

## Headache in School Age Children and Its Possible Related Expected Predisposing Factors: An Assessment Study

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**Abstract: Background:** Headache is a common symptom with a high prevalence in most epidemiological studies. It is one of the 10 most common reasons for outpatient physician visits. Headaches are common in children and the prevalence increases with increasing age. **The aim of the study:** was to find out the prevalence of headache among school age children and study different attributes associated with headaches in Ain Helwan district. **Method:** Descriptive research design was carried out at primary, preparatory and secondary public schools in Ain Helwan district. **Subjects:** included 378 school age children 10-17 years, from both gender. **Sample:** A simple random sample was recruited, utilizing the non-probability sampling technique. **Tool:** The researchers utilized self-administered interview sheet to collect data in relation to personal information of the studied sample, their eating habits, and life style pattern. Data were collected in the period from beginning of March 2011 till the end of April 2011. **Results:** revealed that, out of 378, students 221 were complaining from headache (58.5%). No statistically significant differences were detected between middle childhood and late childhood students regarding dizziness during car riding, sensitivity to certain smile, extreme noise, in addition to intensity of headache that increases with climbing stairs, sport, cough, change body posture, activity, teeth or gums' pain, ear problems, nervousness, vision problems and taking vitamins or drugs. Less than three quarters of sample had inadequate or irregular sleep (72.4%) and there were highly statistically significant differences between middle childhood and late childhood students regarding inadequate or irregular sleep and eating chocolate or cheese, skipping meals, drinking caffeine, staying long time in front of TV or computer, ingestion of cold drink or ice cream, smoking, and complying of any unhealthy condition. More than three quarters of the studied sample showed clinical manifestations of headache in stabbing pain followed by pressing headache (83.7% & 77.8 % respectively). Results revealed adverse effects of headache through scholastic achievement, school attendance and daily activity with no significant differences. **Conclusion:** Headache represents a common disabling health problem among school age children in Ain Helwan district with a prevalence rate of 58.4%. In general, the prevalence of headache increases with age and it is higher in males than females. Stress following staying long time in front of TV or computer was the most common precipitating factor for headache in the study. **Recommendation:** Health education of the parents and children about the precipitating factors which triggers for headache, and increasing awareness about healthy life style, and early diagnosis and treatment of headache are recommended to avoid its drawbacks on child health and school performance.

[Safaa Salah Ismail and Afaf Salah Abed El-Mohsen **Headache in School Age Children and Its Possible Related Expected Predisposing Factors: An Assessment Study**] Life Science Journal 2012; 9(1):617-627]. (ISSN: 1097-8135). <http://www.lifesciencesite.com>. 91

**Key words:** Headache, school age children

### 1. Introduction

Headache is the most frequently reported pain in children followed by abdominal and musculoskeletal pain and it is a common symptom and complaint in pediatric practice, but consultation rates do not reveal the true prevalence (Alawneh & Bataineh, 2006). The prevalence of headache increases with age and reaches adult population prevalence in the early teens (Lipton, 1997).

Headaches are common in children and the prevalence increases with increasing age. In the researchers' practice, almost half of referrals from primary care are because of headache. Unfortunately, most parents think that headache is an uncommon

symptom in children, hence their understandable concern. As well, hoping to relieve the pain, parents are often seeking reassurance that their child's headache is not a sign of serious intracranial disease, such as brain tumors. If this is understood, then no need to explain every headache, but nurses must be able to reassure the child and family that it is not a sign of serious illness (Mukhopadhyay & White, 2008).

Headache is one of humanity most common afflictions. It has been estimated that one person in three experiences sever headache at some stage of life. Most people with a mild recurrent or isolated headache do not consult a physician, and therefore

the true prevalence is unknown. The lifetime prevalence for any type of headache as estimated from population based studies is more than 90 % for men and 95 % for women (**Boes et al., 2004**). A classification was also primarily developed for headache disorders in adults. There are no specific criteria for children, which makes difficult to classify their headaches (**Koenig et al., 2002**).

