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Social phobia in Swedish university students: prevalence, subgroups and avoidant behavior

■ **Abstract** *Background* Public speaking is a common situation that university students have to endure. This situation is feared or avoided by most individuals with social phobia, which has been associated with low levels of educational attainment. However, epidemiological data on social phobia in university students are scarce. The present study examined the prevalence of social phobia and its subgroups in a university student population. Demographic characteristics and avoidant behavior in educational settings were also examined. *Methods* The Social Phobia Screening Questionnaire (SPSQ)—a validated and DSM-IV compatible instrument, was distributed as a postal survey to 753 randomly selected university students in Sweden. Interpretable questionnaires were obtained from 523 students (69.5%). To investigate subgroups, students who met the SPSQ diagnostic criteria of social phobia were analyzed by hierarchical cluster analysis. *Results* The point prevalence of social phobia among the Swedish university students was 16.1%, comparable with 15.6% previously reported for the general population. Two clusters were distinguished consisting of students scoring either low (discrete subgroup) or high (generalized subgroup) on all cluster variables. The discrete subgroup was more common representing 83% of the cases. Social phobia was associated with use of dysfunctional avoidant strategies in educational situations and in anticipation of public speaking. The disorder was less common among students following a pedagogic university program. *Conclusions* Social phobia was highly prevalent among Swedish university students, most cases pertaining to a mild or discrete form of the disorder. The commonness and severity of social phobia in students did not deviate significantly from the general population suggesting that socially anxious individuals do apply for higher education. However, since avoidance and low educational attainment are commonly reported features, future studies should investigate whether sufferers of social phobia underachieve or abolish their studies prematurely.

■ **Key words** prevalence – social phobia – student population – subgroups

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Introduction

When speaking in front of an audience many individuals experience slight discomfort or physiological responses such as pounding heart, muscle tension, trembling and so on. This may last only momentarily and then a more comfortable feeling is reinstated. However, for individuals with social phobia, also known as social anxiety disorder, this situation is severely agonizing. Public speaking is then endured with intense anxiety or avoided altogether [e.g., 1, 2].

Social phobia is characterized by a marked fear of scrutiny in a variety of performance and/or interactional situations. It is considered to be the most common anxiety disorder, at least in Western countries, usually with lifetime prevalence rates in the 7–13% range (see 1 for a review). In a community survey in Sweden, Furmark and colleagues [3] noted a point prevalence of 15.6% supporting that social phobia is among the most common mental disorders, although

there are methodological difficulties inherent in separating true cases from subsyndromal social phobia [1]. Nonetheless, because of the high prevalence together with the pervasiveness of the disorder, social phobia should be recognized as a significant public health problem.

Speaking (or performing) in front of a group of people is a very common activity in education of all sorts. Public speaking is the most prevalent social fear. It is estimated that 15–30% of the normal population experience significant fear in this situation [3–5]. However, even though social phobia is more prevalent among individuals with lower education [1] and associated with an increased risk from dropping out of studies [6], very few reports on the prevalence of social phobia among university students exist [7–9]. Hence, the main objective of the present study was to examine the prevalence of social phobia among Swedish university students. Additional aims were to compare the prevalence rate of social phobia among the students with the Swedish general population [3]. Because a number of epidemiological studies [e.g., 1, 10] have reported that social phobia usually appears to be more frequent among females, young people, and unmarried individuals, these and other common demographic features were also examined.

Another major nosological theme in the research on social phobia is the issue of subgroups and whether they reflect arbitrary cutoffs along a continuum of social anxiety or distinctive entities. The generalized subgroup was first introduced in the revised third edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-III-R; 11) and is currently defined as a fear of "most social situations" [12]. Although not explicitly defined in the DSM system, the literature refers to another social phobia subgroup described varyingly as "discrete," "specific," "circumscribed," "limited," "performance," or "nongeneralized" [e.g., 13, 14]. Recent studies [e.g., 15, 16] have used data driven methods such as cluster analysis to identify empirically derived subgroups of social phobia. For example, in a Swedish community study, Furmark and coworkers [16] found support for three homogenous subgroups distributed along a continuum of severity. Another community study [5] also implied that social anxiety exists on a continuum of severity. Although, preliminary data indicate that the generalized subgroup is more pervasive through childhood and may differ qualitatively from the non-generalized subgroup later in life [17] it is widely agreed that generalized social phobia differ from other groups primarily in severity of the phobia. Since we have previously examined social phobia subgroups in the Swedish general population [16], the present study also aimed at examining empirically derived social phobia subgroups in the student population to make a comparison between the two populations possible.

