

# Social anxiety disorder and its impact in undergraduate students at Jazan University, Saudi Arabia

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## Abstract

Although social anxiety disorder (SAD) is a common mental disorder, it is often under diagnosed and under treated. The aim of this study is to assess the prevalence, severity, disability, and quality of life towards SAD among students of Jazan University, Saudi Arabia. A cross-sectional study was conducted among a stratified sample of 500 undergraduate students to identify the prevalence of SAD, its correlates, related disability, and its impact on the quality life. All participants completed the Social Phobia Inventory, Leibowitz Social Anxiety Scale, Sheehan Disability Scale, and the WHO Quality of Life – BREF questionnaire. Of 476 students, 25.8% were screened positive for SAD. About 47.2% of the students had mild symptoms, 42.3% had moderate to marked symptoms, and 10.5% had severe to very severe symptoms of SAD. Students who resulted positive for SAD reported significant disabilities in work, social, and family areas, and this has adversely affected their quality of life as compared to those who screened negative for SAD. Students reported several clinical manifestations that affected their functioning and social life. *Acting, performing or giving a talk in front of an audience* was the most commonly feared situation. *Blushing in front of people* was the most commonly avoided situation. Since the present study showed a marked prevalence of SAD among students, increased disability, and impaired quality of life, rigorous efforts are needed for early recognition and treatment of SAD.

## Introduction

While most of us experience some level of social unease when we feel scrutinized by others, such as while speaking in public or presenting at meetings, social anxiety disorder (SAD) is defined as an excessive and persistent fear of acting in a way that will be embarrassing and humiliating. This fear is almost invariably provoked by the feared situations, which are avoided or endured with severe distress, and interferes significantly with personal, occupational, and social functioning.<sup>1</sup>

Social anxiety disorder commonly appears in the teenage years,<sup>2</sup> and usually affects 3 to 5% of youths.<sup>3</sup> It is an extraordinarily persistent condition if left untreated and it may lead to a variety of comorbidities, such as other anxiety disorders, affective disorders, nicotine dependence, and substance-use disorder,<sup>4-6</sup> predicting poorer treatment outcomes.<sup>7</sup> Most of patients with SAD have been reported to have at least moderate impairment at some point in their lives. Education, employment, family, romantic relationships, friendships, social networks, quality of life, and other areas of life have been reported to be liable to impairment in patients with SAD.<sup>8-12</sup> Unfortunately, although it is the third most common mental disorder in adults worldwide,<sup>13</sup> SAD is often under diagnosed and undertreated.<sup>14</sup> Furthermore, it has received little attention by both clinicians and researchers.<sup>8</sup>

In general, there is a lack of data on the prevalence of SAD and the reported rates vary widely between studies, with much of the variability possibly being due to different instruments used to determine diagnosis.<sup>10</sup> However, SAD is obviously one of the most common of all anxiety disorders.<sup>10</sup> For instance, Kessler and colleagues (2005) interviewed 9282 English-speaking participants aged 18 years and older and found that SAD was the most common anxiety disorder, with a lifetime prevalence of up to 12%<sup>15</sup> and a 12-month prevalence of 6.8%.<sup>16</sup>

Studies looking at country-specific populations of university students have produced quite variable results when it comes to the prevalence of SAD. Many studies have indicated that social anxiety is a prevalent disorder among university students.<sup>11,12,17-20</sup> For example, studies from Sweden and India have reported the prevalence of SAD among university students to be 16.1% and 19.5%, respectively.<sup>11,12</sup> In the Kingdom of Saudi Arabia, less is known about SAD in general and among undergraduate students. However, high prevalence rates have been reported among

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Saudis, especially adolescents and young adults.<sup>21-25</sup> Elhadad and colleagues (2017) have carried out a study on 380 medical students and found that as high as 59.5% of them were screened positive for SAD. In the same study, SAD was associated with decreased academic achievement, weak clinical exam performance, and avoidance of oral presentation.<sup>22</sup>

The present study aims to investigate SAD prevalence, severity, related disabilities, and its impact in students from five faculties at Jazan University, Saudi Arabia. We expect that this study would be helpful in bridging the gap in the local research of SAD, and will be useful to the future studies attempting to reduce the high prevalence of this disorder and to prevent its long-term consequences.

