

Subtypes of social phobia: Are they of any use?

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Abstract

This study investigated the existence of DSM-IV social phobia subtype models in the community. Data came from the Dresden Predictor Study of a representative sample of 1877 German women (aged 18–24 years) who completed a diagnostic interview and filled out various self-report questionnaires. The number of feared social situations was distributed continuously without a clear-cut for delineation of subtypes and significantly increased functional impairment, comorbidity, subjective need for psychotherapy, seeking psychotherapeutic help and dysfunctional attitudes, and decreased social support and mental health. Subtype models based on the number (1, 2–4 and >4) and type ('formal speaking fear' versus 'other fears') of social fear did not have extra value above the continuum model of social phobia. The heterogeneity within social phobia has to be seen as a continuum of severity of social phobia, with a greater number of feared situations associated with more functional, social and psychological disability.

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1. Introduction

Social phobia (social anxiety disorder) is an anxiety disorder characterized by an intense fear of embarrassment or humiliation in social and performance situations ([American Psychiatric Association \[APA\], 1994](#)). People with social phobia represent a heterogeneous group of patients. Differences within social phobics have for example been found with respect to the number and type of social fears, the frequency of avoidance, impairment due to the fears, sociodemographics, onset age, life satisfaction, social skills, and self-esteem (e.g. [Boone et al.](#),

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1999; Eng, Heimberg, Coles, Schneier, & Liebowitz, 2000; Heimberg, Holt, Schneier, & Spitzer, 1993; Hofmann, Heinrichs, & Moscovitch, 2004; Mannuzza et al., 1995; Stemmerger, Turner, Beidel, & Calhoun, 1995). This observed heterogeneity raises the question if social phobia can be divided into several or more or less distinct subtypes comprising different features (e.g. symptoms and etiological models) with different therapeutic implications or if these differences within social phobia instead have to be seen as a continuum of severity of social phobia for which no sharp boundaries can be drawn.

In recent decades, the body of research on identifying subtypes of social phobia has been expanding but the topic remains controversial. The revised third edition of the Diagnostic and Statistical Manual of Mental Disorders (*DSM-III-R*, APA, 1987) introduced a “generalized social phobia” subtype that was retained in the fourth edition (*DSM-IV*, APA, 1994). According to the *DSM-IV* generalized social phobia should be diagnosed if an individual fears *most social situations*. This definition leaves room for different interpretations. Some researchers (e.g. Heimberg et al., 1993; Hofmann et al., 1999; Hofmann & Roth, 1996) interpret “most situations” to be a quantitative dimension and hold that generalized social phobia is distinct from other subtypes of social phobia (e.g. non-generalized, circumscribed, distinct, specific social phobia) because of a higher number of feared social situations. For example, according to Heimberg et al.’s (1993) definition, individuals with non-generalized social phobia function in at least one broad social domain without experiencing clinically significant anxiety. People with circumscribed social phobia, on the other hand, experience social anxiety in only one or two discrete situations. Hofmann and Roth (1996) as another example assigned a generalized social phobia subtype diagnosis if at least four commonly occurring social situations were feared.

Other researchers (e.g. Stemmerger et al., 1995; Turner, Beidel, & Townsley, 1992) provide a qualitative explanation of “most social situations” and distinguish generalized social phobia from other subtypes on the basis of the type of feared social situations. Typically, individuals who fear social situations involving interactions with others such as attending parties or initiating a conversation are assigned to the generalized social phobia. A “specific” subtype is assigned if individuals fear only performance-oriented situations, such as giving speeches, speaking up in meetings, eating or writing in public, and/or using public restrooms. Individuals assigned to this latter group could fear multiple “specific” social situations.

Further, some researchers (e.g. Holt, Heimberg, Hope, & Liebowitz, 1992; Perugi et al., 2001) have attempted to examine situational domains defined as classes of similar social situations that could capture the heterogeneity of social phobia. Even though two types of social situations (interactional and performance social anxiety) are commonly discussed in the theoretical literature factor analytic techniques found support for three (Safren, Turk, & Heimberg, 1998; Sakurai et al., 2005), four (Safren et al., 1999), and even five (Perugi et al., 2001) situational domains. Unfortunately, not only the number but also the content of these factors varies across the different studies owing to the different samples, methods and cultures used. For example, Perugi et al. (2001) and Safren et al. (1999) found that social interaction anxiety proved to be a unifactorial dimension, whereas performance–observation anxiety was multifactorial. In Safren et al. (1998), three factors (interaction anxiety, anxiety about being observed by others and fear that others will notice anxiety symptoms) were yielded. In addition, in eastern cultures other domains of social fear could be recognized. In Japanese patient samples “relationship fear” (Sakurai et al., 2005) and “offensive fear” (*Taijin Kyofusho*) appeared to be culture-specific situational domains of social phobia (Iwase et al., 2000).

Although factor analysis is a useful technique for detecting common underlying dimensions of feared social situations, it cannot indicate group membership on the basis of these variables.

Studies that used cluster analysis to determine whether distinct social phobia patient groups could be identified on the basis of their pattern of feared social situations found a continuum of dominant public speaking anxiety, moderate social interaction anxiety, and pervasive social anxiety rather than distinct subtypes of qualitatively different feared social situational domains (Eng et al., 2000; Furmark, Tillfors, Stattin, Ekselius, & Fredrikson, 2000). Also Holt et al. (1992) found that the majority of patients with social phobia experienced fear in more than one of four conceptually derived situational domains (assertive interaction, informal speaking/interaction, formal speaking, and observation by others) and that if one social situational domain was feared this was dominated by formal speaking fear.