Operant conditioning models suggest that anxiety disorders could be maintained by negative reinforcement, which means that the individual learns that avoiding the phobic stimulus can reduce fear [see e.g., 18]. Since avoidant behavior is a common strategy used by individuals with different anxiety disorders, it could be argued that persons with social phobia more frequently avoid performance situations and therefore may be at greater risk of underachieving at school or, in the longer run, abolishing their studies prematurely. Thus, the current study also aimed at investigating the association between social phobia and avoidant behavior in anticipation of public speaking.

However, even if an individual with social phobia exposes him/herself to the feared situation the anxiety still may not be reduced despite the fact that exposure has been demonstrated to be an effective treatment approach [e.g. 19]. According to the cognitive model developed by Clark and Wells [20] in-situation safety behaviors can prevent exposure from having effect. These behaviors could be described as subtle avoidance maneuvers in the feared situation, serving to reduce the risk of being negative evaluated. Speaking quickly, rehearsing extensively and avoiding eye contact are some examples of safety behaviors [20]. A similar but conceptually distinct form of subtle avoidance is when persons try to mentally distance themselves in the exposure situation [19]. Hence, the present study also examined the association between social phobia and subtle avoidant behaviors while in educational situations.

Methods

■ Subjects and data collection method

The total inquiry group consisted of 753 (307 men, 446 women) program students in their forth semester of studies randomly sampled from two universities in Sweden. Students were selected from the student-based registry (LADOC). Two hundred and 91 of these students were sampled from Örebro University and the remaining 462 students were from Umeå University. Their age varied between 18 and 60. The fourth semester was chosen in order to minimize the influence of phobia-unrelated factors that could explain why students drop out their first semesters, such as having chosen the wrong educational program.

The total population of students from which the sample was drawn consisted of 3,186 students (1,306 men, 1,880 women). Three strata from the total student population were drawn from the natural science/technique (133 men, 46 women), social science/humanistic (109 men, 251 women) and pedagogic (65 men, 149 women) educational programs. Because the sex distribution in the total population as well as in each stratum was unequal, the random sampling, by a proportioned stratified selection, was made separately for men and women.

A diagnostic questionnaire (see below) was mailed to each participant together with a separate ID-sheet, two stamped return envelopes and a letter explaining the aim of the present study and assuring participant anonymity. Participants were asked to return the questionnaire and the ID-sheet in separate envelopes in order to secure anonymity. Two reminders were mailed in the range of

Table 1 The prevalence of social fears, i.e., the proportion of students that rated the potentially phobic situations as ≥3 on a 0–4 social distress scale

Situation	Prevalence n (%)		
	Social phobia	No phobia	Total
1. Speaking (or performing) in front of a group of people	60 (71.4)	38 (8.7)	98 (18.7)
2. Making a phone call to someone unfamiliar	21 (25.0)	29 (6.6)	50 (9.6)
3. Initiating a conversation with someone unfamiliar	20 (23.8)	9 (2.0)	29 (5.5)
4. Being addressed in a group of people	16 (19.0)	5 (1.1)	17 (3.2)
5. Using public toilets	15 (17.8)	32 (7.3)	47 (9.0)
6. Dealing with authority figures (e.g., a boss or a teacher)	15 (17.8)	12 (2.7)	27 (5.2)
7. Maintaining a conversation with someone unfamiliar	13 (15.5)	13 (3.0)	26 (5.0)
8. Being alone with someone unfamiliar	13 (15.5)	9 (2.0)	22 (4.2)
9. Entering a room in which unfamiliar people are seated	11 (13.1)	5 (1.1)	16 (3.0)
10. Writing in front of others	10 (11.9)	19 (4.3)	29 (5.5)
11. Expressing opinions in front of others	10 (11.9)	7 (1.6)	17 (3.2)
12. Attending a party (or a social gathering)	7 (8.3)	31 (7.1)	38 (7.3)
13. Eating/drinking in public	5 (6.0)	5 (1.1)	10 (1.9)
14. Interacting with colleagues during coffee- or lunchbreaks	2 (2.4)	0 (0.0)	2 (0.4)

5 weeks to non-responders only. Ten students could not be reached by mail and their questionnaires were returned undelivered. Further, two persons were at the time abroad and could not be reached and finally 218 students did not respond. Thus, a total of 523 students (69.4%) were eligible for analyses (178 men, 345 women).

