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Prevalence of Social Anxiety Disorder and Its Impact on Academic Performance among Female Secondary School Students in Saudi Arabia

Tharwat Abdulaziz Alahmary^{1*}, Riyadh A. Algamdi¹, Mohammad Abdulhameed Alharbi² and Sami Abdo Radman Al-Dubai³

¹Joint Program of Family Medicine Post Graduate Studies, Ministry of Health, Al-Madinah, Saudi Arabia

²Faculty of Medicine, King Abdulaziz University, Jeddah, Saudi Arabia

³Joint Program of Preventive Medicine Post Graduate Studies, Ministry of Health, Al-Madinah, Saudi Arabia

*Corresponding e-mail: tharwat.alahmary@gmail.com

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ABSTRACT

Background: Social Anxiety Disorder (SAD) is a common type of anxiety disorder among females that impacts their quality of life and academic performance if not discovered and treated early. Objectives: To determine the prevalence, severity, and associated factors of SAD and to assess its impact on the academic performance of female secondary school students in Medina. Subjects and methods: This cross-sectional study included a representative sample of Saudi girls enrolled in governmental secondary schools in Al-Madinah. A self-administered questionnaire was used for data collection It included socio-demographic data, the Social Phobia Inventory (SPIN) to detect SAD, and the Leibowitz Social Anxiety Scale (LSAS) to evaluate the severity of SAD. Results: The study included 405 female students. The majority were aged \leq 17 years (58.2%). The prevalence of SAD was 51.1%. Marked, severe, and very severe SAD was reported by 12.8%, 4.7%, and 3.7% respectively. SAD was higher among first birth order students, those with less-educated parents, and those with lower income (p<0.05). SAD was significantly associated with all aspects of the paternal-students relationship (p<0.05). Conclusion: SAD is common among girls in secondary schools in Medina. SAD was significantly associated with income, level of parental education, and paternal-students relationship.

Keywords: Females, Performance, Secondary school, Social anxiety Disorder, Students

INTRODUCTION

Social phobia is defined as a persistent and excessive fear of embarrassment in social situations when a person feels as if he/she is being observed by others and negatively evaluated [1]. According to the WHO, 27% of the adult population had a psychiatric disorder including depression, anxiety, and drug abuse that causes disability in their lives. Anxiety disorders rank sixth and account for 4% of all disabilities [2]. SAD is one of the most common types of anxiety disorders worldwide and was estimated to be 7% in the US [1, 3]. It is more common among females and among those who had low educational and socioeconomic status as well as among those who reported unhealthy parenting styles [4-6]. It was found that if not diagnosed and treated early, SAD can lead to other mental diseases like depression and alcohol and substance abuse [3, 7]. The prevalence of SAD in Saudi Arabia ranged from 11.7% to 25.8% and was associated significantly with parenting style [6, 8]. Other previous studies from Ethiopia, Kurdistan, and Turkey found that the prevalence of SAD was 27.5%, 31.25%, and 20.9% respectively and SAD was higher among females [9-11]. This study aimed to measure the prevalence of SAD and its impact on academic performance among female secondary school students in Medina, Saudi Arabia.

MATERIALS AND METHODS

Study Setting and Sample

This observational analytical cross-sectional study was conducted among 405 female secondary school students in Medina city, Saudi Arabia. Al Madinah was divided into four regions and two schools were selected randomly from each region. All students in the 8 governmental schools were approached.

