this manifests in a more negative assessment of the quality of life. The analysis of the indirect effect shows that the severity of depressive symptoms significantly mediates the relationship between the severity of migraine and the assessment of quality of life. The severity and effects of migraine significantly affect the severity of depressive symptoms, and in turn, the severity of depressive symptoms significantly affects the assessment of quality of life. The results show the occurrence of partial mediation, because after considering the mediating role of the severity of depressive symptoms, the direct effect of the impact of the severity and effects of migraine on the assessment of quality of life is also significant. An indirect effect of the mediating role of the severity of

depressive states is explained by 59.9% of the variance of the variable assessment of quality of life. One of the previously cited studies can also be cited on the subject of depression. These were cross-sectional studies (Dudek et al., 2009) that indicate that 28.1% of people with migraine experienced an episode of moderate or severe depression, while the control group had a score of 10.3%. The severity and effects of migraine correlate significantly, moderately, and positively with the symptoms of depression. Similarly, the greater the severity and effects of migraine, the greater the intensity of depressive symptoms and a sense of ressentiment.

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

Summary

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

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

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

Bibliography

Aguggia, M., Cavallini, M., Divito, N., Ferrero, M., Lentini, A., Montano, V., & Valfrè, V. (2011). Sleep and primary headaches. *Neurological Sciences*, *32*, 51-54. https://doi.org/10.1007/s10072-011-0524-5

Amoozegar, F. (2017). Depression comorbidity in migraine. *International Review of Psychiatry*, *29*(5), https://doi.org/10.1080/09540261.2017.1326882

Bhatia, M.S., & Gupta, R. (2012). Migraine: Clinical pattern and psychiatric comorbidity. *Industrial Psychiatry Journal*, *21*(1), 18-21. https://doi.org/10.4103/0972-6748.110943

Bidzan, M. (2013). *Nastoletnie rodzicielstwo. Perspektywa psychologiczna*. Gdańsk: Grupa Wydawnicza Harmonia.

Bigal, M.E., & Lipton, R. (2009). The epidemiology, burden, and comorbidities of migraine. *Neurologic Clinics*, *27*(2), 321-334. https://doi.org/10.1016/j.ncl.2008.11.011

Breslau, N., & Andreski, P. (1995). Migraine, personality, and psychiatric comorbidity. *Headache*, *35*(7), 382-386. https://doi.org/10.1111/j.1526-4610.1995.hed3507382.x

Breslau, N., Merikangas, K., & Bowden, C.L. (1994). Comorbidity of migraine and major affective disorders. *Neurology*, *10*(7), 17-22. (From:) https://pubmed.ncbi.nlm.nih.gov/7969941/ (access: 19.04.2024).

Buse, D.C., Manack, A.N., Fanning, K.M., Serrano, D., Reed, M.L., & Turkel, C.C. (2012). Chronic migraine prevalence, disability, and sociodemographic factors: results from the American Migraine Prevalence and Prevention Study. *Headache: The Journal of Head and Face Pain, 52*(10), 46-55. https://doi.org/10.1111/j.1526-4610.2012.02223.x

Cardona-Castrillon, G.P., Isaza, R., Zapata-Soto, A.P., Franco, J.G., & Gonzalez-Berrio, C. (2007). The comorbidity of major depressive disorder, dysthymic disorder and anxiety disorders with migraine. *Revista de Neurologia*, *45*(2), 272-275. (From:) https://www.researchgate.net/publication/5965769_The_comorbidity_of_major_depressive_disorder_dysthymic_disorder_and_anxiety_disorders_with_migraine (access: 19.04.2024).

Czerw, A. (2019). *Społeczne znaczenie migreny z perspektywy zdrowia publicznego i systemu ochrony zdrowia*. Warszawa: Narodowy Instytut Zdrowia Publicznego – Państwowy Zakład Higieny.

Dąbrowski, A. (2012). Wpływ emocji na poznanie. *Przegląd Filozoficzny – Nowa Seria*, *21*(3), 315-335. (From:) https://journals.pan.pl/Content/93764/PDF/v10271-012-0082-6.pdf (access: 19.04.2024).

Demir, Ü.F., & Bozkurt, O. (2020). Effects of Perceived Social Support, Depression and Anxiety Levels on Migraine. *Archives of Neuropsychiatry*, *57*(3), 210-215. https://doi.org/10.29399/npa.25000

Dindo, L.D., Recober, A., Haddad, R., & Calarge, C.A. (2017). Comorbidity of Migraine, Major Depressive Disorder, and Generalized Anxiety Disorder in Adolescents and Young Adults. International *Journal of Behavioral Medicine*, *24*(4), 528-534. https://doi.org/10.1007/s12529-016-9620-5

Domitrz, I. (2018). *Migrena*. Warszawa: Medical Education.