Questionnaire

A DSM-IV [12] diagnosis of social phobia was established by means of the Social Phobia Screening Questionnaire (SPSQ; see 3 for details). The diagnostic section of this instrument was based on 14 potentially phobic situations (five performance and nine interactional situations; see Table 1). The respondent was firstly asked to rate level of distress in 14 potentially phobic situations on a fixed choice scale ranging from zero (no distress) to four (severe distress). Thereafter, six diagnostic questions followed, assessing whether the individual met the DSM-IV social phobia criteria A–D for one or more of the 14 situations. The E-criterion was assessed with three yes/no questions, i.e., the participant was asked whether the social discomfort was of such nature that it severely interfered with or severely bothered the person in his/her occupational/academic, leisure-time or social activities. The F-criterion was fulfilled since all subjects were between 18 and 60 years old. Whether social phobia could be better accounted for by other disorders or drugs (exclusion related to criteria G and H, respectively) could not be evaluated properly. This might increase sensitivity and decrease specificity. However, in a validation study using a diagnostic interview as a reference, the sensitivity of the SPSQ was 100% and the specificity 95% [3].

The SPSQ was complemented with questions regarding parental history of social anxiety, avoidant personality disorder (taken with permission from [21], sociodemographic and personal data, i.e., gender, age, marital status, immigration and birth order [see 16]. In addition, the Umeå sample received questions about which educational program they participated in and where they were brought up, i.e., whether the person had grown up in a community with fewer than 10,000 citizens, between 10 and 50,000 citizens, between 50 and 100,000 citizens or more than 100,000 citizens. A question on the county in which the participant was brought up was also included and responses were coded as being either in northern or southern Sweden.

In addition, the participants received Swedish versions of the Social Phobia (SPS) and the Social Interaction Anxiety (SIAS) scales [22]. Finally, avoidant behavior in anticipation of a public speaking situation was assessed, i.e., the participant was asked whether he or she ever had avoided an educational situation because of his/her fear to speak in front of an audience. The Umeå sample, also received a question regarding potential strategies to reduce the risk for a negative outcome in the case they had experienced an educational situation as threatening.

■ Diagnostic issues

Social phobia

To be diagnosed as having social phobia the individual had to fulfill the diagnostic DSM-IV criteria assessed with the SPSQ [3]. Briefly, this meant that the respondent rated at least one potentially phobic situation as three or higher on the 0–4 social distress scale. This particular situation had to be consistently endorsed in the diagnostic questions covering social phobia criteria A–D. Finally, the E-criterion had to be met, i.e., the individual had to admit impairment in at least one of the three life domains assessed.

Subgroups

Hierarchical cluster analysis was performed similar to the method previously used to reveal social phobia subgroups in the Swedish general population [16]. Homogenous clusters among students with social phobia were identified with Ward's hierarchical cluster analysis using squared Euclidean distances as similarity measure [23]. The cluster variate consisted of four variables: (a) distress ratings of the pooled 14 phobic situations (range 0–56); (b) number of phobic situations rated as ≥3 on the distress scale (range 0–14); (c) level of functional impairment, i.e., the number of impaired life domains endorsed on the E-criterion question (range 0–3); and finally, (d) number of criteria fulfilled for avoidant personality disorder (range 0–7). Standardization into z-scores was performed prior to the cluster analysis. To establish initial clusters, the percentage change in agglomeration coefficients was evaluated and a scree plot was used to detect a point of inflection [23].

Criterion validity

The SPS and the SIAS were used to validate the cluster solution. Clinically identified subgroups [14] as well as subgroups in the general population [16] have previously been reported to diverge on these questionnaires.

■ Psychometric evaluation

The alpha coefficient for the 14-item social distress scale was 0.85, indicating sufficient homogeneity. An alpha coefficient above 0.70 is considered to be reliable [24]. The scale correlated highly both with the SPS ($r = 0.71$) and the SIAS ($r = 0.77$), suggesting adequate concurrent validity.