## Materials and Methods

### Study place, design and participants

Jazan University is situated in Jazan region, southwest of the kingdom of Saudi Arabia. It is the leading higher educational institution in Jazan province. This is an

observational cross-sectional survey targeting Jazan University students who are over 18 years and registered for the academic year 2016/2017. The target colleges were Applied Medical Sciences, Pharmacy, Sciences, Computer sciences and Business administration.

### Sample size and sample design

A sample of 400 participants was estimated for the purpose of this study. The sample size was calculated using the formula for a cross-sectional study,  $n = [(z^2 * p * q) / d^2]$ . Sample size was calculated using the following parameters:  $p$ =prevalence of Knowledge 50%,  $Z$ =95% confidence interval,  $d$ =error  $\leq 5\%$ , and a 25% non-response rate. Probability proportional to size sampling (PPS) was used to adjust the number of students in each faculty.

### Data collection

The structured questionnaire was written in Arabic and distributed by six medical students to the study population. After explaining the purpose of the study and obtaining verbal consents, data collectors waited somewhere near for the completion of the questionnaire to give the respondents the opportunity to ask clarifying questions regarding the interpretation of terms or items in the questionnaire. All respondents were asked to fill out the survey separately to make sure that they do not duplicate each other's answers. The data collection process took place in the period from November 2016 to January 2017.

### Instruments

The questionnaire consisted of demographic information such as age, sex, faculty type, family size, birth order, perceived family income, marital status, and housing type. Rating instruments included the Social Phobia Inventory (SPIN) to detect social anxiety disorder, the Liebowitz Social Anxiety Scale (LSAS) to evaluate social anxiety disorder severity, the Sheehan Disability Scale (SDS) to assess disability due to social anxiety disorder, and the WHO Quality of Life – BREF questionnaire to assess the quality of life. All study tools were translated to simple Arabic by the study authors. The questionnaire took about 15 to 20 minutes to complete.

### Social Phobia Inventory

The SPIN is a short, self-rating scale developed by Dr. K.M. Connor to capture the social phobia symptoms.<sup>26</sup> It consists of 17 items and each item is rated from 0 (not at all) to 4 (extremely). The scale ranges from 0-68. A score  $\geq 19$  suggests social anxiety disorder.

It has good test-retest reliability, internal consistency, convergent and divergent validity and can be used for screening of and detecting treatment response to social anxiety disorder. Regarding diagnosis of social anxiety disorder, it has a sensitivity of 73-85% and a specificity of 69-84%. Although Shah and Kataria<sup>12</sup> used a cut-off point of 19 on this scale in a similar study, Dogaheh<sup>27</sup> reported that the cut-off point of 29 resulted in balanced sensitivity (0.96) and 1-specificity (0.87), and it was more appropriate for this study (a cut-off point of 19 resulted in an oddly very high prevalence).

### Liebowitz Social Anxiety Scale

The LSAS is self-rating scale developed by Dr. Michael Liebowitz to rate fear/anxiety and avoidance regarding 24 commonly feared *performance* or *social* situations.<sup>28</sup> It consists of 13 performance-related items and 11 social-related items which are rated from 0 (none/never) to 3 (severe/usually). It has a good internal consistency and evaluates the severity of fear and avoidance in common social situations. A score of  $< 55$  suggests mild social anxiety disorder, 55-64

suggests moderate social anxiety disorder, 65-79 suggests marked social anxiety disorder, 80-94 suggests severe social anxiety disorder, and  $> 95$  suggests very severe social anxiety disorder.

### Sheehan Disability Scale

The SDS is a simple and commonly used scale developed by David V. Sheehan<sup>29</sup> to evaluate functional impairments/disabilities in the domains of work, social life/leisure and family life/home responsibility due to an anxiety disorder. Each domain is rated on an 11-point, where 0=no impairment, 10=most severe, 1-3=mild, 4-6=moderate, and 7-9=marked.