Although the identification of subtypes of social phobia has clinical utility it needs to be shown that these subtypes reflect phenomenological reality in the first place. Epidemiological studies with non clinical samples that are not constrained by the greater severity seen among persons seeking treatment for their social phobia are needed. Kessler, Stein, and Berglund (1998) provided support for the distinction between persons with solely speaking fear and those with other social fears in a community. However, this study was restricted because only six social situation probes were assessed and only one of these concerned fear of social interaction. Assessment of many situations is important, not only to obtain fine-grained subgroups but also to avoid missing cases (Heckelman & Schneier, 1995). Stein, Torgrud, and Walker (2000) utilized a higher number of social fear items and found that impairment attributed to social phobia increased linearly as the number of social fears increased, with no clear evidence of a threshold. They noted that this continuum of social fears makes classification system arbitrary. Furmark et al. (2000) found a similar continuum but acknowledged that categorical distinctions might have some useful purpose and divided social phobics into three subgroups according to the Heimberg subtype model (Heimberg et al., 1993). Thus epidemiological studies that assessed a wide variety of social situation probes actually question the use of subtypes because of the continuum of the number of social fears. Still it might be possible that other qualitative variables such as psychological or social factors would validate subtyping of social phobia within a community.

In summary, the *DSM-IV* definition of the subtype “generalized social phobia” is open to interpretational differences and has left researchers to devise their own classification criteria, which likely has contributed to the inconsistencies found in the literature. Further, different analytic techniques (e.g. cluster analysis, factor analyses) and different samples (e.g. community versus clinical) have yielded somewhat different views on the subject of social phobia subtypes. In the community, the heterogeneity was rather shown to be a continuum of severity of social phobia, bringing the use of social phobia subtypes into question. Unfortunately, these community studies only included number and distress of social fears, functional impairment and criteria of avoidant personality to examine subtypes in social phobia. Actually, the use of subtypes of social phobia should not only be examined on the basis of these variables, but on differences in subjective need for therapy, seeking psychotherapeutic help, sociodemographics, comorbidity, and social and psychological variables as well.

The present study investigates the use of subtypes of *DSM-IV* social phobia in young women. It improves on previous research in the following ways. First, the present study sample consisted of a representative community sample that was not biased by the severity of social phobia that is naturally paired with treatment-seeking populations. Second the diagnosis of social phobia was based on a detailed structural interview (F-DIPS: Diagnostisches Interview für Psychische Störungen—Forschungsversion [Diagnostic Interview for Psychiatric Disorders—research version]; Margraf, Schneider, Soeder, Neumer, & Becker, 1996). This interview included 13

social situation probes that were rated for degree of fear and frequency of avoidance, in contrast to previous studies that often had either a small range of social situation probes or had dichotomous fear answers (yes–no). Further, the interview was designed to extract detailed information about the degree of impairment due to social fears. Third, we evaluated several possible subtyping schemata for social phobia. Subtyping on the basis of the number of social fears as well as on the basis of type of feared social situation was investigated. Fourth, the subtyping models were evaluated not only on the basis of information on the number and type of feared social situation and impairment, but on qualitative differences such as subjective need for therapy, sociodemographics, comorbidity, and social and psychological variables.

2. Method

2.1. Participants

The sample for the present study was derived from the baseline data from the Dresden Prediction Study (DPS), a prospective epidemiological study designed to collect data on the prevalence, incidence, recovery, course, and risk factors of mental disorders in Dresden. Dresden is a city of 480,000 people located in the former German Democratic Republic (DDR, or East Germany).

The DPS sample was drawn randomly from the Dresden government register of residents in 1996. In Germany, this normally includes all residents, because every person is required to register. Participants were German women aged 18–24 years at the time of selection from the register. Of those contacted ($N = 5204$), 2068 completed the diagnostic interview and a subsample ($N = 1877$) completed both the diagnostic interview and a packet of self-report measures. Further methodological details are reported elsewhere (see Becker, Türke, Neumer, Soeder, & Margraf, 2002; Hoyer, Becker, Neumer, Soeder, & Margraf, 2002).

The study sample consisted of 130 women with a social phobia at baseline. Sociodemographic details of the present study sample and the original DPS sample are presented in Table 1. The average age of the women at baseline was 21 years ($S.D. = 1.9$). The majority (65%) had successfully completed their A-levels (“Abitur”), whereas 10% were still in school at baseline. Almost two-thirds (62%) were not employed. High socioeconomic status (SES) was reported by only 9%, middle SES by 59%, and low SES by 32%. When considering these SES data it should be noted that 56% still lived with their parents. Finally, 4% had a spouse, 65% had a partner and 32% were single. One-fourth (23%) lived together with their partner/spouse.

The only significant difference between the social phobia study sample and the DPS sample without social phobics was “employment” ($\chi^2 = 6.951, P < .05$). Relatively more women with social phobia were working part time than full time compared to women without social phobia. In other community studies social phobia was also associated with unemployment and education problems (e.g. Fehm, Pelissolo, Furmark, & Wittchen, 2005).

