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Social Anxiety in Adolescents

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ABSTRACT

Social Anxiety Disorder (SAD) is a chronic, disabling and treatable disorder with common onset in adolescence. Virtually there are no Indian studies on SAD. The study was conducted to find out frequency, demographic and phenomenological characteristics of SAD, family related risk factors, academic impairment and comorbidity of depression among adolescents. 421 adolescents in one high-school were screened for SAD and depression and associated factors with academic impairment. 54 (12.8%) had SAD. The most common manifestation of SAD was avoiding giving speeches. SAD was equally common among both genders, was associated with difficulty in coping with studies, concern about weight, having less friends, lack of intimacy with parents, and being treated differently from siblings. In conclusion, SAD is a common adolescent disorder, with major depression as a comorbidity and associated with impairment in academic functioning. All adolescents especially with depression consulting medical professionals should be interviewed for SAD and treated.

Key Words : Social Anxiety Disorder, Adolescence, Manifestations, Associated factors

Introduction

Social Anxiety Disorder (SAD) occurs in western countries like United States, Canada and New Zealand at relatively similar rates (lifetime prevalence ranging from 1.7-3% on Diagnostic Interview Schedule) whereas lower rates are reported from East Asian countries like Taiwan and Korea (0.5-0.6% respectively on the same instrument)(Chavira and Stein 2002). There are no Indian data regarding any aspect of social anxiety disorder in adults or adolescents.

Community studies using DSM III criteria found prevalence of SAD as approximately 1% with slightly higher prevalence in girls than boys (Kashani and Orvaschal, 1990; McGee et al, 1990). Two German studies used DSM IV criteria for epidemiological studies. The first study of SAD among 12-17 year old adolescents found lifetime prevalence of SAP as1.6% with higher rates in females (2.1%) than males (1%)(Essau et al, 1999). The other study of adolescents and young adults aged 14-24 years found lifetime prevalence of SAD as 7.3%. Again higher rates of 9.5% in females than 4.9% in males were seen (Wittchen et al, 1999).

The two adolescent studies mentioned earlier found comorbid conditions occurring in approximately 20% adolescents with SAD. These conditions are depressive disorders, substance use disorders and other anxiety disorders. Stein et al. (1990) found major depression in 35% of social phobia patients retrospectively .

Marital conflict between parents and lack of a close relationship with adult have been identified in community survey as potential childhood risk factors for SAD (Chartier et al, 2001).

Aims and Objectives

- To find out frequency of Social Anxiety Disorder among high school adolescents
- To find out demographic as well as phenomenological characteristics of SAD among adolescents
- To find out association of SAD with family related factors, perceived difficulties in studies, appearance characteristics.
- To delineate factor structure of social phobia.
- To examine co-morbidity of depression in social anxiety disorder

Material and Method

The students of classes IX, X , XI and XII participated in groups of about 100 students. They were requested to fill up a proforma approved by the school. It comprised of demographic characteristics, Social Phobia Inventory

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(SPIN)(Connor et al., 2000), Brief Patient Health Questionnaire (Spitzer et al.1990) and factors associated with social anxiety disorder. We also tried to validate SPIN with another instrument, Liebowitz Social Anxiety Scale (Leibowitz, 1987) on a smaller sample of subjects within one week of SPIN administration.

Social Phobia Inventory (SPIN) is a self-rating screening instrument consisting of 17 items on fear and avoidance in a variety of social situations and a subscale rating physiological arousal symptoms like blushing, sweating, palpitations, shaking and trembling. Each item is rated from 0 (not at all) to 4 (extremely). Psychometric properties of SPIN have been reported in both healthy controls and psychiatric patients with and without SAD. As there are no norms for SPIN in adolescent population, we used a cut off one standard deviation beyond the mean, which is a reasonable boundary between mild and greater severity of symptoms.

Liebowitz Social Anxiety Scale (1987) assesses both social interaction and performance related anxiety as well as fear and avoidance. The items are scored on separate scales ranging from 0 to 3 for fear or anxiety and avoidance. There are 13 performance items that include questions about telephoning in public and giving report to a group, as well as eleven social interaction items that include returning goods to a store and giving party.

