

## The Relationship Between Migraine and Quality of Life Among Adults' Patients Attending Tripoli Medical Center in Libya

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### Abstract

The present study aimed to explore the relationship between migraine and quality of life (QOL), as well as the potential impact of gender differences. A cross-sectional study was conducted. The sample consisted of (136) patients aged 25–40 years who were diagnosed with migraine during their visit to the neurology clinic at Tripoli Central Hospital for treatment. The questionnaire of QOL (World Health Organization's, WHO, 1996). The Statistical Package (SPSS, 24.0) were used to verify the study hypotheses. Results: The results showed that QOL was negatively affected by migraines, and an inverse relationship was found between disease severity and poor QOL, with females being more affected. Conclusion: The clinical presentation of migraine symptoms indicates that it is high among participants and is a major cause of the decline in their daily QOL. Furthermore, primary care physicians should urgently provide treatment services to these patients.

**Keywords:** *Migraine, Quality of life (QoL), Adults.*

### المخلص

هدفت الدراسة إلى الكشف عن علاقة الصداع النصفي لدى عينة من الشباب البالغين بمؤشرات جودة الحياة، والتأثير المحتمل للفروق بين الجنسين. اتبعت الدراسة منهج الوصفي. وتألفت العينة من (136 مريضاً)، تتراوح أعمارهم بين (25-40 سنة)، تم تشخيصهم طبياً بهذا الاضطراب العصبي أثناء ترددهم على عيادة الأعصاب في مستشفى طرابلس المركزي لتلقي العلاج. وطبق استبيان منظمة الصحة العالمية لجودة الحياة (1996)، واستخدمت الحزمة الإحصائية للعلوم الاجتماعية (SPSS, 24.0) للتحقق من فروض الدراسة. النتائج: أظهرت نتائج الدراسة تأثيراً سلبياً على جودة حياة المشاركين بسبب الإصابة بهذا الاضطراب، وكما وجدت علاقة عكسية بين ارتفاع شدة أعراضه وتدني درجات جودة الحياة لصالح الإناث. الاستنتاج: تشير صياغة الحالة الإكلينيكية لأعراض الصداع النصفي بأنها مرتفعة بين المشاركين، وهو السبب الرئيس في تدني مظاهر حياتهم اليومية. علاوة على ذلك، ينبغي على أطباء الرعاية الصحية تقديم خدمات علاجية لهؤلاء المرضى بشكل عاجل.

**الكلمات المفتاحية:** *الصداع النصفي، جودة الحياة، الشباب.*

### Introduction

Migraine is one of the most common types of headaches worldwide (Amiri, et al. 2022). The estimated prevalence is 15%. It has been recognized as a neurological disorder with significant public health implications and as measured by years lived with disability. Migraine affects 4.9% of the world's population (Stovner et al., 2018; Steiner

and Stovner, 2023). According to the results of in other study in 2019 to determine the global burden of this disease, it was the second leading cause of years lived with a disability (Steiner et al., 2020). Besides, Migraine became a one of the healthy problems that affects individuals and society on a wide scale. (Bolaer et al., 2004). It is most common in patients seen by doctors in general practice for the diagnosis of headache disorders (Börü et al., 2005). In addition, headache itself is a primary headache disorder and is not classified according to other disorders (such as migraine, tension headache, or cluster headache) (International Headache Society, 2018). However, it is diagnosed as secondary, when symptoms are related to structural, metabolic, or other disorders (Özge et al., 2011).

In the 1960s, initial proposals were made to classify migraine episodes among the different types of headache disorders (Olesen and Steiner, 2004, p.808). Recently, a revised version was released, the International Classification of Headache Disorders-II or ICHD-II, (2004), as follows:

<b>Table 1. Classification of ICHD-II, 2004</b>		
<b>ICHD-II codes</b>	<b>ICD-10NA code</b>	<b>Diagnosis.</b>
1.	G43	Migraine.
1.1	G43.0	Migraine without aura.
1.2	G43.1	Migraine with aura.
1.2.1	G43.10	Typical aura with migraine headache.
1.2.2	G43.10	Typical aura with non-migraine headache.
1.2.3	G43.104	Typical aura without headache.
1.2.4	G43.105	Familial hemiplegic migraine.
1.2.5	G43.105	Sporadic hemiplegic migraine.
1.2.6	G43.103	Basilar-type migraine.
1.3	G43.82	Childhood periodic syndromes that are commonly precursors of migraine.
1.3.1	G43.82	Cyclical vomiting.
1.3.2	G43.820	Abdominal migraine.
1.3.3	G43.821	Benign paroxysmal vertigo of childhood.
1.4	G43.81	Retinal migraine.
1.5	G43.3	Complications of migraine.
1.5.1	G43.3	Chronic migraine.
1.5.2	G43.2	Status Migrainous.
1.5.3	G43.3	Persistent aura without infarction.
1.5.4	G43.3	Migrainous infarction.
1.5.5	G43.3	Migraine-triggered seizures [+ G 40.x or G41.x to specify the type of seizure].
1.6	G43.83	Probable migraine.
1.6.1	G43.83	Probable migraine without aura.
1.6.2	G43.83	Probable migraine with aura.
1.6.5	G43.83	Probable chronic migraine.

(Headache Classification Subcommittee of the International Headache Society 2004,24).

According to the previous table (1), Shahraki et al. (2011) emphasized that migraine is a type of pain (with or without aura) that hinders daily activities and reduces productivity and quality of life (QOL). This disease causes severe pain and fatigue, significantly impacting both individuals and society (Bigal et al., 2004).

Notably, migraine disorders are a migraine disorders affect health related QOL (HRQL) and diagnostic accuracy and are a common cause for seeking medical advice and hospital admission (Becker, 2002, p.18). Migraine patients experience decreased productivity with severe disability, leading to a deterioration in quality of life (Kwong et al 2007, p.332). Therefore, migraine is a polymorphic disorder that may affect quality of life through several different pathways (Todorov, 2009, p.8). Furthermore, similar in-depth research is urgently needed to investigate the relevant relationship between headaches and QOL in adults (Ditto et al., 2023; Smitherman et al., 2000; Terwindt et al., 2000). As these studies and debates about causal relationships continue (e.g., migraines may contribute to poor quality of life, and conversely, an individual may suffer from migraine attacks due to a decline in QOL), another study found that a decreasing number of migraine patients experience poor quality of life if they do not receive early, accurate diagnosis and effective treatment (Brna et al., 2007, p.44).

On the other hand, those who suffer from traumatic experiences due to this neurological disease exhibit symptoms such as: aura, dissatisfaction, decreased vitality (Tkachuk et al., 2003, 52; Chaushev and Milanov, 2009, p.26). Consequently, individuals diagnosed with chronic headaches have worse life experiences than those with other similar disorders (Buse et al., 2024). It has also been noted that the results of numerous epidemiological and population studies have shown that people without this disorder have a higher QOL than those with migraines. (Launer et al., 1999, p.338). Overall, QOL assessment is a dynamic phenomenon rather than a static phenomenon (Jokovic et al., 2003, pp. 67-68). In psychotherapy, the term QOL refers to an important aspect of mental health that should be focused on during therapy sessions (Antonaci et al., 2011, pp.116-117).

Although studies investigating the role of migraine in affecting QOL are relatively recent, understanding the psychological status of patients with this neurological disorder has received widespread attention based on numerous published studies (Becker, 2002, p.19). Moreover, in clinical psychiatric practice, terms such as loss of well-being, sleepiness, loss of strength, general weakness, anxiety and depression, fatigue, and loss of interest are often confused, and all of the above are used to represent fatigue or some psychological disturbance that interferes with the patient's daily life activities and affects their quality of life. In this review, we address the QoL in migraine patients from the perspective of psychopathology, neuropsychology, and psychotherapy, as few studies have described clinical psychiatric studies of migraine disorders with QoL among adults.

