

Functional Disability among Students with Migraine Headache

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Abstract

Background: Headache is the most prevalent neurological disorder. Migraine headache is the second most common, affecting between 10 to 12 percent of the population. The average lifetime prevalence of migraine in children and adolescents is 5.5%. Migraine restricts teenage quality of life and is a major cause of absence from school. It was reported that 90% of migraineurs have some headache-related disability, and approximately half are severely disabled or require bed rest. **The aim of this study is to** evaluate the impact of migraine headache on functional abilities among sixth grade primary school students. **Materials and methods:** The study included 1024 sixth grade primary school students of both sexes aged 10.0-13 years randomly chosen from eight primary schools, as follows; four rural and four urban schools **All individuals were subjected to:** complete history taking, neurological examination and functional disability assessment using: 1-Migraine disability assessment scale. 2-Sheehan Disability Scale. **Results:** The data showed that students with typical migraine had significant functional disability due to their headaches as evaluated with migraine disability assessment scale (MIDAS) and Sheehan disability scale (SDS) and this impairment was greater in females. Students with probable migraine showed considerable degree of functional disability but it was statistically significantly higher among students with typical migraine. **Conclusion:** Students with typical and probable migraine showed considerable degree of functional disability, however, it was significantly higher among typical migraineurs.

Keywords: Typical migraine, Probable migraine, Migraine disability assessment scale (MIDAS), Sheehan disability scale (SDS).

Introduction

Headache is the most prevalent neurological disorder and among the most frequent symptoms seen in general practice (Jensen and Stovner, 2008). It is one of the most frequent causes of consultation in neurology clinics (Jensen and Stovner, 2008).

Migraine headache is the second most common, affecting between 10 to 12 percent of the population (Breslau and Rasmussen, 2001). The average lifetime prevalence of migraine is 11%. Prevalence of migraine in children and adolescents is 5.5% (Abu-Arafah et al., 2010).

Migraine constitutes a major health problem. It restricts teenage quality of life and is a major cause of absence from

school as well as an important factor in health-related costs among adolescents (Fendrich et al., 2007). It was reported that 90% of migraineurs have some headache-related disability, and approximately half are severely disabled or require bed rest (Berg and Stovner, 2009).

The World Health Organisation (WHO) has recognised the impact of migraine worldwide and categorised it as the same level of disability as dementia, quadriplegia and acute psychosis. Furthermore WHO classified chronic migraine as more disabling than blindness, paraplegia, angina or rheumatoid arthritis (Harwood, 2004).

Subjects and methods

The study included 1024 students, of both sexes aged 10-13 years randomly chosen from eight primary schools, as follows; four rural and four urban schools in Minia district. Of the The total sample, 387 had headache, study groups included: (Students with typical migraine headache: n = 141), students with probable migraine: n= 48, students with non-migraine headache: n = 198). Diagnosis of migraine was established according to the International Headache Society criteria (IHS) 2013. Both students with migraine and non-migraine headache were subjected to the following: complete history taking, neurological examination and functional disability assessment using: 1-Migraine disability assessment scale (Patients are asked questions about the frequency and duration of their headaches, as well as how often these headaches limited their ability to participate in activities at work, at school, or at home), 2-Sheehan Disability Scale (five-items, self-rated questionnaire designed to assess functional impairment in three inter-related domains; Work/School, Social and Family life).

All analyses were performed with version 22 of Statistical Package of Social Science (SPSS). Qualitative data were expressed as proportions, while quantitative data were expressed as mean ± standard deviation (SD). Qualitative data were analyzed by Chi square (χ²) test. Statistical significance was defined as p values less than 0.05.

Results

The present study included 189 students with migraine headache and 198 students with non-migraine headache.

All results summarized in tables (1- 3) and figures (1-2).

- The impact of typical migraine on functional ability and comparison of its impact with non-migraine headache students using MIDAS and SDS are shown in **figure (1&2)**: The functional disability assessed by MIDAS and SDS was statistically significant higher in students with typical migraine rather than students with non-migraine headache (p= 0.001).

