

Social phobia and potential childhood risk factors in a community sample

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ABSTRACT

Background. This study examined the relationship between potential childhood risk factors and social phobia in an epidemiological sample. Identifying risk factors such as childhood adversities can often uncover important clues as to the aetiology of a disorder. This information also enables health care providers to predict which individuals are most likely to develop the disorder.

Methods. Data came from the Mental Health Supplement to the Ontario Health Survey of a survey of 8116 Canadian respondents, aged 15–64. Social phobia was diagnosed using the Composite International Diagnostic Interview (CIDI). Childhood risk factors were assessed by a series of standardized questions.

Results. A positive relationship was observed between social phobia and lack of close relationship with an adult, not being first born (in males only), marital conflict in the family of origin, parental history of mental disorder, moving more than three times as a child, juvenile justice and child welfare involvement, running away from home, childhood physical and sexual abuse, failing a grade, requirement of special education before age 9 and dropping out of high school. Many of these variables remained significant after controlling for phobias, major depressive disorder and alcohol abuse. The data also suggest that some childhood risk factors may interact with gender to influence the development of social phobia.

Conclusions. Although an association was detected between social phobia and childhood risk factors, naturalistic prospective studies are needed to clarify the aetiological importance of these and other potential risk factors for the disorder.

INTRODUCTION

Social phobia is a highly prevalent anxiety disorder characterized by excessive fear of situations where an individual is subject to the scrutiny of others (American Psychiatric Association, 1994). The disorder has been shown to affect multiple aspects of an individual's life such as education, employment, family relationships, romantic relationships and social networks (Schneier *et al.* 1994). There is also mounting evidence that it may be a risk factor for other serious disorders such as depression

and alcohol abuse (Schneier *et al.* 1992; Magee *et al.* 1996). Clinical and community studies indicate that the natural course of the disorder is lengthy (Reich *et al.* 1994; Chartier *et al.* 1998). Although evidence-based treatments of social phobia have recently been developed (Heimberg *et al.* 1995; Schneier, 1995) its causal pathways remain poorly understood. Risk factor research may improve our understanding of the development of social phobia.

Risk factor research refers to the study of antecedent conditions and subsequent outcomes, and how they are related (Kazdin *et al.* 1997). Identifying risk factors, such as childhood adversities, can often uncover important clues as to the aetiology of a disorder as well as enabling

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health-care providers to predict which individuals are most likely to develop the disorder. This information is vital in developing intervention and prevention programmes and in reducing possible complications.

Since the mean age of onset of social phobia is in early adolescence, it is especially appropriate to study childhood risk factors. Several clinical and epidemiological studies indicate that childhood experiences play a role in the development of social phobia. Bruch & Heimberg (1994) reported that relative to control subjects, individuals with social phobia more frequently reported the perception that their parents isolated them from others, that their family units were less sociable, that great importance was placed on other's opinion of one's behaviour, that shame was used as a method of control or discipline and finally that their mothers avoided social situations. Parents who are less caring and more overprotective are more commonly reported by individuals with social phobia than controls (Parker, 1979; Masia & Morris, 1998). Other factors perceived by respondents to precipitate the disorder were family and school environment, onset of adolescence, low self-esteem, temperament and poverty (Chartier *et al.* 1998). Marital conflict in the family of origin, history of childhood physical and sexual abuse, traumatic social conditioning, maternal psychiatric disorder, impaired school performance and behavioural problems during adolescence have been associated with social phobia in some studies (Davidson *et al.* 1993; Cummings, 1994; Stemberger *et al.* 1995; Stein *et al.* 1996). Additionally, genetic and family studies suggest that there may be a heritable component to this disorder (Kagan, 1984; Kendler *et al.* 1992; Fyer *et al.* 1993; Rosenbaum *et al.* 1994; Stein *et al.* 1998*a, b*).

