

Nightmares: Prevalence, Age and Gender Differences among Kuwaiti Children and Adolescents

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Study Objective: To estimate the prevalence rates of self-reported nightmares among Kuwaiti children and adolescents aged 10 to 18 years, and to examine the age and gender differences.

Methods: A sample of 6,727 school students was recruited. A self-rating scale item was used to assess nightmares' frequency. It was answered on a 5-point intensity scale, anchored by 0: No and 4: Very much. This scale had acceptable temporal stability. Point prevalence rate was computed as the summation of the percentages of responses in the two options: "Much" and "Very much" during the most recent month.

Results: The prevalence rates among males ranged between 6.1% (age 18) and 17.6% (age 13). The ages 13, 12, and 11 had, respectively, the highest rates. From the age 10 to 13 years, the prevalence rates were increasing steadily, but from the age 14 to 18 years, the prevalence rates were decreasing consistently. As for females, the prevalence rates ranged from 9.5% (age 11) to 17.9% (age 18). The younger groups (10-14 yrs) had a lower prevalence than the older ones (15-18 yrs). Gender differences in the mean scores on the self-reported nightmares were significant in the ages 15 to 18, in which females had significantly higher mean scores than their male counterparts.

Conclusions: In a non-Western large Kuwaiti sample, self-reported nightmares are common. There is a need for comprehensive programs of guidance, counseling, or intervention. (*Sleep and Hypnosis* 2006;8(1):33-40)

Key words: Nightmares, epidemiology, prevalence, children, adolescents, Kuwait

INTRODUCTION

Nightmares are described as frightening dreams that usually awaken the sleeper from rapid eye movement (REM) sleep. It is

The present research was supported by Kuwait University under Grant No. OP01/04. The author gratefully acknowledges the generous assistance of Research Administration at that University.

I thank Professor Eugene Steele, Department of English, College of Arts, Kuwait University for his assistance in proofing the manuscript.

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Accepted February 13, 2006

almost always a long, complicated dream that becomes increasingly frightening toward the end. The long, dreamlike feature is essential in making the clinical differentiation from sleep terror. The element of fright or anxiety is an essential part of the nightmare (1, p. 163).

Nightmares usually last approximately 4-15 minutes (2). They usually terminate with an awakening that is associated with a rapid return of full alertness, a lingering sense of fear or anxiety, and vivid recall of the dream context. These factors often lead to sleep disruption and difficulty returning to sleep (3, p. 580, 4). Most nightmares involve potential physical harm to the child or

adolescent, including fears of attack, falling, or death, and in many patients the nightly themes occur. Stressful periods and traumatic events as well as some medications, including some beta blockers and antidepressants, are known to exacerbate the occurrence of nightmares (5,6).

As for the prevalence rates of nightmares, the findings are quite different. It can be said that the rate ranges from 1% to 85% according to the methodology. As early as 1954, MacFarlane et al (7) found the prevalence rates of the nightmares as follows: 29% of boys and girls at age 3, 33% of boys and 47% of girls at age 10, and 6% of boys and 4% of girls at age 14. In a sample of children and adolescents (N=309) aged 5-18 years, Simonds and Parraga (8) found an occurrence of at least 1 nightmare in the previous 6 months in 16.5% of the sample population. The frequency of nightmares diminished with increasing age. In their 4 age groups, 5-8; 9-11; 12-14, and 15-18, the prevalence rates were 30.9%, 30%, 11.5%, and 8.9%, respectively.

Broughton (2) stated that approximately 40-50% of adults report at least occasional nightmares. Other studies found that about 85% of respondents reporting at least 1 episode within the past year. However, between 2% and 6% of these subjects report weekly nightmare attacks (9,10,11). In an insomniac French population, Ohayon et al (12) found that nightmares were reported in 18.3% of respondents, and were 2 times higher in women than in men.

