Prevalence of common phobias and their socio-demographic correlates in children and adolescents in a traditional developing society

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Abstract
Objective: The aim of this study was to identify the most common phobias in children and adolescents and to determine the prevalence, age distribution, and socio-demographic correlates of phobias. **Method:** This was a prospective cross-sectional study conducted at public and private schools from July 2009 to February 2009. The questionnaire included socio-demographic information, extra-curricular activities and hobbies, behaviour at home and various phobic fears and it was distributed among children aged 6 to 18 years. Psychiatrists determined the definitive diagnosis for various phobias by checking and screening their symptoms. **Results:** Of the studied subjects, 44% were males and 56% were females. The overall prevalence of phobia in children and adolescents was 19.7%. Among children with phobia, females had higher rates of phobias (62.4% vs 37.6%) than males. Nearly half of total sufferers were in the 12-15 year age group (46.3%). Social phobia (12.7%) was the commonest phobia found followed by agoraphobia (8.6%). Secondary school children were highly afflicted with social phobia (14.9%), agoraphobia (11.7%) and specific phobia (9.6%), while preparatory students (8.3%) were more likely to have 'medical' phobia (fear of physical illness, medical tests and procedures). A significant difference was observed between the age groups in children with agoraphobia (p=0.002). **Conclusion:** The overall prevalence of phobia in children and adolescents in Qatar was higher than rates found in other epidemiologic studies, with the most common phobias observed being social phobia, agoraphobia and specific phobia.

Key Words: Prevalence; Phobia; Children; Qatar

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Introduction

Phobias are the most common anxiety disorders in childhood. A phobia is defined as an irrational and excessive fear of an object or situation.[1] Phobias usually develop in late childhood, adolescence or early adult life in response to a frightening event or situation. Large scale epidemiological surveys suggest that 5 to 20% of all children and adolescents are afflicted with at least one anxiety disorder.[1-3] In one of the few studies of impairing childhood anxiety disorders, the prevalence was greater than 10%.[4] Also, in a large U.S survey, the prevalence ranged from 12% to 20%.[2] The phobic disorders cause severe impairment and excessive distress. Although effective psychosocial and drug therapies exist, these anxious youngsters are virtually ignored compared with children with other psychiatric problems. There has been a

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recent increase in interest regarding phobias because of higher-than-expected incidences; and phobia leads to disrupted relationship, severe anxiety and depression.

Social phobia includes fears involving other people or social situations such as performance anxiety or fears of embarrassment by scrutiny of others. 6.8% of the American adult population (which is approximately 115 million) suffer from social phobia.[5] Specific phobia is fear of a single specific panic trigger such as spiders, dogs, elevators, water, flying, catching a specific illness, etc.[6] An estimated 8.7% of Americans (or 19.2 million adults) suffer from a specific phobia.[7] Agoraphobia is characterized by intense anxiety about being in a place or situation from which escape might be difficult or embarrassing in the event of a panic attack. Agoraphobia is commonly associated with panic disorder. 'Medical' phobia is the fear of physical illness, medical tests and procedures.

According to the Diagnostic and Statistical Manual of Mental Disorders[6], 4th Edition (DSM-IV), social phobia, specific phobia and agoraphobia are subgroups of anxiety disorders. Studies published in recent years confirm the high prevalence of specific phobias in the general population, especially in children.[7-8] Children's fears differ in nature across different ethnic groups and culture, beliefs, values and traditions may play a role in their expression. Researchers believe that a combination of genetic and environmental influences results in the emergence and maintenance of social phobia. If left untreated, individuals with social phobia rarely recover.

Phobias in children may be particularly under-recognized because their presentation may be regarded as mere fears or may be misdiagnosed because of symptom overlap with other anxiety disorders and depression.[9] So far, no study has been conducted on the prevalence of phobias among school children and adolescents in the State of Qatar. The aim of this study was to investigate the most common phobias and determine the prevalence of phobias in school children and adolescents and their socio-demographic correlates, in particular gender.

Method

This was a prospective cross sectional study. The study included schoolchildren and adolescents in the age group 6-18 years, studying at primary, preparatory and secondary levels in government and private schools in the State of Qatar. A multi-stage stratified random sampling technique was used and the schoolchildren were selected randomly. Stratification allowed proportional representation of both urban and semi-urban areas. The list of names of schools in urban and semi-urban areas was obtained from the Supreme Council for Education and Higher Education. Schools are segregated according to sexes and a total of 151,050 students are studying at primary, preparatory and secondary schools. There are 299 schools, of which 152 are for boys and 147 for girls located in 21 different districts. We selected 30 schools with 15 boys' and 15 girls' schools located in 10 districts. During the first stage, one school from each of these 5 districts was selected randomly, thus overcoming the cluster effect. Similarly, the classrooms and schoolchildren were selected in the second and third stages using the same simple random sampling procedure, finally resulting in the selection of 2200 students representing a true random sample of the study population, which is 1.5% of total students in Qatar.