Headache is very common in children and its prevalence increases in adolescence. Data from multiple studies have shown the prevalence of headache to be in the range of 37-51% in 7 years old, growing steadily to 57-82 % in 15 years old. Pre-pubertal boys are more often afflicted than girls whereas after puberty headaches occur more often in girls (**Lewis et al., 2002**).

The epidemiology of headaches in children and adolescents has been well studied in Western countries, but very little similar information has been recorded in developing countries (**Ayatollahi & Ayatollahi, 2002**). In addition, results from the different studies have varied according to the diagnostic criteria, methods of data collection, specific population and regions. In addition, variations in prevalence rates have been attributed to case definition and the age and sex of population surveyed (**Ayatollahi & Khosravi, 2006**).

”Frequent” headache was reported in 2.5% of children who were at least seven years of age and 15 % of those who were at least 15 years of age. The prevalence of headache ranged from 37- 51% in those who were at least seven years of age and gradually rose to 57-82 % by age 15. Before puberty, boys are affected more frequently than girls, but after the onset of puberty, headaches occur more frequently in girls (**Donald & Lewis, 2002**).

Recurrent headaches adversely affect academic performance, memory, school attendance, personality and peer relations (**Shivpuri et al., 2003**). Headaches have a significant impact on the lives of children and adolescents, resulting in school absence decreased extracurricular activities and poor academic achievement (**Abu-Arefeh & Russel, 1994**).

The term “headache” was defined as a pain in the area of the head, which handicapped the pupil’s school attendance, homework, leisure activities, or daily living. Recurrent headache, such as migraine and tension headaches, is a common problem which often begins in childhood and extends into adulthood. Until recently, little attention has been devoted to this common chronic pain problem in children and adolescents (**Abu-Arafah & Macleod, 2005**).

About 5% of school-age children and at least 10% of teens get headaches, recurrent headaches with additional symptoms. Often triggered by things like stress, sleep deprivation, and menstruation, it can

cause the following symptoms: pounding, throbbing pain or dull, steady pain on one or both sides of the head, dizziness, stomachaches, nausea and/or vomiting, seeing spots or halos sensitivity to light, noise, and/or smells, which in addition, last anywhere from 30 minutes to several hours, and some can last as long as a couple of days (**Lipton, 1997**).

In general, children get the same types of headaches as adults, and headaches often are hereditary, so if a parent gets them, their children might too. In addition, a family member with headaches may give a clue to the cause but may also be acting as a role model for the headache behavior (**Mukhopadyay & White, 2008**).

Once the headache diagnosis is established, management must be based on the frequency and severity of headache and the impact on the patient's lifestyle. Experienced pediatric nurses can play key roles in pediatric care of children with headache. The nurse has a key role in obtaining the patient history, assisting with diagnosis and management, and providing counseling to prevent further headaches. Certain modifications may prevent many of the headaches. These changes include improving sleep habits, meal schedules, fluid intake, and stress reduction and eliminating food and environmental triggers. Nursing expertise can be used to develop improved collaborative care plans, which, when shared with the child, family, and primary care provider, will lead to successful continuity of long-term care (**Johnson et al., 2009**).

On the same context, **Lewis (2007)**, identified that management of headache by teaching process must be the incorporation of life style change, such as regulation of sleep and eating habits, avoidance of skipping meals and caffeine, adequate fluid intake, regular exercise, identification of triggering factors, and stress management.

#### **Aim of the study:**

To find out the prevalence of headache among school age children and study different attributes associated with headaches in Ain Helwan district.

#### **Research questions:**

1. What is the prevalence of headache among school age children in Ain Helwan district?
2. What are the different attributes associated with headaches?

#### **2. Subjects and Methods**

**Research design:** This was a descriptive analytical research design through cross-sectional survey, based study on school children aged, between 10- 17 years.

**Research setting:** This study was carried out at schools at Ain Helwan district.

**Subjects:** Children fulfilling the following criteria were included in the study sample such as; students from both genders, and aged 10-17 years. They were recruited from primary, preparatory and secondary public schools in Ain Helwan district in the period from beginning of March 2011 till end of April 2011.