Dudek, D., & Krupa, A. (2021). Objawy bólowe w depresji. (In:) D. Dudek, M. Siwek, & J. Woronia (eds.), *Ból i depresja,* 49-64. Poznań: Termedia Wydawnictwa Medyczne.

Dudek, D., Siwek, M., & Grabski, B. (2009). *Zaburzenia psychiczne w neurologii*. Poznań: Termedia Wydawnictwa Medyczne.

Ekman, P., & Davidson, R.J. (2017). *Natura emocji. Podstawowe zagadnienia*. Gdańsk: Gdańskie Wydawnictwo Psychologiczne.

Encyklopedia PWN. (2024). *Jakość życia.* (From:) https://encyklopedia.pwn.pl/szukaj/jako%C5%9B%C4%87%20%C5%BCycia.html (access: 19.04.2024).

Group, T.W. (1995). *The World Health Organization quality of life assessment (WHOQOL)*. Position paper from the World Health Organisation. https://doi.org/10.1016/0277-9536(95)00112-K

Herman, J.L. (2024). *Trauma. Od przemocy domowej do terroru politycznego*. Warszawa: Czarna Owca.

Karbowski, M.G. (2023a). Resentyment1 – geneza pojęcia i próba zdefiniowania. *Szkice Akademickie 17.* (From:) https://drive.google.com/file/d/1IwG69fuwhCuU6tA4fqp-DCY6ysxRHImE/view (access: 17.04.2024).

Karbowski, M.G. (2023b). In search of the relationship between predisposition to addictions and impulsivity in online players from the ressentiment perspective. *Probation*, *4*, 201-223. https://doi.org/10.5604/01.3001.0054.0101

Karbowski, M.G. (2023c). The destructive impact of ressentiment in the process of acculturation. *Probation*, *2*, 51-79. https://doi.org/10.5604/01.3001.0053.6711

Keltner, D., & Ekman, P. (2005). *Wyrażanie emocji twarzą*. (In:) M. Lewis, & J.M. Haviland-Jones (eds.), *Psychologia emocji,* 307-323. Gdańsk: Gdańsk: Gdańskie Wydawnictwo Psychologiczne.

Kocwa-Karnaś, A., & Domitrz, I. (2018). Psychosocial difficulties due to migraine. Is migraine just a recurrent, lingering headache? *Migrena*, *2*(2), 55-62. (From:) http://www.ptbg.pl/pdf/MS-2018-2.pdf (access: 19.04.2024).

Krysta, K. (2021). Nowe możliwości terapeutyczne w migrenie u pacjentów z depresją. *Psychiatria po Dyplomie, 6,* (From:) https://podyplomie.pl/psychiatria/37042,nowe-mozliwosci-terapeutyczne-w-migrenie-u-pacjentow-z-depresja (access: 19.04.2024).

Loisy, C., Beorchia, S., & Lamousse, C. (1992). *Migrena*. Warszawa: W.A.B.

Molgat, C.V., & Patten, S.B. (2005). Comorbidity of major depression and migraine – a Canadian population-based study. *The Canadian Journal of Psychiatry*, *50*(13). https://doi.org/10.1177/070674370505001305

Moneta, P., Kaczmarek, M., Przybylski, M., Niedzielski, J., Durko, A., & Żytkowski, A. (2018). Quality of life and methods of treatment of people suffering from migraine. *Issues*, *19*(4), 27-33. (From:) https://bolczasopismo.pl/resources/html/article/details?id=190196&language=en (access: 19.04.2024).

Oedegaard, K.J., & Fasmer, O.B. (2005). Is migraine in unipolar depressed patients a bipolar spectrum trait? *Journal of Affective Disorders*, *84*(2-3), 233-242. https://doi.org/10.1016/j.jad.2003.11.007

Pavlovic, J.M., Vieira, J.R., Lipton, R.B., & Bond, D.S. (2017). Association Between Obesity and Migraine in Women. *Current Pain and Headache Reports*, *21*(41). https://doi.org/10.1007/s11916-017-0634-8

Pradeep, R., Nemichandra, S. C., Harsha, S., & Radhika, K. (2020). Migraine Disability, Quality of Life, and Its Predictors. *Annals of Neurosciences*, *27*(1), 18-23. https://doi.org/10.1177/0972753120929563

Rasmussen, B.K., Jensen, R., & Olesen, J. (1991). A population-based analysis of the diagnostic criteria of the International Headache Society. *Cephalalgia*, *11*(3) 129-134. https://doi.org/10.1046/j.1468-2982.1991.1103129.x

Rożniecki, J.J., Stępień, A., & Domitrz, I. (2018). Leczenie migreny przewlekłej – zalecenia opracowane przez Grupę Ekspertów Polskiego Towarzystwa Bólów Głowy i Sekcji Badania Bólu Polskiego Towarzystwa Neurologicznego na podstawie międzynarodowych zaleceń i najnowszej literatury. *Polski Przegląd Neurologiczny*, *14*(2), 60-66.