The Brief PHQ consists of 9 items (corresponding to nine criteria for Major depression as per DSM IV) for time frame of last two weeks to be rated on 4-point scale (0 = Not At All, 1= Frequently, 2 = More than half of the days, 3 =Almost Daily). Major depression was diagnosed when person rates at least five symptoms with two or more with sadness of mood or lack of pleasure as essential criteria. Persons who have these essential criteria present plus 2 or 3 responses rated 2 or 3 were considered as having other depressive disorder.

The following family related, appearance related and other factors were also included in the instrument: difficulty in coping with studies, being troubled with appearance, closeness with parents, strict parents, being treated differently as compared to siblings, discrimination because of gender, parental conflicts, perception of having limited friends and confiding relationship.

Adolescents were also requested to give examples of their social anxiety experiences,

Data analysis

Adolescents with SAD and those without (control group) were compared as regards to demographic characteristics, associated factors like appearance, difficulties in coping with studies, relation with parents, confiding relationships and comorbidity of depression.

Factor structure of SPIN was explored by principal component analysis with varimax. rotation. SPSS X version 2002 was used to analyze the data.

Categorical data was compared using Chi -square test and quantitative data was compared using 't' test.

Results

Total responses received were 425, of these 4 were incomplete and hence were not included in the analysis leaving 421. There were no refusals for participating in the study.

1. Prevalence of social phobia :
Table 1 shows pattern of SPIN scores.

Table 1 : **PATTERN OF SPIN SCORES**

Score Range	N (%)
Upto 7	136(32.3)
8-15	145(34.4)
16-22	86 (20.4)
23 or more	54(12.8)

Mean SPIN score of the adolescents was 13.3(sd 9.4). Hence subjects scoring 23 or more on SPIN (Mean+1SD) were considered having Social Anxiety Disorder (Index group) and those scoring less comprised of control group. Based on this, 54 (12.8%) adolescents had SAD.

Concurrent validity of SPIN was examined on 33 SPIN positive and equal number of SPIN negative subjects with another instrument, Liebowitz Social Anxiety Scale(Leibowitz,1987) within one week of SPIN administration.. The Pearson correlation between total SPIN score and Leibowitz total score 0.565 which was significant at 0.01 level(2-tailed).Moreover none of the SPIN negative subjects scored above threshold of caseness as per Leibowitz Social Anxiety Scale.

2. Demographic characteristics:

The students were from classes IX to XII. Hence their age range was 12-18 and 244(57.9%) were boys.

Adolescents with SAD were of comparable age to adolescents without SAD.

Although boys were slightly overrepresented among SAD group, the difference was not statistically significant.

Table 2: **DEMOGRAPHIC CHARACTERISTICS**

Demographic Characteristics		SAD Present N=54 N(%)	SAD Absent N=367 N(%)
Age	Range	13-17	12-18
	Mean (sd)	15.0(1.1)	15.0(1.3)
Gender	Boys	33(61.1)	211(57.5)
	Girls	21(38.9)	156(42.5)

Clinical Manifestations of SAD:

Score for adolescents having social anxiety disorder was 23-58 and mean score 31.6 (SD 8).

Whereas SPIN score for adolescents without SAD was 10.6 (SD5.9) and score was 0-22. The following four items were endorsed by at least 50% of the adolescents with SAD

- I avoid having to give speeches.
- Being criticized scares me a lot.
- I am afraid of doing things when people might be watching.
- Being embarrassed or looking stupid are among my worst fears

The most frequently endorsed fear items on LSAS were acting, performing or giving a talk in front of an audience, being the center of attention and speaking up at a meeting. These were also the frequently endorsed avoidance items.

Narratives of Adolescents:

" I always feel scared and nervous in the company of people whom I don't know. So I just don't talk to them even if I feel lonely and secluded."
"My parents urge me to sing on stage or talk on stage. I have a nice voice but I can't face the public, so I have never tried. Sometimes I think I should try, then again in the end I give up the idea because of fear of public."