### WHO Quality of Life – BREF

The WHOQOL-BREF is an abbreviated version of the WHOQOL-100 developed by the WHOQOL Group<sup>30</sup> to assess the quality of life in multiple dimensions, and it is applicable cross-culturally. It consists of 26 items based on a four-domain structure: Physical health (7 items), Psychological health (6 items), Social relationships (3 items) and Environment (8 items), along with a self-rating of general quality of life

**Table 1. Socio-demographic characteristics of participants.**

Characteristics	Male, n (%) N=243	Female, n (%) N=233	Total, n (%) N=476
Age in years*			
19 – 21	78 (32.1)	161 (70.9)	239 (50.8)
22 – 24	152 (62.6)	64 (28.2)	216 (45.9)
25 – 27	13 (5.3)	2 (0.9)	15 (3.2)
College			
Applied Medical Sciences	44 (18.1)	41 (17.6)	85 (17.9)
Pharmacy	14 (5.8)	5 (2.1)	19 (4.0)
Business Administration	70 (28.8)	86 (36.9)	156 (32.7)
Computer Sciences	59 (24.3)	39 (16.7)	98 (20.6)
Sciences	56 (23)	62 (26.6)	118 (24.8)
Marital status*			
Single	232 (95.9)	192 (83.8)	424 (90.0)
Married	8 (3.3)	31 (13.5)	39 (8.3)
Divorced	2 (0.8)	6 (2.6)	8 (1.7)
Family size*			
<6	42 (17.3)	33 (14.4)	75 (15.9)
06-10	135 (55.6)	162 (70.7)	297 (62.9)
>10	66 (27.2)	34 (14.8)	100 (21.2)
Birth order*			
First or only child	46 (18.9)	47 (20.5)	93 (19.2)
In the middle	159 (65.4)	144 (62.9)	303 (64.1)
Last baby	38 (15.6)	38 (16.6)	76 (16.1)
Perceived family income (SR/month)*			
Very good	49 (20.3)	38 (17.4)	87 (19.0)
Good	117 (48.5)	98 (45.0)	215 (46.8)
Bad	75 (31.1)	82 (37.6)	157 (34.2)
Housing type*			
Owning housing	191 (78.9)	207 (90.0)	398 (84.3)
Rent housing	51 (21.1)	23 (10.0)	74 (15.7)

\*Because of missing responses, the total percentages do not add up to 100%.

(1 item) and general satisfaction with health (1 item). It is self-administered and each item is scaled from 1-5 in a positive direction, which means that higher scores indicate a higher quality of life. Each domain score (mean score of items within that domain) is converted to a scale of 0-100 and indicates an individual's perception of quality of life in that domain. In the absence of clear cut-off point for such study, a cut-off point of 88.22 (70% of the total scores) was used as suggested by Al-Fayez and Ohaeri<sup>31</sup> and Xia *et al.*<sup>32</sup>

### Statistical analysis

The data was analysed using SPSS version 20. Descriptive (frequency and percentage) and inferential statistics (chi-square test) were used to interpret the data. An independent samples t-test was used to analyse the difference between the two groups (students with/without social anxiety disorder). Pearson correlation coefficient was used for correlation analysis.

### Ethical consideration

All participants were informed of their rights to participate and that their information would be kept anonymous and only used for the purpose of this study. Ethical approval was obtained from the University Ethical Committee.

Using a cut-off score of 29, participants were screened positive for social anxiety disorder if they scored 29 or higher on the SPIN scale. Table 2 shows that 123 (25.8%) students were screened positive for SAD, 71 of them (51.1%) were males and 52 were females (42.3%). There was a statistically significant difference in the prevalence of SAD regarding the birth order. Being a first-born child (or the only child) was associated with least prevalence of SAD (15.6%) and being a middle born child was associated with higher prevalence of SAD (61.5%) ( $X^2=6.407$ ,  $P<0.05$ ). However, with respect to gender, faculty type, family size, perceived family income, and housing type, there was no statistically significant difference in the prevalence of SAD (all P values  $>0.05$ ). In addition, as the range of age groups was narrow, (*i.e.* most of students were young adults, who are the target population of this study) and as most of the students were single, these two parameters (age and marital status) were not significantly associated ( $P=0.777$  and  $P=0.511$ , respectively) with the prevalence of SAD. The Cronbach's alpha for SPIN scale obtained in this study sample was 0.85.