Data collection took place from July to February 2010. The questionnaires with a letter of explanation were distributed to the parents of the children studying at primary levels and living in both urban and semi-urban areas of Qatar. Preparatory and secondary school students had completed the questionnaires and returned them to the nurse in-charge of the school. Content validity, face validity and reliability of the questionnaire were tested using 100 children. These tests demonstrated a high level of validity and high degree of repeatability (kappa = 0.82). A total of 2250 students were approached and 1703 students participated in the study with a response rate of 75.7%. Non-responders were randomly distributed across all schools. The study excluded students aged below 6 years and above 18 years and those who refused to give consent to take part in the study.

The questionnaire had four parts: the first included the socio-demographic details of the students; the second included extra-curricular activities and hobbies; the third part behaviour at home; and the fourth part was a diagnostic screening questionnaire which consisted of 39 fears related to phobias. Students were asked to answer the questions by indicating 'yes' or 'No.' Only results from the 1st and 4th sections of the questionnaire are reported here.

Child psychiatrists made psychiatric diagnoses. Two senior psychiatrists then independently reassessed these diagnoses through a systematic review of the symptoms. Psychiatric diagnoses generated from this reassessment were jointly discussed and a consensus diagnosis was taken as final. IRB approval was obtained from the Hamad Medical Corporation for conducting this research in Qatar.

Student's t-tests were used to ascertain the significance of differences between mean values of two continuous variables and confirmed by non-parametric Mann-Whitney test. Chi-square analysis was performed to test for differences in proportions of categorical variables between two or more groups. The level $p<0.05$ was considered as the cut-off value for significance.

Results

Table I shows the socio-demographic characteristics of the studied school children and adolescents according to gender. The majority of the participants were in the age group 12-15 years (44%), followed by 6-11 years (35.8%). Of the 1703 students, 44% were males and 56% were females. There was a significant association observed between gender and: age group (significantly greater proportion of males than females in secondary school); performance of students in exams (significantly greater proportion of females whose performance was very good); household income (significantly greater proportion of girls than boys whose household income was in the 10,000-14,000 Qatari Riyal(QR) category- 1 USD is approximately 4 QR; and type of house (significantly greater proportion of girls than boys who lived in villas). Nearly half of the students' parents were consanguineous (49.6%).

Table II shows the socio-demographic characteristics of

Table I. Socio-demographic characteristics of children and adolescents by gender (N=1703)