■ **Attrition analysis**

Approximately 12 months after the last reminder had been sent out, all the non-responders in the Örebro sample and half of the non-responders (randomly sampled) in the Umeå sample were contacted for an interview over the telephone. A total of 96 individuals in the Örebro sample and 84 of 168 individuals in the Umeå sample were contacted. Subjects were asked whether they were willing to answer a brief question from the SPSQ [3]. Twenty-six subjects refused, 16 subjects had changed their phone number, one person was abroad and 51 subjects were unreachable by telephone. Thus, a total of 86 individuals (53 in the Örebro sample; 33 in the Umeå sample) were interviewed. As formulated in the questionnaire, the interviewer read the list of potentially phobic situations, after which the impairment (E-criterion) questions was posed, asking whether the subject considered him- or herself to be impaired or severely bothered by social anxiety in any of these situations.

Results

■ Prevalence of social fears and phobia

A total of 84 (16.1%) of the students met the criteria of social phobia. The most common social fear was "Speaking (or performing) in front of a group," endorsed by 71.4% of students with social phobia and by 18.7% of all the respondents (see Table 1).

In the Swedish general population, 188 (15.6%) of the 1,202 respondents fulfilled the criteria for social phobia [3]. The two populations did not differ in prevalence rate of social phobia ($\chi^2 = 0.1$, df $= 1$, $P =$ ns). A total of 37 (10.6%) of the individuals in the general population who reported having attained a high educational level, had social phobia [3]. This proportion differed significantly from the university student sample ($\chi^2 = 5.1$, df $= 1$, $P < 0.05$). Levels of social anxiety did not differ between cases in the student population and the general population ($0.5 < t < 1.1$, n.s.). Mean ($\pm$SD) scores for students vs. the general population were 19.7 ($\pm$6.8) versus 20.7 ($\pm$8.9) on the SPSQ, 20.5 ($\pm$12.4) versus 21.5 ($\pm$15.1) on the SPS and 29.6 ($\pm$14.7) versus 28.4 ($\pm$14.8) on the SIAS.

■ Demographic characteristics

Demographic characteristics are presented in Table 2. No significant associations were observed except for a significant association between social phobia and choice of educational program in the Umeå sample. It was there less common for students with than without social phobia to follow a pedagogic program. Moreover, in the total sample, students with social phobia ($n = 84$) as compared to those without ($n = 439$), showed a tendency to be younger.

■ Hierarchical cluster analysis

A two-cluster solution emerged since the largest increase was observed in going from two to one cluster using the point of inflection/scree plot method [23].

The percentage change in the clustering coefficient, when going from two to one cluster, was 66%. The two clusters consisted of one high- ($n = 14$; 2.7%) and one low-score ($n = 70$; 13.4%) cluster, which were significantly differentiated on all variables (see Table 3). To evaluate the stability of the cluster solution, the hierarchical two-cluster solution was compared to an iterative non-hierarchical cluster analysis (k-means clustering; 23) with two clusters specified in the analysis. This yielded a kappa of 0.96, suggesting that the two-cluster solution was robust.

Cluster labeling and description

Clusters were labeled in accordance with the terminology used in our previous community study [16] and in agreement with established subgroup terminology [14, 25]. The high-score cluster was labeled "generalized social phobia," normally interpreted to be more severe and disabling than other social phobia subgroups [5]. In the present study, the profile of the generalized subgroup (see Table 3) most closely matched the generalized (or severe) subgroup previously observed in the Swedish general population [16]. In the latter study, the individuals in the generalized subgroup feared on the average 7.9 of the 14 social situations, fulfilled six of the seven APD-criteria, and 2.3 of the three impairment domains [16]. Further, the scores of the severe subgroup on the SPS and SIAS in the present study (see Table 4) were comparable with those from clinical studies where the generalized subgroup has been predominating [e.g., 26, 27]. Finally, individuals in the low-score cluster feared less than two situations on the average, consistent both with our [16] and others [14, 25] previous descriptions of "discrete social phobia."

As expected, four unpaired t-tests, also tested for homogeneity or variance, confirmed that the two subgroups differed significantly on all the variables in the cluster variate (see Table 3).

