



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

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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 Liebowitz 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 of social situations while a person feels as 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 causing 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 the 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 the 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  $\geq$  of 19 suggests SAD. It has good test-retest reliability, internal consistency, 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, 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. Participant's 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% 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 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)	$\leq 17$	236	58.2
	$\geq 18$	169	41.8
Educational grade	First	87	21.5
	Second	123	30.4
	Third	195	48.1

Living status	Both parents	340	84
	One parent	65	16
Family size	<4	54	13.3
	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
Maternal educational level	Illiterate	16	4
	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
Family income (SAR/month)	≤ 6000	208	51.3
	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, emotional abuse and parental neglect were 11.4%, 24.2%, and 8.6% respectively (Table 2).

**Table 2 Students' relationship with their parents**

	N	%
<b>Parental anger</b>		
Usually	110	27.2
Rarely	211	52.1
Never	84	20.7
<b>Parental criticism</b>		
Usually	93	23
Rarely	190	46.9
Never	122	30.1
<b>Parental criticism in front of others</b>		

Usually	34	8.4
Rarely	112	27.7
Never	295	63.9
<b>Parental over-protection</b>		
Usually	239	59.0
Rarely	110	27.2
Never	56	13.8
<b>Parental provocation</b>		
Usually	65	16.0
Rarely	122	30.1
Never	218	53.8
<b>Parental abuse</b>		
No	294	72.6
Yes	111	27.4
<b>Parental physical abuse</b>		
No	359	88.6
Yes	46	11.4
<b>Parental emotional abuse</b>		
No	307	75.8
Yes	98	24.2
<b>Parental neglect</b>		
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**

	Not At All	A Little Bit	Somewhat	Very Much	Extremely
	N (%)	N (%)	N (%)	N (%)	N (%)
I am afraid of people in authority.	169 (41.7)	99 (24.4)	86 (21.2)	37 (9.1)	14 (3.5)
I am bothered by blushing in front of people.	160 (39.5)	86 (21.2)	84 (20.7)	48 (11.9)	27 (6.7)
Parties and social events scare me.	216 (53.3)	81 (20.0)	52 (12.8)	39 (9.6)	17 (4.2)
I avoid talking to people I don't know.	92 (22.7)	90 (22.2)	108 (26.7)	78 (19.3)	37 (9.1)
Being criticized scares me a lot.	110 (27.2)	90 (22.2)	73 (18.0)	70 (17.3)	62 (15.3)
I avoid doing things or speaking to people for fear of embarrassment.	167 (41.2)	86 (21.2)	74 (18.3)	43 (10.6)	35 (8.6)
Sweating in front of people causes me distress.	217 (53.6)	78 (19.3)	48 (11.9)	33 (8.1)	29 (7.2)
I avoid going to parties.	218 (53.8)	67 (16.5)	59 (14.6)	37 (9.1)	24 (5.9)
I avoid activities in which I am the center of attention.	197 (48.6)	85 (21.0)	56 (13.8)	40 (9.9)	27 (6.7)

