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The Relationship between Family Structure and Social Anxiety in Young Adults

An Honor's Thesis Presented to the faculty of Louisiana State University

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The Relationship between Family Structure and Social Anxiety in Young Adults

Social anxiety disorder (SAD), also known as social phobia, is a disorder characterized by fear regarding social interaction or performance that impacts people of all ages. It is a relatively common disorder that is thought to affect between 3% and 13% of the population with the typical age of onset being near the mid-teens (Diagnostic and Statistical Manual of Mental Disorders-IV-text revision; *DSM-IV-TR*; APA, 2000). According to the *DSM-IV-TR*, social phobia is marked by fear that persists even when the individual is not in a position of social evaluation or interaction. The anxiety experienced by the individual may involve fear of embarrassing oneself in the presence of others, fear of being assessed by others, or fear of interacting with others, particularly with unknown persons. For most individuals who have social phobia, it interferes with their daily life by causing them to avoid certain fear-provoking situations and experience persistent anxiety over encountering those situations, which contributes to the debilitating nature of the disorder. Social anxiety is often accompanied by an additional physiological response which can be as serious as a panic attack or as mild as crying (*DSM-IV-TR*). Typically, individuals will avoid anxiety-provoking situations if possible and may experience physiological symptoms at the thought of the feared situation. Physiological symptoms may also occur when the individual is physically exposed to the feared situation. Regardless, severe social anxiety interferes with the daily life of the individual who suffers from it.

Etiology

The etiology of social anxiety has been described using several pathways that may occur independently or in combination. These pathways include three associative (or learned) pathways: classical conditioning, modeling, and transmission of negative information; and a

separate non-associative pathway (Davis, 2009). In the classical conditioning pathway, the individual has a direct experience that leads to the subsequent development of social phobia, such as speaking in front of a group and being very embarrassed when unable to answer difficult questions. In the modeling pathway, the individual witnesses another person exhibit social anxiety in a certain situation or have a bad experience, which prompts the development of social phobia. For example, a person may watch someone speak in front of a group of people and be unable to answer someone's questions. In the third associative pathway, negative transmission of information, the individual indirectly hears about anxiety or fear and consequently develops social phobia. For example, an individual might hear a story about someone who gives a presentation in front of a class and becomes humiliated when he does not know the answer to several questions asked by the teacher. Individuals with social phobia who did not have some specific encounter thought to associate social stimuli with anxiety, whether direct or indirect, are thought to have developed their anxiety via a non-associative pathway. This pathway is linked with a possible biological or genetic component; however, it also contains many individuals who cannot identify the cause of their anxiety given the retrospective nature of this research. Overall, the etiological mechanism remains poorly understood at this time (Davis, Munson, & Tarcza, 2009). Therefore, it is relevant to examine possible triggers for social anxiety that are inadequately understood. One aspect to examine is the context in which these potential etiological causes occur—the family. While various family variables, parenting styles, family structures, and the like are related to the expression of anxiety (Davis, 2009), a particularly interesting and potentially traumatic influence could be divorce. Because the divorcing of parents is a common experience for many children and has been shown to have a variety of

negative consequences, the evaluation of divorce as it relates to social anxiety is a relevant and currently understudied topic.

The Influence of Family Variables on Social Anxiety

Research has uncovered a number of factors that correlate with the development of social anxiety in children and adolescents, many of which pertain to the family setting. Knappe, et al. (2008) found that psychopathology in the parents was correlated with the development of social phobia in the child, particularly when comorbid with three or more disorders. They also found that aspects of parenting such as overprotection, rejection, and lack of emotional warmth were correlated with the development of social phobia in the child. Further, the combination of psychopathology and parental rearing practices was found to be even more highly correlated with the development of social phobia. Researchers investigating the role of the family and the family environment in the development of social phobia have indicated that the family may play a critical role in social phobia in children and adolescents.