		Gender		
Variables	*Total*	*Male (n=749) n(%)*	*Female (n=954) n(%)*	*P-value*
Age Group				
Primary (06-11 Years)	610(35.8)	244(32.6)	366(38.4)	<0.001
Preparatory (12-15 Years)	750(44.0)	291(38.9)	459(48.1)	
Secondary (16-18 Years)	343(20.1)	214(28.6)	129(13.5)	
Nationality				
Qatari	1225(71.9)	541(72.2)	684(71.7)	0.809
Non-Qatari	478(28.1)	208(27.8)	270(28.3)	
Performance of Students in School Exam				
Very Good	511(30.0)	170(22.7)	341(35.7)	<0.001
Good	535(31.4)	258(34.4)	277(29.0)	
Average	494(29.0)	238(31.8)	256(26.8)	
Poor	163(9.6)	83(11.1)	80(8.4)	
Father's Education				
Illiterate	51(3.0)	25(3.3)	26(2.7)	0.388
Primary	133(7.8)	54(7.2)	79(8.3)	
Intermediate	475(27.9)	225(30.0)	250(26.2)	
Secondary	466(27.4)	199(26.6)	267(28.0)	
University	578(33.9)	246(32.8)	332(34.8)	
Father's Occupation				
Not Working	150(8.8)	58(7.7)	92(9.6)	0.504
Sedentary/Professional	514(30.2)	239(31.9)	275(28.8)	
Manual	99(5.8)	41(5.5)	58(6.1)	
Business Man	405(23.8)	177(23.6)	228(23.9)	
Government Officer	535(31.4)	234(31.2)	301(31.6)	
Mother Education				
Illiterate	157(9.2)	71(9.5)	86(9.0)	0.036
Primary	188(11.0)	65(8.7)	123(12.9)	
Intermediate	418(24.5)	191(25.5)	227(23.8)	
Secondary	396(23.3)	190(25.4)	206(21.6)	
University	544(31.9)	232(31.0)	312(32.7)	
Mother Occupation				
House Wife	936(55.0)	416(55.5)	520(54.5)	0.311
Sedentary/Professional	449(26.4)	185(24.7)	264(27.7)	
Manual	142(8.3)	71(9.5)	71(7.4)	
Business Women	176(10.3)	77(10.3)	99(10.4)	
Marital Status of Parents				
Married	1561(91.7)	688(91.9)	873(91.5)	0.217
Divorced	51(3.0)	17(2.3)	34(3.6)	
One of the Parent is Dead	91(5.3)	44(5.9)	47(4.9)	
Household Income (QR)				
< 5000	92(5.4)	48(6.4)	44(4.6)	0.008
5000 – 9999	522(30.7)	237(31.6)	285(29.9)	
10,000 – 14,999	438(25.7)	164(21.9)	274(28.7)	
> 15,000	651(38.2)	300(40.1)	351(36.8)	
Type of House				
Popular House	332(19.5)	168(22.4)	164(17.2)	<0.001
Flat	152(8.9)	83(11.1)	69(7.2)	
Villa	970(57.0)	398(53.1)	572(60.0)	
Bungalow	249(14.6)	100(13.4)	149(15.6)	
Place of Living				
Urban	1579(92.7)	687(91.7)	892(93.5)	0.161
Semi-Urban	124(7.3)	62(8.3)	62(6.5)	
Consanguinity				
No Relation	858(50.4)	372(49.7)	486(50.9)	0.655
1st Degree	594(34.9)	270(36.0)	324(34.0)	
2nd Degree	251(14.7)	107(14.3)	144(15.1)	

Table II. Socio-demographic characteristics of children and adolescents with phobia by gender (N=335)

		Gender		
Variables	*Total*	*Male (n=126)*	*Female (n=209)*	*P-value*
Age Group				
Primary (06-11 Years)	109(32.5)	44(34.9)	65(31.1)	0.351
Preparatory (12-15 Years)	155(46.3)	52(41.3)	103(49.3)	
Secondary (16-18 Years)	71(21.2)	30(23.8)	41(19.6)	
BMI Group				
Normal (<25 Kg/M2)	276(82.4)	100(79.4)	176(84.2)	0.312
Overweight ((25-30 Kg/M2)	36(10.7)	14(11.1)	22(10.5)	
Obese (>30 Kg/M2)	23(6.9)	12(9.5)	11(5.3)	
Nationality				
Qatari	239(71.3)	96(76.2)	143(68.4)	0.128
Non-Qatari	96(28.7)	30(23.8)	66(31.6)	
Performance of Students in School Exam				
Very Good	105(31.3)	23(18.3)	82(39.2)	0.001
Good	110(32.8)	45(35.7)	65(31.1)	
Average	94(28.1)	45(35.7)	49(23.4)	
Poor	26(7.8)	13(10.3)	13(6.2)	
Father's Education				
Illiterate	10(3.0)	4(3.2)	6(2.9)	0.499
Primary	33(9.9)	12(9.5)	21(10.0)	
Intermediate	98(29.3)	44(34.9)	54(25.8)	
Secondary	90(26.9)	30(23.8)	60(28.7)	
University	104(31.0)	36(28.6)	68(32.5)	
Father's Occupation				
Not Working	27(8.1)	13(10.3)	14(6.7)	0.729
Sedentary/Professional	96(28.7)	35(27.8)	61(29.2)	
Manual	22(6.6)	7(5.6)	15(7.2)	
Business Man	75(22.4)	26(20.6)	49(23.4)	
Government Officer	115(34.3)	45(35.7)	70(33.5)	
Mother Education				
Illiterate	38(11.3)	17(13.5)	21(10.0)	0.692
Primary	31(9.3)	11(8.7)	20(9.6)	
Intermediate	85(25.4)	33(26.2)	52(24.9)	
Secondary	77(23.0)	31(24.6)	46(22.0)	
University	104(31.0)	34(27.0)	70(33.5)	
Mother Occupation				
House Wife	187(55.8)	71(56.3)	116(55.5)	0.979
Sedentary/Professional	89(26.6)	32(25.4)	57(27.3)	
Manual	30(9.0)	12(9.5)	18(8.6)	
Business Women	29(8.7)	11(8.7)	18(8.6)	
Marital Status of Parents				
Married	304(90.7)	112(88.9)	192(91.9)	0.607
Divorced	10(3.0)	4(3.2)	6(2.9)	
One of the Parent is Dead	21(6.3)	10(7.9)	11(5.3)	
Household Income (QR)				
< 5000	19(5.7)	10(7.9)	9(4.3)	0.072
5000 – 9999	94(28.1)	34(27.0)	60(28.7)	
10,000 – 14,999	92(27.5)	26(20.6)	66(31.6)	
> 15,000	130(38.8)	56(44.4)	74(35.4)	
Place of Living				
Urban	307(91.6)	114(90.5)	193(92.3)	0.549
Semi-Urban	28(8.4)	12(9.5)	16(7.7)	
Consanguinity				
No Relation	169(50.4)	64(50.8)	105(50.2)	0.049
1st Degree	121(36.1)	52(41.3)	69(33.0)	
2nd Degree	45(13.4)	10(7.9)	35(16.7)	