At the beginning of the study, all children from the students who fulfill the sampling criteria were present on the day of data collection. They agreed to be interviewed and were included as subjects for the study.

**Sample:** A simple random sample of 378 students was recruited, utilizing the non-probability sampling technique. The students were chosen from six schools: Tarek Ben Ziad and Belal Ben Rabah primary schools, Omer Ben Abd El-Aziez Preparatory school for boys, Om El-Abtal Preparatory school for girls, Helwan Preparatory school for girls, Helwan Secondary school for girls.

**Tools:** A self-administered interview sheet was designed and utilized by the researchers to collect the necessary data. It included to four parts and entailed the following items:

- Personal information of students such as: age, gender, parents' education and occupation etc.
- Headache characteristics included questions about starting headache, numbers of attacks, duration, and site etc.
- Precipitating factors included questions about dizziness during the care ride, sensitivity to certain smile, extreme noise, vision problems, sinusitis etc.
- Life style pattern of students included questions related to inadequate sleep, skipping meals, drinking caffeine, staying long time in front of TV or computer, visits to health care units, seeking health advice from school nurse etc.

#### Field work:

- Tools were reviewed by experts in different fields of nursing and medicine.
- Official letters from the Faculty of Nursing, Helwan University were forwarded to the Ministry of Education to obtain their permission to visit the schools and collect data.
- Official letters were available with the approval of the Ministry of Education, addressed to the directors of the schools. Each director was informed about the time and date of data collection .
- Before conducting the main study, a pilot study was done with the assistance of the

children's teachers' involving the application of the questionnaire, to ten children in a class chosen randomly. This was done to assess whether the students could comprehend it easily and estimated the time needed to fill in the questionnaire.

- Students who shared in the pilot study were excluded from the main study sample.
- Based on the results obtained from the pilot study, some modifications were done on the questionnaire and then, it was administered to the students.
- Each student was interviewed individually after explaining the purpose and method of the study and obtaining his/her approval to participate in the study and they were assured about confidentiality of data collected.
- Each interview took approximately 15-20 minutes to complete filling in the study tool, depending upon the understanding and response of the students. Data were collected during the period from beginning of March to the end of April 2011.
- Instructional handouts were designed by the researchers in simple Arabic language to explain the meaning of headache, causes, and risk factors from headache and healthy life style pattern to decrease headache. They were distributed to the participants.

#### Statistical Analysis:-

Upon completion of data collection, each answer sheet was coded and scored. The researchers coded the data into a coding sheet so that data could be prepared for computer entry. Data were statistically analyzed by using the Statistical Package for Social Science (SPSS) version 15, and test of significance. The level of significance was considered at  $p < 0.05$ .

#### Limitations of the study:

There were no students in 2nd and 3rd secondary schools beside few students were in schools due to revolution.

### 3. Results

**Figure (1)** illustrated that out of 378 students under study 221 were complaining from headache (58.5%), while, 157 (41.5%) were not. In addition, 104 children were in middle childhood from  $10 < 14$  years, and 117 children in late childhood from 14-17 years.

**Table 1:** displayed the socio-demographic characteristics of students. Age for less than two thirds of the studied sample (65.6%) ranged from 14-17 years (late childhood). The same table indicated that the majority of the studied sample (80.7%) was

males. In addition, 65.3 % of them were in 2nd and 3rd preparatory, school and 1st secondary school.

**Table 2:** showed the socio-demographic characteristics of students' parents. The father occupations for more than third of the studied sample (34.9 %) were workers, followed by employees (22.7%). The same table indicated that the highest percentage of the studied sample (36.5%) their fathers' educational level was secondary education, followed by more than one quarter (26.4%) were illiterate. The table also showed that two thirds of the studied sample of mothers were housewives (66.7%), and secondary educated mothers constituted the highest percentage accounting for slightly more than one third (34.4%).