However, factors that correlate with social anxiety are not limited to the role of the family and parents. Marteinsdottir, Svensson, Svedberg, Anderberg, and von Knorring (2007) found that life events also play a role in the development of social phobia. They utilized a sample of 30 individuals with clinically diagnosed social phobia and 75 controls without social phobia to evaluate the relationship between life events and social phobia. They found that the number of life events was significant in relation to social phobia. A substantially greater number of negative life events experienced in childhood was reported by the socially phobic group than the control group. Additionally, the socially phobic group reported a significantly greater number of negative life events in the year before the onset of social phobia occurred. Marteinsdottir, et al. (2007) also found that certain life events were correlated with social phobia. Both the socially

phobic women and men were more likely to have reported that they had experienced divorce before the onset of the social phobia. Moreover, experiencing the illness or death of a loved one was reported more frequently in the socially phobic group.

Similarly, the long-term effects of divorce on children have been described as both positive and negative. Amato, Loomis, and Booth (1995) found that the general well-being of children who experience parental divorce is compromised long-term. Parental conflict that is often associated with divorce has been found to be associated with anxiety about forming and being involved in new relationships (Amato, 2000). According to Riggio (2004), this may be due to the negative outlook these people adopt based on the relationship model of their parents; however, a positive effect of divorce was also found. Riggio (2004) found that children from divorced families were generally more independent and self-reliant into young adulthood, likely due to the parents' increased need for the child to exhibit these qualities following a divorce. Riggio (2004) also found that individuals originating from divorced families reported less relational anxiety in young adulthood than those from intact families, which she attributed to prior experience with the termination of a relationship.

Schick (2002) conducted a study on the emotional and behavioral differences in children from divorced families and intact families using participants between the ages of 9 and 13 years. He examined several emotional and behavioral factors, including anxiety, self-esteem, competence, and severity of behavior problems. Schick (2002) found that the children originating from divorced families exhibited significantly greater levels of social anxiety and unstable performance in school than children from intact families. He also found that the length of time since the divorce did not prove significant in the results. Also, surprisingly, gender was not found to affect the results. Some research indicated that the conflict between the parents

surrounding the divorce rather than simply the divorce itself may be responsible for the negative effects on the child (Camara & Resnick, 1988).

Though research on the relationship between divorce and the development of social anxiety in children is lacking, some research has been done involving the connection in adults. Overbeek, et al. (2006) found that experiencing a divorce is correlated with the development of social anxiety, dysthymia, and alcohol abuse in adults. This research indicated that divorce as a process may be related to social anxiety. However, Overbeek, et al. (2006) attributed the connection they found between social anxiety and divorce to the general discord surrounding the process of divorce rather than the actual divorce itself. This attribution is similar to the suggestions of previously mentioned research (Camara & Resnick, 1988).

Present Study and Rationale

Given that approximately 10 out of 1000 people get married each year and roughly 5 in 1000 get divorced, it is evident that divorce is a commonly experienced event for many individuals (U.S. Census Bureau, 2011). Thus, the effects of divorce are extremely relevant and merit psychological research. Though much research has been conducted on identifying risk factors for developing social phobia, including aspects related to the role of the parents, there is a paucity of research regarding the specific relationship between divorce and the development of social anxiety. Therefore, the purpose of the present study is to evaluate this relationship and examine the extent to which young adults from divorced families have more fear of negative evaluation and fear of social interaction (i.e., two main social anxiety constructs) than their peers from intact families.

Hypotheses

Hypothesis one: Participants originating from divorced families will exhibit significantly greater levels of social anxiety, as indicated by greater fear of negative evaluation, than those originating from intact families.

Hypothesis two: Participants originating from divorced families will exhibit significantly greater levels of social anxiety, as indicated by greater fear of social interactions, than those originating from intact families.

Method

Participants

An a priori power analysis was conducted to determine the number of participants needed to detect significant effects should they exist. Based on the proposed analyses, a power analysis was conducted to determine the number of participants needed to perform a one-way ANOVA. The following criteria were specified: 2 groups (divorced and intact), a large effect size was anticipated, $\alpha = .05$, and power set at .80. The results indicated a total of 52 participants would be needed, with 26 people in the divorced group and 26 in the intact group.