Using the LSAS scale to detect the severity of SAD, 47.2% (N=58) had mild

symptoms, 42.3% (N=52) had moderate to marked symptoms, and 10.5% (N=13) had severe to very severe symptoms. As shown in Table 3, the descending ranking of commonly feared/avoided situations (LSAS scale) was obtained. The most commonly feared situations reported by students were *acting, performing or giving a talk in front of an audience* (75.0%, N=357), followed by *taking a test* (74.0%, N=352). The most commonly avoided situations reported by students were *blushing in front of people* (79.4%, N=377), followed by *having to give speeches* (76.7%, N=365). The majority of students (76.5%, N=364) reported that *being embarrassed or looking stupid* is among their worst fears. The Cronbach's alpha for LSAS scale obtained in this sample was (0.87) and (0.85) for the fear/anxiety and avoidance domains, respectively.

An independent samples t-test was employed to compare between students with SAD and students without SAD in their scores on the SDS and QOL scales. As Table 4 shows, the difference between the two groups was statistically significant. Students who screened positive for SAD reported significantly more disabilities in the work ( $t(474)=6.596$ ,  $P<0.01$ ), social life ( $t(473)=6.941$ ,  $P<0.01$ ), and home areas

## Results

Of 500 questionnaires, students completed 476 questionnaires giving a response rate of 95.2%. Table 1 details the sociodemographic distribution of the study population. The results show that 243 (51.1%) of respondents were males and 233 (48.9%) were females. The respondents' age ranged from 19 to 27 years. The mean, median, and mode of students' age were 21.49, 21, and 22 years, respectively ( $SD=1.57$ ), which indicates a fairly even distribution of participants' ages. The sample consisted of different faculties with the highest number from Business administration (156, 32.7%) and the lowest number from Pharmacy (19, 4.0%). Most of the respondents (90%) were single (N=424), 8.3% were married (N=39), and 1.7% were divorced (N=8). Those who lived in families consisted of 6-10 members comprised the majority of the study population (62.9%). Regarding birth order, a high frequency of respondents (303, 64.1%) reported that they were in the middle of their families. Most of the study population perceived their family income as *very good* (19.0%) and *good* (46.8%), and lived in their own household (84.3%).

**Table 2. Comparing social phobia with demographic variables of the participants.**

Demographic variables	SPIN score <29 n (%)	SPIN score ≥29 n (%)	X <sup>2</sup>	P value
Study population	353 (74.2)	123 (25.8)		
Gender			2.956	0.090
Male	172 (48.7)	71 (57.7)		
Female	181 (51.3)	52 (42.3)		
Age*			0.504	0.777
19 – 21	179 (51.1)	60 (50.0)		
22 – 24	161 (46.0)	55 (45.8)		
25 – 27	10 (2.9)	5 (4.2)		
Faculty type	0.225	0.705		
Health faculties	79 (22.4)	25 (20.3)		
Others	274 (77.6)	98 (79.7)		
Family size*			0.611	0.737
<6	53 (15.1)	22 (18.0)		
06-10	223 (63.7)	74 (60.7)		
>10	74 (21.1)	26 (21.3)		
Birth order			6.407	0.041
First or only child	74 (21.1)	19 (15.6)		
In the middle	228 (65.1)	75 (61.5)		
Last baby	48 (13.9)	28 (23.0)		
Perceived family income (SR/month)*			0.480	0.787
Very good	31 (9.2)	10 (8.3)		
Good	104 (30.8)	34 (28.1)		
Bad	203 (60.1)	77 (63.6)		
Housing type*			1.985	0.192
Owning housing	300 (85.7)	98 (80.3)		
Rent housing	50 (14.3)	24 (19.7)		

SPIN, Social Phobia Inventory. \*Because of missing responses, total percentages do not add up to 100%.