**Table 3:** demonstrated that an equal percentage of more slightly more than three fifths (61.5 %) of middle childhood (10- < 14 years) under study have onset of pain as acute and repeated headache. The same table showed significant relations between middle childhood and late childhood students as regards having onset of pain as acute , repeated headaches , number of attacks per month, pain headache in unilateral location, continuous pain all the time, and gender. In addition the same table showed no statistically significant differences between middle childhood and late childhood students as regards headache pain fixed and slow, overhead as heaviness, pulsating quality headache, and duration of headache (P=0.50, 0.45, 0.54 & 0.038 respectively).

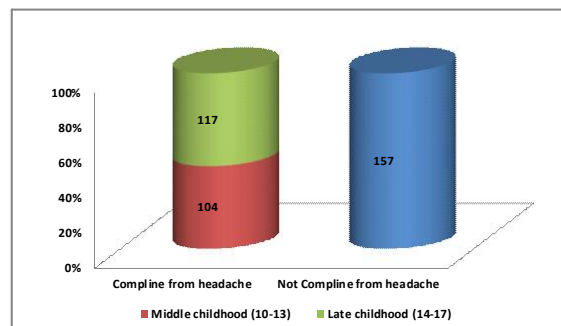
**Table 4:** showed no statistically significant differences between middle childhood and late childhood students regarding dizziness during car riding, sensitivity to certain smile, extreme noise. In addition, to intensity of headache increase with climbing stairs, sport, cough, change body posture, activity ,teething or gums pain, ear problems, nervousness, vision problems and taking vitamins or drugs .

In addition, the table showed statistically significant differences between middle childhood and late childhood students regarding family history of headache, time of menses in girls, headache increase when carrying heavy thing and walking adding to children complaining from sinusitis.

**Table 5:** revealed that less than three quarters of sample had inadequate or irregular sleep and there was a highly statistically significant difference between middle childhood and late childhood students regarding inadequate or irregular sleep and eating chocolate or cheese.

In addition, the same table showed statistically significant differences between middle childhood and late childhood students regarding their life style pattern such as; skipping meals, drinking caffeine,

staying long time in front of TV or computer, ingestion of cold drink or ice cream, smoking , and complain of any unhealthy condition (P= 0.64, 0.13,0.33,0.172, 0.08 & 0.20, respectively).



**Figure (1):** Prevalence of headache among studied sample.

**Table (1):** Socio demographic characteristics of the studied sample (n= 378).

Socio demographic characteristics	No	%
<b>Age (in years):</b>		
10<14	130	34.4
14-17	248	65.6
<b>Gender:</b>		
Male	305	80.7
Female	73	19.3
<b>Grade :</b>		
5th & 6th primary school, and 1st preparatory school	131	34.7
2nd & 3rd preparatory school, and 1st secondary school	247	65.3

**Table 6:** highlighted that the majority of studied sample showed clinical manifestations of headache in stabbing pain followed by pressing/ tightening headache. In addition, the table showed that the lowest percentage regarding clinical manifestations of headache as sense of nauseating and/or vomiting in starting headache and elevation of body temperature .

In addition, table (6) showed no statistically significant differences between middle childhood and late childhood students regarding their clinical manifestations of headache as pressing headache, facial redness, leakage from nose, elevation of body temperature, sense of nauseating or vomiting , blurred vision and numbness in the face .

**Table 7:** revealed that a minority of studied samples representing only one tenth were making referral to hospital for follow up, and less than fifth were going to doctor for advice, followed by near one third seeking advice from school nurse. In addition, the table showed significant differences between middle childhood and late childhood students regarding to prefer to stay in dark and quite place, going to doctor advice and satisfied from advice of school nurse.

**Table 8:** showed frequently of adverse effects of headache through scholastic achievement, school attendance and daily activity and there were no statistically significant differences between middle

childhood and late childhood students regarding to scholastic achievement, school attendance and daily activity (P=0.28, 0.09 &0.053 respectively).