Table 3 :P **CLINICAL MANIFESTATIONS OF SAD**

MANIFESTATIONS	N=54 %
I avoid having to give speeches.	62.9
Being criticized scares me a lot.	51.8
I am afraid of doing things when people might be watching.	51.8
Being embarrassed or looking stupid are among my worst fears	50
Fear of embarrassment causes me to avoid doing things or speaking to people	48.2
I would do anything to avoid being criticized.	48.1
I avoid activities in which I am the center of attention	38.9
I avoid speaking to anyone in authority.	33.3
Trembling or shaking in front of others is distressing to me.	33.3
I avoid talking to people I don't know.	31.5
I avoid going to parties.	31.5
Heart palpitations bother me when I am around people.	31.5
Talking to strangers scares me.	27.8
I am bothered by blushing in front of people.	24.1
Parties and social events scare me.	24.1
I am afraid of people in authority.	22.3
Sweating in front of people causes me distress.	20.4

"Sometimes I don't raise my hand even when I know the correct answer. I am afraid what will happen if it turns out to be wrong and what will others think of me."

" Sometimes it happens that while talking to someone, I think that I talked nonsense. I feel very guilty and think a lot about it and regret that why I did so. But then I come to know that the person did not find anything wrong in that. This usually happens to me."

"I avoid giving performance in audience. Although I know everything, I can not recall anything on the stage."

"I feel shy to talk to any unknown person or to perform some activities in front of an audience. I am afraid of giving answers or expressing my views in front of people in authority."

4. Factor structure of SPIN

Principal Component Analysis yielded four factors of SPIN with eigenvalues more than one.

Factor I (Criticism, embarrassment) had high loading on items: 5,6,11,12,15,17 accounting for highest variance (27.08%) i.e. scared of being criticized, fear of embarrassment, avoiding giving speeches, doing anything to avoid being criticized, fear of being embarrassed or looking stupid the worst, distress on trembling or shaking in front of others.

Factor 4 (Stranger context) had high loading on items 4, 9, 10 (accounting for 5.9 % variance) i.e. avoiding talking to unknown people, avoiding activities in which one is center of attention, scared of talking to strangers.

5. Depression and Social Anxiety Disorder:

Of the 54 SAD adolescents, 5 (9.3%) had Major depression and 7 (13%) had other depression. Of the control group of the 367 adolescents 7 (1.9%) had major depression and 39(10.6%) had other depression. SAD was more often associated with major depressive disorder or any type of depression as a whole, compared to the control group (p=0.011 and p=0.053 respectively). Deathwish or ideas of self-harm were present in 6(11.1%) of the 54 adolescents with SAD compared to 22(6%) of the 367 adolescents in the control group.

Table 4 : **FACTOR STRUCTURE OF SPIN : ROTATED COMPONENT MATRIX**

	Factor			
Variable	**1**	**2**	**3**	**4**
Variance	27.1%	12.8%	11.3%	5.9%
Afraid of authority	0.16	.76	0.07	-0.08
Bothered by blushing	0.22	.58	.36	-.24
Parties, social events scare	0.18	0.06	.77	-0.07
Avoid talking to strangers	0.13	.13	-0.03	.70
Being criticized scares a lot	0.72	.16	-0.003	.20
Fear of embarrassment leads to avoidance of talk	0.67	.21	.16	.18
Sweating in front of people causes distress	-0.09	.39	.50	.14
Avoid going to parties	-0.04	-0.01	.72	.37
Avoid activities in which being center of attention	0.16	.26	.27	.49
Scared talking to strangers	0.15	-0.01	.17	.72
Avoids giving speeches	.45	.23	.19	.27
Do anything to avoid criticism	.73	-0.06	-0.02	-0.008
Palpitations when with people	.37	.32	.34	-0.01
Afraid others watching	.33	.55	.26	.25
Embarrassed. Looking stupid worst fear	.71	-0.07	-0.09	-0.09
Avoid speaking to authorities	.14	.67	-0.10	.36
Trembling in presence of others	.45	.29	.30	-0.05

Factor 2 (Authority context) had high loading on items 1,2,14,16 (accounting for 12.83 %variance), i.e. afraid of people in authority, bothered by blushing in front of others, afraid of doing things when people might be watching, avoiding speaking to anyone in authority.

Factor 3 (parties, social events) had high loading on items 3, 7, 8 (accounting for 11.3 % variance) i.e. scared of parties and social events, distress on sweating in front of people, avoiding going to parties.