### Prevalence

Migraine is a chronic neurological disease that affects 11% or more of adults worldwide. (Stovner et al., 2007,193). Also, data Indicate that migraine affects approximately 12% of adults in SUA and significantly impacts QOL, illustrating the detrimental impact on patients' daily lives (Mula et al., 2009). In Korea, 2.9% of men and 9.2% of women suffer from this disease. (Kim et al., 2012, p.204). In Turkey, recent epidemiological studies were reviewed using the ICHD criteria for migraine types in their second edition (ICHD-II, 2004), with an overall prevalence ranging from 4.5% in

women and 5.7% in men (Ertas et al., 2012, p.147). In Addis Ababa, the incidence of migraine is 10% for recurrent migraine disorders, 6.5% for migraine without aura, 0.9% for possible migraine, and 2.6% for migraine with aura (Mengistu and Alemayehu, 2013, p.2). Studies from China and Germany also indicated that migraine (MIG) was the most common diagnosis, with an episodic prevalence of migraine (39.1%) (12.5%), respectively (Dong et al., 2012, p.1; Yoon et al., 2012, p.215). Additionally, the yearly prevalence of migraine has been estimated in the general Spanish population, it was lower among males (5.91%) compared to females (15.94%) (Fernández-de-Las-Peñas et al., 2009, p.97). Global differences in definitions and study methodologies also account for the varying prevalence estimates of migraine from country to country (Ertas et al., 2012, p.148). As can be seen, psychological studies on the causal relationship between migraine disorders and QOL in Arab countries including Libya are still only partially documented- As far as I know -. Therefore, there is an urgent need to conduct similar studies on the QOL of migraine patients in other parts of the world.

### Purpose of Study

This study aimed to:

1. A study of migraine and QOL among adults attending the outpatient clinics of Tripoli Central Hospital in Tripoli Municipality for treatment.
2. To assess the differences in QOL between participants (men and women) with migraine.

### Hypotheses:

The purpose of this study was to test two hypotheses.

- 1- There is a negative impact of migraine on the QOL of adults in Libya.
- 2- There is a statistical difference between males and females in QOL.

### Limitations

1. The study was conducted only among adults with migraine who attended outpatient clinics at Tripoli Central Hospital, potentially excluding those who did not seek medical attention or attended other hospitals
2. The study was conducted within a specific time frame (2025), which may limit the generalizability of the results to other time periods
3. The results are based on self-reported data from the participants, which may be subject to bias or inaccuracies.

### Methods and Procedures

This study investigated the relationship between migraine and quality of life in adults at Tripoli Central Hospital in Libya. Therefore, a cross-sectional approach was adopted.

### Sample selection and tools

The sample consisted of 136 patients, including 60 men and 76 women, who were randomly selected to participate in the study. The mean age was 33.8 years (SD = 2.3), with an age range of  $25.04 \pm 40.26$  years. The patients were evaluated for recurrent migraine at the neurology clinic of Tripoli Central Hospital from August 3rd to September 5th, 2025. The WHOQOL scale (1996) was used to assess the QOL of patients, which consists of 26 items distributed across four domains: six items related

to psychological health, three items related to social relationships, seven items related to physical health, and eight items related to environmental health. The scale was translated into Arabic by (researcher), and its reliability was ensured through a test-retest process. The socioeconomic level of the family was assessed using the scale prepared by Alshakhs (2006). Data analysis was performed using SPSS (version 24.0) at a significance level of  $p \leq 0.001$ .

## Results

According to the data obtained in this study, migraine frequency assessment revealed that at least nine patients had daily migraine attacks (%6.62), and 37 (%27.21) had weekly migraine attacks. As for monthly, the mean number of headache attacks among patients was 1–8 times per month 51(%37.5). In addition, nearly 73 (53.67%) of the participants were workers in government jobs, and 37 (46.32%) were unemployed. Considering the educational level, 47 ( 27.20%) of the participants had a university degree, 7 (2.94 %) had less education, and the majority of patients had secondary education or equivalent 82 (69.86 %]. The results showed that longer duration ( $p < 0.001$ ) was a major cause of migraine frequency and lower quality of life indicators. Meanwhile, the processed data revealed that gender was not a significant variable in relation to quality of life, and different patterns in the associations between headache pain, headache frequency, and quality of life were found to be non-similar in magnitude between men and women and were in favor of women.

