Social Anxiety and Depression Symptoms in Swedish Adolescents – Demographic Risk Markers and Problem Outcomes[1]

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Abstract

This study examined the role of demographic factors as risk markers of social anxiety and depression symptom levels. We also examined how different combinations of social anxiety and depression symptom levels were related to psychological and behavioral problems. Self-reported longitudinal data from Swedish adolescents (n = 1477) was used. The sample was divided into four groups of social anxiety and depression symptom levels. Being a girl was the highest risk marker for all symptom level groups. Girls were 7.2 times more likely than boys to be high in both social anxiety and depression symptoms. Other risk markers to be high in both social anxiety and depression symptoms were: being older, having Swedish parents and having lower socioeconomic status. Being high in depression symptoms had a positive relationship with self-harm, drinking and school problems. Social anxiety and depression prevention programs should especially target girls. Depression prevention programs should decrease problem behavior.

Keywords. Social anxiety, depression, prevention, risk factors, adolescents, problem behavior.

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Symptom av social ångest och depression hos svenska ungdomar – en analys av riskfaktorer och relaterat problembeteende

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Social anxiety disorder and major depression are highly prevalent psychological disorders (Ohayon & Schatzberg, 2009) in both adolescents and adults. The disorders have an early onset (Chavira & Stein, 2005) and may trigger various developmental challenges to children and adolescents (Pine, Cohen, Gurley, Brook & Ma, 1998). Previous research on social anxiety and depression has mainly focused on disorder risk factors or correlations between symptoms and risk factors. Few studies have examined social anxiety and depression symptom levels at the same time in normative samples. No study has done this in Sweden, targeting Swedish adolescents. Therefore, this study aimed at developing a greater understanding about social anxiety and depression symptom risk markers and problem behavior outcomes in Swedish adolescents.

The main goal in prevention research is to prevent or intercept various problem behaviors from happening. To prevent problem behaviors from happening, one must have an understanding about *why* or *where* it happens. Since controlled experiment is difficult to conduct in this area, researchers usually look at risk factors that correlate with, or predict, problem behavior. Thus, the main purpose of this study is to take a closer look at groups with different levels of social anxiety and depression symptoms as risk factors to problem behavior. The problem behaviors we focused on were self-harm, drinking, anticipation of failure and school problems.

There are different ways to approach and classify social anxiety and depression. Petersen et. al. (1993) suggests three main approaches in understanding depression: depression as a mood, depression as a symptom, and depression as a clinical disorder. Most studies about adolescent social anxiety and depression have focused on clinical cases of social

anxiety and depression, and the comorbidity among these two psychological phenomenon. Nevertheless, we have limited understanding of the coexistence of social anxiety and depressive *symptoms* in normative samples, and the similarities and differences in their predictors and consequences. This study examined if there was any differences in demographic risk markers of social anxiety and depression symptoms. Finally, we investigated the consequences of social anxiety and depression symptoms to see how different symptom level groups were related with problem behavior outcomes.

Social Anxiety and Depression Among Adolescents

In DSM-IV (American Psychiatric Association, 1994) social anxiety disorder is defined as a marked and persistent fear of social situations, causing limitation in daily life activities and functioning. From an evolutionary perspective, social anxiety has always been a part of our behavior because being cautious with people has survival value (Marks & Nesse, 1994). As we grow older, most of us learn how to process information regarding our social environment and make judgments about safe and dangerous social situations. Nevertheless, some people may be unable to develop these skills and feel insecure in various social settings regardless of the cues which may indicate safe social environments (Nesse, 1998). These feelings of insecurity may develop a handicapping form of social anxiety which is called social anxiety disorder in clinical terminology. Ample evidence suggests that experiencing social anxiety can limit the quality of life and severely reduce daily life functioning (Stein & Kean, 2000; Fehm, Beesdo, Jacobi & Fiedler, 2008). For example, persons with social anxiety rate themselves as less functioning than others. They also feel impaired in doing their main activity, such as working or going to school (Stein & Kean, 2000).