**Table (2): Socio-demographic characteristics for parent of the studied sample (n= 378).**

Items	No	%
<b>Father occupation:</b>		
Worker	132	34.9
Private work	66	17.5
Driver	46	12.2
Retirement	18	4.8
Employee	86	22.7
Died	30	7.9
<b>Father education:</b>		
Illiterate	100	26.4
Read & write	66	17.5
Secondary education	138	36.5
University education	74	19.6
<b>Mother occupation:</b>		
House wife	252	66.7
Employee	54	14.3
Teacher	42	11.1
Worker	30	7.9
<b>Mother education :</b>		
Illiterate	110	29.1
Read & write	84	22.2
Secondary education	130	34.4
University education	54	14.3

**Table (3): Distribution of Common Characteristics Headache of the studied sample (no= 221).**

Variable	Middle childhood 10<14 year		Late childhood 14-17 year		Total		P -value
	No= 104	%	No=117	%	No=221	%	
<b>Onset of pain is acute</b>							
	64	61.5	82	70.1	146	66.1	0.000
<b>Repeated headache</b>							
	64	61.5	85	72.6	149	67.4	0.004
<b>Number of attacks of headache / month</b>							
1-3	76	73.1	75	64.1	151	68.3	0.001
4-6	13	12.5	28	23.9	41	18.6	
≥ 6	15	14.4	14	12	29	13.1	
<b>Headache pain in unilateral location</b>							
	23	22.1	52	44.4	75	33.9	0.001
<b>Headache pain is fixed &amp; slow</b>							
	42	40.4	55	47	97	44	0.50
<b>Headache pain over head as heaviness</b>							
	38	36.5	45	38.5	83	37.6	0.45
<b>Continue headache all time</b>							
	43	41.3	17	14.5	60	27.1	0.000
<b>Pulsating quality headache</b>							
	49	47.1	55	47	104	47.1	0.54
<b>Duration of headache attacks</b>							
30 min-< 2hour	90	86.5	109	93.2	199	90	0.038
2-4 hours	4	3.8	6	5.1	10	4.5	
≥ 4+ hours	35	9.6	2	1.7	12	5.4	
<b>Tie head</b>							
	47	45.2	60	51.3	107	48.4	0.259
<b>Gender</b>							
Male	69	66.3	80	68.4	149	67.4	0.000
Female	35	33.7	37	31.6	72	32.6	

**Table (4): Distribution the Precipitating Factors for Headache of the Studied Sample (no= 221).**

Variable	Middle childhood 10<14 year		Late childhood 14-17 year		Total 221		P -value
	No	%	No	%	No	%	
<b>Dizziness during the car riding</b>							
	34	32.7	29	24.8	63	28.5	0.12
<b>Sensitive to certain smile</b>							
	27	26	30	25.6	57	25.8	0.53
<b>Extreme noise increase headache</b>							
	37	35.6	86	73.5	123	55.7	0.15
<b>Intensity increase with walking</b>							
	50	48.1	60	51.3	110	49.8	0.003
<b>Intensity increase with climbing stairs</b>							
	41	39.4	40	34.2	81	36.7	0.144
<b>Intensity increase with sport</b>							
	35	33.7	38	32.5	73	33	0.40
<b>Family history of headache</b>							
	77	74	96	82	173	78.3	0.00
<b>Increase with time of menses</b>							
	12	11.5	26	22.2	38	17.2	0.003
<b>Pain of headache increase with cough</b>							
	52	50	39	33.3	91	41.2	0.006
<b>Pain of headache increase when carrying heavy thing</b>							
	51	49	22	18.8	73	33	0.000
<b>Pain of headache start when changing body posture</b>							
	28	26.9	41	35	69	31.2	0.143
<b>Intensity increases by activity</b>							
	74	71.1	117	100	191	86.4	0.053
<b>A companied with taking vitamins or drugs</b>							
	43	41.3	72	61.5	115	52	0.36
<b>Increased with teeth or gums pain</b>							
	48	46.2	66	56.4	114	51.6	0.022
<b>Increased with ear inflammation</b>							
	46	44.2	75	64.1	121	54.8	0.07
<b>A companied with nervousness or stress</b>							
	58	55.8	95	81.2	153	69.2	0.23
<b>A companied with change in atmosphere</b>							
	56	53.8	83	70.9	139	62.9	0.03
<b>Increased with sinusitis</b>							
	59	56.7	27	23.1	86	38.9	0.00
<b>A companied from vision problem</b>							
	26	25	28	23.9	54	24.4	0.46