Criterion validity

Two unpaired t-tests, using SPS and SIAS as dependent variables, showed significant differences between the two subgroups (see Table 4). Hence, the criterion validity for the two-cluster solution was deemed to be satisfactory. In addition, non-phobics differed significantly from both subgroups ($P < 0.001$; Dunnett's C tests), having mean ($\pm$SD) scores of 8.0 ($\pm$7.8) on the SPS and 14.3 ($\pm$9.4) on the SIAS.

■ Profile analyses

Demographic characteristics

One variable differentiated the subgroups. All individuals in the generalized group ($n = 14$) were stu-

Table 2 Sociodemographic and descriptive characteristics of students with and without social phobia

Characteristic	Social phobia n (%)	No phobia n	χ^2 (df)
University			
Örebro	29 (13.8)	181	1.1 (1)
Umeå	55 (17.6)	258	
Sex			
M	26 (14.6)	152	0.3 (1)
F	58 (16.8)	287	
Age, years[a]			
18–29	71 (17.9)	326	3.5 (1)*
30–59	13 (10.3)	113	
Marital status [a]			
Single	37 (17.5)	174	0.5 (1)
Having a partner	45 (14.8)	259	
Immigration			
Born in Sweden	75 (15.4)	411	1.4 (1)
Born abroad	9 (24.3)	28	
Birth order			
Older sibling(s) only	33 (16.0)	173	2.0 (3)
Younger sibling(s) only	28 (15.9)	148	
Younger and older siblings	15 (16.3)	92	
Only child	8 (19.5)	33	
Education program[b]			
Natural science/Technique	14 (19.2)	59	10.9 (2)**
Pedagogic	5 (6.1)	77	
Social science/humanistic	36 (23.2)	119	
Community brought up in, number of citizens[b]			
Fewer than 10,000	20 (16.5)	101	3.8 (3)
Between 10 and 50,000	13 (15.7)	70	
Between 50 and 100,000	16 (25.0)	48	
Over 100,000	4 (11.1)	32	
Part of Sweden being brought up in[b]			
North part	37 (15.6)	200	0.2 (1)
South part	12 (19.0)	51	

*$P < 0.10$; **$P < 0.005$
[a]The cells were merged into two categories since the expected counts were less than five
[b]It was only the Umeå sample who received this question

Table 3 Cluster means (SD) on the four variables the variate consisted of in the hierarchal cluster analysis

Variable	Cluster		
	1 (DSP)	2 (GSP)	t (df)
Social distress ratings (0–56)	17.5 (5.5)	29.7 (2.8)	12.2 (82)***
Number of social fears (0–14)	1.9 (0.9)	5.8 (1.0)	15.0 (82)***
Level of impairment (0–3)	1.4 (0.6)	2.4 (0.7)	5.2 (82)***
Number of APD-criteria (0–7)	3.1 (2.0)	5.4 (1.7)	3.9 (82)***

APD, avoidant personality disorder; DSP, discrete social phobia; GSP, generalized social phobia; ***$P < 0.0001$

dents at Umeå university ($\chi^2 = 7.1$, df = 1, $P < 0.01$). The generalized subgroup also tended to be over-represented among those students who were brought up in a community with fewer (compared with more) citizens than 50,000 ($\chi^2 = 3.2$, df = 1, $P < 0.10$).

Social fears

The prevalence of social fears within the two subgroups is listed in Table 5. Briefly, speaking fears dominated in both the mild and the severe subgroup (70% vs. 78.6%).

However, the generalized subgroup, to a greater extent than the discrete subgroup, contained a mix of both performance and interactional fears.

■ Avoidant behavior

Among the students, social phobia was associated with more avoidant behavior in anticipation of a public speaking situation ($\chi^2 = 30.3$, df = 1, $P < 0.0001$). In-situation subtle avoidance, in those who experienced an educational situation as threatening, was used more often as a strategy in cases than non-cases ($\chi^2 = 4.4$, df = 1, $P < 0.05$). Furthermore, students with social phobia used more dysfunctional strategies in comparison to those without social phobia ($\chi^2 = 11.4$, df = 1, $P < 0.001$). The most common subtle avoidant behaviors used by students with social phobia were: trying to distance themselves from the exposure situation by e.g., thinking about something else (26%), taking anxiolytic medication before entering the situation (16%), rehearsing extensively (16%), and breathing deeply (16%).