( $t(474)=4.375$ ,  $P<0.01$ ). As well, students who screened positive for SAD reported significantly worse quality of life, that is, they scored lower than students who screened negative for SAD on the physical health domain ( $t(473)=4.220$ ,  $P<0.01$ ), psychological health domain ( $t(459)=3.970$ ,  $P<0.01$ ), social relationship domain ( $t(472)=1.999$ ,  $P<0.05$ ), and environment domain ( $t(474)=2.297$ ,  $P<0.05$ ). The Cronbach's alpha for SDS scale obtained in this sample was (0.74), and for QOL scale, the Cronbach's alpha for the respective domains were 0.64 (physical health), 0.64 (psychological health), 0.55 (social relationships), and 0.72 (environment).

As shown in Table 5, both SPIN and LSAS scores were positively correlated with SDS scores. Thus, SAD and its severity were significantly associated with reported disabilities in the areas of work, social life, and home life. In contrast, both SPIN and LSAS scores were negatively correlated with QOL score. This means that SAD and its severity were significantly associated with deterioration in all domains of quality of life. In general, these results suggest that students who screened positive for SAD suffered more than students who screened negative from deteriorated functioning and quality of life.

## Discussion

The main purpose of the present study was to investigate SAD prevalence, severity, related disabilities, and its impact in undergraduate students at Jazan University. SAD symptoms may overlap with other diseases making it challenging to recognize and separate SAD from shyness or poor social skills. Many studies of SAD from different countries and cultures reported widely varied estimates of the prevalence ranging from 1.9% and 20.4% among the general population and depending on the diagnostic threshold.<sup>33</sup> In the present study, SAD was as high as 25.8% among the study population, much higher than many other studies among undergraduate students.<sup>11,12,17,18,34</sup> However, as SPIN, the screening scale used in this study, has a

specificity of 0.84-0.94 and the analysis using LSAS shows that 47.2% of those with SAD have a mild degree of SAD, it can be inferred that the prevalence might be lower than identified. However, the prevalence looks quite high even after this consideration. Within the Saudi context, a few studies

have investigated SAD among university students and most of them have been conducted on medical students, making it difficult to compare our findings with a similar study. However, consistently with the present study, social anxiety have been revealed to be a highly prevalent disorder in Saudi

**Table 3. Rank ordering of most commonly feared/avoided situations.**

Rank	Situation	N (%)
<b>Feared situations</b>		
1	Acting, performing or giving a talk in front of an audience	357 (75.0)
2	Taking a test	352 (74.0)
3	Speaking up at a meeting	326 (68.5)
4	Talking to people in authority	299 (62.8)
5	Meeting strangers	289 (60.7)
6	Working while being observed	289 (60.7)
7	Expressing a disagreement or disapproval to people you don't know very well	284 (59.7)
8	Being the center of attention	275 (46.4)
9	Talking with people you don't know very well	271 (56.9)
10	Looking at people you don't know very well in the eyes	267 (56.1)
<b>Avoided situations</b>		
1	I am bothered by blushing in front of people	377 (79.4)
2	I avoid having to give speeches	365 (76.7)
3	Being embarrassed or looking stupid is among my worst fears	364 (76.5)
4	Fear of embarrassment causes me to avoid doing things or speaking to people	333 (70.0)
5	I avoid talking to people I don't know	331 (69.6)
6	I am afraid of doing things when people might be watching	326 (68.5)
7	I would do anything to avoid being criticized	321 (67.5)
8	Trembling or shaking in front of others is distressing to me	318 (66.8)
9	Heart palpitations bother me when I am around people	317 (66.6)
10	I avoid activities in which I am the center of attention	312 (65.6)

**Table 4. Disabilities and quality of life in students with social phobia.**

	SPIN score <29, M (SD)	SPIN score ≥29, M (SD)	t	P value
<b>Disabilities</b>				
Work	0.79 (0.885)	1.42 (0.984)	6.596	0.000
Social life	0.73 (0.846)	1.38 (1.028)	6.941	0.000
Home	0.81 (1.047)	1.30 (1.116)	4.375	0.000
<b>Quality of life</b>				
Physical health	64.92 (15.641)	58.11 (14.585)	4.220	0.000
Psychological health	72.23 (16.206)	65.25 (17.195)	3.970	0.000
Social relationships	67.13 (21.272)	62.50 (24.136)	1.999	0.046
Environment	63.01 (16.492)	59.08 (15.769)	2.297	0.022