the children and adolescents with phobia according to gender. The overall prevalence rate of phobia in students was 19.7%. The prevalence of phobia was higher in females (21.9%) compared to males (16.8%). About half of the sufferers were in the age group 12-15 years (46.3%). Only 31.3% with phobias had a very good academic performance. A good proportion of the parents had 1st degree consanguineous marriages (36.1%). A significant difference was observed between girls and boys in their examination results (significantly greater proportion of females whose performance was very good compared with males).

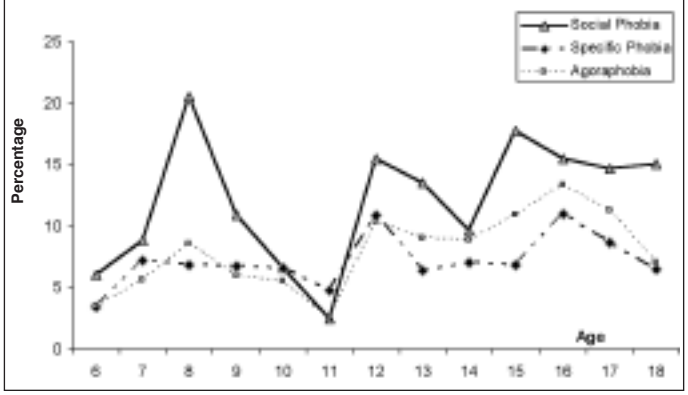
Table III reveals the prevalence of the most common phobias in students according to school level. Social phobia was the most common phobia found in students (12.7%). Other types of phobias such as agoraphobia (8.6%), specific phobia (7.5%) and medical phobia (7%) were found less commonly. Social phobia (14.9%), agoraphobia (11.7%), and specific phobia (9.6%) were more frequent in secondary school children, whereas medical phobia (8.3%) was more common in preparatory students.

Table III. Prevalence of the most common phobias in children and adolescents according to school level (N=1703)

Type of Phobia	*Total N=1703*	*Age Group*			*P-value*
		Primary (6-11 Yrs) n=610	*Preparatory (12-15 Yrs) n=750*	*Secondary (16-18 Yrs) n=343*	
Social Phobia	217(12.7)	62(10.2)	104(13.9)	51(14.9)	0.052
Agoraphobia	147(8.6)	34(5.6)	73(9.7)	40(11.7)	0.002
Specific Phobia	128(7.5)	37(6.1)	58(7.7)	33(9.6)	0.130
Medical Phobia	119(7.0)	38(6.2)	62(8.3)	19(5.5)	0.171

Figure 1 compares the age distribution of the students with most common phobias. Social phobia was more prevalent in students in all ages with a peak at the age of 8 years compared to other common phobias. Agoraphobia and specific phobias had a peak at the age of 16 years. These three common phobias had a tendency to decline after 18 years of age.

Figure 1: Age specific prevalence of the most common phobias in children and adolescents by type of phobia and age



Discussion

As is the case in many other developing countries, the youth in the State of Qatar today are facing greater socio-environmental stress than their predecessors. The urbanization and environmental changes and their impact on child and adolescent psychopathology deserve careful inquiry. Childhood anxiety disorders, the most common group of psychiatric disorders in children, are virtually ignored compared with other psychiatric problems. Therefore, the current study examined the prevalence of the most common phobias in children and adolescents and found that the overall prevalence rate of phobia in students was 19.7%. The National Institute of Mental Health (NIMH) reported a lower prevalence of phobias (8.7% and 18.1%) in American adolescents[6], while a study by Mazaeva et al also reported a lower estimate of 15.2% in 1731 adolescents with mental illness.[10] The majority of children with phobias in the present study were in preparatory school (46.3%), followed by primary (32.5%) and secondary school (21.2%).