Participants consisted of undergraduate students at Louisiana State University who received course credit in exchange for their participation in the study. The overall age range of participants was 18 to 22 years ($M = 20.19$), with similar means for the divorced ($M = 20.56$) and intact ($M = 19.83$) groups (see Table 1). Because the typical age of onset for social anxiety is sometime in preadolescence or adolescence, participants in the present study should be old enough to evidence social anxiety (Davis et al., 2009). Furthermore, participants were ethnically and racially diverse (6.9% African American, 8.3% Asian, 9.7% other) though predominantly Caucasian (75%), and included both males (12.5%) and females (87.5%). The divorced group of participants varied in aspects relating to the divorce of their parents, including whether the parents remarried and who the participant lived with following the divorce. Remarriage in the

mothers (36.1%) and fathers (41.7%) was similar, but the majority of participants lived with the mother following the divorce (75%) (see Table 1). Prior to conducting the survey, approval of the Institutional Review Board was obtained. Furthermore, the participants were shown a consent form before participating which informed them of the general purposes of the survey and notified them that their participation is voluntary and they could withdraw at any time.

For the current study, two groups were formed: participants of intact families ($n = 36$) and participants of divorced families ($n = 36$). Overall response to the online survey resulted in 155 participants completing all the measures. From that number, 36 of the participants reported that they experienced parental divorce. As a result, from the remaining 119 participants coming from intact families who had complete data, 36 thirty-six participants were randomly selected for comparison.

Measures

Demographic questionnaire. A demographic questionnaire was created for the purposes of this study and included with the other measures in order to obtain necessary background information regarding the participants and their family structure. Requested information on the questionnaire included the participant's age, gender, ethnicity, the family of origin's socioeconomic status, any reported history of mental illness, and questions about the participant's family structure.

Questions regarding the family structure concerned the participant's parents/caregivers, essentially who raised the participant, whether the participant was adopted, whether the parents/caregivers were married, whether or not there was a divorce, and other related questions (See Appendix A).

Social Anxiety

Two different measures were used to examine social anxiety. The measures were intended to be used in conjunction because each measure evaluates a different aspect of fears related to social anxiety.

Social Phobia Scale (SPS; Mattick & Clarke, 1998). The SPS specifically assesses fears related to negative evaluation by others, which is an important yet separate feature of social anxiety. These fears are unrelated to interactions with others and instead are focused on individual actions and the fear of being evaluated or watched closely during these actions. The SPS is a 20-item self-report measure. Items are rated on a 4-point Likert Scale where 0 equals “not at all” and 4 equals “extremely.” This measure is found to have good test-retest reliability and high internal consistency. It also has discriminant validity in distinguishing agoraphobia and social phobia. Further, this measure has good construct validity in relation to other measures of social anxiety (See Appendix B). The clinical cutoff is greater than or equal to a score of 24 (Brown et al., 1997).

Social Interaction Anxiety Scale (SIAS; Mattick & Clarke, 1998). The SIAS assesses anxiety related specifically to social interactions. The items on this measure focus on anxiety concerning individual performance in social situations with others. The SIAS is a 20-item self-report measure in which items are rated on a 4-point Likert scale with 0 meaning “never” and 4 meaning “extremely.” Similar to the SPS, this measure is shown to have high internal consistency and test-retest reliability. The SIAS also has good discriminant validity for distinguishing between groups and high construct validity (See Appendix C). The clinical cutoff is greater than or equal to a score of 34 (Brown, et al. 1997).

Procedure

This survey took place through an online host made available through Louisiana State University's list of psychology experiments. Psychology students at Louisiana State University were recruited to participate in the study in exchange for course credit. Students choosing to participate in the study were directed to an online survey that they completed in one session. The survey began with an informed consent section followed by the demographics questionnaire. The participants then completed online versions of the SPS and the SIAS. The survey commenced with a statement requesting that any participants with questions or concerns should contact the experimenter. Finally, the last page of the survey was a debriefing page containing contact information for university mental health services should any student desire them. Participation in the online survey should have taken less than 30 minutes. Similar online studies used by the Laboratory for Anxiety, Phobia, and Internalizing Disorder Studies (LAPIS) have been successful using this process for consenting, obtaining data, and debriefing. Based on responses to the demographics questionnaire, 2 groups were created: those originating from divorced families and those who were raised in intact families.