SPIN, Social Phobia Inventory

**Table 5. Correlating SPIN and LSAS with SDS and QOL scores.**

	SDS score			QOL score			
	Work	Social life	Home	Physical health	Psychological health	Social relationship	Environment
SPIN score (r)	0.29**	0.30**	0.19**	-0.19**	-0.18**	-0.92*	-0.11*
LSAS score (r)	0.29**	0.26**	0.26**	-0.20**	-0.13**	-0.11*	-0.19**

SPIN, Social Phobia Inventory; LSAS, Leibowitz Social Anxiety Scale; SDS, Sheehan Disability Scale; QOL, WHO Quality Of Life – Bref. r is Pearson correlation coefficient. \* $P<0.01$ . \*\* $P<0.05$ .

undergraduate students population.<sup>22,23</sup>

Regarding socio-demographic features, this study found no significant age or gender differences among students with SAD. In terms of age, student ages were overall similar as a product of the sample population, and thus age was not studied as a variable compared to other cohorts of the general population, though other studies have shown an early onset of social anxiety symptoms.<sup>2,35</sup> In terms of gender, our study's finding of no difference is overall in line with the body of research that has yielded inconclusive comparisons of gender prevalence of SAD.<sup>36</sup> Some studies focusing on students have found a higher prevalence among male students and suggested a culturally-specific emphasis placed on males for social tasks,<sup>25</sup> but more research into these gender differences is certainly warranted. Consistently with Australian, Indian and Swedish studies, this study reported that SAD was more prevalent among students of Business Administration, Sciences and Computer Sciences (*i.e.* non-medical faculties) than students of Applied Medical Sciences and Pharmacy (*i.e.* medical faculties).<sup>11,12,37</sup> Although SAD is expected to be higher among students of higher-pressure faculties like medical sciences and pharmacy, less prevalent SAD can be explained by considering that medical faculties are competitive and require high academic and social skills.<sup>12</sup>

The most commonly reported feared situations in the target sample were *Acting, performing or giving a talk in front of an audience* followed by *Taking a test*, and the most commonly avoided situations were *Blushing in front of people* followed by *Having to give speeches*. These findings are consistent with that of earlier studies.<sup>11-13</sup> It is noteworthy that university students face these situations daily. Elhadad *et al.* reported that students with SAD were more likely to have a weak clinical exam performance, and to avoid performing oral presentations.<sup>22</sup> In addition, the analysis of LSAS showed that the majority of students had mild to moderate forms of SAD, which is in accordance with prior studies on university students.<sup>11,12</sup> If untreated, SAD may affect the academic future of students and lead to several comorbidities, including other anxiety disorders, depression and bipolar disorders, and substance abuse.<sup>4-6</sup>

In the present study, it was found that SAD is associated with impairment in the area of work, social life, and family life. This finding is supported by prior studies on SAD among students, which reported more disabilities among people with SAD.<sup>8-12</sup> Also, consistently with previous studies,<sup>12,25,38-40</sup> we found that those with SAD

showed a significant reduction in all areas of quality of life, including physical and psychological health, social relationships, and environment. In the present study, students with SAD were more likely than students without SAD to be unsatisfied with their health, suffer from depression and psychological distress, rate their quality of life as *poor*, and to be unsatisfied with many aspects of life.<sup>12</sup> For example, 20.5% of students with SAD reported dissatisfaction with their *sleep* and *daily activities*, and 22.9% reported dissatisfaction with their *sexual life*.

In sum, this study confirms the high prevalence of SAD among undergraduate students and its substantial impact on them, and provides a connection between prior studies of certain populations of university students and those at Jazan University. It can also serve as a model for other university-specific investigations, as well as certain geographic or demographic groups.

### Study limitations

This study targeted only university students and it is necessary to choose a community representative sample to generalize the results. This is a self-report cross-sectional study, and a longitudinal study using structured clinical interview is needed to assess SAD among students. Social desirability bias is inevitable in such studies as social anxiety is by nature a sensitive issue.

### Conclusions

SAD has a quiet high prevalence and marked impact on the quality of life of university students. These findings necessitate more hard efforts in recognizing and treating SAD in the academic constitutions. Early detection and appropriate treatment will help in reducing the bad consequences of this common disorder.

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