2.2. Procedure

The sample that was selected from the government register received a letter with detailed information about the DPS and a stamped reply card to confirm participation. The interviewers then invited the interested participants for the diagnostic interview by telephone, letter or personal contact. The participants could choose the location (the Technical University Dresden, the home of the participant or a quiet neutral place) where the interview would take place.

Table 1
Demographic details

| Variable | Study sample with social phobia (N = 130) | DPS sample without social phobia (N = 1747) |
|-------------------------------------|---|---|
| Partner (%) | | |
| Single | 32 | 34 |
| Partner | 65 | 62 |
| Spouse | 4 | 5 |
| SES (%) | | |
| Low | 32 | 32 |
| Middle | 59 | 61 |
| High | 9 | 8 |
| Education (%) | | |
| No certificate | 5 | 4 |
| Secondary modern | 2 | 4 |
| Comprehensive and technical college | 29 | 33 |
| A-levels | 65 | 60 |
| Employment (%) | | |
| Not employed | 62 | 50 |
| Part time | 16 | 19 |
| Full time | 22 | 31 |

DPS: Dresden Prediction Study; SES: socioeconomic status.

The mean duration of the interview was 114 min (range: 30–330 min). The self-report questionnaires were filled out directly after the interview. If the interview took a lot of time, the participant could fill out the questionnaires at home and send them to us.

2.3. Measures

2.3.1. DSM-IV diagnoses

The diagnostic assessments were based on the F-DIPS (Margraf et al., 1996). The structured interview format of the F-DIPS allowed the assessment of symptoms, syndromes and diagnoses of clinical disorders (axis I) according to the *DSM-IV* (APA, 1994). The interview was based on the Anxiety Disorders Interview Schedule (ADIS-IV-L; DiNardo, Brown, & Barlow, 1995) and was also a revision of an earlier diagnostic interview following the DSM-III-R (DIPS; Margraf, Schneider, & Ehlers, 1991). Unlike its previous versions F-DIPS also contains sections on substance abuse and dependence as well as on children's disorders. It yields lifetime, period and point prevalence rates for the following psychiatric disorders: all anxiety disorders, all affective disorders, the research diagnosis mixed anxiety–depression, hypochondrias, somatization disorder, conversion disorder and pain disorder, substance abuse and dependence, bulimia nervosa, anorexia nervosa and some children's disorders (separation anxiety, attention-deficit/hyperactivity and disruptive behavior disorders, elimination disorders). Furthermore, there is a sociodemographic section, a screening for psychosis, a screening for general medical condition and medication, a short section on family history of psychiatric disorders and a section about treatment for psychiatric disorders. Axis IV (psychosocial and environmental problems) and axis V (global assessment of functioning) are also registered or rated.

The retest and inter-rater reliability of the F-DIPS was tested in an unselected sample of 191 patients from a psychosomatic clinic (Keller, 2000). The retest reliabilities across the groups of

disorders were between .65 and .89 (κ -coefficient) and .65 and .94 (Yule's Y -coefficient). The study proved the F-DIPS a valid instrument for the diagnosis of psychiatric disorders (Keller, 2000).

Interviewers were either psychology students in their last year of training or medical doctors. All underwent an intensive training of about 1 week and subsequently attended a supervision meeting every 2 weeks. Doctoral-level psychologists read every interview. Unclear cases were discussed and a consensus diagnosis was given. A diagnosis of a psychological disorder measured by F-DIPS was assigned if all criteria for a *DSM-IV* diagnosis were satisfied. The diagnoses arrived by inspection of the final protocol.

2.3.2. Fear of social situations

The interviewer asked the participants taking social phobia section of the F-DIPS about the degree of their own fear of 13 social situations. The interviewer read a list of social situations and asked the participants to indicate for each one if they got "anxious or nervous" in the situation. If the answer was yes the interviewer asked 'how much do you fear this situation?'. Finally the interviewer rated the answer on a scale of 0 (no fear) to 8 (very strong fear). Fear or avoidance of a situation was rated as clinically relevant if the score was 4 or higher.

2.3.3. Impairment

If the participant avoided one or more social situations to a clinically relevant degree the interviewer asked how much the participant felt impaired and how much of a burden the participant experienced because of the social phobia. To assess impairment due to the social phobia the interviewer asked (translation), "Are you impaired by these fears in your life? How much impairment do you experience in your life (for example in your daily routine, work, social activities)? Is your actual work or education, in particular, influenced by your social fears?". The interviewer then rated the answer on a scale of 0 (not at all) to 8 (very much). For the burden of social phobia the interviewer asked (translation), "Are you burdened by these fears in your life?" The interviewer then rated the answer on a scale of 0 (not at all) to 8 (very much) burden.

2.3.4. Subjective need for psychotherapy

The participant filled out the question (translation) "Did you feel the need for psychotherapy because of psychological or social problem in the last 12 months?" There were nine possible answers that we reduced to three categories: no problem, no need for therapy, and need for therapy.

2.3.5. Psychopathology

We used the German version of the revised Symptom Checklist 90 (SCL-90-R; Derogatis & Cleary, 1977; German version by Franke, 1995) as a measure of general psychopathology. This questionnaire consists of 90 items using a 5-point Likert scale. For our study we used the global severity index score (GSI): $\text{sum score}/(90 - \text{number of missing data})$.