Kessler *et al.* (1997), using data from the National Comorbidity Survey, examined several childhood adversities and a number of mental disorders including social phobia. The adversities they considered were loss events such as divorce and parental psychopathology, interpersonal trauma such as rape and assault and other adversities such as natural disasters. These factors were associated with the onset but not the persistence of anxiety disorders, mood disorders, addictive disorders and acting out disorders. Parental marital break-up, sexual

abuse and maternal psychiatric disorders were the strongest predictors. The probability of onset of a disorder increased with the number of adversities. However, according to Kessler, the adversities showed little specificity. One adversity could not be connected with one disorder.

Using data from the NCS, Magee *et al.* (1999), analysed the effects of 12 negative life events and 10 chronic childhood adversities on the onset of social phobia, agoraphobia and specific phobia. They found that sexual assault by a family member and verbal aggression between the parents have significant and unique effects on the onset of social phobia after controlling for a number of co-morbid disorders and other covariates.

Studying a wider array of potential childhood risk factors and utilizing data obtained from population-based studies would improve our understanding of risk factors of social phobia. This study considered data from a large epidemiologic, cross-sectional study conducted in the Canadian province of Ontario. It examined the relationship between childhood risk factors and social phobia. The factors included in the analysis were juvenile justice or child welfare involvement, running away from home, birth order, nature of relationship with parents or significant adult, marital conflict in the family of origin, parental death before age 16, parental history of mental disorder, mobility of family of origin, living in a rural area as a child, socio-economic status of family of origin, childhood physical and sexual abuse, dropping out of high school, failure of a grade in school and requiring special education.

METHOD

Data from the Mental Health Supplement to the Ontario Health Survey were analysed to address the research question. The Ontario Health Survey is a province-wide, cross-sectional population health survey designed and collected by the Ontario Ministry of Health in consultation with Statistics Canada. It was developed to provide information needed for health planning and policy development. The Mental Health Supplement to the Ontario Health Survey was conducted subsequently to study prevalence, severity and risk factors of mental disorders and to gather data on mental

health services. The 8116 respondents, ages 15–64, were interviewed between December 1990 and April 1991. The Ontario Health Survey had a 76.5% response rate. Of those individuals, 88.1% also took part in the Mental Health Supplement, giving a net response rate of 67.4%.

Boyle and colleagues (1996) provide a comprehensive description of the survey. The Mental Health Supplement to the Ontario Health Survey has a multi-stage design using stratification and clustering. The survey was conducted in two stages. First, a probability sample of on average 46 enumeration areas was selected from each Public Health Unit. The probability of being selected was adjusted for each enumeration area; the larger the number of households per enumeration area, the larger the probability of being selected. Secondly, a probability sample of 15 households were selected from the urban enumeration areas and 20 households were selected from the rural enumeration areas.

Cluster sampling of the households was used to decrease costs of data collection. The cluster effect in rural areas was higher because of fewer clusters. To offset this design effect in rural areas, more households were selected in each area. The 15 to 24 years old age group was oversampled to increase statistical reliability of this age group. If one in the household was between 15 and 24 years old, all members in the households had equal chances of being selected. Computer-generated random numbers were used to select the subjects.

Compared with responders, non-responders tended to be male, to live in urban settings, be older, born outside of Canada, to speak a language other than English at home and to have fewer health problems. On important measures related to health status such as: education, income and marital status, there was very little difference between non-responders and responders. Selection bias is unlikely to be a concern. A weighting procedure was used to compensate for non-responders.

The interview schedule used for the Mental Health Supplement was the Composite International Diagnostic Interview (CIDI). The CIDI is considered more sensitive in diagnosing social phobia than the Diagnostic Interview Schedule (DIS) because it covers a broader range of situations (six *versus* three). Kappa estimates for social phobia were remarkably high at 0.97

(Wittchen *et al.* 1991). Some changes were made to the structure and flow of the interview before it was used for the Mental Health Supplement (Boyle *et al.* 1996).