The onset of social anxiety disorder occur around age 11 in 50 percent of the cases and before age 20 in 80 percent of the cases (Chavira & Stein, 2005). The prevalence of social

anxiety disorder among Swedish adolescents is around five percent. Daniel Pine and colleagues (1998) concluded that adolescents with an anxiety disorder are two to three times at higher risk of having an anxiety disorder as adults. In addition to this, social anxiety disorder is considered to be one of the most persistent anxiety disorders.

Depression is another psychological problem which may influence healthy adjustment and functioning of adolescents (Rushton, Forcier & Schectman, 2002). Just as social anxiety, temporary depressive symptoms and depressive mood is common to most adolescents, while persistent symptoms and mood can be classified as clinical depression. According to DSM-IV (American Psychiatric Association, 1994) clinical depression is defined as a loss of interest of daily activities for at least a two week period, impairing daily functioning severely. The general onset of depression occurs slightly later than social anxiety, with peaks around age thirteen to sixteen (Costello, Mustillo, Erkanli, Keeler & Angold, 2003). The 1-year prevalence of major depression disorder among Swedish adolescents aged 16 to 17 was 5.6 percent in 1999 (Olsson & Von Knorring, 1999).

Risk Markers for Social Anxiety and Depression Symptoms

Some adolescents are more vulnerable to display social anxiety and depression symptoms than others depending on their individual characteristics and social-demographic background. Girls consistently report higher levels of social anxiety than boys. A study on Swedish adolescents aged 12 to 14 years old (Green-Landell, Tillfors, Furmark, Bohlin, Andersson & Svedin, 2009) reported a point-prevalence social anxiety disorder rate of 6.8 % in girls and 1.8 % in boys. Regarding depression, girls are more at risk than boys. Girls are twice as likely to develop major depression disorder (Cicchetti & Toth, 1998), and it seems like the difference emerges around the 14-year age mark, persisting into adulthood (Petersen et. al., 1993).

Social and economic status is often related with higher psychological problems in a limited population. A study in Brazil (Vorcaro, Rocha, Uchoa & Lima-Costa, 2004) indicates that low socioeconomic status is related with social anxiety. There is research indicating that adolescents with divorced parents experience more distress and have higher potential in developing problem behavior (Storksen, Roysamb, Holmen & Tambs, 2006). Previous research about immigration status and culture as risk marker to social anxiety and depression among adolescents is very limited and inconclusive.

Social Anxiety and Depression Problem Behavior Outcomes

An unwanted behavior is usually considered a problem. In this study we consider self-harm, alcohol use, anticipation of failure and school problems as behavioral and psychological problems. If we want to prevent or treat problems, it can be a good idea to investigate the relationship between social anxiety, depression and problem behavior outcomes.

There is some evidence that social anxiety is related to problem behavior outcomes. Research suggest there is a positive relationship between anxiety and self-harm (Oconnor, Rasmussen, Hawton, 2009), but no study has yet examined the relationship between social anxiety and self-harm in school-children. It is unclear if social anxiety is related to more or less alcohol use in school children. One theory suggests that people with social anxiety drink more in order to relieve the anxiety level or regulate positive and negative emotions (Cooper, Frone, Russell & Mudar, 1995). Another theory suggests that people with social anxiety drink less because they isolate themselves more and get involved in less alcohol group activities. Social anxiety should have a positive relationship with anticipation of failure because people with social anxiety suffer from intense negative thoughts and catastrophic scenarios.

However, no studies have yet demonstrated such a relationship. Finally, there are no studies about the relationship between social anxiety and school problems.

The relationship between depression and problem behavior is well established. Depressed adolescents are at higher risk of harming themselves and drinking more alcohol. Anticipation of failure seems to be a mediator on developing depressive symptoms, if peers have depressive symptoms (van Zalk, Kerr, Branje, Stattin & Meeus, 2010). Depression has also been linked to school problems, like decreased academic performance (Haines, Norris & Kashy, 1996).