Table 4 Cluster means (SD) on the Social Phobia (SPS) and Social Interaction Anxiety (SIAS) scales

Variable	Cluster		
	1 (DSP)	2 (GSP)	t (df)
SPS	18.2 (10.5)	31.4 (14.6)	3.9 (77)***
SIAS	26.2 (11.8)	48.0 (15.3)	5.8 (81)***

DSP, discrete social phobia; GSP, generalized social phobia; ***$P < 0.0001$

■ Attrition

A total of 33 of the 86 contacted non-responders, i.e., 38.4%, met the impairment criterion as assessed by the telephone interview. Among responders, 148 students of 518 (28.6%) met the impairment criterion assessed with the questionnaire. In this respect, responders tended to be impaired less often than non-responders ($\chi^2 = 3.4$, df = 1, $P < 0.10$).

Discussion

The point prevalence of social phobia among Swedish university students was estimated at 16.1%, which is comparable with the prevalence rate of 15.6% in the Swedish general population [3]. This high prevalence among university students is somewhat surprising considering that social phobia has been reported to be less common among persons with higher education [1, 10]. For instance, in our Swedish general population study [3] the prevalence of social phobia among individuals with a high educational level was 10.6 %, i.e., notably lower than in the present study. One explanation of this divergence could be that the university students in the present study were assessed at their fourth semester and therefore they may be at risk of withdrawing from their studies during subsequent semesters. Unfortunately, because the students participated anonymously, this could not be examined empirically. A recent pilot study of first year university students in Australia, reported a prevalence rate of 18.3% using the abbreviated version of Social Phobia Inventory (Mini-SPIN) with a cut-off score of 7 [9]. This high prevalence suggests that persons with social phobia apply for higher education, even if it does not say anything about to what extent their studies will be completed. In Turkey, Izgic and coworkers [7] found a lifetime prevalence of 9.6% in university students. A comparison with the general population was not made.

The cluster analysis, used for subtyping, yielded a two-cluster solution consisting of a large mild (discrete) and a smaller but more severe (generalized) social phobia subgroup. In comparison with our general population study [16], the discrete/mild social phobia subgroup was more common in the student sample where 83% of the cases fell into this category as compared to 50% in the community sample. However, since the cut-off points defining the clusters were not identical in the two samples, which are inherent in the cluster analytic method used, a direct comparison between the prevalence rates of the subgroups in the two samples is not meaningful to do. In the community sample, low educational attainment was associated particularly with the generalized/severe subtype [16]. In the present generalized subgroup, social anxiety levels were similar to clinical populations [e.g., 26–28]. Taken together this suggests that persons with social phobia who do apply for higher education first and foremost are suffering from a milder form of the disorder.

Van Ameringen and coworkers [6] noted early leave of school in about 50% of the individuals in a sample of 201 patients with a primary diagnosis of anxiety disorders and in which social phobia was the most frequent disorder. The two most common explanations for leaving school were problems with speaking in front of the class and feeling nervous at school and in class [6]. The higher risk to drop out of school among students with social phobia may be associated with dysfunctional strategies to handle social anxiety in educational settings. Such strategies

Table 5 The prevalence of social fears, i.e. the proportion of students that rated the potentially phobic situations as ≥3 on a 0–4 social distress scale, within students with generalized social phobia (GSP) and discrete social phobia (DSP)

Situation	Prevalence n (%)	
	DSP ($n = 70$)	GSP ($n = 14$)
1. Speaking (or performing) in front of a group of people	49 (70.0)	11 (78.6)
2. Making a phone call to someone unfamiliar	13 (18.6)	8 (57.2)
3. Initiating a conversation with someone unfamiliar	11 (15.8)	9 (64.3)
4. Being addressed in a group of people	10 (14.3)	6 (42.9)
5. Using public lavatories	11 (15.8)	4 (28.6)
6. Dealing with authority figures (e.g., a boss or a teacher)	9 (12.8)	6 (42.8)
7. Maintaining a conversation with someone unfamiliar	6 (8.6)	7 (50.0)
8. Being alone with someone unfamiliar	7 (10.0)	6 (42.9)
9. Entering a room in which unfamiliar people are seated	6 (8.6)	5 (35.7)
10. Writing in front of others	7 (10.0)	3 (21.4)
11. Expressing opinions in front of others	3 (4.3)	7 (50.0)
12. Attending a party (or a social gathering)	2 (2.8)	9 (64.3)
13. Eating/drinking in public	2 (2.9)	3 (21.4)
14. Interacting with colleagues during coffee- or lunchbreaks	0 (0.0)	2 (14.3)