In assessing social phobia, respondents were asked: 'Some people have such an unreasonably strong fear of doing things on this list that they avoid them altogether or feel extremely uncomfortable about doing them. Have you ever had such an unreasonably strong fear of... (a) speaking in public?; (b) having to use the toilet when away from home?; (c) eating or drinking in public?; (d) talking to people because you might have nothing to say or might sound foolish?; (e) writing while someone watches?; (f) talking in front of a small group of people?'. If any of these fears were endorsed, the interviewer would then ask respondents about the persistence of the fear, avoidance of the feared situation and the degree of distress and interference which the fear caused. To minimize recall bias, a 12-month time frame was used for the social phobia questions. The potential childhood risk factors were assessed by a series of standardized questions. The data for the childhood physical and sexual abuse was obtained through a self-administered questionnaire due to their sensitive nature of these questions.

The statistical association between the diagnostic groups (social phobia *v.* without social phobia) and dependent variables was analysed by logistic regression. Since the survey has a multistage design that used stratification and clustering, sampling weights were assigned and the design effect of 2.2 was incorporated into the analysis. SPSS was the computer program used in summarizing and analysing the data.

In an effort to understand better the relationship between the 15 potential childhood risk factors and different types of social phobia, four models were examined. The main focus of this study was to compare subjects with 'current' DSM-III-R social phobia (i.e. those who had symptoms in the 12 months prior to the interview) to subjects with no lifetime history of social phobia regarding rates of these factors. (Subjects with lifetime history of social phobia and not meeting criteria for the disorder in the last 12 months were excluded from the analysis.)

In the second model, we conducted the same analysis as above but we controlled for co-

morbid disorders. The disorders used as covariates were current (12 month) phobias (simple phobia and agoraphobia), major depressive disorder and alcohol abuse. In the third analysis, we compared a subgroup of respondents with more severe current (12-month) social phobia to respondents with no lifetime history of social phobia. The severe social phobia group, defined as respondents with social phobia reporting three or more social fears, could approximate the generalized social phobia subtype described in DSM-III-R. Due to the small number of social situations surveyed, the respondents in this sample could not definitively be classified into generalized and non-generalized subtypes of social phobia.

In the fourth analysis, we compared two mutually exclusive subgroups of social phobia; speaking-only social phobia and complex social phobia. Kessler *et al.* (1998) used latent class analysis to identify these two subgroups in the National Comorbidity Survey sample. Speaking-only social phobia subgroup consisted to respondents with social phobia who reported being fearful of one or two of the speaking situations; public speaking and talking in front of a small group of people. The complex social phobia subgroup consisted of respondents who endorsed at least one social fear other than a speaking fear. Previous research has found that individuals with social phobia whose social fears are limited to public speaking situations are less severely affected by social phobia than individuals who have social fears beyond public speaking situations (Stein & Chavira, 1998).

RESULTS

The following section will present data on the association between retrospectively reported potential childhood risk factors and current (12-month) diagnosis of social phobia. As summarized in Table 1, the group with current social phobia more frequently reported a number of childhood factors at a statistically significant level. The occurrence of these factors was reported more frequently in individuals with social phobia. The second and third columns of Table 1 show the weighted percentages of those reporting the childhood factor. These percentages have not been controlled for socio-demographic variables as have the odds ratios.

The fourth column displays odds ratios and confidence intervals comparing individuals with current social phobia to individuals with no lifetime history of the disorder. The only factors in the analysis not differing significantly between the groups were birth order, parental death, parental social class, living in a rural area, and failing a grade after third grade. The variable describing parental social class in this sample is of limited value since only two categories, blue *versus* white collar, were used.

Age, gender, and education were used as covariates in order to gain an understanding of the unique influence of the potential childhood risk factor on social phobia. The variable, 'dropping out of high school' was controlled for personal income instead of education. Controlling for these factors, appreciably affected the odds ratio in some instances. In the case of 'dropping out of high school', the weighted but not controlled percentages between respondents with social phobia and no social phobia are relatively close (37% and 30%, respectively). The odds ratio could be expected at about 1.30, however because of the inclusion of sociodemographic covariates, the odds ratio is 2.08.