Study Instruments

A self-administered questionnaire consisting of three parts was used in this study. The first part included questions on sociodemographic characteristics like age, school grade, family size, birth order, parental marital status, family income, and parenting style. The second part assessed SAD by using the Social Phobia Inventory (SPIN). The SPIN is a short, self-rating scale developed by Dr. K.M. Connor to capture social phobia symptoms [12-14]. It consists of 17 items and each item is rated from 0 (not at all) to 4 (extremely) with a total score of 0-68. A score ≥ 19 suggests SAD. It has good test-retest reliability, internal consistency, and convergent and divergent validity. The Cronbach alpha was 0.85 [15, 16]. The third part was the Leibowitz Social Anxiety Scale (LSAS) which is used to assess the severity of SAD. The LSAS is a self-rating scale developed by Dr. Michael Liebowitz to rate fear/anxiety and avoidance regarding 24 commonly feared performance or social situations [17]. It consists of 13 performance-related items and 11 social-related items which are rated from 0 (none/never) to 3 (severe/usually). The Cronbach alpha for the fear/anxiety domain was 0.88 and for the avoidance, the domain was 0.87 [15]. A score of <55 suggests mild SAD, 55-64 suggests moderate SAD, 65-79 suggests marked SAD, 80-94 suggests severe SAD, and >95 suggests very severe SAD. To evaluate the academic performance of the students, the last semester score of each student was obtained from the school.

Statistical Analysis

Analysis was performed using the Statistical Package for the Social Sciences (SPSS®) (version 22.0, IBM, Armonk, NY). Percentages and frequencies were obtained for the categorical variables. A Chi-square test was performed to assess the association between the categorical variables. The accepted level of significance was set below 0.05 (p<0.05).

Ethical Considerations

Ethical approval was obtained from the Ethics Committee of the Directorate of Health in Al-Madinah. The objectives and benefits of the study were explained to the participants. Participants' confidentiality and anonymity were assured. Signed consents were obtained from the participants.

RESULTS

The study included 405 female high school students. The age of 41.8% of them was \geq 18 years whereas 58.2% were aged \leq 17 years. About half of them (48.1%) were in the third grade. The majority of them (84%) live with both parents whereas 16% live with one parent. The family size without counting parents ranged between 4 and 8 persons among 70.9% of the students. The first birth order was mentioned by 25.7% of them. Higher educated mothers and fathers (university) were reported among 32.6% and 38.5%, respectively. Family monthly income of less than 6000 SR was reported by 51.3% of the students. Regarding performance, almost half of them (50.1%) got >90% in the last semester (Table 1).

Table 1 Socio-demographic characteristics of the participants (n=405)

Variables	n	%	
Age (Years)	≤ 17	236	58.2%
rige (Teurs)	≥ 18	169	41.8%
	First	87	21.5%
Educational grade	Second	123	30.4%
	Third	195	48.1%
Living status	Both parents	340	84%
Elving status	One parent	65	16%
	<4	54	13.3%
Family size	4-8	287	70.9%
	>8	64	15.8%
Birth order	First	104	25.7%
	2-3	141	34.8%
	4-6	97	24%
	>6	63	15.5%
	Illiterate	16	4%
Maternal educational level	Read/write	29	7.2%
	School	228	56.3%
	University	132	32.6%
Paternal educational level	Illiterate	10	2.5%
	Read/write	21	5.2%
	School	218	53.8%

	University	156	38.5%
	≤ 6000	208	51.3%
Family income (SAR/month)	6001-10000	110	27.2%
	>10000	87	21.5%
Performance in the last semester	≤ 80%	75	18.5%
	81%-90%	127	31.4%
	>90%	203	50.1%

Relationship with Parents

Parental anger was usually reported by 27.2% of the students. Usual parental criticism was reported by 23% of them and it was in front of others in 8.4% of cases. Usual parental over-protection was reported by 59% of them. Parental provocation was usual among 16% of the students. Parental abuse was reported by 27.4% of the students. The prevalence of parental physical, and emotional abuse and parental neglect were 11.4%, 24.2%, and 8.6% respectively (Table 2).

Table 2 Students' relationship with their parents

	N	%			
Parental anger					
Usually	110	27.2%			
Rarely	211	52.1%			
Never	84	20.7%			
P	arental criticisı	n			
Usually	93	23%			
Rarely	190	46.9%			
Never	122	30.1%			
Parental o	riticism in fron	t of others			
Usually	34	8.4%			
Rarely	112	27.7%			
Never	295	63.9%			
Parental over-protection					
Usually	239	59.0%			
Rarely	110	27.2%			
Never	56	13.8%			
Parental provocation					
Usually	65	16.0%			
Rarely	122	30.1%			
Never	218	53.8%			
Parental abuse					
No	294	72.6%			
Yes	111	27.4%			
Parental physical abuse					
No	359	88.6			
Yes	46	11.4%			