Talking to strangers scares me.	194 (47.9)	88 (21.7)	61 (15.1)	35 (8.6)	27 (6.7)
I avoid having to give speeches.	123 (30.4)	72 (17.8)	72 (17.8)	67 (16.5)	71 (17.5)
I would do anything to avoid being criticized.	114 (28.1)	93 (23.0)	60 (14.8)	69 (17.5)	69 (17.0)
Heart palpitations bother me when I am around people.	177 (43.7)	79 (19.5)	55 (13.6)	50 (12.3)	44 (10.9)
I am afraid of doing things when people might be watching.	151 (37.3)	83 (20.5)	60 (14.8)	68 (16.8)	43 (10.6)
Being embarrassed or looking stupid are among my worst fears.	151 (37.3)	114 (28.1)	63 (15.6)	39 (9.6)	38 (9.4)
I avoid speaking to anyone in authority.	211 (52.1)	78 (19.3)	61 (15.1)	38 (9.4)	17 (4.2)
Trembling or shaking in front of others is distressing to me.	155 (38.3)	95 (23.5)	57 (14.1)	51 (12.6)	47 (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 Anxiety Disorder		p-value
	Yes N (%)	No N (%)	
<b>Age (Years)</b>			
≤ 17	125 (53)	111 (47)	0.466
≥ 18	82 (48.5)	87 (51.5)	
<b>Educational grade</b>			
First	47 (54.0)	40 (46.0)	0.821
Second	56 (45.5)	67 (54.5)	
Third	104 (53.3)	91 (46.7)	
<b>Living status</b>			
With parents	168 (49.4)	172 (50.6)	0.083
One parent	39 (60)	26 (40)	
<b>Family size</b>			
<4	26 (48.1)	28 (51.9)	0.697
4-8	152 (53.0)	135 (47.0)	
>8	29 (45.3)	35 (54.7)	
<b>Birth order</b>			
First	63 (60.6)	41 (39.4)	0.038
2-3	61 (43.3)	80 (56.7)	
4-6	47 (48.5)	50 (51.5)	
>6	36 (57.1)	27 (42.9)	
<b>Maternal educational level</b>			
Illiterate	11 (68.8)	5 (31.2)	0.464
Read/write	15 (51.7)	14 (48.3)	
School	116 (50.9)	112 (49.1)	
University	65 (49.2)	67 (50.8)	
<b>Paternal educational level</b>			

Illiterate	8 (80.0)	2 (20.0)	0.041
Read/write	13 (61.9)	8 (38.1)	
School	113(51.8)	105 (48.2)	
University	73 (46.8)	83 (53.2)	
<b>Family income (SR/month)</b>			
≤ 6000	116 (55.8)	92 (44.2)	0.022
6001-10000	51 (46.4)	59 (53.6)	
>10000	40 (46.0)	47 (54.0)	
<b>Degree in the last semester</b>			
≤ 80%	37 (49.3)	38 (50.7)	0.939
81%-90%	65 (51.2)	62 (48.8)	
>90%	105 (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 ( $p<0.001$ ), 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**

	<b>Social Anxiety Disorder</b>		<b>p-value</b>
	<b>Yes N (%)</b>	<b>No N (%)</b>	
	<b>N=207</b>	<b>N=198</b>	
<b>Parental anger</b>			
Usually	69 (62.7)	41 (37.3)	$<0.001$
Rarely	109 (51.7)	102 (48.3)	
Never	29 (34.5)	55 (65.5)	
<b>Parental criticism</b>			
Usually	64 (68.8)	29 (31.2)	$<0.001$
Rarely	94 (49.5)	96 (50.5)	
Never	49 (40.2)	73 (59.8)	
<b>Parental criticism in front of others</b>			
Usually	21 (61.8)	13 (38.2)	$<0.001$
Rarely	74 (66.1)	38 (33.9)	
Never	112 (43.2)	147 (56.8)	
<b>Parental over-protection</b>			
Usually	123 (51.5)	116 (48.5)	0.98
Rarely	56 (50.9)	54 (49.1)	
Never	28 (50.0)	28 (50.0)	
<b>Parental provocation</b>			
Usually	42 (64.6)	23 (35.4)	0.005
Rarely	69 (56.6)	53 (43.4)	
Never	96 (44.0)	122 (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 the 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 socio-economic 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 socio-economic 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 the school grade and the prevalence and severity of social phobia [32].

Regarding parental-students relationship, usual parental angry with students, criticizing them individually or in front of others, parental provocation, and parental abuse with its 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 of 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 for 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 evaluation 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, emotional abuse and their effects on students' psychological health. Special attention should be given to students of low socioeconomic status, through providing more social and psychological support. Future studies are recommended to include male students and those in earlier school stages.

### DECLARATIONS

#### Conflicts of Interest

The authors declared no potential conflicts of interest concerning the research, authorship, and/or publication of this article.

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