Vgontzas and Kales (4) reached the conclusion that nightmares are a current problem for approximately 5% of the general population and a past problem for another 5%. Liu et al (13) studied the prevalence rate of nightmares among a sample of Chinese elementary school children aged 12-18. They found that 5.7% of the boys, and 8.5% of girls responded "often", while 38.2% of boys and 48.0% of girls responded "sometimes". Agargun and colleagues (14) found 7.5%

prevalence of "often", and a 58.2% prevalence of "sometimes" for nightmares among college students.

Regarding the gender differences in the prevalence of nightmares, a large range of investigations have revealed higher rates in women than in men (10,14,15,16,17). However, different rates were reported on the basis of gender. In the DSM-IV, females report having nightmares more often than do men at a ratio of approximately 2-4: 1 (3, p. 581). Following a similar pattern, Ipsiroglu et al (18) found that girls were affected more frequently than boys by nightmares (64% vs. 52%, $p < 0.01$).

Contrary to this agreement about the gender differences, Schredl and Pallmer (19) stated that no gender-specific differences in prevalence rates can be pinpointed for sure. In the present researcher's view, it is obvious that the last generalization contradicts the majority of findings in this area.

Arabic studies in this field are scarce. In Kuwait, Abdel-Khalek (20) conducted an epidemiologic study of sleep disorders in non-institutionalized secondary school students (N=2,574; aged 11-18), including nightmares among others. It was found that the self-reported prevalence rates ("Much"+"Very much" in the scale) were 9.5% and 15.7% for boys and girls, respectively. In the aforementioned study, the prevalence rate of nightmare complaint was computed for the total male and female sample, regardless of separating it into subgroups according to age. To the best of our knowledge, there were no other available published studies on prevalence of nightmares among Kuwaiti participants, particularly with a developmental perspective.

The aims of the current investigation were three-fold: (a) to estimate the prevalence rate of self-reported nightmares in a large sample of Kuwaiti children and adolescents, (b) to explore age differences, and (c) to examine the sex-related differences of self-reported nightmares.

METHODS

Participants

A sample of 6,727 male ($n=3,355$) and female ($n=3,372$) volunteer Kuwaiti children and adolescents was selected from various government primary, intermediate, and secondary schools in the different districts of the State of Kuwait. All of the subjects are Kuwaiti citizens. Their ages ranged from 10 to 18 years. The mean age of the male group was 14.02 ± 2.12 years, while that for the females was 14.10 ± 2.05 years. The significance of differences between the two sexes in age was not computed because the comparison had carried out between each age group. It is important to note that those students were chosen from the regular schools, and they were not diagnosed institutionalized patients. No exclusion criteria on psychiatric or neurological grounds were applied. The present study used a different sample than that used by the present researcher in previous studies.

Assessment of nightmares

A self-rating scale item was used to assess nightmares. The statement was as follows: "I have nightmares that wake me up scared". Participants were requested to respond to this item on a 5-point Likert-type scale, as follows, 0: No, 1: A little, 2: Moderate, 3: Much, and 4: Very much. They were instructed to answer this item, according to their subjective evaluation, on the basis of their perceived severity during the past month. The last mentioned self-rating item asked about frequency and not intensity, and this point was quite clear in the instructions to the participants. It is important to note that the concept of nightmare is quite clear to and assimilated by participants' even young children in the present study (i.e., 10 yrs). The Arabic word to refer to the concept is well defined, i.e. "Kaboos".

Procedure

The nightmare item, along with other questionnaires were administered to participants in group sessions of 30 to 35 pupils in their classrooms, during regular school hours. The scales were administered to each group in a single session of approximately 30 minutes in duration. Competent assistants carried out the administration of the tests. The older pupils provided verbal agreement to offer themselves as subjects, after the aims of the study were outlined. There were few refusals. As for the younger pupils, informed consent was obtained. Assurances were made that anonymity would be maintained. The response rate was 94%. The present investigation was carried out in the year 2004.