Parental emotional abuse					
No	307	75.8%			
Yes	98	24.2%			
	Parental neglec	t			
No	370	91.4%			
Yes	35	8.6%			

Prevalence and Severity of SAD

Table 3 summarizes the response of the participants to the individual items of the Social Phobia Inventory scale. Overall, the prevalence of social anxiety disorder among female high school students was 51.1%. Marked, severe, and very severe SAD were reported by 12.8%, 4.7%, and 3.7% respectively as obtained from the LSAS questionnaire.

Table 3 Response of the students to the Social Phobia Inventory scale

I am afraid of people in authority		Not At All	A Little Bit	Somewhat	Very Much	Extremely
I am afraid of people in authority		N (%)	N (%)	N (%)	N (%)	N (%)
I am bothered by blushing in front of people		169	99		37	
I am bothered by blushing in front of people (39.5%) (21.2%) (20.7%) (11.9%) 27 (6 216 81 52 39 70 (20.0%) (12.8%) (9.6%) 17 (4 20.0%) (12.8%) (9.6%) 17 (4 20.0%) (12.8%) (9.6%) 17 (4 20.0%) (12.8%) (9.6%) 17 (4 20.0%) (12.8%) (9.6%) 17 (4 20.0%) (12.8%) (12.8%) (19.3%) 37 (5 20.0%) (12.2%) (20.0%) (10.0%) 37 (5 20.0%) (10.0%)	I am afraid of people in authority	(41.7%)	(24.4%)	(21.2%)	(9.1%)	14 (3.5%)
Parties and social events scare me		160	86	84	48	
Parties and social events scare me	I am bothered by blushing in front of people	(39.5%)	(21.2%)	(20.7%)	(11.9%)	27 (6.7%)
Second S		216	81	52	39	
I avoid talking to people I don't know	Parties and social events scare me					17 (4.2%)
Being criticized scares me a lot					, .	
Being criticized scares me a lot	I avoid talking to people I don't know					37 (9.1%)
I avoid doing things or speaking to people for fear of embarrassment						62
Color						(15.3%)
Sweating in front of people causes me distress 217 78 48 33 (53.6%) (19.3%) (11.9%) (8.1%) 29 (7 (53.8%) (16.5%) (14.6%) (9.1%) 24 (5 (53.8%) (16.5%) (14.6%) (9.1%) 24 (5 (53.8%) (16.5%) (14.6%) (14.6%) (9.1%) 24 (5 (53.8%) (16.5%) (14.6%) (13.8%) (9.9%) 27 (6 (48.6%) (21.0%) (13.8%) (9.9%) 27 (6 (47.9%) (21.7%) (15.1%) (8.6%) 27 (6 (47.9%) (21.7%) (15.1%) (8.6%) 27 (6 (47.9%) (17.8%) (17.8%) (16.5%) (17.8%) (16.5%) (17.8%) (16.5%) (17.8%) (16.5%) (17.8%) (16.5%) (17.8%) (18.6%) (18.8%)						
Sweating in front of people causes me distress (53.6%) (19.3%) (11.9%) (8.1%) 29 (7.2.18 67 59 37 1 avoid going to parties (53.8%) (16.5%) (14.6%) (9.1%) 24 (5.2.18 197 85 56 40 (48.6%) (21.0%) (13.8%) (9.9%) 27 (6.2.18 194 88 61 35 (47.9%) (21.7%) (15.1%) (8.6%) 27 (6.2.18 123 72 72 67 7 (30.4%) (17.8%) (17.8%) (16.5%) (17.8%) (16.5%) (17.8%) (16.5%) (17.8%) (17.8%) (18.6%) (17.8%) (18.6%)	embarrassment					35 (8.6%)
Lavoid going to parties 218 67 59 37 (14.6%) (14.6%) (9.1%) 24 (5.5.8%) (16.5%) (14.6%) (14.6%) (9.1%) 24 (5.5.8%) (16.5%) (14.6%) (14.6%) (15.1%) (15.1%) (15.1%) (15.1%) (15.1%) (15.1%) (15.1%) (15.1%) (16.5%) (17.5%) (_		