**Table (5): Distribution of Components of life style among the studied sample (no= 221).**

Variable	Middle childhood 10<14 year		Late childhood 14-17 year		Total		P –value
	No	%	No	%	No	%	
<b>Inadequate or irregular sleep</b>							
	58	55.8	102	87.2	160	72.4	0.000
<b>Skipping meals</b>							
	40	38.5	29	24.8	69	31.2	0.064
<b>Drinking caffeine</b>							
	29	27.9	24	20.5	53	24	0.13
<b>Eating chocolate or cheese</b>							
	24	23.1	22	18.8	46	20.8	0.02
<b>Staying long time in front of TV or computer</b>							
	59	56.7	100	85.5	159	71.9	0.33
<b>Ingestion of cold drink or ice cream</b>							
	31	29.8	48	41.1	79	35.7	0.172
<b>Complain of any unhealthy condition</b>							
	39	37.5	64	54.7	103	46.6	0.20
<b>Smoking</b>							
	28	26.9	63	53.8	91	41.2	0.08

**Table (6): Distribution of Clinical manifestation of headache among the studied sample (no= 221).**

Variable	Middle childhood 10<14 year		Late childhood 14-17 year		Total		P –value
	No	%	No	%	No	%	
<b>Pressing / tightening headache</b>							
	60	57.7	112	95.7	172	77.8	0.425
<b>Stabbing pain</b>							
	83	79.8	102	87.2	185	83.7	0.003
<b>Facial redness occur</b>							
	35	33.6	85	72.6	120	54.3	0.10
<b>Decent of eye tears</b>							
	54	51.9	64	54.7	118	53.4	0.004
<b>Leakage from nose (running)</b>							
	38	39.4	61	52.1	99	44.8	0.36
<b>Elevation of body temperature</b>							
	41	39.4	30	25.6	71	32.1	0.012
<b>Sense of nauseating and /or vomiting in starting headache</b>							
	32	30.8	32	27.4	64	29	0.34
<b>Blurred vision</b>							
	55	52.9	62	53	117	52.9	0.43
<b>Numbness' in the face</b>							
	36	34.6	76	65	112	50.7	0.34

**Table (7): Frequency of practice to relive headache among the studied sample (no= 221).**

Variable	Middle childhood 10<14 year		Late childhood 14-17 year		Total		P-value
	No	%	No	%	No	%	
<b>Prefer to stay in dark and quite place</b>							
	78	75	83	70.3	161	72.9	0.000
<b>Sleeping</b>							
	83	79.8	108	92.3	191	86.4	0.055
<b>Taking period of rest</b>							
	79	76	95	81.2	174	78.7	0.006
<b>Go to seeking advice from school nurse</b>							
	31	29.8	41	35	72	32.6	0.054
<b>Go to doctor for advice</b>							
	29	27.9	12	10.3	41	18.6	0.000
<b>Taking medication</b>							
	70	67.3	111	94.9	181	81.9	0.21
<b>Making referral to hospital</b>							
	10	9.6	12	10.3	22	10	0.177
<b>Satisfy from advice of school nurse</b>							
	49	47.1	47	40.2	96	43.4	0.000

**Table (8): Frequency of adverse effects of headache among the studied sample (no= 221).**

Variable	Middle childhood 10<14 year		Late childhood 14-17 year		Total		P-value
	No	%	No	%	No	%	
<b>Scholastics achievement</b>							
	36	34.6	61	52.1	97	43.9	0.28
<b>Daily activity</b>							
	74	71.2	110	94	168	76	0.053
<b>School attendance</b>							
	18	17.3	22	18.8	40	18.1	0.09

#### 4. Discussion

Headache is one of the most common complaints in childhood and adolescence. Despite this fact, relatively little was known about the variations of headache prevalence by age, sex and race (Wang et al., 2005).