Data Analysis

Analyses included both preliminary analyses and primary analyses. Preliminary analyses were performed to examine whether factors including age, gender, and race differed between the divorced and intact groups and also to determine if these variables had an impact on the dependent variables. Two Analyses of Variance (ANOVAs) were conducted as the primary analyses to determine if those young adults from divorced families have more social anxiety (i.e., SPS and SIAS scores) than their peers from intact families. Additional analyses included Pearson correlations to examine the age of participants at the time of the divorce and reported anxiety, as well as multiple regressions to investigate the participants' GPA and reported anxiety.

Results

Preliminary Analysis

Preliminary analyses were undertaken in order to determine if the groups were comparable based on demographic variables. A χ^2 analysis was performed to examine if the groups differed in gender or race and no significant differences were found ($\chi^2 (1, N=72) = 1.14$, n.s.; $\chi^2 (3, N=72) = 6.36$, n.s.). An analysis of variance was performed to examine group differences in age and no significant differences were found between the groups $F (1, 70) = .93$, n.s.

Univariate analyses of variance were performed to examine the effect of gender on SIAS and SPS scores, and neither was found to have a significant effect $F (1, 70) = 2.11$, n.s.; $F (1, 70) = 1.06$, n.s., respectively. Similarly, race also did not have a significant effect on SIAS and SPS scores $F (3, 68) = 2.13$, n.s.; $F (3, 68) = 1.92$, n.s., respectively. Therefore, race and gender were not entered as covariates in primary analyses (see Table 2).

Primary Analysis

Two univariate analyses of variance were performed to examine the effect of parental divorce on SPS and SIAS total scores separately and no significant effects were found in either analysis, $F (1, 70) = .31$, n.s. and $F (1, 70) = .68$, n.s.

Secondary Analyses

Given the lack of an effect of divorce on fear of negative evaluation and fear of social interactions, additional analyses were conducted to explore other possible relationships among the study variables. Pearson correlations were run to investigate the age of participants at the time when the parents divorced and the self-reported anxiety levels according to the SPS and

SIAS. SPS and SIAS total scores were significantly correlated, $r = .824$; however, age at divorce was not related to either measure of social anxiety. Results are presented in Table 3.

Multiple regressions were then run to examine the scores on both the SPS and SIAS in relation to GPA. A series of four Bonferroni-corrected multiple regressions were run, including two for both the intact and divorced groups. For the intact group, GPA significantly predicted neither SPS, $F(4, 31) = 1.68$, n.s., nor SIAS scores, $F(4, 31) = 1.33$, n.s. For the divorced group, GPA significantly predicted SPS scores, $F(3, 32) = 6.01$, $p < .0125$; $R^2 = .36$. Examination of the results revealed that the coefficient for those with a GPA between 2.5 and 2.9 was significant ($\beta = .580$, $p = .001$). However, GPA was not found to predict SIAS scores in the divorced group, $F(3, 32) = 2.27$, n.s.

Discussion

The results of the current study were not found to be significant, which indicates that within the sample, participants originating from divorced families were not shown to exhibit greater levels of social anxiety, specifically fear of negative evaluation and fear of social interaction. Because these particular variables had not previously been examined in relation to parental divorce, the results of the current study are neither consistent nor inconsistent with previous research in a direct sense. However, related previous research on the associations of divorce indicated that the divorcing of parents does have some negative consequences on the child, including a compromise in general well-being (Amato, Loomis, & Booth, 1995) and unstable performance and social anxiety in school in pre-adolescents (Schick, 2002). Furthermore, previous research on the influence of family variables on social anxiety indicated that other variables relating to the family, aside from divorce, are connected to the development of social anxiety. These variables directly pertain to the parents, such as parental

psychopathology and aspects of parenting (Knappe, et al. 2008), providing evidence that the behaviors of the parents in general and towards the child are correlated with social phobia in the child. It is possible that other aspects relating to the parental role may have an impact on the child's mental health, though no clear link between parental divorce and social anxiety has been found. Although divorce was not found to correlate with social anxiety, both divorce and social anxiety are linked to many related aspects of parental behavior. While divorce itself may not have an effect on social anxiety, the severity of the events caused by the divorce may be more directly correlated with social anxiety in the child.

