Prevalence and Associated Factors of Social Anxiety Among Lebanese Adolescents

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ABSTRACT

Objective: To determine the prevalence of social anxiety among Lebanese adolescents and assess its association with bullying and child abuse.

Methods: This cross-sectional investigation conducted between January and May 2019 recruited 1,810 adolescents aged 14 to 17 years selected randomly from private schools from all Lebanese governates (Beirut, Mount Lebanon, North, South, and Bekaa). Participants completed a questionnaire that included items from the Liebowitz Social Anxiety Scale, the Childhood Abuse Self-Report Scale, and the Illinois Bully Scale.

Results: The results showed that 73.2% (95% CI, 71.02–75.31) of the participants had social anxiety. Higher mean scores on the psychological, neglect, physical, and sexual abuse scales and bullying and victimization scales were significantly associated with higher total social anxiety, fear, and avoidance scores ($P < .05$ for all). The multivariate analysis showed that having separated parents (β = 11.16), as well as higher child psychological abuse (β = 0.69), neglect (β = 0.52), physical abuse (β = 1.71), and sexual abuse (β = 1.56) were significantly associated with higher total social anxiety. The same results were found for social fear and avoidance, with bullying victimization being significantly associated with higher social fear only ($P = .042$).

Conclusions: This study showed high social anxiety among adolescents in Lebanon. Having separated parents and child abuse were related to social anxiety among adolescents. Future studies are needed to explore the effects of specific forms of childhood abuse in individuals with certain vulnerabilities.

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Social anxiety disorder is defined as a "marked fear or anxiety in a social situation" in which the person feels they are being disgraced by others.[1] Over the years, the effects of social anxiety disorder on an individual's development have been addressed in research, but few studies have actually looked at other factors that might increase the likelihood of developing the disorder.[2–4] Social anxiety disorder is a growing problem among adolescents in different communities, with a high prevalence in Lebanon, an early age at onset, and some similarities to other countries of the same socioeconomic status.[5] In Western countries, the lifetime prevalence of social phobia in adults is estimated to be 7%–13%,[6] whereas the prevalence of social anxiety disorder in children and adolescents ranges from 0.5% to 4%.[7] The lifetime prevalence of social phobia in a community mental health survey in Al Ain in the United Arab Emirates (UAE) was 0.4% for social phobia and 0.4% for specific phobia.[8] In another study[9] conducted in the UAE, 55 (27.1%) of 203 children were identified as shy, and the shyness was significantly associated with social anxiety. In a study[10] of 1,511 Omani adolescents, 36.6% exhibited social phobia. A study[11] in Saudi Arabia of 98 patients found that 60% had severe generalized social anxiety disorder, and the remainder had mild or moderate subtypes. Another study[12] from Saudi Arabia with 454 students found that 11.7% had social anxiety disorder. In Lebanon, among a nationally representative sample of the Lebanese population (n = 2,857 adults), the prevalence of social phobia was 1.9%.[13]

Critical risk factors for mental health are childhood maltreatment and peer victimization.[14] Therefore, several studies[15,16] have assessed the relation between childhood violence and social anxiety disorder and have consistently shown that sensitivity in adulthood to such childhood events is correlated with the disorder. In addition, child abuse by parents, siblings, or other family members is a major factor that induces and increases existing psychological disorders such as social anxiety.[17,18] In addition to childhood abuse, wherein perpetrators usually include parents and other adults, peer victimization is seen as another harmful social learning experience that leads to the development of social anxiety. Therefore, a child exposed to peer victimization is also more likely to encounter adverse social experiences, which may reinforce negative

Clinical Points

- The study showed that 73.2% of the participants had social anxiety.
- Having separated parents, as well as higher child psychological, physical, and sexual abuse and neglect were associated with more social anxiety.
- More bullying victimization was associated with higher social fear only.