**Table 2: Characteristics of the Participants (n = 136)**

Variables	N (%)
<b>Sample</b>	136
20–25 years	56 (36.6%)
26–30 years	34 (26.6%)
31–40 years	32 (25.6%)
> 40 years	14 (11.2%)
<b>Gender</b>	<b>N (%)</b>
Male	60 (44.12%)
Female	76 ( 55.88%)
<b>Educational level</b>	<b>N (%)</b>
Illiterate	00 (0.00%)
Primary	7 (2.94 %)
Secondary	82 (69.86 %)
University degree	47 ( 27.20%)
<b>Employed</b>	<b>N (%)</b>

Yes	73 (53.67%)
No	37 (46.32%)
<b>When was your first migraine diagnosis?</b>	<b>N (%)</b>
< 1 year	63 (32.34%)
1–2 years	26 (24.16 %)
3–5 years	11 ( 16.11 %)
> 5 years	36 (27.39 %)
<b>How often do you experience migraine attacks?</b>	<b>N (%)</b>
Daily or almost daily	9 ( 6.62%)
1–3 times per week	37(27.21%)
1–8 times per month	51(37.5%)
< 12 times a year	39(28.67%)

**Table 3. Correlation between migraine and quality of life (n = 136)**

variables	n	r	Sig
Migraine headache	136	-0.46	* 0.015
WHOQOL			

$\leq \alpha (0.001)$

The previous table shows an inverse relationship between migraine and QOL, with patients experiencing recurrent headache attacks having a lower QOL ( $r = -0.46$ ,  $p < 0.001$ ). Similarly, the results in Table 3 indicate that patients with migraine experience poorer QOL, increased healthcare costs, higher prescription costs, job loss, feelings of helplessness, decreased productivity, and social withdrawal compared to those without migraine.

In the same vein, the current study findings can help decision-makers develop health facility services that may be useful in the early and periodic detection of patients and their access to the best levels of treatment and prevention of health care to alleviate this suffering within the Libyan community. These results are consistent with those of some previously published studies, indicating a correlation between migraine and indicators of lower QOL. Miertová, Jankovská, Ovšonková, and Barnau (2024) suggested that risk factors that negatively impact the QOL of migraine patients include a high rate of frequent and long-lasting attacks. Domitrz and Golicki (2022) argued that, based on Polish citizens' responses to the EQ-5D-5L questionnaire, the primary impact of



migraines on people's QOL is manifested in symptoms of pain, anxiety, discomfort, and depression.

## Discussion

The study gives useful insight into how migraines affect quality of life in Libya, but its impact is limited by the small single-center sample, lack of a healthy control group, reliance on self-reported data, and missing details on diagnosis, treatments, and factors like comorbidities or socioeconomic status. Further breakdowns by age and gender could also strengthen the findings.

The current study its results are comparable to those reported by Miertová, Jankovská, Ovšonková and Barnau (2024); Bazarganem, Komini, Kibe, Askari, and Kopp (2024). A higher frequency of monthly migraine attacks is associated with a lower QOL. According to a study conducted by Almosaiteer, Rabbani, Alharbi, and Aldukhayel (2022), males with migraine reported better health than females. Furthermore, those who experienced fewer migraines reported better QoL. Conversely, the results showed that patients' QOL was not affected by age or the presence of comorbidities.

Recently in South India, the study results by Anokha, Gopukumar, Soumya, Umashankar, Nandavar, and Vasanth (2025) are consistent with findings a present study, which found that migraine affects all aspects of quality of life, including functional, psychological, social, environmental, and physical aspects. This was confirmed by a study conducted by Leonardi, Raji, Busoni, and D'Amico (2010). Reduced quality of life was associated with disease severity in Italian migraine patients despite their attendance at a specialized headache center. In this context, the prevalence of headache in Belikova, Eskişehir, western Turkey, was found to be 78.2%, while the prevalence of migraine among patients was 7.2% (Arslantas, Tuzun, Ünsal, and Özbek, 2013, 498).

## Conclusion

According to the data obtained in this study, migraine is common among Libyan adults, with migraine patients experiencing a decreased quality of life in all dimensions of the QOL scale, which can be interpreted as negatively related to quality of life. This can be interpreted as migraine headaches impacting various QOL. Moreover, more studies are still needed in order to raising awareness between all specialists, general population to contribute to Improving QOL as much as possible.