In order to identify the more primary variables, the childhood variables were all forced into a multivariate model. The factors included in the best model were running away from home, lack of a close relationship with parents or significant adult, parental history of mental disorder, childhood physical abuse, failure of a grade before age 9, and requiring special education before age 9.

As shown in Table 2, some childhood factors occur more frequently in one gender than the other. For example, the relationship between lack of a close relationship with an adult and social phobia is more strongly demonstrated in the male subgroup than the female subgroup. When tested in the model, statistically significant interactions were found between gender and the following factors: birth order, child welfare involvement, sexual abuse and lack of close relationship with an adult. These data indicate that some childhood risk factors may interact with gender to influence the development of social phobia.

It has been suggested that little attempt has been made to determine whether different adversities predispose to different disorders and

Table 1. Potential childhood risk factors and 12-month social phobia (all cases)

Childhood risk factors	Social phobia (N = 566) %	No social phobia (N = 6710) %	Odds ratio
Juvenile justice involvement	6	4	1.82 (1.05–3.18)*
Child-welfare involvement	10	3	2.70 (1.68–4.37)*
Running away from home	17	5	3.40 (2.33–4.96)*
Birth order (not first-born)	75	69	1.31 (0.97–1.78)
Lack of close relationship with an adult	29	15	2.63 (1.96–3.55)*
Marital conflict in family of origin	37	23	1.82 (1.38–2.39)
Parental death	5	8	0.62 (0.34–1.13)
Parental history of mental disorder	52	33	2.13 (1.63–2.78)*
Moving > 3 times (in childhood)	13	9	1.63 (1.10–2.42)*
Living in rural area	43	43	1.12 (0.85–1.47)
Parental social class – blue collar	57	56	1.03 (0.76–1.40)
Severe physical abuse	20	9	2.54 (1.80–3.60)*
Severe sexual abuse	13	7	1.72 (1.18–2.74)*
Dropping out of high school	37	30	2.08 (1.53–2.82)*
Failing a grade before age 9	15	9	1.99 (1.34–2.99)*
Failing a grade after age 9	15	16	1.15 (0.78–1.69)
Did not fail a grade	66	75	1.00
Special education before age 9	4	1	2.97 (1.46–6.03)*
Special education after age 9	7	2	2.71 (1.54–4.77)*
No special education	90	96	1.00

Each odds ratio was calculated by controlling for age, gender, and education level. (The analysis of the variable 'Dropping out of high school' was controlled for age, gender and personal income.)

*Statistically significant at $P < 0.05$.

Table 2. Gender, potential childhood risk factors, and 12-month social phobia

Childhood risk factors	Gender	Social phobia (N = 566) %	No social phobia (N = 6710) %	Odds ratio
Juvenile justice involvement	Male	13	6	2.26 (1.15–4.05)*
	Female	2	6	1.18 (0.36–3.82)
Child welfare involvement	Male	4	3	0.98 (0.32–2.93)
	Female	14	3	4.17 (2.38–7.32)*
Birth order (not first-born)	Male	84	69	2.50 (1.45–4.30)*
	Female	69	71	0.89 (0.69–1.29)
Lack of close relationship with an adult	Male	42	17	4.14 (2.70–6.36)*
	Female	21	14	1.77 (1.15–2.73)*
Severe sexual abuse	Male	2	4	0.69 (0.16–2.93)
	Female	20	11	2.17 (1.38–3.42)*
Special education before age 9	Male	7	2	3.46 (1.48–8.13)*
	Female	2	1	2.03 (0.56–7.35)
Special education after age 9	Male	10	3	3.02 (1.46–6.23)*
	Female	4	2	2.44 (0.98–6.09)
No special education	Male	83	95	1.00
	Female	94	97	1.00

Each odds ratio was calculated by controlling for age, gender and education level.

*Statistically significant at $P < 0.05$.

that studies should adjust for co-morbid disorders (Kessler *et al.* 1997). The implementation and interpretation of such an analysis for all possible co-morbid disorders is beyond the scope of this paper. We did, however, attempt to see if differences on childhood factors remain significant when controlled for phobia (agoraphobia

and simple phobia), major depressive disorder, and alcohol abuse, some of the most common co-morbid disorders in social phobia. To accomplish this, the childhood factors were analysed by including phobias, current (12-month) major depressive disorder, and alcohol abuse as covariates in the logistic regression.