attitudes about themselves and peer relationships. This can lead to the avoidance of social experiences and an increasing degree of social anxiety.[14,19] In addition, it has been shown that peer bullying at school is strongly correlated with psychological effects on adolescents.[3,20]

It has been demonstrated that family instability has a major impact on children's health.[18] Research has found that the offspring of separated parents are at higher risk of adjustment problems including but not limited to academic problems (eg, inferior scores), troublesome actions (eg, behavior and substance use problems), bad mood, and major anxiety disorder.[21] Anxiety is a developmentally normal response to the caregiver's separation during infancy and is central to the child's social development.[22] While most children learn to control their distress response to separation appropriately, some children continue to feel anxiety after separation.[23] These behaviors can become particularly problematic and disabling as signs of separation anxiety continue. In this situation, regulatory worries and doubts over caregiver separation are not age appropriate and are related to school refusal and excessive absence.[23] The marital status of the parents could have a great impact on the well-being of these individuals.[24]

Cultural variation affects the expression of social phobia where there is a variation of the perception of what constitutes a social threat.[25] Different cultures have different social rules and expectations. Among some cultures, particularly those of Asia, the self is defined largely by one's familial or social group; however, in western countries the self is defined under the term *individualism* or *independent* (one's uniqueness).[25] Each of these 2 culturally defined and expanded self-perceptions may be viewed as potential objects of social threat.[25] The most common scale to assess social unease in a given sample of a population is the Liebowitz Social Anxiety Scale (LSAS)[26,27] because of its high sensitivity and specificity. The LSAS was compared with the Social Phobia Scale and the Social Interaction Anxiety Scale and was found to yield more reliable results than its predecessors,[4,28] making it the tool of choice for psychologists and psychiatrists conducting anxiety-related studies. Although it was administered in Arabic in Oman,[10] the LSAS was retranslated to be used in Lebanon, as the 2 countries do not share the same dialect.

Few studies have evaluated the connection between child abuse and bullying among Lebanese adolescents with social anxiety disorder.[29–31] Previous studies[31,32] assessed anxiety and its correlates among Lebanese adolescents, but none have assessed social anxiety among adolescents using the LSAS. Therefore, the objectives of this study were to determine the prevalence of social anxiety among Lebanese adolescents and assess its association with bullying and child abuse. We hypothesize that childhood abuse (psychological, physical, sexual, and neglect) and bullying victimization would be associated with higher social anxiety among this age group.

Table 1. Sociodemographic Characteristics of the Sample Population (N = 1,810)

Characteristic	Sample
Sex, n (%)	
Male	844 (46.70)
Female	963 (53.30)
Parent status, n (%)	
Living together	1,581 (88.10)
Separated	213 (11.90)
Smoking status, n (%)	
Yes	468 (25.90)
No	1,342 (74.10)
Age, mean ± SD, y	15.42 ± 1.14
Household Crowding Index, mean ± SD	1.01 ± 0.64

METHODS

Procedure

This cross-sectional investigation was conducted between January and May 2019. From 2,250 questionnaires distributed, 1,810 (80.44%) were collected, as the remaining forms were either not filled or partially filled (less than 60% completed). A proportionate random sample of schools from all Lebanese governates (Mohafazat) was used as the recruitment method (Beirut, Mount Lebanon, North, South, and Bekaa). A list of schools was obtained from the Ministry of Education and Higher Education in Lebanon. A total of 18 private schools were contacted; 2 refused to participate as they believed it would take too much time for the students to fill out the questionnaires. Students aged between 14 and 17 years old were randomly selected from each school. They had the ability to agree or decline to participate in the study, with no monetary payment in exchange for their involvement. This study used the same methods described previously.[33–37] The Psychiatric Hospital of the Cross Ethics and Research Committee, in compliance with the hospital's Regulatory Research Protocol, approved the study protocol (HPC-012-2019). Written consent was obtained from the students' parents prior to starting the data collection.