I avoid going to parties (53.8%) (16.5%) (14.6%) (9.1%) 24 (5	Sweating in front of people causes me distress					29 (7.2%)
197 85 56 40 (48.6%) (21.0%) (13.8%) (9.9%) 27 (6 194 88 61 35 (47.9%) (21.7%) (15.1%) (8.6%) 27 (6 123 72 72 67 7 (30.4%) (17.8%) (17.8%) (16.5%) (17.8%) (16.5%) (17.8%) (17.8%) (18.6%) (17.8%) (18.6%) (17.8%) (18.6%) (18						
I avoid activities in which I am the centre of attention (48.6%) (21.0%) (13.8%) (9.9%) 27 (6 194 88 61 35 (47.9%) (21.7%) (15.1%) (8.6%) 27 (6 123 72 72 67 7 (30.4%) (17.8%) (17.8%) (17.8%) (16.5%) (17.8%) (17.8%) (17.8%) (17.8%) (17.5%) (17.8%) (17.5	I avoid going to parties					24 (5.9%)
194 88 61 35 (21.7%) (15.1%) (8.6%) 27 (6 123 72 72 67 7 (17.8%) (17.8%) (17.8%) (17.8%) (17.8%) (17.8%) (17.8%) (17.8%) (17.5%) (17.5%) (17.8%) (17.5%) (17.8%) (17.5%) (17.8%) (17.5%) (17.8%) (,
Talking to strangers scares me	I avoid activities in which I am the centre of attention					27 (6.7%)
123 72 72 67 77 72 72 72 72	77. W. L			-		25 (5 50)
I avoid having to give speeches (30.4%) (17.8%) (17.8%) (16.5%) (17.8%) (17.8%) (17.8%) (17.8%) (17.8%) (17.8%) (17.8%) (17.8%) (18.5%)	Talking to strangers scares me					27 (6.7%)
114 93 60 69 60 69 60 69 60 60			, -			71
I would do anything to avoid being criticized (28.1%) (23.0%) (14.8%) (17.5%	I avoid having to give speeches					(17.5%)
177 79 55 50 4	T 111 41 4 111 1 111 1 1 141 1					69
Heart palpitations bother me when I am around people (43.7%) (19.5%) (13.6%) (12.3%) (10.5%) (13.6%) (10.5%) (13.6%) (10.5%) (14.8%) (16.8%)	I would do anything to avoid being criticized					(17.0%)
151 83 60 68 4 (20.5%) (14.8%) (16.8%) (10.8%) (151 114 63 39 (16.8%) (16.8%	II4					(10.00()
I am afraid of doing things when people might be watching (37.3%) (20.5%) (14.8%) (16.8%) (10.8%) 151 114 63 39	meart paipitations bother me when I am around people					(10.9%)
151 114 63 39	I am afraid of doing things when people might be watching					
	i am arraid of doing things when people might be watching					(10.6%)
	Doing ambanyassad an looking stunid are among my wayst foous					29 (0 40/)
Being embarrassed or looking stupid are among my worst fears (37.3%) (28.1%) (15.6%) (9.6%) 38 (9.6%) 211 78 61 38	being embarrassed or looking stupid are among my worst lears					38 (9.4%)
	Lavaid speaking to appear in authority			-		17 (4 2%)
	i avoid speaking to anyone in authority					17 (4.2%) 47
	Trambling or shaking in front of others is distressing to ma				-	(11.6%)

Association between Social Anxiety Disorder and Socio-Demographic Factors

SAD was higher among first-order students (60.6%), (p=0.038), among students whose fathers were illiterates (80%), (p=0.041) and among those who had low income (55.8%), (p=0.022) (Table 4).