2.3.6. Mental health

The 14-item mental health questionnaire from the Marburger Health Study (Lutz, Heyn, Schmid, Sick, & Steinl, 1992a) was used to measure the ability to enjoy life and to accept difficult things in life (e.g., (translation) "I come to grips with the things in my life that are not changeable"; "I feel loved and understood by people who I find important"; "I believe that my life has meaning"). Participant scored the items on a 4-point Likert scale.

2.3.7. *Neuroticism*

We used the 14 items on the emotionality scale from the revised Freiburg Personality Inventory (FPI; [Fahrenberg, Hampel, & Selg, 1989](#)) to measure neuroticism. Participants scored the items at a 4-point Likert scale.

2.3.8. *Anxiety sensitivity*

We administered the Anxiety Sensitivity Index (ASI; [Reiss, Peterson, Gursky, & McNally, 1986](#)), a dispositional measure of fear-of-anxiety symptoms (including both cognitive and somatic sensations) arising from the belief that they will have consequences that are socially, physically, or psychologically harmful.

2.3.9. *Dysfunctional attitudes*

Dysfunctional attitudes were assessed with the Dysfunctional Attitudes Scale (DAS; [Beck, Brown, Steer, & Weissman, 1991](#); [Weissman, 1979](#); [Weissman & Beck, 1978](#)), which measures with 40 items those stable cognitive schemas associated with depression ([Beck et al., 1991](#)). Items included statements such as, “I should be happy all the time” or “my life is wasted unless I am a success.” Responses varied on a 7-point scale from “total agreement” to “total disagreement.” For this study, we used the total sum score.

2.3.10. *Self-efficacy*

A 10-item questionnaire was used to measure optimistic beliefs that are based on the concept of self-efficacy, that is, a sense of ability to carry out particular actions ([Bandura, 1977](#), e.g. “I will find a solution for every problem”). Scores varied from 0 (low self-efficacy) to 30 (high self-efficacy).

2.3.11. *Life satisfaction*

A 12-item questionnaire measured life satisfaction in important life areas ([Lutz et al., 1992b](#)). The participants used a scale of 0 (very unsatisfied) to 4 (very satisfied).

2.3.12. *Social support*

The German Social Support Scale, short version (SOZU-K-22 [Soziale Unterstützung, Kurzform]; [Fydrich, Sommer, Menzel, & Höll, 1987](#)) was used to measure social support. This questionnaire included items about emotional support, instrumental support and social integration, for example, “I often feel I am an outsider” and “there are persons to whom I can show all my feelings without feeling embarrassed.” Participants scored their agreement on scale of 0 (does not apply to me) to 4 (applies exactly to me).

2.4. *Statistical analyses*

The present study had two aims, namely to examine different subtype models of social phobia based on the number and pattern of feared social situations and to investigate qualitative differences. To identify a pattern of situational domains, that reflect similar feared social situations, principal components analysis with varimax rotation was performed including the 13 items on “fear of social situations” with the 0–8 scale. On the basis of the results of the number of feared situations and the pattern of feared situational domains (type of situation), we constructed one continuum model and two subtype models. To investigate association between the continuum of feared social situations and nominal variables (partner and comorbidity) logistic regression analyses were performed. For ordinal variables (SES, education, employment and subjective need

for psychotherapy) ordinal regression analyses, and for interval variables (impairment variables, psychological and social variables) linear regression analyses were performed. To investigate the qualitative differences within the two constructed subtype models, Chi-square tests were used for nominal and ordinal variables, and analysis of variance (ANOVA) tests for interval variables were used. Post hoc Tukey tests were used to reveal differences between subtypes.

We used Bonferroni correction to control for alpha inflation for the tests of qualitative differences between subtypes on psychological and social factors. With Bonferroni correction the alpha level of the eight regression analyses and ANOVA's for psychological and social differences decreased to .006.

3. Results

3.1. Number of social fears

The mean number of feared social situations was 5.65 (S.D. = 2.76) and avoided social situations 4.25 (S.D. = 2.78). Fig. 1 shows the percentages of the numbers of clinically relevant feared social situations [fear rating ≥ 4 on a scale of 0 (no fear) to 8 (extreme fear)]. The mean number of clinically relevant feared social situations was 2.66 (S.D. = 2.01) and was significantly lower than the number of feared social situations (5.65 versus 2.66), $t(129) = 15.86$, $P = .000$. Forty-one percent feared only one social situation to a clinically relevant degree, whereas 19% had two clinically relevant social fears, 15% had three clinically relevant social fears, 10% had four clinically relevant social fears, and 16% had five to nine clinically relevant social fears (range, 0–13) (see Fig. 1). This indicates a continuous distribution.