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## References

- Almosaiteer, S. Rabbani, U. Alharbi, B., and Aldukhayel, A. (2022). Quality of life and its predictors among patients with migraine in Qassim region, Saudi Arabia: a cross-sectional study. *Egypt J Neurol Psychiatry Neurosurg* 58-69. <https://doi.org/10.1186/s41983-022-00507-4> [Retrieved on 05/09/2025].
- Alshakhs, A. (2006). Socio-economic level scale of the family. (2nd ed.), Anglo-Egyptian Library. Cairo.
- Amiri, P., Kazeminasab, S., Nejadghaderi, S.A., Mohammadinasab, R., Pourfathi, H., Araj-Khodaei, M., et al. (2022). Migraine: A Review on Its History, Global Epidemiology, Risk

- Factors, and Comorbidities. *Frontiers in Neurology*, 12, 800605 PMID: 35281991 <https://doi.org/10.3389/fneur.2021.800605>. [Retrieved on 18/08/2025].
- Anokha, V, Gopukumar, K., Sowmya, D., Umashankar, R, Nandavar, S, and Vasanth, S. (2025). Impact of migraine on disability and quality of life: Perspective from South Indian Context. *Quality of Life*, 16(1-2), 5-13. DOI: 10.7251/QOL2501005A.
  - Antonaci F, Nappi G, Galli F, Manzoni GC, Calabresi P, and Costa A. (2011). Migraine and psychiatric comorbidity: a review of clinical findings. *J Headache Pain*, 12(2):115-25. DOI: 10.1007/s10194-010-0282-4.
  - Arslantas, D., Tozun, M., Ünsal, A., and Özbek., Z. (2013). Headache and its effects on health-related quality of life among adults. *Turkish Neurosurgery*, 23 (4), 498-504. DOI: 10.5137/1019-5149.JTN.7304-12.0.
  - Bazerman, M ·. Comini, J. Kibe, L.W · Ascari, S. and Cobb, S. (2024). Association between Migraine and Quality of Life, Mental Health, Sleeping Disorders, and Health Care Utilization Among Older African American Adults. *Journal of Racial and Ethnic Health Disparities*, 11, 1530–1540.
  - Becker W. (2002). Assessing health-related quality of life in patients with migraine. *Can J Neurol Sci*, 2, S16-22. DOI: 10.1017/s031716710000189x. PMID: 12139081.
  - Bigal M, Lipton R, and Stewart W. (2004). The epidemiology and impact of migraine. *Curr Neurol Neurosci Rep*, 4(2):98-104. DOI: 10.1007/s11910-004-0022-8. PMID: 14984680.
  - Bolayir E, Celik K, Kugu N, Yilmaz A, Topaktas S, Bakir S. Intraerythrocyte antioxidant enzyme activities in migraine and tension-type headaches. *J Chin Med Assoc.* 67(6):263-7. PMID: 15366402.
  - Börü UT, Koçer A, Luleci A, Sur H, Tutkan H, Atli H. (2005). Prevalence and characteristics of migraine in women of reproductive age in Istanbul, Turkey: a population-based survey. *Tohoku J Exp Med*. 206(1), 51-9. DOI: 10.1620/tjem.206.51. PMID: 15802875.
  - Buse DC, Cady R, Starling AJ, Buzby M, Spinale C, Steinberg K, Lenaburg and et al (2024). Headache/migraine-related stigma, quality of life, disability, and most bothersome symptom in adults with current versus previous high-frequency headache/migraine and medication overuse: results of the Migraine Report Card survey. *BMC Neurol*, 24(1):232. DOI: 10.1186/s12883-024-03732-x.
  - Brna P, Gordon K, and Dooley J. (2007). Health-related quality of life among Canadians with migraine. *J Headache Pain*, 8(1):43-8. DOI: 10.1007/s10194-007-0320-4. PMID: 17361382; PMCID: PMC3476113.
  - Chaushev N, and Milanov I. (2009). Impact of migraine and migraine treatment on patient's capacity to work and quality of life. *J Clin Med*, 2, 26–31.
  - Ditto, T., Kuriakose, S., and Theertha Sanilkumar, T. (2023). Assessment of quality of life in young adults with migraine. *Sch Acad J Pharm*, 12(12), 334-344.
  - Domitrz, I and Golicki, D. (2022). Health-related quality of life in migraine: EQ-5D-5L-based study in routine clinical practice. *J. Clin. Med*, 24;11(23), 6925. DOI: 10.3390/jcm11236925.
  - Dong Z, Di H, Dai W, Liang J, Pan M, et al. (2012) Application of ICHD-II Criteria in a Headache Clinic of China. *PLOS ONE* 7(12): e50898.
  - Ertas M, Baykan B, Orhan EK, Zarifoglu M, Karli N, Saip S, and et al. (2012) One-year prevalence and the impact of migraine and tension-type headache in Turkey: a nationwide home-based study in adults. *J Headache Pain*, 13(2):147-57. DOI: 10.1007/s10194-011-0414-5.
  - Fernández-de-Las-Peñas C, Hernández-Barrera V, Carrasco-Garrido P, Alonso-Blanco C, Palacios-Ceña D, Jiménez-Sánchez S, and Jiménez-García R. (2010). Population-based study of migraine in Spanish adults: relation to socio-demographic factors, lifestyle and co-morbidity with other conditions. *J Headache Pain* 11(2):97-104. DOI: 10.1007/s10194-009-0176-5.