The Current Study

Even though there have been extensive research about social anxiety and depression risk markers and problem behavior outcomes, limited studies have examined social anxiety and depression together. There are also limited prospective studies focusing on symptoms in normative samples. This study has two specific research questions. First, to what extent age, gender, family socioeconomic status, parent marital status and immigration status are related to various combinations of social anxiety and depression symptom levels? Second, how are different combinations of social anxiety and depression symptom levels related to youths' psychological and behavioral outcomes prospectively?

Based on indications from previous research on social anxiety disorder and major depression disorder, we expect girls, adolescents with divorced parents and adolescents from families with lower socioeconomic status to be at higher risk of having high social anxiety and depression symptoms. Adolescents with high levels of social anxiety symptoms should be at higher risk of developing self-harm behavior, anticipation of failure and school problems. However, because of two opposing theories, it is unclear if high social anxiety is a risk or

protective factor to drinking. Adolescents with high levels of depression symptoms should be at higher risk to develop all problem behaviors.

Method

Participants

Self-reported data (n = 1477) was collected from seven Swedish elementary schools. The schools were located in a mid-sized Swedish city with a slightly lower unemployment and income level than the Swedish national average. Participants were surveyed in four consecutive years. Data from the first two waves (T1 and T2) were included in the current analysis.

Mean age of the adolescents at the start of the study was 14, and 51.8 % were boys and 48.2 % were girls. Twenty-seven percent of the sample had an immigrant mother or father outside Scandinavia and was thus defined as having “immigrant status”. Thirty-seven percent of the adolescents had divorced or separated parents. Family socioeconomic status were determined with the question “Do your family have more or less money compared to other families in your neighborhood?”. Answer could range from “a lot less” to “a lot more”.

Table 1

Mean age and distribution of gender, parent marital status and immigrant status.

	Student sample distribution (n = 1477)
Mean Age	14.2 years old
Gender	51.4 % boys
Parents Marital Status	37.0 % divorced
Immigrant Status	27.1 % immigrants

Measurements

Social anxiety. The SPSQ-C measures fear of social situations in children (Gren-Landell et. al., 2009). The scale is a modified version of SPSQ, Social Phobia Screening Questionnaire, which measures social anxiety in adults. Originally, the scale had eight items, but in this set seven items were used: “speaking in front of the class”, “raising my hand up during class”, “making a phone call to someone I do not know very well”, “going to a party”, “initiating conversation with someone I do not know very well”, “eating with others during lunch” and “looking in somebody’s eyes during a conversation”. The respondent could select one out of three answers to each item: “no fear”, “some fear” or “a lot of fear”. The minimum total average score would be “1”, representing no fear on all items. The maximum total score would be “3”, representing a lot of fear in all social situations. Reliability test with Cronbach´s alpha resulted in .74.

Depression. The Center for Epidemoilogic Studies Depression Scale (CES-D) was developed for both adult and children (Weissman, Orvaschel, & Padian, 1980). The scale contains sixteen items which measure depression symptoms in the last week. The items begins with the statement “During the past week…” and continues with another statement like “…I was sad”. The respondent could select one out four answers: “not at all”, “very seldom”, “now and then” or “often”. Reliability test with Cronbach´s alpha resulted in .91.

Self-harm. The scale includes nine questions about various self-harming behaviors and actions. All questions included two criteria: that the behavior led to some kind of wound, like bleeding or burn wound, and that it was done on purpose. The respondent could select one out of seven answers, representing a number of times committing the behavior or act, from “zero” to “more than five” times. The current nine-item inventory is a revised version of the original

DSHI (Gratz, 2001), which has been adapted to adolescents (Lundh, Karim & Quilisch, 2007). Reliability test with Cronbach´s alpha resulted in .88.

Alcohol use. To estimate adolescent alcohol use, the question "have you had so much beer, liquor or wine that you got drunk, during the last year?" was used. The respondent could select one out of the following five answers: "no, it has not happened", "once", "two or three times", "four to ten times" or "more than ten times".