Participants

The sociodemographic characteristics of the participants are summarized in Table 1. The mean (SD) age was 15.42 (1.14) years, and 53.30% were female. In addition, 11.9% of the adolescents had separated/divorced parents.

Minimal Sample Size

According to the G-power software, a minimum of 395 participants was deemed necessary based on a f2 change of 2%, an α error of 5%, a power of 90%, and 9 factors to be entered in the multivariable analysis.

Table 2. Promax Rotated Matrix of the Liebowitz Fear and Avoidance Scale Items[a]

Liebowitz Fear Scale Items

Factor	Items	Factor 1: Fear of Social Interaction	Factor 2: Fear of Public Speaking	Factor 3: Fear of Being Observed	Factor 4: Fear of Eating or Drinking in Public
Talking to people in authority	5	0.852			
Returning goods to a store	22	0.710			
Giving a party	23	0.681			
Looking people in the eyes that you don't know very well	19	0.624			
Talking with people you don't know very well	11	0.530			
Expressing a disagreement or disapproval to people you don't know very well	18	0.508			
Trying to pick up someone	21	0.498			
Calling someone you don't know very well	10	0.495			
Resisting a high-pressure salesperson	24	0.484			
Going to a party	7	0.456			
Meeting strangers	12	0.444			
Being the center of attention	15		0.867		
Participating in small groups	2		0.665		
Acting, performing, or giving a talk in front of an audience	6		0.620		
Speaking up at a meeting	16		0.522		
Giving a report to a group	20		0.450		
Entering a room when others are already seated	14			0.994	
Talking on the phone in public	1			0.927	
Writing while being observed	9			0.863	
Urinating in a public bathroom	13			0.785	
Working while being observed	8			0.644	
Taking a test	17			0.537	
Eating in public places	3				0.793
Drinking with others in public places	4				0.612
Percentage of variances explained		48.15	6.90	5.68	4.56

Liebowitz Avoidance Scale Items

Factor	Items	Factor 1: Social Interaction Avoidance	Factor 2: Nonverbal Performance Avoidance	Factor 3: Ingestion Avoidance	Factor 4: Public Performance Anxiety and Avoidance
Calling someone you don't know very well	10	0.763			
Entering a room when others are already seated	14	0.714			
Talking with people you don't know very well	11	0.691			
Looking people in the eyes that you don't know very well	19	0.684			
Expressing disagreement or disapproval to people you don't know very well	18	0.676			
Trying to pick up someone	21	0.649			
Talking on the phone in public	1	0.608			
Giving a party	23	0.545			
Resisting a high-pressure salesperson	24	0.520			
Talking to people in authority	5	0.486			
Returning goods to a store	22	0.462			
Going to a party	7	0.460			
Meeting strangers	12	0.445			
Taking a test	17		0.777		
Writing while being observed	9		0.682		
Urinating in a public bathroom	13		0.649		
Working while being observed	8		0.645		
Eating in public places	3			0.618	
Drinking with others in public places	4			0.467	
Being the center of attention	15				0.802
Speaking up at a meeting	16				0.728
Participating in small groups	2				0.629
Giving a report to a group	20				0.529
Acting, performing, or giving a talk in front of an audience	6				0.516
Percentage of variances explained		47.44	5.56	4.93	4.41

[a]Total score: Cronbach α = 0.969, fear subscale: Cronbach α = 0.952, avoidance subscale: Cronbach α = 0.951.