6. Associated factors

Adolescents with SAD had more often associated difficulties in coping with studies. They were also more troubled with concerns of being overweight or underweight.

Moreover it was found that the adolescents with SAD were having less intimate relationships with their parents as compared to adolescents without SAD.

Also, they more often reported that they were treated differently as compared to their brothers or sisters. More adolescents with SAD reported that they had limited number of friends compared to adolescents without SAD. They were found to have confiding relationship with family members less often as compared to control group.

However gender difference in SAD was observed for two things, more girls than boys had difficulty in coping with studies and more girls were troubled with hair loss.

Discussion

1. Prevalence of SAD:
Frequency of SAD in adolescents in this study was 12.8 %. This figure is high compared to earlier studies on SAD in adolescents(Kashani and Overschal, 1990, McGee et al,1990). If this study were two-stage study, i.e. after screening if structured interviews were conducted this figure could have been lower. However as SPIN is cross-validated with LSAS it seems that the findings of this study are valid. East Asian studies have found less frequent SAD in adult populations. Eastern cultures emphasize interdependent self construals (e.g. emphasis on self as being part of a group) rather than western independent self construals (i.e. emphasis on self as being autonomous). Additional research is needed to understand the variables like language, social ideals, child-rearing practices and social affiliations that may mediate expression of social anxiety**.**

Table 5 : **ASSOCIATED FACTORS IN SAD**

ASSOCIATED FACTORS	SAD PRESENT N=54 N(%)	SAD ABSENT N=367 N(%)	P VALUE
Difficulties in coping with studies	35(64.8)	169(46.0)	0.009*
Troubled with appearance			
Over/Under-weight	24(44.4)	104(28.3)	0.016*
Acne	19(35.2)	112(30.5)	0.489
Skin colour	13(24.1)	58(13.8)	0.129
Hair loss	16(29.6)	113(30.8)	0.862
Closeness with father	30(55.6)	303(82.6)	0.000*
Closeness with mother	41(75.9)	321(87.5)	0.022*
Strict parents	22(40.7)	121(33)	0.260
Discriminated against siblings	13(24.1)	42(11.4)	0.010*
Gender bias	8(14.7)	32(8.7)	0.154
Parental conflicts	10(18.5)	53(14.4)	0.423
Perception of having adequate friends	27(50.0)	259(70.6)	0.002*
Confiding relation with family members present	24(44.4)	216(58.9)	0.045*

7. Comparison of manifestations between boys and girls: Most of the manifestations of social phobia were equally found among boys as well as girls with SAD. However being afraid of people in authority was found more often in boys with SAD as compared to girls with SAD (30.3% vs 9.5%, P=0.069)

8. Gender and associated factors in SAD:

Boys and girls with SAD were compared on various factors, which can be potentially related to this disorder. No gender differences were observed as regards several factors like closeness with parents, confiding relationships, concern with body weight, pimples or skin complexion.

2. Demographic Characteristics:

No gender differences were seen as regards prevalence of SAD. In clinic populations SAD occurs in equal

Table 6 : **GENDER AND ASSOCIATED FACTORS IN SAD**

Associated Factors	Boys (N=33) N%	Girls (N=21) %
Closeness with father	19(57.6)	11(52.4)
Closeness with mother	26(78.8)	15(71.4)
Confiding relationship with		
Family	15(45.5)	9(42.9)
Friends	22(66.7)	13(61.9)
Neighbor	3(9.1)	0
Relative	3(9.1)	2(9.5)
Teacher	2(6.1)	0
Others	4(12.1)	0
Difficulty in coping with studies	18(54.5)	17(81)*
Troubled with weight	13(39.4)	11(52.4)
Troubled with pimples	10(30.3)	11(52.4)
Troubled with skin color	6(18.2)	7(33.3)
Troubled with hair loss	4(12.1)	12(57.1)**
* p=0.047 ** p=0.000		

proportion among men and women, however in community settings women have twice more often SAD (Chavira & Stein, 2002). In Indian culture, in a male dominated society women are not usually expected to give public lectures or talk with authorities. Hence in women, public speaking fears are considered normative.

