



Relationships between social anxiety, depressive symptoms, and antisocial behaviors: Evidence from a prospective study of adolescent boys

Maria Tillfors^{a,*}, Bassam El-Khoury^b, Murray B. Stein^c, Kari Trost^{a,d}

^a Department of Behavioral, Social and Legal Sciences, Örebro University, SE-701 82 Örebro, Sweden

^b Department of Public Health, Karolinska Institute, Stockholm, Sweden

^c Department of Psychiatry, University of California San Diego, La Jolla, CA, USA

^d Department of Psychology, Stockholm University, Stockholm, Sweden

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ABSTRACT

Little is understood about generalized and non-generalized social anxiety disorder (SAD) and their associations with co-occurring internalizing and externalizing problems in adolescence. In the present study, we investigated adolescent boys with SAD symptoms and considered depressive symptoms as well as antisocial behaviors when looking for patterns during two developmental time periods; junior high and high school. Participants in the analyses were part of a longitudinal study. No patterns were found linking antisocial problems and non-generalized SAD in either junior high or high school. Furthermore, it was uncommon for youths in the non-generalized SAD subgroup to develop comorbidity over time. The generalized SAD subgroup of boys, however, was likely to develop comorbidity either with depressive symptoms only or with depressive symptoms and antisocial tendencies. Our findings suggest that developmental pathways for SAD subgroups may differ.

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Social anxiety disorder (SAD), also known as social phobia, is one of the most prevalent mental disorders. SAD is characterized by intense anxiety and avoidant behavior during performance and/or social interactional situations. Approximately 7–13% of individuals in westernized populations will suffer from social phobia during their lifetime and women are more likely to be affected (Furmark, 2002; Rapee & Spence, 2004). Although most research to date has focused on social phobia in adults, it is clear that SAD symptoms often begin in childhood or adolescence, typically around the age of 13 (Rapee & Spence, 2004). However, considering prevalence and seriousness of this disorder (Fehm, Pelissolo, Furmark, & Wittchen, 2005; Schneier, 2006; Stein & Stein, 2008) it is surprising how little is understood about its characteristics and course early on in its development.

In terms of the general pathology of SAD, there are indications that SAD usually belong to one of two subgroups (i.e., generalized or non-generalized; APA, 2000). In turn, these subgroups are associated with different patterns of co-occurring internalizing problems like depressive symptoms (Chartier, Walker, & Stein, 2003; Wittchen, Stein, & Kessler, 1999), and externalizing problems like antisocial behaviors (Sareen, Stein, Cox, & Hassard, 2004). However, only a few studies have considered prospective information gathered during adolescence. In the present study, we will (a) identify patterns based on two subgroups within SAD with consideration to depressive

symptoms and behavioral problems during two time points during adolescence, and (b) study the developmental pathway of those individuals with pronounced SAD symptoms.

The generalized form of SAD is defined in the DSM system as a fear of “most social situations” (APA, 2000). The literature further refers to another SAD subgroup described varying as “discrete,” “circumscribed,” “limited,” “performance,” or “non-generalized,” although not explicitly defined in the DSM system (Hofmann, Heinrichs, & Moscovitch, 2004). This latter subgroup in most cases seems to include those whose social fears are constrained to one or more performance situations.

In a recent cross-sectional study among youths, Marmorstein (2006) found that generalized SAD among females aged 15–17 was associated with major depression. Among males however, only the performance-focused SAD was found to be associated with dysthymia as well as conduct disorder, an instance of severe externalizing behavior. The differential patterning of symptoms associated within the two SAD subgroups suggest that the two dimensions of internalizing and externalizing problems should be simultaneously considered when evaluating these subgroups and in settings where both time and gender are taken into account.

1. Understanding the link between depressive symptoms and SAD subgroups

Social avoidant behavior is a key aspect of SAD and also one of the known risk factors for depression. It is therefore not surprising

* Corresponding author. Tel.: +46 19 303959; fax: +46 19 303484.

E-mail address: Maria.Tillfors@bsr.oru.se (M. Tillfors).

that prior research has found a link between early behavioral inhibition and later development of SAD and major depression (Hirshfeld-Becker et al., 2007; Neal, Edelmann, & Glachan, 2002). Inhibited children typically react with fearfulness, avoidant behavior, and reticence when confronted with unfamiliar or novel people and places (Kagan, Snidman, & Arcus, 1993). However, previous studies have only found a weak to moderate association between childhood behavioral inhibition and SAD. One reason may be that behavioral inhibition, like SAD, consists of different subgroups, where one subgroup of children reacts with social worry and another with high physiological reactivity. The subgroup typified by social worry may be characterized by stability over time as well as being associated with later development of generalized SAD. This and the finding that an association between social worry and adult depressive symptoms exists suggest that generalized SAD and depression share a common vulnerability factor (Rapee & Spence, 2004). Hence, this could in turn explain the high level of co-occurrence observed between generalized SAD, in comparison with non-generalized SAD, and depression in retrospective studies (Hofmann et al., 2004) and prospective ones (e.g., Beesdo et al., 2007; Wittchen et al., 1999).