Anticipation of failure. The Strategy and Attribution Questionnaire (Nurmi, Salmela-Aro & Haavisto, 1995) includes ten subscales of which anticipation of failure is one. The scale includes six statements about the expectations of failure on difficult tasks, for example "I easily become insecure when facing new tasks". The respondent could choose one out of four answers: "don't agree at all", "don't particularly agree", "agree pretty well" or "agree completely". Reliability test with Cronbach´s alpha resulted in .72.

School problems. To estimate the level of school problems, fourteen statements of various problems were used in the questionnaire. Two examples of statements are "this semester I have been tired of school" and "this semester I have had problems with teachers". The respondent could select one out of four possible answers: "don't agree at all", "don't particularly agree", "agree pretty well" or "agree completely". Reliability test with Cronbach´s alpha resulted in .88.

Procedure

The data collection was approved by the regional ethic boards. Parents were informed about the study and had the option to withdraw their child from the participation, which one percent of the parents did. The students were also informed about the confidentiality of the study, and that they could withdraw at any time. There is no information about how many declined or failed to complete the questionnaire.

Statistical Analysis

Pearson correlations were used to analyze the relationship between variables, while t-tests were used to analyze group differences. We divided the sample into four different groups by mean as low and high on social anxiety and depression symptoms: low on both social anxiety and depression symptoms, low on social anxiety symptoms but high on depression symptoms, high on social anxiety symptoms but low on depression symptoms, and finally high on both social anxiety and depression symptoms. Multi-nominal logistic regression was used to examine demographic and family predictors of different symptom groups. Low on both social anxiety and depression symptoms was used as the reference group. ANOVA was used to analyze differences in problem behavior outcomes between symptom level groups.

Results

Correlations

The correlations between the study variables were in the expected direction (see Table 3). Age showed a low relationship with depression T1 ($r = .08$, $p < .001$), indicating that adolescents have slightly more depression symptoms as they get older. Gender demonstrated a moderate positive relationship with social anxiety T1 ($r = .26$, $p < .001$) and depression T1 ($r = .36$, $p < .001$), indicating that girls experience more social anxiety and depression symptoms than boys. Family socioeconomic status had a small negative relationship with social anxiety T1 ($r = -.16$, $p < .001$) and depression T1 ($r = -.11$, $p < .001$), indicating that lower socioeconomic status is related with higher social anxiety and depression.

Social anxiety T1 demonstrated a low positive relationship ($r = .18$, $p < .001$) with self-harm and a moderate positive relationship ($r = .27$, $p < .001$) with anticipation of failure, However, there was a negative relationship ($r = -.11$, $p < .001$) between social anxiety T1 and alcohol use. Depression T1 showed positive moderate to strong relationships with all problem

behavior outcomes: drinking (r = .20, p < .001), self-harm (r = .40, p < .001), anticipation of failure (r = .30, p < .001) and school problems (r = .52, p < .001).

Social Anxiety and Depression Symptom Groupings

The sample was divided into four groups by using mean split method. First, social anxiety and depression was each divided into groups with low and high symptom levels. Mean split value was 1.40 for social anxiety and 1.74 for depression. Next, these two symptom level groups were combined according to table 2. This resulted in four different groups: low on both social anxiety and depression symptoms, low on social anxiety symptoms but high on depression symptoms, high on social anxiety symptoms but low on depression symptoms, and finally high on both social anxiety and depression symptoms.

Table 2

Group sizes in social anxiety and depression symptom levels.

	Low depression	High depression
Low social anxiety	520 (36 %)	240 (16.6 %)
High social anxiety	329 (22.8 %)	357 (24.7 %)

Demographic Risk Markers

A multi-nominal regression analysis (see Table 4) showed that older adolescents were 1.23 times higher at risk to having high symptom levels of both social anxiety and depression than younger adolescents (Wald = 6.93, p < .01). They were also 1.30 times higher at risk to having high depression symptom levels (Wald = 9.05, p < .01).