Point prevalence rate was defined as the proportion of participants who complained of nightmares at a specific time (21,22). Therefore, the point prevalence was computed for this item, and the summation of the percentage of responses in the last two options, 3 and 4 (i.e., "Much" and "Very much") was combined to denote the highest frequency of the phenomenon in question during the previous month. This procedure is consistent with earlier studies that considered the selection of the options "Always" or "Often" as an indication that the subject has the problem (16,20,23,24,25).

RESULTS

One-week interval test-retest reliability for the item used to assess nightmares was 0.75 for children ($n=60$), and 0.80 for adolescents ($n=60$), denoting acceptable temporal stability.

Nightmare disorder was assessed by a self-rating scale item. Participants were requested to respond to this item on a 5-point Likert-type scale. Table 1 sets out the percentage of these response options among males.

Inspection of this table reveals that the percentage of response alternative 3 and 4 (i.e., “Much” and “Very much”) ranged from 6.1% (age 18) to 17.6% (age 13). The ages 13, 12, and 11 had respectively, the highest percentages. From the age 10 to 13 years, the prevalence rates were increasing steadily. On the other hand, from the age 14 to 18 years, the prevalence rates were decreasing consistently.

ages 16+17=15.7%, and age 18=17.9%. It was found that the younger groups (10-14 yrs) had a lower mean percentage than the older ones (15-18 yrs) (M=12.08% versus 15.75%, respectively). Figure 1 sets out the percentage of reported nightmares in the different age groups of males and females.

As previously mentioned, the nightmare rating-scale was answered on a 5-point scale. Then the individual responses in any given

Table 1. Percentages of Respondents by Response Options for Nightmare Item In Different Age Group of Males

Age	N	No 0	A little 1	Moderate 2	Much 3	Very Much 4	3+4
10	240	53.9	27.0	10.4	6.2	2.5	8.7
11	251	58.2	22.6	5.6	6.8	6.8	13.6
12	267	53.5	22.5	9.4	5.6	9.0	14.6
13	261	46.7	27.6	8.1	7.3	10.3	17.6
14	350	51.0	28.8	10.3	5.1	4.8	9.9
15	645	48.7	32.6	9.9	5.7	3.1	8.8
16	653	51.5	30.0	10.1	4.4	4.0	8.4
17	472	52.8	31.1	8.3	5.3	2.5	7.8
18	216	49.5	31.9	12.5	4.2	1.9	6.1

Table 2. Percentages of Respondents by Response Options for Nightmare Item In Different Age Group of Females

Age	N	No 0	A little 1	Moderate 2	Much 3	Very Much 4	3+4
10	239	61.9	19.7	6.7	5.4	6.3	11.7
11	222	63.0	17.6	9.9	3.6	5.9	9.5
12	230	60.4	21.3	7.4	6.1	4.8	10.9
13	261	51.1	27.2	7.3	7.3	7.3	14.6
14	454	46.6	30.0	9.7	8.4	5.3	13.7
15	606	41.7	33.5	11.1	6.9	6.8	13.7
16	569	39.2	34.3	10.4	8.4	7.7	16.1
17	518	41.7	30.1	12.9	9.5	5.8	15.3
18	273	33.4	35.5	13.2	9.5	8.4	17.9

Table 2 presents the same percentages among females. Reference to this table shows that the prevalence rates ranged between 9.5% (age 11) and 17.9% (age 18). Notwithstanding that there was not a general trend for prevalence rates of nightmares to increase or decrease as the age progressed, there was a clear trend that the rates tend to increase as the age progressed among females, if the rate has been averaged every couple of years. That is, ages 10+11=10.6%, ages 12+13=12.75%, ages 14+15=13.7%,