3.2. Type of feared social situation

Table 2 presents the frequencies of the types of feared social situations. The most common feared social situation was public speaking with a percentage of 89% for “any fear” (≥ 1 on a scale of 0–8) and 76% for clinically relevant fear (≥ 4 on a scale of 0–8). Frequencies for any fear

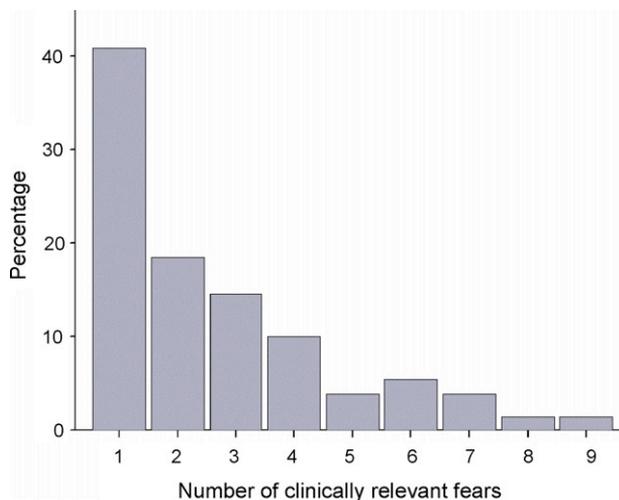


Fig. 1. Percentages of the numbers of clinically relevant feared social situations.

Table 2
Fear and clinically relevant fear of social situations for women with social phobia ($N = 130$)

| Situation | Any fear ^a (%) | Clinically relevant fear ^b (%) | Percentage clinically relevant fear of any fear (%) |
|---|------------------------------|--|--|
| Public speaking | 89 | 76 | 85 |
| Talking to people in authority | 68 | 30 | 44 |
| Starting a conversation | 62 | 28 | 45 |
| Rejecting a senseless claim | 55 | 23 | 42 |
| Talking to strangers | 52 | 17 | 33 |
| Asking someone to change his/her behavior | 50 | 27 | 54 |
| Continuing a conversation | 45 | 18 | 40 |
| Joining courses/meetings | 39 | 11 | 28 |
| Dating | 36 | 10 | 28 |
| Attending parties | 35 | 15 | 45 |
| Writing while being observed | 15 | 3 | 20 |
| Eating in public places | 13 | 7 | 53 |
| Using public toilets | 6 | 2 | 24 |

^a Fear rating ≥ 1 on a scale of 0–8.

^b Fear rating ≥ 4 on a scale of 0–8.

of other social interaction situations were also high (talking to people in authority: 68%, starting and continuing a conversation: 62 and 45%, rejecting a senseless claim: 55%, talking to strangers: 52%, and asking someone to change his/her behavior: 50%), but these frequencies declined to the range of 17–30% if only clinically relevant fear was examined. The participants feared the observational situations using public toilets, eating in public places and writing while being observed least often (see Table 2). The percentage of “any fear” that was clinically relevant was highest for public speaking (85%) suggesting that social phobics feared this particular situation most with respect to the percentage of participants concerned as well as its severity. The corresponding values for the other 12 situations were far lower and ranged from 24% for using public toilets to 54% for asking someone to change his/her behavior (see Table 2).

3.3. Situational domains

To investigate domains of feared social situations principal component analysis with varimax rotation was performed using the 13 items on “fear of social situations” with a 0–8 scale. We obtained a four-factor solution that accounted for 56% of the variance. A social situation was considered to load onto a factor if its factor loading score exceeded .40. Table 3 presents the item loadings. The first factor, assertive interaction (eigenvalue 2.37), consisted of talking to strangers, rejecting a senseless claim, asking someone to change his/her behavior, starting a conversation and continuing a conversation. The second factor, informal speaking/interaction (eigenvalue 2.14), included attending parties, talking to strangers, eating in public places, dating, starting a conversation and continuing a conversation. The third factor, formal speaking/interaction (eigenvalue 1.47), consisted of public speaking and joining courses/meetings. Finally, the fourth factor, observation by others (eigenvalue 1.31), included writing while being observed and using public toilets. The item talking to people in authority loaded on none of the factors and was excluded.

The participants were classified on the basis of situational domain involvement, which was defined as having one or more clinically relevant fears within a situational domain. Table 4 presents the percentage of situational domain involvement. Only half of the participants (49%)

Table 3

Factor loadings of social situations on situational domains within women with social phobia ($N = 130$)

| Item wording | Factors | | | |
|---|-----------------------|-------------------------------|-----------------------------|-----------------------|
| | Assertive interaction | Informal speaking/interaction | Formal speaking/interaction | Observation by others |
| Talking to strangers | .46 | .43 | .27 | -.19 |
| Rejecting a senseless claim | .82 | .00 | .00 | .16 |
| Asking someone to change his/her behavior | .83 | .00 | .00 | .00 |
| Starting a conversation | .47 | .56 | .18 | -.16 |
| Continuing a conversation | .61 | .40 | .22 | .00 |
| Attending parties | .00 | .71 | .11 | .00 |
| Eating in public places | .00 | .61 | -.26 | .32 |
| Dating | .19 | .68 | .31 | .00 |
| Joining courses/meetings | .15 | .16 | .61 | .14 |
| Public speaking | .00 | .00 | .79 | .00 |
| Using public toilets | .15 | -.14 | .33 | .62 |
| Writing while being observed | .19 | .30 | .00 | .60 |
| Talking to people in authority | .28 | .00 | .20 | -.57 |

Note: Factor loadings $\geq .40$ are denoted by bold typeface.