Russell, M., Rasmussen, B.K., Fenger, K., & Olesen, J. (1996). Migraine without aura and migraine with aura are distinct clinical entities: a study of four hundred and eighty-four male and female migraineurs from the general population. *Cephalalgia*, *16*(4), 239-245. https://doi.org/10.1046/j.1468-2982.1996.1604239.x

Scheler, M. (2022). *Resentyment w strukturze systemów moralnych*. Warszawa: Wydawnictwo Aletheia.

Scherer, K.R. (2001). *Appraisal Processes in Emotion*. (In:) R. Scherer, A. Schorr, & T. Johnstone (eds.), *Appraisal processes in emotion: Theory, methods, research*, 92-120. New York: Oxford University Press.

Scherer, K.R. (2005). What are emotions? And how can they be measured? *Social Science Information*, *44*(4), 695-729.

Scherer, K.R. (2009a). The dynamic architecture of emotion: Evidence for the component process model. *Cognition and Emotion*, *23*(7), 1307-1351.

Słońska, Z. (1999). *Promocja zdrowia*. (In:) J.B. Karski (ed.), *Promocja zdrowia*, 304-319. Warszawa: Wydawnictwo IGNIS.

Stępień, A. (2009). *Migrena i jej postacie kliniczne*. Poznań: Termedia Wydawnictwo Medyczne.

Stępień, A. (2011). Bóle głowy – aspekty psychiatryczne. *Neurologia po Dyplomie*, *6*(2), 67-78. (From:) https://podyplomie.pl/publish/system/articles/pdfarticles/000/013/613/original/67-78.pdf?1477299456 (access: 19.04.2024).

Stępień, A. (2019). *Neurologia*. Vol. 1. Warszawa: Medical Tribune Polska.

Stępień, A. (2020). *Oddziaływanie społeczne migreny*. Neurologia po Dyplomie. (From:) https://podyplomie.pl/neurologia/34102,oddzialywanie-spoleczne-migreny?page=2 (access: 19.04.2024).

Stępień, A., Słowik, A., Domitrz, I., Kozubski, W., Rejdak, K., Rożniecki, J., & Gałecki, P. (2021). Experts and national consultants' recommendations regarding management of patients treated for migraine with comorbid depression. Diagnosis. Therapeutic strategies. Part 2. *Psychiatria Polska*, *243*, 1-18. https://doi.org/10.12740/PP/OnlineFirst/139596

Tobiasz-Adamczyk, B. (2013). Wyzwania dla rodzin związane z opieką nad chorym lub starszym bliskim. (In:) K. Slana (ed.), *Zagadnienia małżeństwa i rodzin w perspektywie feministyczno-genderowej*, 191-211. Kraków: Wydawnictwo Uniwersytetu Jagiellońskiego.

Varni, J.W., Seid, M., & Kurtin, P.S. (2001). PedsQL 4.0: reliability and validity of the Pediatric Quality of Life Inventory version 4.0 generic core scales in healthy and patient populations. *Medical Care*, *39*(8), 800-812. https://doi.org/10.1097/00005650-200108000-00006

Wachowska, K., Bliźniewska-Kowalska, K., Sławek, J., Adamczyk-Sowa, M., Szulc, A., Maes, M., & Gałecki, P. (2023). Wspólny patomechanizm migreny i depresji. *Psychiatria Polska*, *57*(2), 405-419. https://doi.org/10.12740/PP/OnlineFirst/143982

Weber, M. (1965). *Sociology of Religion*. London: Methuen Publishing.

Yang, Y., Ligthart, L., Terwindt, G.M., Boomsma, D.I., Rodrigez-Acevedo, A.J., & Nyholt, D.R. (2016). Genetic epidemiology of migraine and depression. *Cephalalgia*, *36*(7), 679-691. https://doi.org/10.1177/0333102416638520

Zgorzalewicz, M. (2005). Patomechanism of migraine headache. *Child Neurolology*, *14*(28), 7-14. (from:) https://neurologia-dziecieca.pl/pdf-displ.php?pdf=neurologia_28-7-14.pdf&id=24#frame (access: 19.04.2024).

Zhang, Q., Shao, A., Jiang, Z., Tsai, H., & Liu, W. (2019). The exploration of mechanisms of comorbidity between migraine and depression. *Journal of Cellular and Molecular Medicine*, *23*(7), 4505-4513. https://doi.org/10.1111/jcmm.14390