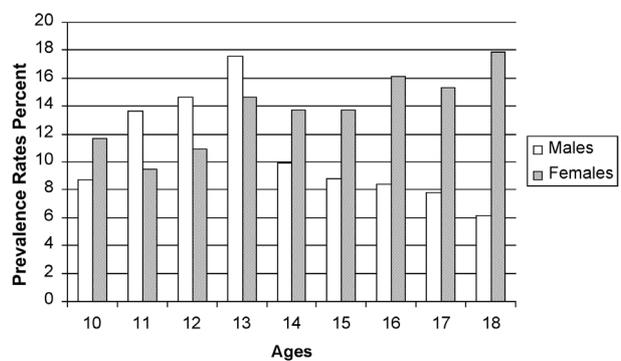


Figure 1. Percentage of reported nightmares among males and females in 9 age groups

Table 3. Means, Standard Deviations, and t Ratios for the Self Rating-Scale Item to Assess Nightmares in the Past Month among Males and Females

Age	Males			Females			t	p
	N	M	SD	N	M	SD		
10	240	.77	1.03	239	.74	1.19	0.22	-
11	251	.81	1.22	222	.72	1.15	0.88	-
12	267	.94	1.29	230	.73	1.14	1.89	-
13	261	1.07	1.33	261	.93	1.24	1.26	-
14	350	.84	1.11	454	.96	1.17	1.40	-
15	645	.82	1.03	606	1.03	1.19	3.40	.001
16	653	.79	1.05	569	1.11	1.23	4.81	.0001
17	472	.74	0.99	518	1.08	1.20	4.84	.0001
18	216	.77	0.95	273	1.24	1.25	4.76	.0001

age group gave rise to means and standard deviations. Table 3 shows the descriptive statistics for the nightmares scale among males and females. As can be seen from this table, there were significant differences between males and females in nightmare mean scores in the ages 15 to 18. In all comparisons, females had significantly higher mean score than their male counterparts.

DISCUSSION

The prevalence rates of nightmares among males and females in the current study ranged from 6.1% to 17.9%. These rates lie in the previous studies ranges. However, the previous rates are quite different up to the range from 1% to 85%. Different methodological factors may elucidate this wide range of prevalence rates of nightmares. Foremost among these factors are the characteristics of the sample: whether school-based, general population, or clinical e.g., insomniacs, as well as the age group, and sample size. The measurement differences may play also an important role, e.g., the time period covered by the question: previous 1 week, 1 month, 6 month, or past year, the options / alternatives of the question: Yes / No; 3-or 5-point scale format, the phrasing of the options: Much, Very Much, Often, Always, Sometimes, etc, and asking about the severity versus frequency. Furthermore, the cultural differences have an impact on

nightmare reporting.

Among males, the highest prevalence rates were found in the age groups 13, 12, and 11, respectively, whilst there was a decrease from the age groups 14 to 18. This result may cast light on the age of puberty in males in some Arab countries, i.e., 13.5 ± 3.00 (26). Before the aforementioned age, most children in their way to maturity suffer from many stresses, whether physical, sexual, psychological, or social. After reaching puberty, the release happens and the stresses decrease. It is important to note that the highest prevalence rate was among male group of 13 years, which is the nearest age group to the mean of puberty age previously shown. It seems that the age 13 in males is the turning point in the rates of reported nightmares. One part of the present findings is congruent with what has been reported by Schredl and Pallmer (19) in this respect. They concluded that nightmares are decreasing strongly with age. However, it is not clear why this result did not apply to the female groups.

Nightmare prevalence among females had a different landscape. In the nine female groups, there was not a general trend as to the prevalence rates to increase or decrease based on age. However, the female younger groups had a lower mean score than their older counterparts, i.e., a general increase of reporting nightmare prevalence as the age progressed. This result is in conflict with both expectation and previous findings (1, p. 163,8,19).