In the current study, gender differences were also explored. Phobias were more prevalent in female students (21.9%) than in males (16.8%), with a female to male sex ratio of 1.3:1 which is similar to other epidemiologic studies that have observed a higher frequency among females.[10] Among preparatory students aged 12-15 years, girls (49.3%) were more afflicted than boys (41.3%). Previous western surveys have reported the trend of a female excess in anxiety disorders emerging at adolescence.[11-12] Overall, phobias were more prevalent in preparatory students in the age group 12-15 years (46.3%) and then declined in the age group 16-18 years (21.2%). These results are consistent with the study by Simonoff et al where the rates of childhood anxiety disorders were reported to decline during adolescence.[13]

In Qatar, the most commonly reported phobias among children and adolescents were social phobia, agoraphobia, specific phobia and medical phobia, while social phobia was the most common phobia observed in students (12.7%). Izgic et al found the one year prevalence of social phobia in university students to be 7.9% and life-time prevalence to be 9.6% which is similar to our results.[14] Studies in different countries have placed the prevalence of social phobia in the range of 5% to 8%, making it the most common anxiety disorder and one of the most common psychiatric disorders.[15-16] A lower prevalence rate was noted in German adolescents in the 14 to 15 year old group (2%) and 16 to 17 year old age group (2%).[17]

The present study found that social phobia had a peak at the age of 16-18 years (14.9%), followed by 12-15 years (13.9%). The prevalence of social phobia increased in children as the age increased; 10.2% in 6-11 years to 14.9% in 16-18 years. Social phobia typically manifests in middle childhood at approximately the age of 10 years. The age pattern presented in these studies is quite interesting. The increasing prevalence of social phobia between the age groups is likely to reflection increased self-consciousness during adolescence underpinned by both biological and environmental transitions. Family and twin studies show a tendency for social phobia to be inherited in offspring[18]; and in the current study, nearly half of the students' parents

(49.5%) were consanguineous.

Agoraphobia is commonly associated with panic disorder. In the study group, agoraphobia was found to be the 2nd most common phobia with a prevalence rate of 8.6%. Agoraphobia is a generalized fear of leaving home or a familiar 'safe' area, and of possible panic attacks that might follow. The study findings revealed that the sample had such fears and the prevalence increases with age. Agoraphobia was significantly more prevalent in the 16-18 years age group than in the 6-11 age group (11.7%; vs.5.6%, p=0.002).

Specific phobias are fears that are excessive, not based on reality, last for months and affect normal daily function. The overall prevalence of specific phobia in our study sample was 7.5% with a higher frequency among secondary school students in the age group 16 -18 years (9.6%). In U.S, approximately 7-9% of children are estimated to have specific phobia.[7] Essau et al reported a lower prevalence rate with 3.5% of the adolescents meeting the DSM–IV criteria for specific phobia.[19] Specific phobias generally appear in early childhood, at approximately the age of 7. In this study, the prevalence rate of specific phobia in the age group 6-11 years was 6.1%. Specific phobias may begin at any time during childhood or adolescence and they tend to persist into adulthood.

The prevalence rates and types of phobias vary among various cultural and ethnic groups.[20] Verhulst et al reported that specific phobia was the most common anxiety disorder, followed by social phobia, then generalized anxiety disorder.[21] In contrast, social phobia was the most common anxiety disorder, followed by agoraphobia, then specific phobia. Phobias that continue into adulthood generally become chronic if they are not treated and may lead to marked reduction in quality of life. Considering that mental disorders are underreported, they can be attributed to many factors, and are the leading cause of disability in young populations, the importance of proper diagnosis and treatment is paramount. Thus, early diagnosis of first social anxiety symptoms may assist in the prevention of more severe psychiatric symptoms. The study findings are of interest and future studies should investigate, in a more detailed manner, the pattern of risk factors associated with phobias in children.

Conclusion

The study findings revealed that the overall prevalence rate of phobia in children and adolescents in Qatar was higher than the rate found in other epidemiologic studies. The most common phobias observed in children were social phobia, agoraphobia and specific phobia with a higher frequency in the 16-18 year old age group. Social phobia was the most prevalent phobia in this sample. Social phobia peaked at the age of 8 years, whereas agoraphobia and specific phobia peaked at the age of 16. Girls had higher rates of all phobic disorders than boys.

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