Table 3

Pearson correlations of age, gender, family socioeconomic status, immigration status, social anxiety symptoms, depression symptoms, self-harm behavior, alcohol use, anticipation of failure and school problems.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Age	-														
2. Gender[1]	-.02	-													
3. Family SES	-.04	-.11***	-												
4. Family Marital Status[2]	-.03	-.01	-.04	-											
5. Immigration Status[3]	-.17***	-.02	.06*	.18***	-										
6. Social Anxiety T1	-.01	.26***	-.16***	.00	.07**	-									
7. Depression T1	.08***	.36***	-.11***	.09***	.08**	.39***	-								
8. Self-Harm T1	.00	.11***	-.12***	.07**	.06*	.18***	.40***	-							
9. Self-Harm T2	.07*	.02	-.04	.03	.04	.09**	.30***	.44***	-						
10. Drinking T1	.24***	.00	.07**	.15***	.12***	-.11***	.20***	.20***	.19***	-					
11. Drinking T2	.19***	.02	.07*	.12***	.15***	-.09**	.19***	.18***	.26***	.62***	-				
12. Anticipation of Failure T1	-.04	.07**	-.07*	.07**	.06*	.27***	.30***	.15***	.11***	.03	.02	-			
13. Anticipation of Failure T2	.00	.16***	-.14***	.04	.03	.29***	.28***	.09**	.12***	-.05	-.01	.29***	-		
14. School Problems T1	.17***	.11***	-.08**	.15***	.16***	.17***	.52***	.31***	.30***	.38***	.36***	.25***	.18***	-	
15. School Problems T2	.08**	.20***	-.04	.13***	.16***	.11***	.43***	.21***	.31***	.24***	.36***	.14***	.23***	.58***	-
Mean	14.21	.49	3.11	.37	.73	1.39	1.67	.25	.36	1.50	1.55	2.22	2.22	1.79	1.83
Std. Deviation	1.02	.50	.80	.48	.44	.34	.59	.68	.86	1.06	1.12	.41	.44	.57	.67

Notes: T1 = First wave of data, T2 = Second wave of data.

[1] Girls = 1, boys = 0 [2] Divorced parents = 1, intact families = 0 [3] Immigrant = 0, Swedish = 1

* $p < .05$, ** $p < .01$, *** $p < .001$

Adolescent girls were 7.28 times at higher risk than boys of having high symptom levels of both social anxiety and depression (Wald = 144.20, $p < .001$). They were also 3.72 times at higher risk of having high depression symptom levels (Wald = 56.04, $p < .001$), and 2.38 times at higher risk of having high social anxiety levels (Wald = 30.92, $p < .001$)

Adolescents with Swedish parents were 1.63 times higher at risk than adolescents with immigrant parents of having high symptom levels of both social anxiety and depression (Wald = 6.73, $p < .01$). They also showed a 1.55 time higher risk at having high social anxiety symptoms (Wald = 5.76, $p < .05$). Adolescents from a family with lower socioeconomic status were at 1.41 times higher at risk than adolescents from families with higher socioeconomic status of having high symptom levels of both social anxiety and depression (Wald = 12.12, $p < .001$).

In summary, as expected, being a girl was the highest risk marker to all symptom level group combinations. Age was a risk marker to “high on both”, as well as “high on depression”. Having Swedish parents was a risk marker to “high on both”, as well as to “high on social anxiety”. Lower family socioeconomic status was a risk marker only to “high on both”. Adolescents with divorced parents were not at higher risk to any symptom level group combinations, which was unexpected.

Table 4

Age, gender, immigrant status, family socioeconomic status and parent marital status as risk markers on social anxiety and depression symptom level groups, using a multi-nominal logistic regression analysis.