Questionnaire

The questionnaire was in Arabic, the national language of Lebanon, and required approximately 60 minutes to complete. Students were requested to fill out the form at school to avoid any influence from their parents when answering questions. At the end of the process, finished forms were collected and sent for statistical analysis. Sociodemographic characteristics were collected including age, sex, and Household Crowding Index; the latter reflects the socioeconomic status of the family and was calculated by dividing the number of persons in the house by the number of rooms, not including the kitchen and bathrooms.[38]

Table 3. Bivariate Analysis Taking the Liebowitz Anxiety Scale and Subscales as the Dependent Variable

	Liebowitz Fear Score, Mean ± SD	*P* Value[a]	Liebowitz Avoidance Score, Mean ± SD	*P* Value[a]	Total Social Anxiety Score, Mean ± SD	*P* Value[a]
Sex						
Male	25.92 ± 15.88	.56	32.10 ± 16.26	**.01**	56.47 ± 29.46	.364
Female	26.39 ± 16.38		29.97 ± 17.45		55.07 ± 32.70	
Parent status						
Living together	24.52 ± 15.03	**<.001**	29.77 ± 16.35	**<.001**	52.70 ± 29.16	**<.001**
Separated	37.73 ± 18.87		38.72 ± 18.76		76.26 ± 37.30	
	Correlation Coefficient	*P* Value	Correlation Coefficient	*P* Value	Correlation Coefficient	*P* Value
Psychological abuse	0.424	**<.001**	0.342	**<.001**	**0.360**	**<.001**
Child abuse/neglect	0.257	**<.001**	0.150	**<.001**	**0.246**	**<.001**
Physical child abuse	0.383	**<.001**	0.383	**<.001**	**0.357**	**<.001**
Sexual child abuse	0.266	**<.001**	0.205	**<.001**	**0.198**	**<.001**
Bullying victimization	0.324	**<.001**	0.198	**<.001**	**0.279**	**<.001**
Age	0.024	.340	−0.032	.206	−0.017	.493
Household Crowding Index	−0.134	**<.001**	−0.117	**<.001**	**-0.137**	**<.001**

[a]Bolding indicates statistical significance.

Participants' anonymity was guaranteed throughout the data collection procedure.

Development of Outcome Measures

The forward and backward translation method was conducted for the LSAS and Child Abuse Self-Report Scale (CASRS). The forward translation was done by a single bilingual translator, a health professional familiar with the terminology of the scales, whose native language is Arabic but is fluent in English. An expert committee comprised of health care professionals and a language professional verified the Arabic-translated version. A backward translation was then performed by a native English-speaking translator, who was fluent in Arabic and unfamiliar with the concepts of the scales. The back-translated English questionnaire was subsequently compared to the original English version by the expert committee, aiming to discern discrepancies and solve any inconsistencies between the 2 versions. The forward-backward process was repeated until all ambiguities disappeared.[39–41]

Liebowitz Social Anxiety Scale

The self-report LSAS contains 24 items used to assess the range of social interaction and performance situations feared by a person to assist in the diagnosis of social anxiety disorder. The 24 items are scored on a Likert scale of 0 to 3 on fear felt during the situations, and then the same items are rated regarding the avoidance of the situation. Combining the total scores for the fear and avoidance sections provides an overall score with a maximum of 144 points.[42] A score < 29 was the cutoff value for identifying the presence or absence of social anxiety.[43]

Factor Analysis of the Liebowitz Social Anxiety Scale

We ran the factor analysis of the LSAS scales on the full sample (total N = 1,810). None of the included items from the fear or avoidance scales was removed during the factor analysis process. Items of the fear and avoidance scale converged on a 4-factor solution with Eigenvalues greater than 1, accounting for a total of 65.29% and 62.34% of the variance for the fear and avoidance scales, respectively. The Kaiser-Meyer-Olkin measure of sampling adequacy was 0.920 and 0.912 for the fear and avoidance scales, respectively, with a significant Bartlett's sphericity test for both scales ($P < .001$). Moreover, a high Cronbach α was found for the full scale (0.969) and the fear (0.952) and avoidance (0.951) subscales (Table 2).

Child Abuse Self-Report Scale

The CASRS[44] is a validated 38-item scale divided into 4 categories of child abuse and neglect. All items are graded on a 4-point Likert scale. Since the number of items is different in the 4 categories, the mean is calculated for each subtest, with higher scores representing higher abuse and negligence[45] (Cronbach α: psychological [0.973], neglect [0.971], physical [0.966], and sexual [0.954]).