The current study showed that the total prevalence of headache among 378 school children aged 10-17 years in Ain Helwan district represented almost three fifths distributed between mild childhood less than half and late childhood more than half. These results were in agreement with Abdou et al. (2005), who reported a prevalence of 72.3 % of headache among 1200 child, age ranged between 6-11 years in Alexandria. Other investigators reported lower prevalence of 39% and 45.4 % among school age children in England and Sweden, respectively (Isik et al., 2006).

In some Arabic countries, studies estimating the prevalence of headache among school age children reported a prevalence of 37% in the Emirates (Bener

et al., 1998) and 44 % in Saudi Arabia (Jumah et al., 2002). On the other hand, Alawneh & Bataineh, (2006) reported a lower prevalence of 24 % of headache among school age children in Jordan.

In addition, headaches are common during childhood and become more common and more frequent during adolescence. In epidemiological survey of 9000 schoolchildren, one-third of the children who were at least seven of age had had headaches and half of those were at least 15 years.

In the present study, male students suffered from headache more frequently than females accounting for almost two thirds versus slightly less than one third and this was statistically significant. However, headache was more common in male students below the age of 14. In a similar study, Lewis et al. (2002) found that pre-pubertal boys were more often afflicted by headache than girls whereas after puberty headaches occur more often in girls. In accordance with the previous results Martin & Behbehani (2006) and Kroner - Herwig & Vath (2009)



suggested that pubertal hormone imbalance may be a risk factor for developing headache in girls at puberty. Similarly **Laurell et al., (2004)** and **Gassmann et al., (2008)** confirmed that teenaged females suffer from headache more frequently than males.

In the present study, the prevalence of headache among middle childhood age from 10 < 14 years was lower than late childhood age from 14-17 years. This finding contradicted with the study carried out by **El-Tallawy et al., (2006)**, who found a prevalence of headache of 21.1 % in 2088 school age children in Assiut Governorate, of whom 734 children chosen from the 4th and 5th grade of primary schools aged 9-11 years, 834 children from the 1st and 2nd grades of preparatory school with age ranged from 11-13 years and 520 students from secondary schools representing 1st grade whose age ranged from 14-15 years.

This discrepancy between the current study results and prevalence in the other studies may be attributed to the difference in age grouping and its impact on the ability of young children to express their symptoms, to the different constitutional factors of the studied populations, to the difference in criteria used for diagnosis or environmental risk factors.

The current study finding clarified that regarding socio-demographic characteristics in relation to parents, education, the illiterate fathers represented approximately one quarter and for the worker fathers accounted for almost one third. Other studies found that headache were more common when the students' family had a low income as that of **Unp et al., (2005)**.

The present study result showed in relation to family history of headache, that more than three quarters of the studied sample have a positive family history with statistically significant differences between mild childhood and late childhood. This is in agreement with **Laura et al., (2011)**, and **Isik et al., (2006)**, who found that 60.9 % and 87.3% respectively of children with primary headache have a positive family history for headache.

Studying different precipitating factors for headache, the current study clarified factors such as; sensitive to certain smile, noise, skipping meals, and inadequate or irregular sleep, and stress. This is in agreement with **Isik et al., (2006)**, who reported that stress is the most common precipitating factors for headache in 69%, 83.6% and 72.6% respectively. According to a **National Headache Foundation survey (2011)**, nearly 30% of children miss school because of headaches. For many children, the start of the school season can be a particularly stressful time.