Table 3. Potential childhood risk factors and 12-month social phobia controlling for phobias, major depressive disorder and alcohol abuse

Childhood risk factors	Phobias	Phobias and MDD	Phobias, MDD and AA
Juvenile justice involvement	1.34 (0.66–2.73)	1.25 (0.60–2.63)	1.33 (0.61–2.91)
Child welfare involvement	0.55 (0.30–1.05)	1.43 (0.71–2.89)	1.23 (0.57–2.64)
Running away from home	2.80 (1.77–4.44)*	2.53 (1.52–4.20)*	2.38 (1.38–4.12)*
Lack of close relationship with an adult	2.27 (1.58–3.27)*	2.05 (1.39–3.05)*	2.04 (1.35–3.08)*
Marital conflict in family of origin	1.20 (0.84–1.70)	1.12 (0.76–1.64)	1.12 (0.75–1.67)
Parental history of mental disorder	1.79 (1.30–2.47)*	1.51 (1.06–2.14)*	1.52 (1.06–2.19)*
Moving > 3 times	0.95 (0.55–1.62)	0.92 (0.51–1.65)	0.96 (0.52–1.75)
Severe physical abuse	1.89 (1.21–2.96)*	1.76 (1.08–2.86)*	1.45 (0.85–2.47)
Severe sexual abuse	0.99 (0.55–1.77)	0.71 (0.35–1.41)	0.63 (0.31–1.33)
Dropping out of high school	1.71 (1.18–2.48)*	1.90 (1.28–2.82)*	1.76 (1.16–2.65)*
Failing a grade before age 9	1.77 (1.08–2.92)*	1.82 (1.09–3.04)*	1.88 (1.11–3.17)*
Failing a grade after age 9	1.04 (0.65–1.66)	1.00 (0.61–1.66)	1.06 (0.63–1.77)
Did not fail a grade	1.00	1.00	1.00
Special education before age 9	2.84 (1.24–6.49)*	2.30 (0.92–5.77)*	2.74 (1.06–7.08)*
Special education after age 9	3.11 (1.62–5.96)*	3.19 (1.64–6.20)*	3.44 (1.75–6.75)*
No special education	1.00	1.00	1.00

MDD, Major depressive disorder; AA, alcohol abuse.

Each odds ratio was calculated by controlling for age, gender, and education level. (The analysis of the variable 'Dropping out of high school' was controlled for age, gender, and personal income.)

*Statistically significant at $P < 0.05$.

Table 4. Potential childhood risk factors and 12-month severe social phobia (three or more fears)

Childhood risk factors	Severe social phobia	No social phobia	Odds ratio
	($N = 185$) %	($N = 6710$) %	
Juvenile justice involvement	11	4	3.16 (1.51–6.61)*
Child welfare involvement	15	3	4.28 (2.23–8.23)*
Running away from home	22	5	4.69 (2.70–8.13)*
Birth order (not first born)	77	69	1.46 (0.87–1.39)
Lack of close relationship with an adult	35	15	3.30 (2.07–5.26)*
Marital conflict in family of origin	47	23	2.76 (1.77–4.28)*
Parental death	4	8	0.43 (0.13–1.40)
Parental history of mental disorder	62	33	3.12 (1.97–4.93)*
Moving > 3 times (in childhood)	19	9	2.50 (1.42–4.40)*
Living in rural area	38	43	0.87 (0.55–1.39)
Parental social class – blue collar	53	56	0.83 (0.50–1.40)
Severe physical abuse	28	9	4.08 (2.47–6.74)*
Severe sexual abuse	20	7	3.16 (1.75–6.11)*
Dropping out of high school	42	30	2.49 (1.52–4.07)*
Failing a grade before age 9	25	9	4.25 (2.43–7.42)*
Failing a grade after age 9	16	16	1.50 (0.79–2.84)
Did not fail a grade	59	75	1.00
Special education before age 9	6	1	4.38 (1.67–11.48)*
Special education after age 9	7	2	2.90 (1.21–6.98)*
No special education	87	97	1.00

Each odds ratio was calculated by controlling for age, gender, and education level. (The analysis of the variable 'Dropping out of high school' was controlled for age, gender, and personal income.)