The Illinois Bully Scale

The Illinois Bully Scale[46] is a research-validated tool used to measure bullying and victimization by directly surveying students. It is divided into a bullying scale (questions 1–9) and a victimization scale (questions 10–16). In this study, the victimization scale was used, and it has been recently validated in Lebanon.[47] Higher scores indicate higher victimization score.

Statistical Analyses

SPSS software version 25 was used to conduct data analysis. Missing data constituted less than 10% of the whole database and thus were not replaced. We checked the reliability using Cronbach α values. A factor analysis was initiated using the principal component analysis technique to confirm the legitimacy of the construct of the Liebowitz fear and avoidance scales in the Lebanese population. We used a promax rotation since the extracted factors were found to be meaningfully associated. The Kaiser-Meyer-Olkin measurement of sampling adequacy and Bartlett's sphericity test were appropriate.

For bivariate analysis, the student t test was used to compare continuous variables in 2 groups. Pearson

Table 4. Multivariable Analysis of Covariance

Variable	β	Partial Eta Squared	*P* Value[a]	CI Lower	CI Upper
Total social anxiety score					
Child psychological abuse	0.690	0.036	**<.001**	0.508	0.871
Child neglect	0.521	0.037	**<.001**	0.387	0.656
Child physical abuse	1.712	0.047	**<.001**	1.321	2.102
Child sexual abuse	1.569	0.019	**<.001**	1.003	2.134
Bullying victimization	0.031	0.001	.787	−0.195	0.257
Age	0.757	0.001	.201	−0.405	1.919
Sex (females vs males*)	−1.040	0.001	.465	−3.830	1.750
Household Crowding Index	−4.503	0.013	**<.001**	−6.508	−2.497
Parent status (separated vs living together*)	11.165	0.018	**<.001**	7.031	15.299
Social fear score					
Child psychological abuse	0.438	0.052	**<.001**	0.343	0.532
Child neglect	0.333	0.055	**<.001**	0.263	0.403
Child physical abuse	0.567	0.020	**<.001**	0.363	0.770
Child sexual abuse	0.527	0.008	**<.001**	0.232	0.821
Bullying victimization	0.122	0.003	**.042**	0.005	0.239
Age	0.816	0.005	**.008**	0.211	1.421
Sex (females vs males*)	0.479	0.001	.518	−0.974	1.931
Household Crowding Index	−2.398	0.013	**<.001**	−3.442	−1.354
Parent status (separated vs living together*)	7.276	0.029	**<.001**	5.124	9.429
Social avoidance score					
Child psychological abuse	0.252	0.015	**<.001**	0.148	0.356
Child neglect	0.189	0.015	**<.001**	0.111	0.266
Child physical abuse	1.145	0.063	**<.001**	0.921	1.369
Child sexual abuse	1.042	0.026	**<.001**	0.717	1.367
Bullying victimization	−0.091	0.001	.169	−0.221	0.039
Age	−0.059	0.001	.863	−0.727	0.609
Sex (females vs males*)	−1.519	0.002	.063	−3.122	0.084
Household Crowding Index	−2.104	0.009	**<.001**	−3.256	−0.952
Parent status (separated vs living together*)	3.889	0.007	**.001**	1.513	6.264

[a]Bolding indicates statistical significance.
*Reference group. In the global model, the independent variable is parent status. Covariates are sex, age, Household Crowding Index, child psychological abuse, child neglect, child physical abuse, child sexual abuse, and victimization score.

correlation was used for linear correlation between continuous variables. A multivariate analysis of covariance was carried out to compare multiple measures (the total social anxiety score and subscales were taken as a dependent variable) between parents being separated or living together, taking into account potential confounding variables: sex; age; Household Crowding Index; psychological abuse, child abuse neglect, child abuse physical, child abuse sexual scale scores; and victimization score. Backward logistic regressions were also conducted taking the dichotomous social anxiety fear and avoidance scores as dependent variables, while entering the same independent variables in the models. In all cases, $P < .05$ was considered significant.