At a younger age SAD is less frequent, with increasing age SAD would occur more frequently. As per DSM IV, SAD can be diagnosed even in childhood (APA, 1994).

SAD most commonly manifests itself with fear of giving speech. This study also found the same. Other common features included being scared of criticism and fear of being embarrassed or looking stupid.

3. Factor Analysis:

Principal Component Analysis in this study yielded four factors. In each factor the items that had high loading were directly related. e.g. scared of being criticized and doing anything to avoid being criticized were loaded on the same factor.

Connor et al. (2000) studied psychometric properties of SPIN and had done principal component analysis, which gave five factors: Factors 1, 2 and 4 were related to fear and avoidance of: Factor I : Talking to strangers and in social gatherings , Factor II : Criticism and Embarrassment, Factor IV: People in authority, Factor III: Physiological changes like sweating, trembling or shaking, palpitations and blushing, Factor IV: loaded high on the items of avoiding being the center of attention and public speaking.

Physiological changes occurring during social anxiety have not occurred as a separate factor in this study, rather they have been part of the other four factors.

4. Comorbidity of Depression with Social Phobia:

Numerous studies have found that most individuals with SAD have one or more comorbid psychiatric disorder. Presence of psychiatric comorbidity is associated with poor prognosis (Davidson et al., 1993). Most frequent comorbid disorder with SAD is major depression (Stein et al., 1999, Van Ameringen et al 1991). Social phobia generally precedes mood disorder (Kessler et al 1999). This study found major depression in 9.3% of SAD adolescents and other depressive disorders in 13% of adolescents with SAD. Thus presence of SAD in this study raises risk of having major depression five times as compared to control group.

5. Associated factors:

Deathwish and thoughts of self-harm were present in SAD more frequently compared to the control group(11.1% Vs 6% respectively)

Social anxiety disorder leads to difficulties in coping with studies as well as lack of desired number of friends more frequently. Anxiety related to physical attractiveness may be one of the contributing factors in causation of SAD. This study found concern about being underweight or over weight emerging as an important association with SAD.

Kendler et al. (2001) have proposed that phobia proneness is inherited but specific stimuli are required to activate this proneness and lead to expression of clinical phobia.

Stein et al. (2001) on basis of adult twin studies conclude that approximately 50% of variance in social anxiety related concerns is heritable leaving other 50% attributable to environmental influence.

Adolescents with SAD more often reported having been treated differently as compared to their siblings, lack of confiding relationship with father or mother and turning to friends for comfort in stressful situations rather to family. More studies are needed to assign etiological role to these factors. However Stein et al (2001) consider these factors

to be less important. They consider that probable causative role for parenting on some forms of psychopathology including phobias is not for more than 5% of variance. Majority of environmental variance must therefore be due to unique extra-familial experiences or to more extreme parental influences (like physical of sexual abuse).

6. Gender Differences in Social Phobia

During childhood and adolescence anxiety disorders are distributed equally between both genders. This study also found this fact. Boys had more severe SAD compared to girls as reflected in SPIN scores (SPIN scores: 32.9 Vs 29.7) In this study pattern of social anxiety differed between boys and girls. Boys reported more often being afraid of people in authority and fear of embarrassment leading to avoidance of activities.

Difficulty in coping with studies was more reported by girls with SAD as well as concern about hair loss.

Limitations of the study:

- This is only one stage study based on findings on screening instruments. Two-stage study employing structured clinical interview would lead to more valid conclusions.
- Although this study has explored the most common comorbidity i.e. major depression, other anxiety disorders and relationship with avoidant personality disorder has not been explored. Future studies on this aspect are needed.

Strengths of this study:

- This is the first Indian study of social anxiety disorder among adolescents.
- Not only the frequency of SAD has been the focus of study but it throws light on symptom structure, gender differences as well comorbidity like major depressive disorder.

Conclusions:

SAD was present in 12.8% high school adolescents and was equally common in both genders. The most frequent social anxiety was related to public speaking. Few gender differences were seen in features of SAD. Major depressive disorder occurred as SAD co morbidity in 9.3% .SAD was associated with difficulty coping with studies, lack of Confiding relationship with family members and perception of having less number of friends.

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