- Headache Classification subcommittee of the international headache society. (2004). The international classification of headache disorders: 2nd edition. *Cephalalgia*, 24 1:9-160. Doi: 10.1111/j.1468-2982.2003.00824. x. PMID: 14979299.
- International Headache Society (2018). Reprints and permissions. *Cephalalgia*, 38(1) 1–211. DOI: 10.1177/0333102417738202.
- Jokovic A, Locker D, Stephens M, Kenny D, Tompson B, and Guyatt G. (2003). Measuring parental perceptions of child oral health-related quality of life. *J Public Health Dent*, 63, 67-72.
- Kim BK, Chu MK, Lee TG, Kim JM, Chung CS, and Lee KS. (2012). Prevalence and Impact of Migraine and Tension-Type Headache in Korea. *J Clin Neurol* (3), 204-211.
- Kwong W, Landy S, Braverman-Panza J, Rosen J, Hutchinson S, and Burch S. (2007) A migraine disease management program in the primary care setting: impact on patient quality of life and productivity loss. *J Clin Outcomes Manage*, 14(6):332–338.
- Launer LJ, Terwindt GM, Ferrari MD. (1999). The prevalence and characteristics of migraine in a population-based cohort: the GEM study. *Neurology*, 11, 53(3), 537-42. DOI: 10.1212/wnl.53.3. 537.
- Leonardi M, Raggi A, Bussone G, and D'Amico D. (2010). Health-related quality of life, disability and severity of disease in patients with migraine attending to a specialty headache center. *Headache*, 50, 1576–1586. DOI: 10.1111/j.1526-4610.2010.01770. x.
- Lyngberg AC, Rasmussen BK, Jørgensen T, and Jensen R. (2005). Incidence of primary headache: a Danish epidemiologic follow-up study. *Am J Epidemiol*, 161, 1066–73. DOI: 10.1093/aje/kwi139.
- Mengistu G, and Alemayehu S. (2013). Prevalence and burden of primary headache disorders among a local community in Addis Ababa, Ethiopia. *J Headache Pain*, 14(1)30. DOI: 10.1186/1129-2377-14-30.
- Miertová, M. Jankovská, K. Ovchonkova and Barnau, A. (2024). Quality of life in patients with migraine. *Journal Of Nursing and Social Sciences Related to Health and Illness*, 1-5. DOI: 10.32725/kont.2024.020.
- Mula M, Viana M, Jauch R, Schmitz B, Bettucci D, Cavanna AE, Strigaro G, and et al. (2009). Health-related quality of life measures and psychiatric comorbidity in patients with migraine. *Eur J Neurol* 16(9):1017-21.
- Olesen J, and Steiner TJ. (2004). The International classification of headache disorders, 2nd edn (ICDH-II). *J Neurol Neurosurg Psychiatry*, 75(6):808-11. DOI: 10.1136/jnnp.2003.031286. PMID: 15145989; PMCID: PMC1739053.
- Özge A, Termine C, Antonaci F, Natriashvili S, Guidetti V, and Wober- Binol C. (2011). Overview of diagnosis and management of pediatric headache. Part I: Diagnosis. *J Headache Pain*, 12, 13—23.
- Shahrakai MR, Mirshekari H, Ghanbari AT, Shahraki AR, and Shahraki E. (2011). Prevalence of migraine among medical students in Zahedan faculty of medicine (Southeast of Iran). *Basic Clin Neurosci*, 2(2), 20-5.
- Sieber WJ, David KM, Adams JE, Kaplan RM, and Ganiats TG. (2000). Assessing the impact of migraine on health-related quality of life: An additional use of the quality of well-being scale-self-administered. *Headache*, 40(8):662-71. DOI: 10.1046/j. 1526-4610.2000.040008662. x. PMID: 10971663.
- Smitherman TA, McDermott MJ, and Buchanan EM. (2011). Negative impact of episodic migraine on a university population: quality of life, functional impairment, and comorbid psychiatric symptoms. *Headache*, 51(4):581-9. DOI: 10.1111/j.1526-4610. 2011.01857. x. PMID: 21457242.
- Steiner TJ, and Stovner LJ. (2023). Global epidemiology of migraine and its implications for public health and health policy. *Nat Rev Neurol*, 19 (2), 109-117. DOI: 10.1038/s41582-022-00763-1. PMID: 36693999.