RESULTS

The mean (SD) social fear score was 26.18 (16.15) (median = 27) and the social avoidance score was 30.95 (16.94) (median = 33). Based on the cutoff points of the LSAS, 73.2% of the participants had social anxiety (95% CI, 71.02–75.31). The log mean ± SD bullying victimization score in our sample was 1.34 ± 1.28 (median = 1.38). The median was used as the cutoff point in the absence of a cutoff score for this scale. The results showed that 841 (46.5%, 95% CI, 44.1%–48.7%) participants were classified as having been previously bullied.

Bivariate Analysis

The results of the bivariate analysis are summarized in Table 3. Higher mean fear and avoidance scores and total social anxiety scores were significantly found in adolescents whose parents were separated compared to those whose parents lived together. Also, higher avoidance score was found in male participants compared to females.

Higher bullying victimization score and psychological abuse, neglect, physical, and sexual child abuse scores were considerably related with higher total social anxiety, fear, and avoidance scores. Higher House Crowding Index was considerably associated with lower total social anxiety, fear, and avoidance scores.

Multivariable Analysis

After adjusting for all covariates, a significant difference was found between those whose parents were separated and those whose parents were living together. Significantly higher mean total social anxiety (67.44), social fear (32.88), and social avoidance (34.56) scores were found in those with separated parents compared to those with parents living together.

Considering the total social anxiety score as the dependent variable, having separated parents (β = 11.16) and psychological abuse (β = 0.69), child abuse neglect (β = 0.52), physical child abuse (β = 1.71), and sexual abuse (β = 1.56)

were significantly associated with higher total social anxiety, whereas higher Household Crowding Index (β = −4.50) was significantly associated with lower total social anxiety. The same results were found for the social fear and avoidance subscales, with bullying victimization being significantly associated with only higher social fear (Table 4).

Logistic Regressions

The results of the backward logistic regression, taking the dichotomous social fear score as the dependent variable, showed that having separated parents (adjusted odds ratio [aOR] = 4.68), higher child psychological abuse (aOR = 1.06), and neglect (aOR = 1.06) were significantly associated with more social fear, whereas female sex (aOR = 0.75) and higher child sexual abuse (aOR = 0.94) were significantly associated with lower social fear (Supplementary Table 1, model 1).

The results of a backward logistic regression, taking the dichotomous social avoidance score as the dependent variable, showed that having separated parents (aOR = 1.66), higher child psychological abuse (aOR = 1.06), and higher physical abuse (aOR = 1.14) were significantly associated with more social fear, whereas female sex (aOR = 0.49), higher Household Crowding Index (aOR = 0.76), and higher child sexual abuse (aOR = 0.88) were significantly associated with lower social avoidance (Supplementary Table 1, model 2).