The previous finding are also is in accordance with a study carried out by **El-Tallawy et al., (2006)**,

whose findings clarified significant high rate of different precipitating factors such as, sleep disturbances whether hypersomnia or insomnia this may be attributed to the fact that students especially in secondary school may have sleep disturbance due to bad methods of studying in addition to extra school courses (private lessons). Other reported precipitating factors include bright sunlight, noise as most of schools were present in noisy areas which may increase the headache attacks, as well as hunger or missed meals where most of students delay breakfast to 11.00 -12.00 a.m.

In accordance with previous results, those mentioned by **Blau (2004)**, who reported that too much or too little sleep provokes headache in 5% of normal children and in a proportion of children who complain from headache. These environmental triggers, light, sound and smell, are transmitted directly to the central nervous system (CNS) by the special senses; and cause direct excitation of the neural pathways, then cause headache attack but light is a more common precipitant than others, also the study recorded that hunger or missed meal represents a precipitating factor in 60.6% of children.

Additionally, This study result clarified that headache increased with teething or gums pain, activity, ear inflammation, and sinusitis. This finding contradict with that of a study by **Stovner et al. (2007)**, which reported that 48% of children with headache explained that headache is a common symptom common in many pain in children, such as; ear infections, sinusitis infections, colds and flu are often accompanied by headache.

Studying different precipitating factors in common life style for headache, the current study clarified factors such as; stress, staying long time in front of TV or computer, ingestion of cold drink or ice cream and eating chocolate or cheese. This is in agreement with a study carried out by **Stovner et al. (2007)**, who mentioned that; additives in foods monosodium glutamate (MSG), found in many foods such as bacon, bologna and hot dogs, which are known to trigger headaches. Caffeine, soda, chocolate, coffee and tea may cause headaches.

In the present study results revealed that, less than half of the studied sample described a pulsating headache, more than two fifths described fixed and slow headache, more than third described heaviness and less than half described tie in the head. Similarly, other previous studies reported pulsating headache to be the most common type of headache in school age children constituting 41.2-89.5% (**Unp et al., 2005; and Ayatollahi & Khosravi (2006)**), which means that ability of children to express and remember their symptoms make the possibility that the quality of

pain may not be usually easily differentiated in the population.

Regarding to the site of headache, the present study revealed that the unilateral location was the commonest site. **Unp et al. (2005)** found that most of students who suffered from headache defined more than one location. This difference might be explained by the fact that most students forgot the site of headache.

Regarding to duration of headache, the present study findings revealed that the duration of headache attacks lasts from 30 minutes to 2 hours in 90%, from 2-4 hours in 4.5%, and more than 4 hours in 5.4 % of students. This finding contradicted with study by **Andersen et al. (2006)**, who reported that 51.4% of children with headache had attacks that lasted less than 3 hours, while 41.2% had attacks that lasted 4-24 hours and 3.7% had attacks that lasted more than 24 hours.

In the current study, the majority of the studied sample used medication or analgesics to relieve headache but none of them were on maintenance treatment. Previous studies reported that 20 - 77.5% of students with headache use pain relieving medicine (**Isik et al., 2006 and Holstein et al., 2008**). This suggests that self-treatment is a relevant problem in population.

It is noted that while nearly more than two fifths of children with a headache had a severe disorder affecting their scholastic achievement in productive life, and more than three quarter had effect on daily activity but, none was on maintenance treatment. This results was with in accordance with a study carried out by **Rhee (2001)**, who found that; headache affect social competency in a form that can be measured in terms of days of school missed, inability to participate in after-school activities, loss of friendships, and isolation. For the preteen and adolescent, inability to grow up and be independent can be a consequence of headache.

#### Conclusion:

Headache represents a common disabling health problem among school age children in Ain Helwan district with a prevalence rate of 58.4%. In general the prevalence of headache increased with age and it was higher in males than females. Stress followed by staying long time in front of TV or computer were the most common precipitating factors for headache in the study.

#### Recommendation:

Health education of the parents and children about the precipitating factors triggers for headache, and increase awareness about healthy life style. In addition, early diagnosis and treatment of headache to

avoid its drawbacks on child health and school performance.

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2/12/2012