Social anxiety and depression symptom levels[1]	Wald	Sig.	Exp(B)
High on *both*			
Age	6.93	.008	1.23
Gender	144.20	.000	7.28
Immigrant Status	6.73	.010	1.63
Family SES	12.12	.000	.71
Parents marital status	.60	.441	1.13
High on *only depression*			
Age	9.05	.003	1.30
Gender	56.04	.000	3.72
Immigrant Status	.80	.371	1.20
Family SES	2.01	.156	1.17
Parents marital status	2.97	.085	1.36
High on *only social anxiety*			
Age	.47	.492	.95
Gender	30.92	.000	2.38
Immigrant Status	5.76	.016	1.55
Family SES	3.24	.072	.84
Parents marital status	1.72	.189	.81

[1.] The reference category is: low on both

Problem Behavior Outcomes

An ANOVA (see Table 5) showed significant group differences on self-harm behaviors measured at both T1 (F (3, 1429) = 36.02, p <.001) and T2 (F (3, 1052) = 18.23, p <.001). The youths who were high on social anxiety and depression symptoms showed higher levels of self-harm behaviors than the youths who displayed high levels of social anxiety symptoms or the combination of low social anxiety and depression symptoms. This indicates that adolescents who are high on both social anxiety and depression symptoms harm themselves more than adolescents who are high only social anxiety symptoms. However, they do not harm themselves more than those who are high only on depression symptoms.

The group differences in adolescent alcohol use showed a different pattern. There were significant group differences on alcohol use measured at both T1 (F (3, 1421) = 26.37, p <.001) and T2 (F (3, 1036) = 24.39, p <.001). Youths with high symptom levels on both social anxiety and depression showed higher amount of alcohol use than youths with high levels of only social anxiety symptoms, but less amount of alcohol use than youths with high levels of only depression symptoms. However, the youths with high symptom levels on both social anxiety and depression did not use more alcohol than youths with low symptom levels on both social anxiety and depression. This pattern supports the theory that adolescents with social anxiety use less alcohol, while adolescents with depression use more alcohol.

Group differences in anticipation of failure showed yet another pattern. There were significant group differences at both T1 (F (3, 1426) = 39.74, p <.001) and T2 (F (3, 1044) = 42.02, p <.001). Adolescents with high symptom levels on both social anxiety and depression experienced higher anticipation of failure than the other groups. Those high on either social anxiety or depression symptom levels showed higher anticipation of failure than those with low symptom levels on both social anxiety and depression. In conclusion, it seems like social

anxiety and depression symptoms are equally related with failure of anticipation, while adolescents with high symptom levels in both social anxiety and depression experience higher anticipation of failure.

School problem behavior showed the same pattern as self-harm behavior, with significant group differences at both T1 (F (3, 1395) = 95.33, p <.001) and T2 (F (3, 1020) = 52.57, p <.001). Adolescents with high symptom levels on both social anxiety and depression had more school problems than the adolescents who displayed high levels of only social anxiety symptoms or the combination of both low social anxiety and depression symptoms. Youths with high depression symptoms had more school problems than youths with high social anxiety symptoms.

In conclusion, adolescents with high symptom levels of depression experience more behavioral and psychological problems than adolescents with high symptom levels of anxiety. The exclusion is anticipation of failure. Having high symptom levels on both social anxiety and depression only seem to increase the problem of anticipation of failure, while it decrease the problem of alcohol use.

Table 5

Group differences, between different combinations of social anxiety and depression symptom levels, in self-harm, drinking, anticipation of failure and school problems, using ANOVA.

	Groupings based on symptom levels*					
	1	2	3	4	*F*(df)	*p*
Time 1 outcomes						
Self-harm	.09[a]	.12[a]	.39[b]	.50[b]	36.02 (3, 1429)	< .001
Alcohol use	1.46[b]	1.20[a]	1.98[c]	1.52[b]	26.37 (3, 1421)	< .001
Failure anticipation	2.10[a]	2.21[b]	2.23[b]	2.40[c]	39.74 (3, 1426)	<.001
School problems	1.59[a]	1.57[a]	2.05[b]	2.08[b]	95.33 (3, 1395)	<.001