Table 4

Situational domain involvement of women with social phobia ($N = 127^a$)

| Number of situational domains | Situational domain combination | N | Percentage of total (%) | Percentage of number of sit. domain (%) |
|-------------------------------|--------------------------------|-----|-------------------------|---|
| One domain | | 62 | 49 | |
| | Assert | 8 | 6 | 13 |
| | Informal | 7 | 6 | 11 |
| | Formal | 47 | 37 | 76 |
| | Observe | – | – | – |
| Two domains | | 21 | 17 | |
| | Assert/informal | 10 | 8 | 48 |
| | Assert/formal | 8 | 6 | 38 |
| | Assert/observe | – | – | – |
| | Informal/formal | 3 | 2 | 14 |
| | Informal/observe | – | – | – |
| | Formal/observe | – | – | – |
| Three domains | | 41 | 32 | |
| | Assert/informal/formal | 39 | 31 | 95 |
| | Assert/informal/observe | 2 | 2 | 5 |
| | Informal/formal/observe | – | – | – |
| | Assert/formal/observe | – | – | – |
| All four domains | | 3 | 2 | 100 |

Assert: assertive interaction; informal: informal speaking/interaction; formal: formal speaking/interaction; observe: observation by others.

^a Three participants not included because they only feared talking to people in authority, which was excluded after the factor analyses.

had fear(s) in only one situational domain; of the remainder, 17% had fears in two situational domains, 32% in three situational domains and 2% in all four situational domains. As can be seen from Table 4, 76% of the participants, who had only fear(s) in one situational domain, showed fears in the formal speaking fear domain. Thus, 37% of all social phobics feared solely formal speaking. Fears within the three situations domains assertive interaction, informal speaking/interaction and formal speaking/interaction was common as well (32%). But only 2% of all social phobics had fears in all situational domains.

3.4. Empirical evidence for subtypes based on the number of feared social situations

Table 5 presents the associations between the number of feared social situations and sociodemographic, comorbidity, need for psychotherapy, impairment, and psychological and social variables. A higher number of social fears was significantly associated with more functional impairment ($r = .30, P = .001$), more comorbid psychiatric disorders ($OR = 1.22, P = .034$), higher subjective need for psychotherapy ($OR = 1.70, P = .023$), seeking psychotherapeutic help ($OR = 1.21, P = .002$), more dysfunctional attitudes fear ($r = .32, P = .000$), less social support ($r = -.33, P = .000$) and poorer mental health ($r = -.32, P = .000$).

Table 5

Associations between sociodemographic factors, comorbidity, psychotherapy, and psychological and social factors, and the number of social fears

| Variable | Number of social fears | | |
|----------------------------------|------------------------|-------------|-------------|
| | OR | <i>r</i> | <i>P</i> |
| Sociodemographic factors | | | |
| Partner/spouse | .88 | | .162 |
| Socioeconomic status | .66 | | .125 |
| Education | 1.05 | | .830 |
| Employment | 1.11 | | .607 |
| Comorbidities | | | |
| Other baseline disorders | 1.22 | | .034 |
| Other lifetime disorders | 1.16 | | .155 |
| Psychotherapy | | | |
| Subjective need for treatment | 1.70 | | .023 |
| Seeking psychotherapeutic help | 1.21 | | .002 |
| Impairment | | | |
| Functional impairment | | .30 | .001 |
| Burden | | .12 | .159 |
| Psychological and social factors | | | |
| Psychopathology | | .08 | .351 |
| Neuroticism | | .18 | .038 |
| Anxiety sensitivity | | .16 | .080 |
| Dysfunctional attitudes | | .32 | .000 |
| Self-efficacy | | -.18 | .037 |
| Mental health | | -.32 | .000 |
| Social support | | -.33 | .000 |
| Life satisfaction | | -.22 | .011 |

Note: OR: Odds ratio. Significant results are denoted by bold typeface. Psychological and social factors were corrected for alpha inflation ($P < .006$).

Table 6
Sociodemographic factors, comorbidity and psychotherapy in two subtype models of social phobia

| Variable | Number of social fears subtype model | | | χ^2 | <i>P</i> | Type of social fear subtype model | | χ^2 | <i>P</i> |
|-------------------------------------|---|--|---|----------|----------|--|---|-------------|-------------|
| | One social fear (<i>N</i> = 53) (%) | Two to four social fears (<i>N</i> = 56) (%) | More than four social fears (<i>N</i> = 21) (%) | | | Formal speaking fear (<i>N</i> = 47) (%) | Other social fear (<i>N</i> = 83) (%) | | |
| Sociodemographic factors | | | | | | | | | |
| Partner/spouse | 74 | 70 | 52 | 3.20 | .202 | 70 | 68 | .11 | .746 |
| Socioeconomic status | | | | | | | | | |
| Low | 30 | 30 | 43 | 5.33 | .255 | 23 | 37 | 4.50 | .106 |
| Middle | 55 | 63 | 57 | | | 62 | 57 | | |
| High | 15 | 7 | 0 | | | 15 | 6 | | |
| Education | | | | | | | | | |
| No certificate | 6 | 2 | 10 | 4.97 | .547 | 4 | 5 | .07 | .995 |
| Secondary modern | 4 | 0 | 5 | | | 2 | 2 | | |
| Comprehensive and techn. college | 28 | 29 | 29 | | | 28 | 29 | | |
| A-levels | 62 | 70 | 57 | | | 66 | 64 | | |
| Employment | | | | | | | | | |
| Not employed | 60 | 59 | 71 | 2.40 | .664 | 53 | 66 | 2.19 | .335 |
| Part time | 15 | 16 | 19 | | | 19 | 15 | | |
| Full time | 25 | 25 | 10 | | | 28 | 19 | | |
| Comorbidity | | | | | | | | | |
| Other baseline disorders | 32 | 52 | 57 | 5.87 | .053 | 28 | 54 | 8.57 | .003 |
| Other lifetime disorders | 62 | 68 | 76 | 1.36 | .507 | 53 | 75 | 6.27 | .012 |
| Psychotherapy | | | | | | | | | |
| Subjective need for treatment | | | | | | | | | |
| No problem | 25 | 11 | 14 | 6.85 | .144 | 28 | 11 | 6.14 | .046 |
| No need for treatment | 51 | 45 | 43 | | | 42 | 49 | | |
| Need for treatment | 25 | 45 | 43 | | | 30 | 40 | | |
| Seeking psychotherapeutic help | | | | | | | | | |
| Yes | 11 | 7 | 19 | 2.28 | .320 | 11 | 11 | .00 | .97 |