2. Understanding the link between antisocial behaviors and SAD subgroups

It has been suggested that high levels of social inhibition, characterizing generalized SAD, may function as a protective mechanism against antisocial behaviors. This could be congruent with the observation that adolescents with generalized SAD may be too socially inhibited to associate with delinquent peers. For instance, Kerr and colleagues (1997) report that behaviorally inhibited boys in late childhood, defined by those who were too shy to make friends, seem to be less delinquent than their counterparts with low levels of behavioral inhibition. Thus, although social inhibition may be a risk factor for developing internalizing problems, it may protect against developing externalizing problems.

Repeatedly, however, studies have found an association of SAD with antisocial behaviors, as for example the earlier mentioned association between non-generalized SAD and conduct disorder observed among youths (Marmorstein, 2006). Sareen and colleagues (2004) found in two large cross-sectional community studies, this time involving adults, an association between generalized SAD and antisocial behavior. Hence, an association between the two SAD subgroups and externalizing problems seems to emerge but within different age groups. This could indicate that the SAD subgroups in relation to externalizing problems connect in different ways as a function of time, i.e., the pattern of co-occurrence changes during the transition to adulthood.

For the last few decades, it has been noted that youths who are violent and persistent over the life course with their problem behaviors start early and tend to lack guilt over time (Moffitt, 1993; Moffitt & Caspi, 2001). Unlike these antisocial individuals, however, SAD individuals seem not to lack the ability to feel empathy or guilt. Because of this presumed retention of empathic ability, it is unlikely that most SAD individuals will display violent problem behaviors.

In the present study, we looked specifically at boys with SAD symptoms and considered problem behaviors as well as depressive symptoms when looking for patterns during two developmental time periods in adolescence: junior high school and high school. We first studied possible patterns of SAD, depressive symptoms and antisocial behaviors separately at these two different time periods in order to understand possible cross-sectional configurations. Second, in order to understand

developmental pathways of SAD in terms of depressive symptoms and antisocial behaviors, we studied individual developmental pathways for boys with pronounced SAD symptoms. In accordance with prior research (Beesdo et al., 2007; Chartier et al., 2003; Wittchen et al., 1999) we expected more co-occurrence of depressive symptoms to be observed among generalized SAD adolescents and we expected this relationship to become stronger over time, in comparison to non-generalized SAD adolescents. Since previous research shows conflicting findings (Marmorstein, 2006; Sareen et al., 2004) when it comes to the association between SAD subgroups and antisocial behaviors, the *a priori* hypotheses for this relationship were less clear. However, we expected that none of the adolescents in either SAD subgroup would engage in violent antisocial behaviors.

3. Analytical approach

Both variable and person-oriented approaches were used in the present study. The variable oriented approach is useful in analyzing and understanding what characteristics co-aggregate in a group of individuals (Block, 1971). For the purpose of the present study, we used the variable oriented approach to look at the characteristics that are most similar in order to find possible underlying SAD factors. The person-oriented approach is useful in finding configurations and patterns of longitudinal trajectories (Bergman, Magnusson, & El-Khoury, 2003; Bergman & Trost, 2006). We used the person-oriented approach to find and understand individual patterns and pathways of social anxiety symptoms and their relationship to depressive symptoms and antisocial behaviors.

4. Method

Participants were part of a prospective longitudinal program of research. Approximately 3000 children and adolescents between the ages of 10 and 18 took part in a 6-year longitudinal survey in an average sized community in mid-Sweden. The present study focuses on boys at two age periods specifically during junior high school and high school. These age periods were chosen specifically since they represented two socially relevant developmental time points.

Research on prevalence, etiology, and treatment of psychological disorders is primarily based on categorical diagnoses and restricted to arbitrary cut-offs based on extreme levels of symptoms (DSM-IV-TR; APA, 2000; Harvey, Watkins, Mansell, & Shafran, 2004) which has limited the comprehensive portrayal of disorders in the literature. In the present study, the dimensional perspective is implemented. By taking the dimensional view, no distinct difference is made between, for example, sub-threshold social anxiety and the diagnostic category SAD except in the frequency and/or severity of experienced symptoms (Kollman, Brown, Liverant, & Hofmann, 2006).

As part of the larger survey, adolescents filled out a depression scale, a social anxiety scale, and questions about problem behaviors. Adolescents' reports were used since it has been suggested that adolescents may provide more accurate information about themselves than teachers or parents (Steinberg, Lamborn, Darling, Mounts, & Dornbusch, 1994; Trost, Biesecker, Stattin, & Kerr, 2007). When adolescents are asked to report norm-breaking behaviors like their own use of tobacco products, their reporting have been found to be highly reliable (Post et al., 2005). Furthermore, it has been reported that adolescents with certain psychological disorders may be able to give a unique and reliable description of their own health (Smith, Pelham, Gnagy, Molina, & Evans, 2000).

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