- Steiner T, Stovner LJ, Jensen R, Uluduz D, and Katsarava Z. (2020). Lifting the burden: the global campaign against H. Migraine remains second among the world's causes of disability, and first among young women: findings from GBD2019. *J Headache Pain*, 21(1), 137. DOI: 10.1186/s10194-020-01208-0.
- Steiner T, Zwart JA. (2007). The global burden of headache: a documentation of headache prevalence and disability worldwide. *Cephalalgia*, 27(3):193-210. DOI: 10.1111/j.1468-2982.2007.01288. x.
- Stovner L, J, Nichols E, Steiner TJ, Abd-Allah F, Abdelalim A, Al-Raddadi RM, and et al. (2018). Global, regional, and national burden of migraine and tension-type headache, 1990–2016: A systematic analysis for the global burden of disease study 2016. *Lancet Neurol*, 17, 954–76. DOI: 10.1016/S1474-4422(18)30322-3.
- Tam, A., Naik, H., Trenaman, L., Lynd and Zhang, L. (2024). Health-related quality of life among women and men living with migraine: a Canada-wide cross-sectional study. *The Journal of Headache and Pain*, 25, (170)1-10. DOI: 10.1186/s10194-024-01882-4.
- Terwindt G, Ferrari M, Tijhuis M, Groenen S, Picavet H, and Launer L. (2000). The impact of migraine on quality of life in the general population: the GEM study. *Neurology*, 12, 55(5):624-9. DOI: 10.1212/wnl.55.5.624. PMID: 10980723.
- Tkachuk G, Cottrell C, Gibson J, O'Donnell F, and Holroyd K. (2003). Factors associated with migraine-related quality of life and disability in adolescents: a preliminary investigation. *Headache*, 43(9):950-5. DOI: 10.1046/j.1526-4610.2003.03185. x. PMID: 14511271; PMCID: PMC2128716.
- Todorov, BK. (2009). *Determinants of health-related quality of life among adolescents with migraine*. Master's thesis, Unpublished. Ohio University.
- World Health Organization. (1996). *The World Health Organization, WHOQOL-BREF User Manual*, Geneva, World Health Organization.
- Yoon MS, Katsarava Z, Obermann M, Fritsche G, Oezuyurt M, Kaesewinkel K, Katsarova A, and et al. (2012). Prevalence of primary headaches in Germany: results of the German Headache Consortium Study. *J Headache Pain*, 13(3):215-23. DOI: 10.1007/s10194-012-0425-x.