Time 2 Outcomes						
Self-harm	.21[a]	.16[a]	.61[b]	.58[b]	18.23 (3, 1052)	< .001
Alcohol use	1.58[b]	1.31[a]	2.16[c]	1.67[b]	24.39 (3, 1036)	< .001
Failure anticipation	2.08[a]	2.20[b]	2.17[b]	2.45[c]	42.02 (3, 1044)	<.001
School problems	1.61[a]	1.67[a]	2.20[b]	2.10[b]	52.57 (3, 1020)	<.001

Notes: * 1 = low on both social anxiety and depression; 2 = low on depression, high on social anxiety; 3 = low on social anxiety, high on depression; 4 = high on both social anxiety and depression. Groups marked with [a] is significantly lower than [b] and [c] ,while [b] is significantly lower than [c].

Discussion

The purpose of this study was to identify social anxiety and depression risk markers, as well as examining problem behavior outcomes related to different combinations of social anxiety and depression symptoms. The first research question asked to what extent age, gender, family socioeconomic status, parent marital status and immigration status are related to various combinations of depression and social anxiety symptom levels. Results indicate that being older, being a girl, having Swedish parents and experiencing lower socioeconomic status are risk markers to having high symptom levels of both social anxiety and depression. The second research question asked how different combinations of depression and social anxiety symptom levels are related to youths' psychological outcomes prospectively. Results show that there are differences in problem behavior between the groups with different social anxiety and depression symptom levels.

Risk Markers

As expected, girls are higher at risk to experiencing high symptom levels of both social anxiety and depression. It is a bit surprising that girls are as high as *seven* times more at risk than boys in experiencing high symptom levels of both social anxiety and depression, since previous research on social anxiety (Green-Landell, Tillfors, Furmark, Bohlin, Andersson &

Svedin, 2009) and depression (Cicchetti & Toth, 1998) indicate rates of "only" *two* to *four* times higher at risk. There is an alternative explanation to this. Measuring symptom levels might be more sensitive than disorder point prevalence, thus yielding higher results. However, since predictions on high symptom levels of *only* social anxiety or depression are in the range of two to four times higher, it seems as if the results are reliable.

We were not sure whether immigration status would be a risk marker for social anxiety and depression symptoms. The results indicate that immigration status is actually a protective factor against having high levels of both social anxiety and depression symptoms. Adolescents with Swedish parents are two times higher at risk to experiencing high levels on both social anxiety and depression. Social anxiety seems to be the reason to these differences, since immigration status is not a factor to having higher depression symptom levels. Adolescents with Swedish parents might experience more social anxiety than adolescents with immigrant parents. If this phenomenon is because of cultural differences in mentality or social interaction is not clear. This complex issue should be addressed in future research.

Adolescents from families with lower socioeconomic status are about two times higher at risk of having both high symptom levels of social anxiety and depression, than adolescents from families with higher socioeconomic status. Age was mainly related to high symptom levels of depression, which supports the theory that depression symptoms slightly increase with age in adolescence (Costello, Mustillo, Erkanli, Keeler & Angold, 2003), while social anxiety symptoms start at younger age and is relatively stable through adolescent years.

Previous research indicates that adolescents with divorced parents are somewhat at higher risk on having high levels of social anxiety and depression symptoms (Storksen, Roysamb, Holmen & Tambs, 2006). However, results from this study indicate that there is no significant difference in risk of experiencing higher levels of social anxiety or depression

between adolescents with divorced or intact families. It does not seem as if the stress from a divorce is large enough to cause social anxiety or depression symptoms. Future research could examine if any particular kind of divorces or family constellations or family dynamics increase the risk of experiencing social anxiety or depression.