- Comparison between students with typical migraine and probable migraine as regard functional disability assessed by MIDAS and SDS are shown in **table (1&2)**: by using (MIDAS) and (SDS), both typical and probable migraine students had a considerable degree of functional disability. *However*, there was higher degree of disability among typical migraine students rather than probable migraineurs with statistically significant difference (P= 0.001) for MIDAS, but the difference was not significant (p= 0.24) for SDS and as regard MIDAS scoring, moderate degree of disability was the higher frequency (%) reported by students with typical migraine in 42 students (29.8%), followed by mild degree of disability in 37 (26.2%) then severe disability in 26 (18.5%). Mild disability was the most frequent disability reported by probable migraineurs and no one reported severe degree of disability. **Table (3)** illustrates that there was statistically significant higher degree of functional disability in females rather than male students suffered from typical migraine using SDS (p=0.04), while by using MIDAS showed no significant difference (p=0.07)

Table (1): Comparison between functional disability (MIDAS) in typical and probable migraineurs (N=189)

MIDAS	Typical migraine (N=141)	Probable migraine (N=48)	P
No disability	36 (25.5%)	16 (33.3%)	0.001*
Mild disability	37 (26.2%)	26 (54.2%)	
Moderate disability	42 (29.8%)	6 (12.5%)	

Severe disability	26 (18.0%)	-	
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Table (2): Comparison between functional disability (SDS) in typical and probable migraineurs (N=189)

SDS	Typical migraine (N=141)	Probable migraine (N=48)	P
No disability	31 (22.0%)	10 (20.8%)	0.24
Mild disability	44 (31.2%)	11 (22.9%)	
Moderate disability	47 (33.3%)	19 (39.6%)	
Severe disability	19 (13.5%)	8 (16.7%)	

Table (3): Gender difference and functional disability using MIDAS and SDS in students with typical migraine (N=141)

Functional disability assessment	Gender		P
	Male (N=61)	Female (N=80)	
MIDAS			0.07
No disability	20 (32.8%)	16 (20.0%)	
Mild disability	18 (29.5%)	19 (23.7%)	
Moderate disability	17 (27.9%)	20 (25.0%)	
Severe disability	6 (9.8%)	20 (25.0%)	
SDS			0.04*
No disability	10 (16.4%)	16 (20.0%)	
Mild disability	20 (32.8%)	19 (23.7%)	
Moderate disability	17 (27.9%)	30 (37.5%)	
Severe disability	4 (6.6%)	10 (12.5%)	

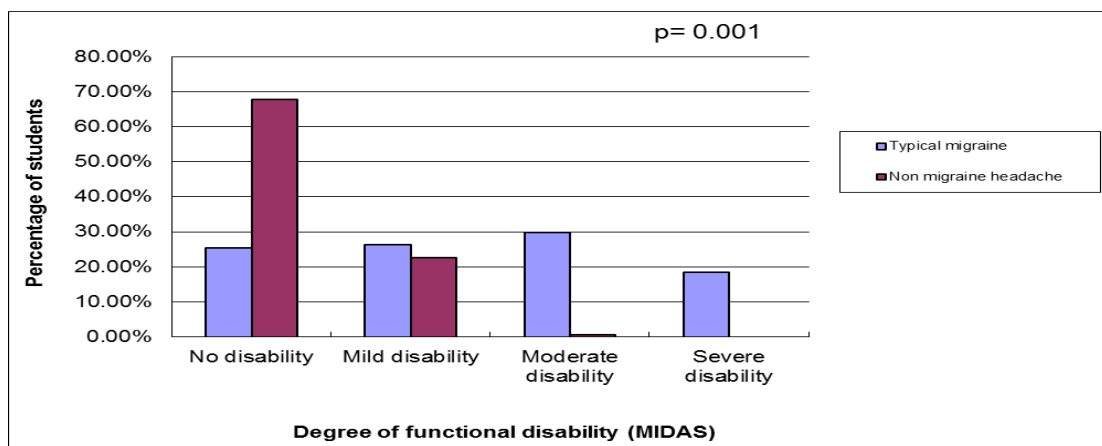


Figure (1): Comparison between typical migraineurs and non-migraine headache students regarding functional disability assessment by (MIDAS)

