

# The influence of selected factors on the quality of life of children with headaches

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## Abstract

**Purpose:** Headaches are one of frequent complaints diagnosed in children and adolescents. Due to their recurring character, they influence the bio-psycho-social functioning of the children. The aim of the study was to learn about the factors influencing the quality of life of children with headaches.

**Material and methods:** The research was conducted on 140 children with headaches, ages 8 to 18, treated at the Chair and Department of Developmental Neurology, Karol Marcinkowski University of Medical Sciences in Poznań. The research tool was the Pediatric Quality of Life Inventory – PedsQL questionnaire.

**Results:** In the studied group 85 (60.7%) children had tension headaches, 25 (17.8%) had migraine with aura and 30 (21.5%) had migraine without aura. Analyzing the particular domains of the quality of life from the PedsQL questionnaire, significant differences were noticed in the evaluation of the domain “physical functioning”, depending on gender, age and the duration of pain, and in the domain “emotional functioning” depending on gender. The duration of pain additionally influenced the evaluation of their social functioning by the patients.

**Conclusions:** The difference in the evaluation of the quality of life depended on the gender and the age of the children, the duration of headaches and the severity of pain. The indicated factors influenced different domains of the quality of life of the adolescents participating in the study.

**Key words:** headache, children, quality of life.

## Introduction

Headaches are one of frequent complaints reported by children and adolescents. Prevalence of migraine in children and adolescents oscillates between 2.7% and 10.6%, while the frequency of autonomous tension headaches ranges from 40.7% to 82.9% [1]. Prolonged complaints or frequently recurring episodes restrict children’s bio-psycho-social functioning. They lead to poorer relationships with peers, frequent absence from school and lower self-esteem. They significantly influence the evaluation of the quality of life done by the children and their parents. Flanagan [2] described five significant areas around which the measurement of the quality of life should be made: physical and financial well-being; relationships with other people; social activity, self-development; leisure time. Lately the evaluation of the quality of life as a therapeutic effect has been of growing importance. Research conducted following this trend is based on the assumption that the quality of life is connected to health. General tools used are called Health Profile, for example SF-36, Sickness Impact Profile or Child Health Questionnaire, and specialized tools like Migraine Specific Questionnaire. The opponents of this research concept stress that there are big differences in the evaluation of the quality of life done by health care professionals and the feelings of patients that often are omitted in this evaluation. They suggest that the evaluation of the quality of life be based on general questionnaires that include the assessment of satisfaction with life in areas considered important by the majority of people, e.g. QOLS – Quality of Life Scale or PedsQL – Pediatric Quality of Life Inventory, along with scales evaluating the influence of a disease or its symptoms on person’s functioning or the quality of life, for example Beck Depression Inventory. Regardless of the research concepts, we are trying to find variables influencing the evaluation of the quality of life. The aim of the study was to learn about the factors influencing the quality of life of children with headaches.

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## Material and methods

The study was conducted on 117 children with headaches, ages 8 to 18 years, treated at the Chair and Clinic of Developmental Neurology. The research tool was the Pediatric Quality of Life Inventory – PedsQL v. 4.0 questionnaire. The questionnaire contains two identical versions – one for the parents and one for the children. It enables the measurement of the quality of life of children from the age of 7 onwards [3]. It is based on the analysis of physical, emotional and social functioning, functioning at school and well-being. Additional questionnaire for collecting clinical and demographic data was used. The Kruskal-Wallis and the U Mann-Whitney tests were used for statistical analysis.

## Results

The research was conducted on 69 (58.97%) girls and 48 (41.03%) boys. There were 21 (17.95%) respondents in the age group under 12 years old, 39 (33.33%) respondents ages 12-15 and 57 (48.72%) older than 15. In the studied group 76 (64.96%) children had tension headaches, 17 (14.53%) had migraine with aura and 24 (20.51%) had migraine without aura. 46 (39.32%) children located pain in the forehead area, 53 (45.30%) in the temples area, and 40 (34.19%) in the whole head. Most frequently it was a throbbing pain (60.68%), sharp pain (36.75%), pain experienced as a ring around the head (35.04%) and piercing pain (26.50%). The duration of the headache in 67 (57.26%) children was the whole day, in 42 (35.90%) up to two hours and in 8 (6.84%) over 48 hours. Daily headaches were reported by 19 (16.24%) children. While analyzing the functioning of children in different areas we found out that the feeling of sluggishness was present in 70 (59.83%) respondents. The feeling of fear accompanied 88 (75.21%) children, anger – 73 (62.40%). Difficulties in falling asleep or nightmares were indicated by 54 (46.15%) children. Among problems at school, usually stressed by the adolescents, was lower concentration (24.79%) and receiving unsatisfactory grades (17.25%). Because of the headaches 26 (22.22%) respondents sometimes did not participate in classes. The satisfaction with their life was declared by 64 (54.70%) children. Significant difference in the evaluation of children's physical functioning depending on age ( $p < 0.0366$ ) was found. Depending on gender, a difference in the evaluation of physical ( $p < 0.024422$ ) and emotional functioning ( $p < 0.009931$ ) was confirmed. Depending on the duration of headaches a difference was noted in the evaluation of physical ( $p < 0.0123$ ) and social functioning ( $p < 0.475$ ). No difference was noted in the evaluation of different areas of functioning depending on the type of headaches.

## Discussion

In the research group adolescents over the age of 15 prevailed, and the number of girls increased with age. Similar observations were made by Powers et al. [4]. The frequency and the duration of headaches influenced the evaluation of physical

and social functioning. In our study, as well as in the research of Powers et al. [4], Carlsson et al. [5] and Bandell-Hoekstra et al. [6] it was noted that the consequences of headaches were felt more by adolescents over the age of 15. The decrease in physical activity of children is often caused by additional complaints felt by them: feeling constantly tired, the lack of appetite, feeling cold all the time, stomach aches, feeling of sultriness [5,6]. Our own studies, as well as the research conducted by other authors show that the duration of pain influenced the way children's functioning was evaluated [5,6]. The lowest ratings were given by children who experienced pain during the whole day. A significant element, noticed by many authors is the difficulty in child's functioning at school. Zgorzalewicz [1], during a neurophysiological examination, noted elongated latencies P300 and N1 and an increase in the value of the amplitudes N1-P2, P2-N2, N2-P3 in people suffering from migraine headaches. Observed changes confirm the existence of perturbations in cognitive processes, especially in the field of memorizing information and decision-making. In our own research about 1/5 of the studied group reported problems at school. Carlsson et al. [5]. Powers et al. [3] observed, that children with headaches miss school more frequently and are less satisfied with their school achievements in comparison with healthy children. The child's age is also of great importance. Older children had more extracurricular activities and they reported more psychophysical problems such as back and neck pain, anxiety. Situations related to higher emotional tension before the start of a headache were more often reported by older children [5]. Powers et al. [3] comparing the functioning of children with headaches with their healthy peers and Hunfeld et al. [7] with children with other disorders noted, that adolescents with headaches are more frequently absent from school, are more stressed and depressed and also more frequently report other somatic complaints. In accordance with our findings Nodari et al. [8], did not find a statistical difference in the evaluation of the quality of life between children depending on the type of headache. Carlsson [5] noted that children with tension headaches more frequently had additional somatic complaints and more emotional tension than children with migraine.

## Conclusions

Concluding, the difference in the evaluation of the quality of life depended on the gender and the age of the children, the duration of headaches and the severity of pain. The indicated factors influenced different domains of the quality of life of the adolescents participating in the study.

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