



# Developmental pathways of social avoidance across adolescence: The role of social anxiety and negative cognition<sup>☆</sup>



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## ABSTRACT

It is argued that the adolescent onset of social anxiety disorder (SAD) may be partly attributable to an increase in avoidance of social situations across this period. The current cohort-sequential study investigated developmental pathways of social avoidance in adolescence and examined the explanatory role of social anxiety and negative cognitive processes. A community sample of youth (9–21 years,  $N = 331$ ) participated in a four-wave study. Trajectory analyses revealed two pathways: an increased avoidance pathway and a low avoidance pathway. The pathways were hardly distinguishable at age 9 and they steadily diverged across adolescence. Logistic regression analyses showed that social anxiety and post-event rumination were significantly related to the increased avoidance pathway; anticipatory processing and self-focused attention were not. The findings suggest that adolescence is a key developmental period for the progression of social avoidance among youth who show relatively high levels of social anxiety and post-event rumination.

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## 1. Introduction

Clinical and community studies of individuals with a DSM-IV (American Psychiatric Association, 1994) diagnosis of social anxiety disorder (SAD) indicate that the disorder typically has its onset in early adolescence (Knappe et al., 2011; Wittchen & Fehm, 2003). In a seminal review of the etiology of SAD, Rapee and Spence (2004) suggested that “the apparent onset of social phobia in early adolescence may perhaps have more to do with the increases in life interference caused by social anxiety [emphasis added] at this developmental stage than with increases in actual levels of social distress” (p. 741). Indeed, social anxiety does not appear to increase across adolescence. Recent studies of the developmental pathways of social anxiety reveal that individual differences in the levels of social anxiety appear in childhood and remain relatively stable across the adolescent period (Broeren, Muris, & Diamantopoulou,

2013; Marmorstein et al., 2010; Miers, Blöte, de Rooij, Bokhorst, & Westenberg, 2013).

If the adolescent onset of SAD cannot be (fully) explained by social anxiety levels per se, might it be explained by an increase in life interference, as proposed by Rapee and Spence (2004)? We suggest that the adolescent onset of SAD may be partly attributable to an increase in the avoidance of feared social situations across this developmental period. Some adolescents with high social anxiety will come to avoid the social situations they are anxious about. Avoidance of social situations could then lead to life interference by limiting adolescents' opportunities for developing and maintaining social relationships and thus building social competence, and by hindering school attendance and academic development. An increase in the avoidance of social situations across adolescence is likely an important factor contributing to life interference and, by extension, to the adolescent onset of SAD.

There is preliminary evidence from cross-sectional studies that the avoidance of social situations increases from late childhood to adolescence. Sumter, Bokhorst, and Westenberg (2009) examined age patterns of self-reported avoidance in a community sample of normally developing adolescents aged between 9 and 17 years. The authors found evidence for an increase in the desire to avoid social situations, whereby adolescents 12 years and older reported a significantly stronger desire to avoid social situations than the group of 9–11 year olds. An age effect for avoidance of social situations

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was also found in a clinical sample of children (aged 7–12 years) and adolescents (aged 13–17 years) with SAD (Rao et al., 2007). That is, a significantly higher percentage of adolescents reported avoidance of social situations as compared to children.

In the current study we examined – longitudinally – the development of avoidance of social situations in a community sample of youth aged between 9 and 21 years. By using a non-clinical sample encompassing a wide range of social anxiety levels, we could measure potential growth in avoidance levels from late childhood to late adolescence. In particular, we investigated whether there is a distinct group of young people who follow a pathway of increasing avoidance of social situations from late childhood to late adolescence.

In addition, we aimed to ascertain *why* some young people might show increased avoidance of social situations. One likely explanation for avoidance is the level of social anxiety. That is, an individual with high social anxiety is perhaps likely to avoid or try to avoid the situations he/she is anxious about. Indeed, moderate to high correlations between social distress and avoidance (.68–.76) have been reported in a non-clinical sample (Sumter et al., 2009). However, anxiety for social situations is not synonymous with avoidance of these situations. An individual with relatively mild anxiety may perceive the anxiety “as a major impediment to their quality of life” and start to avoid social situations, whereas an individual with a higher social anxiety level may not (Rapee & Spence, 2004, p. 739). This suggests that in addition to social anxiety, other factors may play a role in the development of avoidance.

Research on clinical forms of social anxiety can shed light on those factors potentially associated with increased avoidance. The leading cognitive models of SAD (Clark, 2001; Clark & Wells, 1995; Heimberg, Brozovich, & Rapee, 2010; Rapee & Heimberg, 1997) suggest that increased avoidance of social situations is explained, in part, by negative cognitive processes that occur before, during, and after an encounter with a feared social situation. These cognitive processes are, respectively, anticipatory processing, self-focused attention, and post-event rumination.