The secondary multiple regressions conducted did, however, indicate a relationship between GPA and SPS scores in the divorced group. This is potentially a significant finding that should be explored further, but given that the SIAS score was not correlated, conclusive evidence cannot be drawn before a replication of this research. However, the regression results indicated that the nature of the relationship between GPA and SPS scores was positive. It is possible that, given the SPS measures fear of negative evaluation, this positive correlation is explainable because an individual with a higher GPA and a higher rating on the SPS scale might be motivated to earn higher grades to avoid the possibility of being negatively evaluated.

Given that the overwhelming majority of the sample was female and that females in general are more prone to social anxiety (Wittchen, Stein, & Kessler, 1999), it is even more remarkable that the results were insignificant. Because of the high number of females in the sample, any differences between the divorced and intact groups should have been easily found; however, based on examination of the clinical cutoffs both the intact and divorced groups had approximately equal numbers of individuals who likely had social phobia. As a result, the gender dynamic might provide further support for the strength of the findings in this study, but

the clinical cutoffs suggest the effects of social anxiety may have been equally distributed between the two groups leading to the lack of differences.

Another interesting component of the results is that the overall divorce rate for the nation was not reflected in the makeup of the sample. Approximately 25% of the total sample originated from a divorced family, which is lower than the overall approximate divorce rate of 50% (U.S. Census Bureau, 2011). It is possible that a selection bias contributed to the low portion of participants from divorced families, in which individuals from divorced families may have selected themselves out of participation in a study on divorce and anxiety. This would result in the sample having a higher proportion of participants from divorced families who may have been less anxious, impaired, or at least different than other individuals from divorced families.

Study limitations and future research

Certain limitations to the study were unavoidable. Due to its design, the sample was limited to college-aged students in southern Louisiana, which does not necessarily offer an accurate representation of the general population. The type of individual who is able to attend college is most likely a well-adjusted, intelligent, and emotionally stable person who can adequately handle the demands of attending classes and live somewhat independently. It can be assumed that an individual who is struggling emotionally or otherwise would probably not attend college to begin with or would probably drop out. Therefore, this assumption eliminates the inclusion of a true variety of participants that are actually representative of the general population. It is likely that the sample was prone to have a higher than average number of well-adjusted individuals. Even so, a higher rate of students than expected exceeded the clinical cutoffs on the SPS and SIAS. As a result, a strength of these findings is that roughly a quarter of

the sample in each group met at least one of the clinical cutoffs on the measures. This may indicate that in this “higher functioning” group of individuals with social anxiety symptoms, there may be no significant impact from divorce (i.e., social anxiety symptoms may be associated with other risk factors besides divorce in college students; see Table 1).

An additional limitation could be the mean age of the sample. Participants could have been too old and possibly too far past their parents’ divorce for the effects to still exist. The age at which the participants from divorced families’ parents divorced was relatively young ($M = 9.81$) in comparison to their current age ($M = 20.56$), which could also account for the lack of participants reporting effects associated with social anxiety. It is possible that the approximate average of 10 years since the divorcing of parents provided an adequate amount of time for the participants to essentially move on and recover from the negative effects of the divorce. Shick (2002) found greater levels of social anxiety in children originating from divorced families between the ages of 9 and 13 years, so it is possible that there may be an initial increase in social anxiety that does not persist to adulthood. Though Shick (2002) did not find that the length of time since the divorce was significant, his study only included pre-adolescent participants. As a result, a very tentative conclusion may be that for this higher functioning group time may serve as a resiliency factor, allowing an opportunity for social anxiety symptoms to dissipate (though this is speculative). Another possibility is that parental divorce is more difficult for a younger child than for an older one, at least as it relates to social anxiety. Given the average age at which the participants’ parents divorced ($M = 9.81$), it is likely too far after the event to find any effects. However, this conclusion also assumes that while divorce may have initial negative effects, these consequences would not be serious enough to persist and manifest as social anxiety in young adulthood.