*Statistically significant at $P < 0.05$.

Many of the odds ratios quantifying the relationship between the childhood factors and social phobia in this analysis were considerably attenuated but remained important. As Table 3 shows, some variables were no longer statistically significant.

The childhood factors were compared between the subgroup of individuals with more severe social phobia (three or more fears) and the group having no history of social phobia. These results are summarized in Table 4. The childhood factors meeting statistical significance were the

Table 5. Potential childhood risk factors and subtypes of 12-month social phobia (complex and speaking-only)

Childhood risk factors	Severe social phobia	Speaking social phobia	Odds ratio
	(N = 307) %	(N = 239) %	
Juvenile justice involvement	9	4	2.42 (0.75–7.81)
Child welfare involvement	13	5	2.87 (1.04–7.90)*
Running away from home	20	13	1.70 (0.84–3.45)
Birth order (not first born)	74	76	1.03 (0.56–1.89)
Lack of close relationship with an adult	31	27	1.25 (0.70–2.26)
Marital conflict in family of origin	44	28	2.18 (1.26–3.77)*
Parental death	6	3	1.94 (0.56–6.76)
Parental history of mental disorder	60	42	2.15 (1.27–3.65)*
Moving > 3 times (in childhood)	16	11	1.64 (0.75–3.53)
Living in rural area	42	46	0.77 (0.45–1.33)
Parental social class – blue collar	57	57	1.23 (0.67–2.28)
Severe physical abuse	25	13	2.18 (1.09–4.38)*
Severe sexual abuse	17	7	2.60 (1.05–6.41)*
Dropping out of high school	43	30	2.05 (1.13–3.72)*
Failing a grade before age 9	18	10	2.29 (1.03–5.09)*
Failing a grade after age 9	18	11	2.05 (0.94–4.47)
Did not fail a grade	64	79	1.00
Special education before age 9	6	2	4.02 (0.79–20.46)
Special education after age 9	7	6	1.16 (0.40–3.37)
No special education	87	92	1.00

Each odds ratio was calculated by controlling for age, gender, and education level. (The analysis of the variable 'Dropping out of high school' was controlled for age, gender, and personal income.)

*Statistically significant at $P < 0.05$.

same as those in the first analysis, however, the odds ratios are higher. The subgroup of severe social phobia is more strongly associated with childhood factors than the overall social phobia group. For example, individuals with severe social phobia were 4.69 times more likely to have reported running away from home in their childhood than the no social phobia group. This differs from data from Table 1 where the overall social phobia group was 3.40 times more likely to report this problem than the no social phobia group.

The last analysis compared two groups of individuals with social phobia, those with speaking-only social phobia and those with complex social phobia. Seven of the 16 potential childhood risk factors differed significantly between the groups as shown in Table 5.

DISCUSSION

To the best of our knowledge the Mental Health Supplement to the Ontario Health Survey is the second study using the CIDI in a large representative sample. A major strength is that it has also a very comprehensive array of childhood risk factors. A few limitations should be

noted. Although an improvement over earlier diagnostic instruments, the CIDI's section assessing social phobia covers only six situations. Only one question involves a social interaction and all others focus on performance type situations. This makes it difficult to ascertain a DSM-IV diagnosis for the generalized subtype of social phobia where the individual fears most social situations (Kessler *et al.* 1998). Another limitation is the retrospective nature of the responses, introducing the possibility of recall bias. Previous research suggests that although there is likely to be under-reporting, responses generally accurately reflect the occurrence of adverse childhood risk factors (Brewin *et al.* 1993). To minimize recall bias in remembering symptoms of psychiatric disorders, the time frame of 12 months was selected.