could take the form of avoidance behaviors in anticipation of and during educational situations, as noted in the present study. The consequences of these avoidant behaviors could be that high anxiety levels persist [19], which in turn could have an adverse effect on a person's capacity to concentrate, eventually resulting in academic underachievement.

The demographic pattern observed among the students in the present study differed in several ways when compared with studies of social phobia in the general population. For example, unlike the pattern in community studies [1] social phobia was not more frequent in students who were single or female. The latter finding could mean that men with social phobia apply for higher education more frequently than women, despite their problems, which would make the sex distribution more even in this university population. Another possibility could be that the most severe cases of social phobia were not found in the student population, which could affect the comparison of demographic characteristics. For instance, Furmark and coworkers [16] reported that persons with non-generalized social phobia were less often single than those with the generalized subgroup. Consistent with community reports [1], social phobia was more frequent in younger individuals. In the present study we also noted that persons with social phobia more seldom applied for a pedagogic program compared to those without phobia. This is not surprising considering that the pedagogic program mainly attracts students who aim at becoming a teacher, which might not be a feasible career for individuals with social phobia. It should be noted that this question was addressed to the Umeå sample only, which also contained all the students with generalized/severe social phobia. Hence, the above results relating to choice of university program should be interpreted with some caution.

In the current study, students with generalized/severe social phobia tended to have been brought up in a small community (fewer than 50,000 citizens) more often than those with the discrete/mild subtype. This is somewhat deviant from previous epidemiological reports on urbanicity and psychopathology [e.g., 10]. However, in the present study subjects were asked where they had been brought up, in contrast to previous studies that have assessed where subjects were living at the time of questioning. It is possible that a person with social phobia finds agonizing the step from moving from a relatively secure small community with tight social bonds into a bigger community with many strangers, resulting in worsened symptomatology.

There are some potential limitations of this study. First, even though students were randomly selected within the two universities assessed, the universities in question were not. Thus, the present findings may not be generalizable to all university students in Sweden. Second, about 30% of the student sample did not respond. The attrition analysis however, revealed that non-responders tended to be impaired to a larger extent than responders, suggesting that the present study underestimates the prevalence, if anything. Third, we relied on self-report measures only. Although the SPSQ has shown good psychometric properties [3], a resultant positive case of social phobia should be interpreted as indicant of the disorder rather than a formal diagnosis. The high prevalence might reflect that the instrument is overinclusive. However, good diagnostic agreement between the SPSQ and structured clinical diagnostic interviews (SCID; [29]) have been noted in clinical trials [28, 30]. The high prevalence noted here could indicate that social phobia is more common in Scandinavia than in Central or Southern Europe [1] and/or that the SPSQ, focusing one disorder only, is more sensitive to cases of social phobia than the broad diagnostic instruments typically used in epidemiological studies.

The main question addressed by this study is the prevalence of social phobia among university students. Because the prevalence did not differ significantly from the general population [3] it would appear that individuals with social phobia are not stopped by the disorder when seeking higher education. Subjects with social phobia who do find their way into the university could be described as having predominantly a mild form of the disorder, but the mild form is dominant also in the community [16]. We cannot exclude the possibility that students with social phobia have a higher risk of dropping out during their final semesters. Future research should target this issue and investigate if university students who suffer from social phobia drop out from their studies in a higher degree than students without the disorder.

Conclusion

To conclude, social phobia was highly prevalent among Swedish university students and the prevalence rate in the student population did not differ compared with the community at large. Even though most cases pertained to a mild form of the disorder, the high prevalence rate of social phobia in university students should be taken seriously. It is an important task to inform students with social phobia that effective pharmacological and psychosocial treatments are available. This could ultimately prevent premature drop-out of higher education.

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