Future research should examine these possibilities to provide further detail on the relation between age at parental divorce and the severity of its effects. At least in the present study, a relationship between age at time of divorce and social anxiety symptoms was not found; however, this study was subject to the retrospective report of participants and an actual prospective study following children from their childhoods to adulthood would be needed to effectively answer these questions. As well, the relationship between social anxiety and the variety of negative events that can be caused by divorce should also be investigated. The experience of a divorce can vary widely between families, with some children receiving more attention and support through the process than their peers in a similar situation. Therefore, it would be relevant and interesting to quantify the individual potential attributes of a divorce. Utilizing a sample of younger participants could provide more relevant insight, as the participants would, theoretically, not have had ample time to recover from the divorce. Furthermore, resiliency may also be examined in relation to the long-term consequences of parental divorce for a child. The potential characteristics of divorce range widely from mild and positive to severe and negative, so it is possible that these events could be responsible for social anxiety.

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Table 1

Descriptive Statistics of Sample

	<u>Divorced</u>		<u>Intact</u>	
	<i>N</i> (%)	<i>M</i> (<i>SD</i>)	<i>N</i> (%)	<i>M</i> (<i>SD</i>)
Female	30 (83.3%)	-	33 (91.7%)	-
Age	-	20.56 (4.19)	-	19.83 (1.65)
Caucasian	26 (72.2%)	-	28 (77.8%)	-
GPA	-	-	-	-
<1.9	0 (0%)	-	1 (2.8%)	-
2.0-2.49	3 (8.3%)	-	1 (2.8%)	-
2.5-2.9	8 (22.2%)	-	9 (25%)	-
3.0-3.49	12 (33.3%)	-	18 (50%)	-
3.5-4.0	13 (36.1%)	-	7 (19.4%)	-
Mother remarry	13 (36.1%)	-	-	-
Father remarry	15 (41.7%)	-	-	-
Lived with mother	27 (75%)	-	-	-
Has a diagnosis	4 (11.1%)	-	-	-
Met clinical cutoff on SPS	9 (25%)	-	11 (31%)	-
Met clinical cutoff on SIAS	7 (19%)	-	8 (22%)	-

Table 2

Scores By Group

	SPS	SIAS
Gender		
Male	20.33 (12.29)	29.89 (12.79)
Female	15.78 (12.46)	22.95 (13.49)
Ethnicity		
Caucasian	17.72 (13.23)	25.19 (14.37)
African American	4.40 (3.21)	9.60 (5.98)
Asian	16.83 (11.20)	23.67 (8.76)
Other	13.86 (5.79)	23.57 (8.10)
Family Structure		
Divorced	15.53 (14.19)	22.50 (15.76)
Intact	17.17 (10.56)	25.14 (10.90)

Note: Mean score is listed with standard deviation in parentheses.

*Table 3**Correlations between SPS, SIAS, and age at divorce (n = 36)*

	SPS	SIAS	Age at divorce
SPS	1		
SIAS	.824*	1	
Age at divorce	-.147	.001	1

*Note: * $p < .01$.*

Appendix A

Demographics Questionnaire

Demographics

Age: _____

Gender: M F

Race: Caucasian African American Asian Other _____

GPA: 1.9 or less 2.0-2.49 2.5-2.9 3.0-3.49 3.5-4.0

In the following questions, please describe your family of origin.

1. Were you raised by both of your biological parents? Y N

2. If yes, were your biological parents married? Y N

3. Were you adopted? Y N

If yes, please indicate: a.) at what age you were adopted, and b.) whether you were adopted by a family member or another party.

4. Did your parents/guardians divorce? Y N

If yes...

How old were you when they divorced? _____

Did your father remarry? Y N

Did your mother remarry? Y N

Who did you live with after the divorce?

Other details or remarks regarding divorce/remarriage?

5. Please list siblings (if any), their age, and common parents. Do not include names (e.g., *brother, age 12, same mother and father*):

6. Please List any family history of mental illness that has been diagnosed by a doctor or mental health professional:

7. Household Income: _____

In the following questions, please provide information regarding yourself.