However, it is noteworthy that the stresses on and restrictions of female Kuwaitis

increase in this particular and sensitive stage of life, i.e., the age of menarche and adolescence. In the free and democratic society of Kuwait, the newspapers publication of detailed news about violent crimes, particularly rape, murder, and kidnapping are open. Therefore, the vast majority of families found themselves obliged to impose more restrictions on their offspring; mainly girls. These added restrictions placed on the older group of female adolescents may be considered a fertile soil for a general state of anxiety, which would potentially cause an increase in nightmare prevalence. As Mindell (5) stated, stressful periods are known to exacerbate the occurrences of nightmares. Interacting with this salient factor is the stresses of study, and the subject of marriage, inasmuch as marriage happens almost always at a young age in this society.

Consistent with the last-mentioned result is the non-significant gender differences in reporting the nightmare occurrence in the most recent month in the ages 10 to 14 years. This result is in agreement with the sex-ratio in children reported in the ASDA (1, p. 164). However, females had significantly higher mean scores than their male peers in the age groups 15 to 18. A wide harvest of previous results supports the present finding (1, p. 164, 3, p. 581). This result is also compatible with the higher mean scores of Arab females than males on neuroticism, fear, anxiety, depression, and pessimism (27-31).

Regarding the significant gender differences in nightmares, there is a strong possibility of a reporting bias. That is, in the Arabic culture men are less likely to report or admit to having nightmares. There is a point in the favor of this possible interpretation, i.e., gender differences were significant only in the older ages (15-18 years) approaching manhood.

It is interesting to note that the Arabic word for nightmare, i.e., "Kaboos" is quite clear to and assimilated by participants' even young children down to the 10 years old. The Arabic word "Kaboos": denotes a frightening dream

that usually (or necessarily) awakens the sleeper. Laymen attribute nightmares usually to a heavy meal eaten directly before sleep. In their waking up due to the nightmare, they always say: "we beg God to make it good".

It is important to examine the psychometric characteristics of the self-rating scale of nightmares based on a single item. This item had test-retest reliabilities equal to 0.75 for children, while it was 0.80 for adolescents, denoting acceptable temporal stability. Kline (32) and Nunnally (33) have suggested that reliabilities approaching 0.70 or higher are acceptable for research. So, these test-retest reliabilities of the present single item are acceptable and corroborate the trait (not state) - like nature of the score. Based on the acceptable temporal stability of the single item self-rating scale to assess prevalence of nightmares in the most recent past month, it appears that this single item is viable in large scale research projects and community surveys as well as in epidemiologic studies.

The assessment of pathological attributes and personality traits by the help of shortened scales down to a single-item scale has been tried successfully, especially in death anxiety, depression, and personality domains (34-38).

There are several limitations in the current study, and foremost among them is the sample. Notwithstanding its large size in each age group, it was a school-based survey carried out on a limited age range. Furthermore, the studied population is mostly adolescents, and the age range in children is narrow. An important next step in this project would be to choose a probability population sample.

CONCLUSIONS

The vast majority of research on different sleep disorders was carried out on mainly Western societies. Therefore, it is important to explore the prevalence rates of these

disorders in other part of the World. Cross-cultural comparisons are badly needed in this endeavor. By and large, it was found that the assessment of nightmare prevalence in the present Kuwaiti sample by a single item self-rating scale enjoys acceptable reliability.

Self-reported nightmares in the current large size sample of Kuwaiti children and adolescents are common. These results suggest the need for comprehensive programs to intervene. It was found that the highest rates of reported nightmares among males were in the younger ages. By and large, there is a hypothetical interaction between

nightmare reporting and the stage in which the child is approaching adolescence. Then, the prevalence rates were decreasing steadily, denoting the interaction between nightmare frequency and the other important events like switching on another developmental stage. Therefore, nightmares may be considered as a mirror in these instances.

Gender differences in nightmare prevalence were not significant in the young ages, while they were significant in the older ages. On the basis of the sex-typing and sex-roles in this Arabic society, this is the age of sex-related differences to emerge.

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