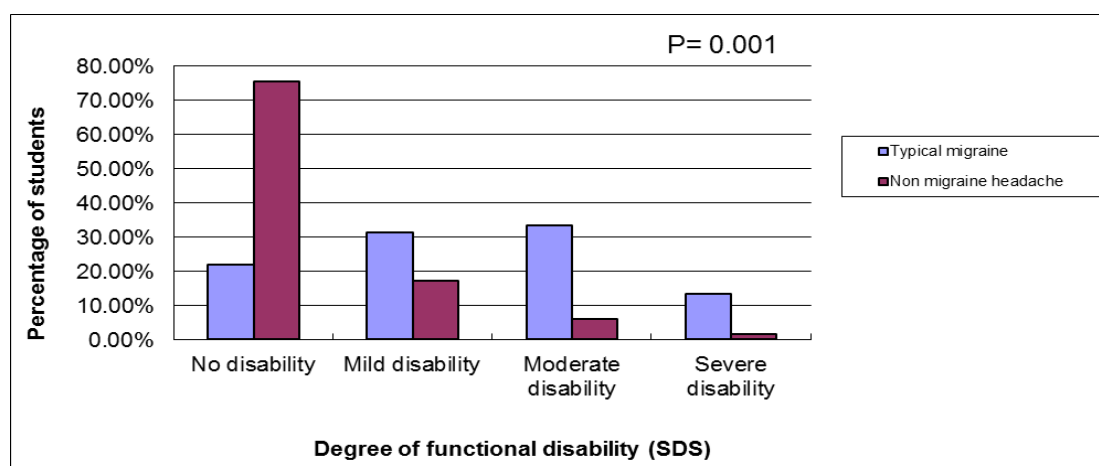


Figure (2): Comparison between typical migraineurs and non-migraine headache students regarding functional disability assessment by (SDS)

Discussion

The World Health Organization positions migraines as the 1st leading reason of disability worldwide. The greatest impact on a child and parent is from migraine, which occurs in up to (10.6%) of children between the ages of 0 and 10 years (Burton et al., 2009). Migraine and general headache disorders are among the top ten causes of disability because they are common and disabling, recurrent headaches have an impact on a child's life in a number of ways, including school absences and reduction in performance, decreased home and family interactions and decreased socialization with peers. (Leonardi, 2010). Our study assessed functional disability in students with migraine and non-migraine headache. The data showed that the students with typical migraine headache showed statistically significant higher degree of functional disability in (44.0%) [mild disability (26.2%), moderate (29.8) and severe disability (18.0%)] compared to students with non-migraine headache when assessed by Migraine disability Assessment Scale (MIDAS) ($p=0.001$) as well as when assessed by Sheehan Disability Scale (SDS) ($p=0.001$). The results agreed with Smitherman (2013) who reported that students with migraine headache had a mean score on the Migraine Disability

Assessment Questionnaire of (9.98 ± 12.10) Compared to those not screening positive for migraine and Lipton et al., (2007) found that (20.3%) of migraineurs lost at least one day of school or work in the past three months; and (28.1%) reported that their productivity at work or school had been reduced by at least half. Also, Ayatollahi et al., (2009) and Fallahzadeh et al., (2010) reported that more than half of migraineurs reported absence from work or classroom and this would lead to the educational failure and lower confidence.

Female students in our study, had statistically significant higher degree of functional disability assessed by (SDS) rather than males as well as when assessed by MIDAS but with insignificant difference ($p=0.07$). In agreement with these results, Radtke and Neuhauser (2009) reported, Women in a German population-based prevalence study had more disability, rated their health worse compared to men (difference $P < 0.001$). Buse et al., (2013) showed nearly similar results, there was higher degree of functional disability as regard MIDAS, among female students than males. According to the study results, both typical and probable migraine students had a considerable degree of disability.

However, there was statistically significant higher degree of disability ($p=0.001$) among typical migraine students compared to probable migraineurs using MIDAS, but with insignificant difference when assessed by SDS ($p=0.25$). In accordance with these finding, Kong et al., (2001) found that the proportion of subjects with high disability was elevated in typical migraine (31%) while in probable migraine in (13.0%) and that, HRQoL was reduced in the students with migraine. These findings might be explained by the lack of one of the diagnostic criteria for migraine to define probable migraine and so, those who experienced their headache of mild intensity, short duration (less than two hours), or not associated with nausea and/or vomiting and photophobia and phonophobia might show lesser degree of disability as evidenced by Bigal (2012) who found that, in children with any migraine subtype, poor performance at school was most significantly influenced by the presence of nausea during attacks, ($P < 0.001$). Although pain related to migraine can make concentration difficult.

Conclusions:

In typical migraineurs, the degree of functional disability was significantly higher than students with non-migraine headache, as well as students with probable migraine showed considerable degree of functional disability but it was statistically significantly higher among students with typical migraine. Females showed more functional disability.

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