Problem Behavior

Depressive symptoms are dominant when it comes to self-harm behavior, since depressed adolescents seem to harm themselves more than adolescents with social anxiety., Adolescents high on social anxiety did not harm themselves more than adolescents low on social anxiety, which is inconclusive with previous research findings on the relationship between anxiety and self-harm (Oconnor, Rasmussen, Hawton, 2009). One explanation of the inconclusive results, and the difference between social anxiety and depression symptoms, could be that *anxiety from lower mood* is stronger and more destructive than *anxiety from fears.*

We were not sure whether or not adolescents with high social anxiety symptom levels stay inside and avoid social events and alcohol, or if they still go to social events and drink a lot more alcohol to cope with the social stress. It seems like high levels of social anxiety is a protective factor when it comes to alcohol use, which supports the first theory that adolescents with high social anxiety avoid social situations where alcohol is involved. However, adolescents with high levels of depression symptoms do seem to use alcohol as a mood regulator, just as previous research indicates (Cooper, Frone, Russell & Mudar, 1995). Once again, low mood seem more problematic and severe than high social fear.

Anticipation of failure is a psychological problem which was expected to be related with both social anxiety and depression. This study is the first to confirm this theory, with a moderate correlation between failure anticipation and social anxiety as well as failure

anticipation and depression. Adolescents high in social anxiety and depression anticipate more failure than adolescents low in social anxiety and depression. In addition, adolescents high in *both* social anxiety and depression anticipate even more failure. The relationship between anticipation of failure, social anxiety and depression need to be researched more to see if any special components in mood and anxiety disorders are related to failure anticipation.

Adolescents with social anxiety and depression symptoms should have problems in school. To our surprise, adolescents high on social anxiety did not differ significantly than adolescents low on social anxiety. This means that adolescents with social anxiety can still handle school. What it does not mean, is that they feel good and perform at their best while attending school. Future research could ask the question if different levels on social anxiety is related with school achievement and school problems. When it comes to depression symptoms, adolescents experienced more problems in school if they had high symptom levels of depression. Also, the correlation between depression symptoms and school problem was strong ($r = 0.48$). Depressed mood seem to relate strongly with school problems, which means that problems in school can be an indicator of future mood disorders. Screening for school problems would be very useful in preventing depression.

Strengths and Weaknesses

There are some methodological issues with this study. First, this study used a rough method to group people into high or low levels of symptoms. There might be differences between those who have medium symptom levels and very high symptom levels. We used four groups to make analysis easier. Second, adolescents with social anxiety, depression and school problems might not be in school to answer the survey making the sample less reliable. For example, if adolescents with school problems are home from school and do not make the

survey, their school problems will not be included in the study even though they are in the population. Third, depression and social anxiety are common problems in Sweden, and it is difficult to know how accurate subjective answers are. It can be difficult to separate between temporary mood and real symptoms. Symptom, mood and disorders need to be defined and measured in detail. This study used the easiest definition and measure, subjective experienced symptoms, which can make results temporary and differ across participants.

Methodological issues considered, this study also have strengths. This is the first Swedish study examining social anxiety and depression symptom levels simultaneously as risk factors of current and future psychological and behavioral problems. The use of longitudinal data when examining problem outcomes is also a strength with this study. Small local samples might be biased with environmental or social conditions. This study had a large sample using data from seven schools, making the results more reliable.

Future Research and Implications on Prevention Program Development

While this study gives some hints on risk markers and problem behavior outcomes in Swedish adolescents, other questions arise. Why are Swedish adolescents with immigrant status less prone to social anxiety and depression symptoms? High levels of social anxiety symptoms were only related with anticipation of failure. What other problem behavior believed to be caused by, or related with, social anxiety should we look for in and out of school? Is there a link between having symptom levels in adolescence and developing serious disorders at an adult? How persistent are the symptom levels, and what effective methods are there to prevent the symptoms of doing greater harm in the future?

This study was intended to assist people who research or work practically with preventing depression, anxiety and problem behavior, such as self-harm, alcohol use, anticipation of failure and school problems. We have learned that social anxiety and

depression prevention programs should target girls and adolescents living in families with lower income levels, because they have an increased risk of experiencing social anxiety and depression symptoms. Depression prevention programs should also lower self-harm, alcohol use, anticipation of failure and school problems, because depression symptoms and problem behavior seem to be related.

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