DISCUSSION

The present study aimed to assess the level of social anxiety among a sample of Lebanese adolescents to evaluate the associated factors. The percentage of adolescents with social anxiety was 73.2% higher than the rate reported in other studies.[48–51] In a recent study[48] conducted among 6,825 participants selected from 7 countries around the world, over a third of participants met the threshold for social anxiety disorder (23%–58% across the different countries). Reports of childhood social phobia have been found to range from 29% to 40% in clinical settings, making it one of the most frequently seen child and adolescent anxiety disorders.[52,53] The variation in prevalence rates can be interpreted by methodological variables that are used to assess a diagnosis, such as various test tools and time of the test, as well as varying thresholds of impairment. Also, the LSAS was developed as a clinician-administered scale, but it is now widely available as a self-report scale with similar psychometric characteristics to the clinician-administered version.[42,54] In various populations, the LSAS has been used as a pharmacologic challenge outcome measure.[55] Overall, evidence has confirmed the use of the LSAS as a self-report questionnaire.[56] Despite that the LSAS items were translated into Arabic, the test's validity might still be hindered by minor language and conceptual misunderstanding. In addition, culture aspects could influence the apparent high rate of social phobia demonstrated in our results. Cultures that are heavily invested in maintaining rigorous ethical norms are more likely to be catalytic triggers for social anxiety.[25] Individuals are more likely to be preoccupied with the presence of others in a society that operates on high moral ground.[25] Excessive focus on one behavior might make one feel as if he or she is falling short of expectations that are conducive to social phobia.[25] There is a trend in Euro-American societies to encourage self-identification.[25] Self-identity, on the other hand, is prohibited in a culture that values collectiveness, as such pursuits are prone to cause discord within collective societies.[25] A study[57] found a strong variation among groups of nations when evaluating participants' reports of norms reflective of their own culture. Individualistic nations were thought to encourage behaviors showing greater attention seeking, whereas collectivistic countries were supposed to favor behaviors expressing greater withdrawal and modesty.[57] Lebanon is more collectivistic than many Western societies. Individuals frequently believe they belong to "groups." These groups reflect or come to define who their members are, and they frequently demand a high level of loyalty and support.[58]

In addition, political instabilities and wars resulted in a tragic number of deaths, casualties, and displacements in Lebanon. These tragedies have affected civilians psychologically. In a study by Maalouf et al[31] among 510 Lebanese adolescents, the 30-day prevalence of psychiatric disorders was 26.1%, of which 13.1% were anxiety disorders. Factors affecting psychiatric disorders were marital instability among parents, not attending school, having a persistent medical illness, having a family history of psychiatric disorders, and vulnerability to bullying.[31]

The LSAS generated 4 fear factors and 4 avoidance factors, with a Cronbach α of 0.952 and 0.951, respectively; whereas, a similar study[28] yielded 2 factors for fear and 2 for avoidance, both having a Cronbach α of 0.92. Our results are similar to those of Heimberg et al[28] because the 3 factors obtained in our study (public speaking fear, fear of being observed, and fear of eating and drinking in public) were combined into 1 factor in their study (fear of performance). The avoidance factors were divided according to the same logic as the fear factors, with our study yielding 4 avoidance factors and the Heimberg et al[28] study yielding 2 factors.

The results of this study show that childhood abuse (psychological, physical, neglect, and sexual) was significantly linked with higher social anxiety, consistent with previous studies using the LSAS in similar populations.[59–61] For example, 1 study[62] of 205 participants revealed that 45% were physically abused during childhood, 23% were sexually abused, and 51% reported 1 type of disability such as social fear, poorer function (developing phobias such as agoraphobia and increased aggression), and depression. Another study[63] of 75 individuals showed higher social anxiety scores by at least 23% in children who had been physically and sexually abused; however, emotional abuse was not assessed, and the sample size was not as large as that of our study. To escape such abuse, it is very likely that adolescents isolate themselves.[64,65]

The prevalence of bullying is increasing and is a root cause of several psychiatric syndromes, such as depression,

social anxiety, and personality disorders.[66] Our results show that bullying is highly correlated with social anxiety, which is in agreement with numerous other studies.[30,67–69] Physical, verbal, and sexual abuse often leads to injuries, intimidation, and mental trauma, respectively, and victims often have mental and physical health problems and are easily distressed emotionally, thus increasing the probability of social isolation.[69]

Finally, there is considerable evidence that children of divorced parents, especially at a young age, grow up differently from those with nondivorced parents.[70] As confirmed by our study, a higher level of fear, anxiety, and social avoidance is correlated with children of divorced parents, as divorce impacts their lifestyle quite significantly and alters their behaviors in school or with friends and even in social gatherings in general.[24] These recurring problems influence their psychological behaviors, leading to anxiety, depression, and a sense of guilt, all inevitably leading to social phobia.[71]