Note: Significant results are denoted by bold typeface. Psychological and social factors were corrected for alpha inflation ($P < .006$).

Table 7
Impairment, and psychological and social factors in two subtype models

| Variable | Number of social fears subtype model | | | <i>F</i> | <i>P</i> | Type of social fear subtype model | | <i>t</i> | <i>P</i> |
|---|---|---|--|-------------|-------------|---|--|--------------|-------------|
| | One social fear (<i>N</i> = 53) <i>M</i> (S.D.) | Two to four social fears (<i>N</i> = 56) <i>M</i> (S.D.) | More than four social fears (<i>N</i> = 21) <i>M</i> (S.D.) | | | Formal speaking fear (<i>N</i> = 47) <i>M</i> (S.D.) | Other social fear (<i>N</i> = 83) <i>M</i> (S.D.) | | |
| Impairment | | | | | | | | | |
| Functional impairment | 3.17 (1.60) ^a | 3.80 (1.62) ^{ab} | 4.33 (1.62) ^b | 4.50 | .013 | 3.23 (1.71) | 3.86 (1.59) | −2.09 | .039 |
| Burden | 4.30 (1.30) | 4.34 (1.48) | 4.76 (1.30) | .91 | .405 | 4.55 (1.21) | 4.30 (1.46) | 1.00 | .318 |
| Psychological and social factors | | | | | | | | | |
| Psychopathology | .53 (.40) | .65 (.55) | .70 (.42) | 1.41 | .248 | .59 (.50) | .62 (.46) | −.38 | .703 |
| Neuroticism | 32.64 (7.28) | 34.00 (8.86) | 37.33 (7.08) | 2.60 | .078 | 32.87 (7.65) | 34.61 (8.29) | −1.18 | .239 |
| Anxiety sensitivity | 14.36 (6.01) | 14.95 (8.96) | 18.90 (8.68) | 2.67 | .073 | 15.04 (7.88) | 15.52 (8.00) | −.33 | .741 |
| Dysfunctional attitudes | 125.79 (29.20) ^a | 134.93 (27.44) ^{ab} | 151.05 (29.37) ^b | 5.99 | .003 | 123.62 (28.19) | 139.68 (28.91) | −3.05 | .003 |
| Self-efficacy | 25.32 (5.54) | 25.29 (4.61) | 23.43 (6.42) | 1.10 | .34 | 25.51 (5.56) | 24.71 (5.19) | .82 | .412 |
| Mental health | 42.72 (7.42) ^a | 40.54 (7.79) ^a | 35.91 (8.31) ^b | 5.86 | .004 | 42.55 (8.00) | 39.61 (7.87) | 2.03 | .044 |
| Social support | 4.24 (.56) ^a | 4.04 (.73) ^a | 3.54 (.80) ^b | 8.18 | .000 | 4.17 (.67) | 3.96 (.73) | 1.64 | .104 |
| Life satisfaction | 3.50 (.52) ^a | 3.31 (.50) ^{ab} | 3.16 (.52) ^b | 3.65 | .029 | 3.47 (.47) | 3.30 (.54) | 1.81 | .073 |

Note: Significant results are denoted by bold typeface. Psychological and social factors were corrected for alpha inflation ($P < .006$). (a and b) Variables sharing superscripts are not significantly different at $P > .05$ (post hoc Tukey).

As the continuous distributions of the number of clinically relevant fears showed that the definition of discrete subtypes of social phobia on the basis of this variable was arbitrary, we further investigated if we could find evidence for subdivisions of the number of clinically relevant fears on the basis of qualitative differences. We investigated differences within several models with different subdivisions of the number of fears (1 versus >1 social fear; 1–3 versus >3 social fears; 1 versus 2 versus >2 social fears; 1–4 versus >4 social fears) and present the results of the best-fitting model (the model that revealed significant differences between the subtypes): a model with three subtypes—one social fear ($N = 53$; 40.8%), two to four social fears ($N = 56$; 43.1%), and more than four social fears ($N = 21$; 16.2%). Tables 6 and 7 present the qualitative differences of these three subtypes. Significant group differences among the three subtypes were found for impairment, $F(2, 129) = 4.497$, $P = .013$, dysfunctional attitudes, $F(2, 129) = 5.990$, $P = .003$, social support, $F(2, 129) = 8.181$, $P = .000$, and mental health, $F(2, 129) = 5.863$, $p = .004$. Post hoc Tukey tests revealed that the subtype with more than four feared social situations had more impairment and more dysfunctional attitudes than those with one feared social situation, and had less social support and poorer mental health lower, and more comorbid psychiatric disorders than both other subtypes. No differences were found between the subtypes with one social fear and with two to four social fears.