1. Please list any current psychiatric diagnoses you have received from a doctor or mental health professional:

2. Please list any current medications you take:

Appendix B

Social Phobia Scale

SPS

For each question please circle a number to indicate the degree to which you feel the statement is characteristic

or true of you. The rating scale is as follows:

0= Not at all characteristic or true of me

1= Slightly characteristic or true of me

2= Moderately characteristic or true of me

3= Very characteristic or true of me

4= Extremely characteristic or true of me

	NOT AT ALL	SLIGHTLY	MODERATELY	VERY	EXTREMELY
1. I become anxious if I have to write in front of other people.	0	1	2	3	4
2. I become self-conscious when using public toilets.	0	1	2	3	4
3. I can suddenly become aware of my own voice and others listening to me.	0	1	2	3	4
4. I get nervous that people are staring at me as I walk down the street.	0	1	2	3	4
5. I fear I may blush when I am with others.	0	1	2	3	4
6. I feel self-conscious if I have to enter a room where others are already seated.	0	1	2	3	4
7. I worry about shaking or trembling when I'm watched by other people.	0	1	2	3	4
8. I would get tense if I had to sit facing other people on a bus or a train.	0	1	2	3	4
9. I get panicky that others might see me faint or be sick or ill.	0	1	2	3	4
10. I would find it difficult to drink something if in a group of people.	0	1	2	3	4
11. It would make me feel self-conscious to eat in front of a stranger at a restaurant.	0	1	2	3	4
12. I am worried people will think my behavior odd.	0	1	2	3	4
13. I would get tense if I had to carry a tray across a crowded cafeteria.	0	1	2	3	4
14. I worry I'll lose control of myself in front of other people.	0	1	2	3	4
15. I worry I might do something to attract the attention of other people.	0	1	2	3	4
16. When in an elevator, I am tense if people look at me.	0	1	2	3	4
17. I can feel conspicuous standing in a line.	0	1	2	3	4
18. I can get tense when I speak in front of other people.	0	1	2	3	4
19. I worry my head will shake or nod in front of others.	0	1	2	3	4
20. I feel awkward and tense if I know people are watching me.	0	1	2	3	4

Appendix C

Social Interaction Anxiety Scale
SIAS

For each question please circle a number to indicate the degree to which you feel the statement is characteristic

or true of you. The rating scale is as follows:

- 0= Not at all characteristic or true of me
 1= Slightly characteristic or true of me
 2= Moderately characteristic or true of me
 3= Very characteristic or true of me
 4= Extremely characteristic or true of me

	NEVER	SLIGHTLY	MODERATELY	VERY	EXTREMELY
1. I get nervous if I have to speak with someone in authority (teacher, boss, etc.).	0	1	2	3	4
2. I have difficulty making eye-contact with others.	0	1	2	3	4
3. I become tense if I have to talk about myself or my feelings.	0	1	2	3	4
4. I find difficulty mixing comfortably with the people I work with.	0	1	2	3	4
5. I find it easy to make friends of my own age.	0	1	2	3	4
6. I tense-up if I meet an acquaintance on the street.	0	1	2	3	4
7. When mixing socially, I am uncomfortable.	0	1	2	3	4
8. I feel tense if I am alone with just one person.	0	1	2	3	4
9. I am at ease meeting people at parties, etc.	0	1	2	3	4
10. I have difficulty talking with other people.	0	1	2	3	4
11. I find it easy to think of things to talk about.	0	1	2	3	4
12. I worry about expressing myself in case I appear awkward.	0	1	2	3	4
13. I find it difficult to disagree with another's point of view.	0	1	2	3	4
14. I have difficulty talking to an attractive person of the opposite sex.	0	1	2	3	4
15. I find myself worrying that I won't know what to say in social situations.	0	1	2	3	4
16. I am nervous mixing with people I don't know well.	0	1	2	3	4
17. I feel I'll say something embarrassing when talking.	0	1	2	3	4
18. When mixing in a group, I find myself worrying I will be ignored.	0	1	2	3	4
19. I am tense mixing in a group.	0	1	2	3	4
20. I am unsure whether to greet someone I know only slightly.	0	1	2	3	4