Clinical Implications

This research shows that many individuals with a history of abuse and bullying have developed social anxiety.[72,73] It also indicates that the assessment and diagnosis of social anxiety disorder should be a priority for clinicians, as it might deliver a healthier understanding of management and specific intervention plans.[74] Early diagnosis is important, since it allows for early interventions with schools or the family to improve mental health,[18] and physicians should be wary of the correlation between child abuse and social anxiety.[75] A variety of treatments, such as cognitive-behavioral therapy (the most common with promising early results), are available to school psychologists to diagnose and help treat these adolescents.[74,76]

Limitations

Although this survey had its limitations, such as the probability of some biased answers, the findings are of great importance. Although every item of the screening instrument was carefully translated to Lebanese colloquial Arabic, their usefulness could still be obfuscated by certain subtle linguistic and conceptual misunderstandings that might not have been apparent during translation, as causal attributions tend to vary from culture to culture. We are also aware of the possibility that some questions might not have been completely understood by the adolescents and that not all students took the questionnaire seriously. There is also the possibility of selection bias since some schools in certain regions were recruited and because public schools were not enrolled. Social desirability bias also might be present since respondents may have answered questions in a way to be viewed favorably by others. Residual confounding bias is probable since not all factors associated with social anxiety disorder were taken into consideration in this study. Also, detailed description of the students' backgrounds, socioeconomic level, and educational status were not considered. Finally, this study was cross-sectional, thus it does not necessarily determine causation between results. However, the relatively large sample size allows a close approximation of the findings to the general adolescent population, especially since no such studies, taking into consideration a representative sample from all regions, were previously conducted in Lebanon.

CONCLUSION

This study showed a high level of social anxiety among adolescents in Lebanon. Having separated parents and child abuse were related to social anxiety among adolescents. Future studies are needed to explore the effects of different types of childhood abuse in individuals with specific vulnerabilities. It would be of benefit to recognize vulnerable individuals and their mental and physical health problems, as well as the effect of psychological and interpersonal processes, to guide the early initiation of interventions to prevent social anxiety disorders.

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Supplementary material: See accompanying pages.

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Supplementary material follows this article.

THE PRIMARY CARE COMPANION
FOR CNS DISORDERS

Supplementary Material

Article Title: Prevalence and Associated Factors of Social Anxiety Among Lebanese Adolescents

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List of Supplementary Material for the article

1. Supplementary Table 1

Disclaimer

This Supplementary Material has been provided by the author(s) as an enhancement to the published article. It has been approved by peer review; however, it has undergone neither editing nor formatting by in-house editorial staff. The material is presented in the manner supplied by the author.

Supplementary Table 1. Logistic regression taking the dichotomous social fear and avoidance scores as dependent variables.			
	p	**aOR**	**95% CI**
Model 1: Social fear score (high vs low*)			
Gender (females vs males*	0.01	0.75	0.60-0.93
Household crowding index	0.018	0.081	0.68-0.96
Parents status (Separated vs living together*)	<0.001	4.68	3.17-6.92
Child psychological abuse	<0.001	1.06	1.05-1.08
Child neglect	<0.001	1.06	1.05-1.07
Child sexual abuse	<0.001	0.94	0.90-0.97
Model 2: Social avoidance score (high vs low*)			
Gender (females vs males*)	<0.001	0.49	0.39-0.62
Household crowding index	0.003	0.76	0.63-0.91
Parents status (Separated vs living together*)	0.01	1.66	1.13-2.44
Child psychological abuse	<0.001	1.06	1.04-1.07
Child physical abuse	<0.001	1.14	1.09-1.18
Child sexual abuse	<0.001	0.88	0.83-0.93

*Reference group; Variables entered in both models: Gender, age, household crowding index, child psychological abuse, child neglect, child physical abuse, child sexual abuse and victimization score.