3.5. Empirical evidence for subtypes based on the type of feared social situation

Because more than half of the participants had fears within more than one situational domain and 10 different combinations of feared situational domains were present in social phobics (see Table 4), it seems suspect to subtype social phobics purely on the basis of situational domain involvement. Based on the situational domain involvement, we selected a subtype model with “solely formal speaking fear” (37%) versus “other social fears” (63%) in which the latter group was allowed to fear formal speaking situations as well. Tables 6 and 7 present the qualitative difference between the formal speaking subtype and the other social fears subtype. Those with other social fears were significantly more impaired, $t(128) = -2.086$, $P = .039$, and more often had comorbid psychiatric disorders ($\chi^2 = 8.565$, $P = .003$) and lifetime psychiatric diagnoses ($\chi^2 = 6.271$, $P = .012$). The percentage of women who subjectively needed psychotherapy was higher in those with other social fears than in those with solely formal speaking fears. Those with other social fears also had significantly more dysfunctional attitudes, $t(128) = -3.052$, $P = .003$, than those with solely formal speaking fears.

4. Discussion

In the present community study we found empirical evidence for a model with a continuum of the severity of social phobia. The number of feared social situations was distributed continuously without a clear-cut for delineation of subtypes. A higher number of clinically feared social situations associated significantly with more impairment, more comorbidity, a higher subjective need for psychotherapy, seeking psychotherapeutic help in the last 12 months, more dysfunctional attitudes, poorer mental health and less social support. These results are consistent with the findings of Stein et al. (2000), who found that impairment attributed to social phobia increased linearly as the number of social fears increased, with no clear evidence of a threshold.

Although we clearly found that the heterogeneity in social phobia represents a continuum of severity of social phobia, it might for clinical reasons be useful to distinguish subtypes with operationalized criteria. Therefore, the present study investigated subtype models of social

phobia as well. We found only little support for a subtype model based on the number of feared social situations and for a subtype model with solely formal speaking fears versus other social fears.

In a subtype model that was similar to the model of Heimberg et al. (1993) with three subtypes (one, two to four, and more than four clinically relevant fears) we found that social phobics with more than four social fears (on a scale of 13) were significantly more functionally impaired and had more dysfunctional attitudes than those with one fear and those with two to four fears. They also had poorer mental health and less social support than those with one social fear. Thus this model is especially adequate for the distinction of social phobia with more than four social fears, but it is limited in distinguishing between one social fear and two to four social.

We found no support for a model purely based on situational domains. Despite our findings that feared social situations form situational domains such as Holt et al. (1992) proposed, namely, assertive interaction, informal speaking, formal speaking, and observational social fears, we found that participants can not be grouped on the basis of these situational domains. More than half of the participants reported fears in more than one situational domain, which makes subtyping purely on the basis of situational domain involvement impossible.

Further, we investigated a subtype model of social phobia similar to the subtype model of Kessler et al. (1998), comparing persons with solely formal speaking fear with persons with other social fears. Those with other social fears had more comorbidity, higher subjective need for psychotherapy, more functional impairment and more dysfunctional attitudes than those with solely formal speaking fear.

Thus, based on our results, subtypes in social phobia have no extra value above a continuum of the number of social fears. The qualitative associations were stronger and more complete in the model with a continuum of severity social phobia than the qualitative differences in the two subtype models were. Only for clinical considerations, such as operationalized criteria of a severer type of social phobia that has special clinical implications might be useful. However, the present results do not directly address whether subtyping on the basis of number or on the type of feared social situation is superior.

There are several limitations of the present study. The sample consisted of young women only. It remains to be seen if the same number and pattern of feared situations exist within men and women of different ages. So far, there is no evidence that this would be different in men or in women of another age group, so we would not expect other subtypes. Further, these results are based on cross-sectional data. Longitudinal studies are needed to explore the causal mechanism underlying the qualitative differences within subtypes of social phobia. Such research would also provide important information about the course of different subtypes of social phobia.

Despite these limitations, this study contributes important findings to the understanding of subtypes within social phobia and has the following implications. On the basis of our results classification of subtypes in social phobia is arbitrary, but it is possible that other variables that we could not include in the present study would reveal adequate and valid subtypes of social phobia. For example Hofmann, Gerlach, Wender, and Roth (1997) found that social skills varied across patients with social phobia. Social skill subtypes and other subtype schemata should be further explored in community and patient samples.

From a clinical point of view, the present results indicate that patients with a high number of social fears are psychologically, socially and functionally more impaired than patients with a low number of social fears. Psychotherapist should provide patients with a severer form of social phobia more sessions that include interventions focusing not only on social phobia symptoms, but on other symptoms such as social support as well.

In sum the present study provides important contributions to the discussion about the existence of subtypes within social phobia. The heterogeneity of social phobia has to be seen as a continuum of severity of social phobia, with a greater number of social fears associated with greater functional, social and psychological disability.

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