Anticipatory processing involves thinking about the upcoming situation, recalling past failures, and making predictions of poor performance or rejection (Clark, 2001). It is hypothesized that these negative anticipatory processes will increase anxiety for, and avoidance of, an upcoming social situation. The link between anticipatory processing and subsequent increased state anxiety has been tested and supported in adult samples (see Clark, 2001). However, to the best of our knowledge, the association between anticipatory processing and avoidance has not been tested in adult or youth samples.

Self-focused attention is defined as “the process whereby attention is directed towards internal self-relevant stimuli” (Bögels & Mansell, 2004; p. 840). The stimuli can include behavior, arousal, thoughts, and emotions. The cognitive theories of SAD propose that individuals with SAD show heightened self-focus during a feared social situation (Clark & Wells, 1995; Rapee & Heimberg, 1997). In turn, this increases awareness of one’s potential flaws or errors in behavior and appearance, leading to a negative self-perception. In this way, self-focused attention may increase state anxiety levels and contribute to the avoidance of feared social situations. Whilst there is some support for the effect of heightened self-focused attention on increased state anxiety in adult and youth samples (Bögels & Mansell, 2004; Kley, Tuschen-Caffier, & Heinrichs, 2012), we are not aware of studies testing the relation between self-focused attention and avoidance.

Post-event rumination is described as a post-mortem of a social situation, whereby the individual reviews the situation in detail and focuses on the negative self-perception experienced during the situation (Clark, 2001; Clark & Wells, 1995). In a similar way,

Heimberg et al. (2010) describe how a socially anxious person broods upon the specifics of the situation, including his or her actions and behavior and the reactions of other persons. The content of the rumination becomes more negative over time, and the process is said to strengthen the desire to avoid future social situations (Brozovich & Heimberg, 2011). In a sample of undergraduate students, Rachman, Grüter-Andrew, and Shafran (2000) found a positive correlation between post-event rumination and the self-reported wish to avoid future social interactions.

In summary, we argue that the adolescent onset of SAD may be partly attributable to an increase in the avoidance of feared social situations across this developmental period. However, we do not yet know whether the avoidance of social situations *does* increase for some young people. Furthermore, if there is such an increase in the avoidance of social situations, we do not know to what extent it is explained by the level of social anxiety and by the aforementioned cognitive processes – anticipatory processing, self-focused attention, and post-event rumination. Hence, the present longitudinal study addressed two research questions. First, is it possible to identify a group of young people who show an increase in avoidance of social situations from late childhood to late adolescence? Second, is any such increase in avoidance related to social anxiety level and to negative cognitive processes occurring before, during, and after a social situation?

To address the first research question we employed group-based trajectory modeling (Nagin, 2005) which is used to identify subgroups of individuals within a population that follow a distinct developmental pathway. We expected to find a developmental pathway showing an increase in the avoidance of social situations from late childhood (9 years) to late adolescence (21 years). Given the paucity of studies in this field, we did not formulate a hypothesis regarding the total number of developmental pathways that would be identified. In relation to the second research question, we hypothesized that higher levels of social anxiety would be positively associated with a pathway of increasing avoidance. We also expected that the three negative cognitive processes would be positively related to an increasing avoidance pathway. Due to the lack of direct evidence in the research literature it was not possible to make a prediction about the *relative* contribution of the three cognitive processes. Finally, Moulds, Kandris, Starr, and Wong (2007) showed a positive relationship between avoidance of social situations and depressive symptoms, independent of anxiety. Therefore, we took depressive symptoms into account to rule out the possibility that increased avoidance could be explained by inactivity related to depression.

## 2. Method

### 2.1. Participants

The present study uses data from participants in the Social Anxiety and Normal Development study (SAND; Westenberg et al., 2009). At the start of the SAND study children and adolescents were recruited from one secondary school and two primary schools in an urban area of the Netherlands. This longitudinal study, with a cohort-sequential design, had four assessment waves and data from all four waves are used in the current study. Informed parental consent and participant assent was obtained in writing at each study wave. The SAND study was approved by the Leiden University Medical Ethical Committee.

At the first wave (W1) the total sample comprised 331 participants (170 boys and 161 girls) aged between 9 and 17 years, with a mean age of 13.34 years ( $SD=2.25$ ). Eighty-two (81.6%) percent of participants lived with their biological parents, 5.7% with biological mother only, and 5.1% with biological mother and

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