This study demonstrates that a relationship exists between social phobia and a variety of retrospectively reported childhood factors. The results presented are consistent with previous findings (Davidson *et al.* 1993; Cummings, 1994; Stein *et al.* 1996; Kessler *et al.* 1997; Magee, 1999). Many childhood factors remained significant even after being controlled for other phobias, major depressive disorder and alcohol

abuse. However, since the relationship between social phobia, co-morbid disorders and childhood factors is intertwined, it does not clarify why the relationship between social phobia and the childhood factors no longer reaches statistical significance. The most severe cases of social phobia are highly correlated with co-morbid disorders. In this sample, for example, 14% of respondents with social phobia also had a current major depressive disorder, whereas 29% of respondents of the subgroup with severe social phobia had the co-morbid disorder. Individuals with pervasive social fears are conceivably at greater risk for other disorders. By controlling the influence of co-morbid disorders, we may also be effectively removing the influence of the most severe cases of social phobia, leading to a different type of bias.

These results clearly show that it is advisable to consider gender when assessing potential childhood risk factors. Though lack of a close relationship with an adult as a child is associated with social phobia in both genders, males are much more likely to report this factor than females. The finding that being first born and male is negatively associated with social phobia is not consistent with some earlier work done on shyness. For example, Bruch (1989) found that shyness was associated with being a first-born or a single child. First-born boys may be expected to have greater social roles and therefore may be exposed to a greater degree to social situations. Factors such as childhood sexual abuse are much more common among females while males are more likely to report having been involved in the juvenile justice system.

This study suggests that there may be differences in risk factors between subtypes of social phobia. Childhood factors are more frequently reported in the histories of individuals with severe or complex social phobia (as defined in this study) relative to individuals with less extensive symptoms found in speaking-only social phobia.

The findings in this study are generally consistent with prevailing theories on the aetiology of social phobia. Conditioning theories suggest that repeated exposure to social situations and in which one experiences noxious interactions such as being repeatedly berated, criticized or otherwise devalued may play a role in the development of social phobia in some

individuals (Mattick *et al.* 1995). Children subjected to physical and sexual abuse and parental strife are likely to have distressing experiences in social situations. These results are also consistent with parenting theories which suggest that a supportive but not overprotective parenting style is associated with less frequent development of anxiety (Parker, 1979; Masia & Morris, 1998). The relationship between childhood risk factors and social phobia is a complex one. As appears to be the case in adversity studies and psychopathology in general (Dohrenwend, 1998), other factors such as personal predisposition and the wider environment are likely to interact with childhood risk factors in the development of social phobia.

Very little is known about the school functioning of young people with social phobia. Davidson *et al.* (1993) reported more frequent histories of school impairment and behavioural problems among adults with the disorder. Adults with social phobia in the current study reported more failures in the early grades at school, greater requirement for special education and dropping out of high school more frequently. These findings confirm the view that increasing awareness social phobia among teachers and school counsellors may be an important step in early intervention. Intervention programmes designed to reduce anxiety problems that may be implemented in schools have been developed (Dadds *et al.* 1997; Kazdin & Weisz, 1998), making the goal of prevention a realistic one.

It must be emphasized that this study is only a first step in identifying risk factors and establishing a causal relationship. It indicates that there is a correlation between social phobia and a variety of childhood factors after controlling for socio-economic variables. The relationships between social phobia and childhood factors were considered to be in the moderately strong range (odds ratio: between 2 and 3). Odds ratios for severe social phobia and child welfare involvement, running away from home, physical abuse and school difficulties were > 4 , which is considered to be strong.

This study does not indicate the direction of possible causality. For example, it is just as likely that social phobia discouraged a close relationship with a parent as the lack of a close relationship predisposed the individual to social phobia. It is quite possible that the childhood

risk factor and the disorder relate to similar underlying causes, for example, genetic components. Determining a temporal relationship would provide essential information in further clarifying risk factors. Replication of these results and ultimately naturalistic prospective studies will shed more light on the potential risk factors associated with social phobia.

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