Table 4 Association between socio-demographic factors and social anxiety disorder among participants

	Social Anxie	p-value				
	Yes N (%)	No N(%)	p value			
Age (Years)						
≤ 17	125 (53%)	111 (47%)	0.466			
≥ 18	82 (48.5%)	87 (51.5%)	0.100			
	Educationa	al grade				
First	47 (54.0%)	40 (46.0%)				
Second	56 (45.5%)	67 (54.5%)	0.821			
Third	104 (53.3%)	91 (46.7%)				
	Living s					
With parents	168 (49.4)	172 (50.6)				
One parent	39 (60)	26 (40)	0.083			
<u>-</u>	Family					
<4	26 (48.1%)	28 (51.9%)				
	152	135	0.697			
4-8	(53.0%)	(47.0%)				
>8	29 (45.3%)	35 (54.7%)				
Birth order						
First	63 (60.6%)	41 (39.4%)				
2-3	61 (43.3)	80 (56.7%)	0.038			
4-6	47 (48.5%)	50 (51.5%)				
>6	36 (57.1%)	27 (42.9%)				
Maternal educational level						
Illiterate	11 (68.8%)	5 (31.2%)				
Read/write	15 (51.7%) 116	14 (48.3%)	0.464			
School	(50.9%)	112 (49.1%)	0			
University	65 (49.2%)	67 (50.8%)				
Paternal educational level						
Illiterate	8 (80.0%)	2 (20.0%)				
Read/write	13 (61.9%)	8 (38.1)				
School	113(51.8%)	105 (48.2%)	0.041			
University	73 (46.8%)	83 (53.2%)				
•						
Family income (SR/month)						
≤ 6000	(55.8%)	92 (44.2%)	0.022			
6001-10000	51 (46.4%)	59 (53.6%)	0.022			
>10000 40 (46.0%) 47 (54.0%)						
Degree in the last semester						
≤ 80%	37 (49.3%)	38 (50.7%)				
81%-90%	65 (51.2%) 105	62 (48.8%)	0.939			
>90%	(51.7%)	98 (48.3%)				

Association between Social Anxiety Disorder and Parental-Students Relationship

SAD was higher among those who reported their parents were angry with them usually (p<0.001), those who reported their parents criticized them usually (p<0.001), and those who reported their parents criticized them in

front of others (p<0.001) and those who reported usual parental provocation (p=0.005). SAD was also higher among those who reported parental physical abuse (p=0.019), emotional abuse (p=0.006), and neglect (p=0.031) (Table 5).

Table 5 Association between social anxiety disorder and parental-students relationship among participants

	Social Anxie					
	Yes N (%) No N (%)		p-value			
	N=207	N=198				
	Parenta	l anger				
Usually	69 (62.7%)	41 (37.3%)				
Rarely	109 (51.7%)	102 (48.3%)	< 0.001			
Never	29 (34.5%)	55 (65.5%)				
	Parental	criticism				
Usually	64 (68.8%)	29 (31.2%)				
Rarely	94 (49.5%)	96 (50.5%)	< 0.001			
Never	49 (40.2%)	73 (59.8%)				
Par	ental criticism	in front of oth	ners			
Usually	21 (61.8%)	13 (38.2)				
Rarely	74 (66.1%)	38 (33.9%)	< 0.001			
Never	112 (43.2%)	147 (56.8%)				
	Parental ove	•				
Usually	123 (51.5%)	116 (48.5%)				
Rarely	56 (50.9%)	54 (49.1%)	0.98			
Never	28 (50.0%)	28 (50.0%)				
Parental provocation						
Usually	42 (64.6%)	23 (35.4%)				
Rarely	69 (56.6%)	53 (43.4%)	0.005			
Never	96 (44.0%)	(56.0%)				
Parental abuse						
No	134 (45.6%)	160 (54.4%)	< 0.001			
Yes	73 (65.8%)	38 (34.2%)				
Parental physical abuse						
No	176 (49.0%)	183 (51.0%)	0.019			
Yes	31 (67.4%)	15 (32.6%)				
Parental emotional abuse						
No	145 (47.2%)	162 (52.8%)	0.006			
Yes	62 (63.3%)	36 (36.7%)				
Parental neglect						
No	183 (49.5%)	187 (50.5%)	0.031			
Yes	24 (68.6%)	11 (31.4%)				

DISCUSSION

The present study aimed to assess the prevalence and severity of SAD and determine its associated factors as well as its impact on the academic performance of secondary school girls in Medina city, Saudi Arabia [18, 19]. In the present study, the prevalence of SAD among secondary school girls was 51.1%. Regarding its severity, it was mild among 31.4% and moderate among 17% of the students. Marked, severe and very severe form was reported by 21.2% of the students. The prevalence of SAD ranged from 6.2% to 32.4% in some Middle East countries, 14.1% to 10.3% in Asian countries, and 26.5% in Poland [20-30]. Moreover, in an earlier comparative study, the prevalence of social phobia in Saudi Arabia, the United Arab of Emirates, and Egypt were 9.8%, 7.8%, and 13%, respectively [30]. In a recent study carried out among undergraduate students at Jazan University, Saudi Arabia, the prevalence of SAD was 25.8%; it was mild in 47.2% of them, moderate, marked, severe/very severe in 42.3% and 10.5% of them, respectively [7]. The apparent difference in the rate of SAD between different studies could be related to some reasons; the demographic characteristics of the participants particularly age, gender, socio-cultural variations between different countries, and the utilization of different tools to assess social phobia.

Relatively, few studies investigated social phobia in only one sex as a result of cultural issues and all were done in Saudi Arabia, as in the present study. For example, the prevalence of SAD among secondary school boys was 11.7% in Abha city and 14.1% in Khamis Mushait [8, 23]. In Taif, the prevalence rate among female university students was 16.3% [31].

In agreement with others, the present study revealed that SAD was more reported among first-birth order students than others [32-34], However, others reported that social phobia was more among children born later [35].

Lower-educated fathers and lower family income, which indicate low socioeconomic status, were associated with a higher rate and more severe form of SAD among female students in the present study. This is quite expected as it is known that low socioeconomic status is associated with many psychological problems including anxiety disorders, as low socioeconomic status induces psychological problems, which in turn may cause individuals to become of low socioeconomic status [36,37].

Additionally, higher-grade students were more likely to have severe/very severe forms of SAD than their counterparts. However, Al-Qahtani didn't find a relation between school grades and the prevalence and severity of social phobia [32].

Regarding the parental-student relationship, usual parental anger toward students, criticizing them individually or in front of others, parental provocation, and parental abuse of all types (physical, emotional, and neglect) were associated with a higher rate of SAD. In addition, a more severe form of SAD was associated with usual parental criticism of students either individually or in front of others, parental provocation, and parental abuse particularly, physical type. Similar findings were reported in two previous studies [8, 38]. Bracik J, *et al.* found that the environmental factors of the school and family had an impact on the development of SAD in adolescents [23].

The present study and others didn't observe an association between the SAD and self-reported academic performance of the students [10, 39]. In the present study, academic performance was self-rated, Therefore further investigation using academic performance from students` records is recommended. Two main limitations are present in this study. The first limitation is the inclusion of females only, which can't give an overview of the problem among the adolescent population in Medina. The second limitation is the cross-

sectional design of the study which can't show the causal relationship between SAD and possible related factors. Despite those limitations, this study could be of usefulness to decision-makers as this is a hidden problem in our conservative society, particularly among female adolescents.

CONCLUSION

SAD is a common health problem among girls enrolled in secondary schools in Medina city as about half of them reported the problem. Although it was mainly mild in severity, a considerable proportion had severe/very severe levels. It was more reported among first birth order students and those with lower socioeconomic status. The parental style was associated with a higher rate of SAD.

Recommendations

Initial and regular periodic evaluations of secondary school girls in Medina city for SAD should be done to discover early enough cases. Health education is recommended for both parents and teachers regarding possible risk factors and early symptoms of social phobia to increase their awareness of the bad impacts of physical, and emotional abuse and their effects on students` psychological health. Special attention should be given to students of low socioeconomic status, by providing more social and psychological support. Future studies are recommended to include male students and those in earlier school stages.

DECLARATIONS

Conflicts of Interest

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