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Subtyping social anxiety in youth

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ABSTRACT

Few empirical studies have examined subtypes of social anxiety disorder (SAD) in youth, and limited consensus resides on the nature of potential subtypes. Identifying subtypes, based on both fear and avoidance patterns, can help improve assessment and treatment of SAD.

Subtypes of fear and avoidance were examined in a sample comprising 131 youth (age 8–15 years) diagnosed with SAD using the Anxiety Disorders Interview Schedule for children and parents (ADIS-C/P). Exploratory factor analysis of fear responses revealed three factors, defining fear subtypes linked to: (1) performance, (2) observation, and (3) interaction situations, respectively. Exploratory factor analysis of avoidance responses showed these were best represented by one avoidance factor. Few youth qualified exclusively for either of the fear subtypes, thus calling into question the clinical utility of these subtypes. Nevertheless, the findings indicate distinct contributions of fear and avoidance in SAD presentation. This finding might help clinicians target and improve treatment of the disorder.

1. Introduction

Social anxiety disorder (SAD) is a prevalent mental disorder among youth, with lifetime prevalence reaching 9.2% at the age of 18 years (Merikangas et al., 2010). SAD onset is typically in childhood (Wittchen & Fehm, 2003). Although amenable to treatment, outcome seems to be less favorable for SAD than for other anxiety disorders among youth (Crawley, Beidas, Benjamin, Martin, & Kendall, 2008; Hudson et al., 2015; Wergeland et al., 2016), and SAD is associated with chronicity, psychiatric comorbidity, social impairment, and reduced quality of life (Burstein et al., 2011; Wittchen & Fehm, 2003). Symptoms of social anxiety may be observed in a wide range of social situations, and it is assumed that these situations congregate in discrete domains that trigger underlying fear dimensions, denoted by several researchers as SAD subtypes (Cox, Clara, Sareen, & Stein, 2008; Holt, Heimberg, Hope, & Liebowitz, 1992; Hook, Valentiner & Connelly, 2013). As such, these subtypes do not represent groupings of individuals, but represent manifestations of distinct underlying characteristics and processes that again relate to the fears that individuals with SAD experience within certain fear domains. Identifying content-based subtypes of SAD can facilitate the identification of fear domains and underlying processes in youth with SAD. This may be one step towards improving diagnosis and treatment of the disorder (Bögels et al., 2010 Dalrymple & D'Avanzato, 2013).

The most recent edition of Diagnostic and Statistical Manual of Mental Disorders, fifth edition (DSM-5; American Psychiatric Association, 2013) introduced a content-based *performance*-only specifier (herein denoted as a performance-only subtype), describing fear restricted to public speaking and performance situations (Bögels et al., 2010). Within this categorical perspective it is assumed that individuals with predominantly performance fears are in some way categorically distinct from individuals with predominantly other SAD symptoms. A competing continuum perspective on SAD assumes that differences between affected individuals, is a result of the number of feared, and/or avoided social situations (Bögels et al., 2010). Although the continuum perspective has gained increasing support (Aderka, Nickerson & Hofman, 2012; Crome, Baillie, Slade, & Ruscio, 2010; Vriends, Becker, Meyer, Michael, & Margraf, 2007) the categorical vs.

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continuum issue remains debatable (Hook et al., 2013). Furthermore, in the sense that subtypes represent underlying dimensions and processes, there is an increasing recognition of the importance of maladaptive self-deficiency concerns or *core fears* in the development and maintenance of SAD (Moscovitch, 2009 Spence & Rapee, 2016). Such core fears relate to distinct fear situations and contexts in which the patient's perceived deficiencies are at risk of being revealed. These fears are not mutually exclusive or qualitatively distinct, but rather highly correlated and are often present simultaneously (Moscovitch, 2009).

Research on diagnostic subtypes of SAD, including the performance-only subtype in DSM-5, (American Psychiatric Association, 2013; Bögels et al., 2010) has been extensive, yet mainly based on adult samples (Dalrymple & D'Avanzato, 2013). Apart from the performance subtype, two other subtypes have been consistently confirmed across several adult studies, consisting of: (1) fear of social interaction, e.g., talking to strangers, and (2) fear of being observed by others, e.g., eating in public (Bögels et al., 2010; Cox et al., 2008). However, generalization of these findings to youth patients can be problematic, as contextual and developmentally related differences between youth and adults (e.g., living with parents, age related changes in fear profiles and the opportunity for avoidance) are known to influence SAD expression (Rao et al., 2007 Spence & Rapee, 2016; Westenberg, Drewes, Goedhart, Siebelink, & Treffers, 2004). Therefore, it is relevant and clinically important to explore and compare if SAD subtypes identified in adult populations apply to youth populations.

Recently, two studies with youths have independently assessed rates and correlates of the performance-only subtype in a community and a treatment-seeking sample, respectively (Burstein et al., 2011; Kerns et al., 2013). Although with some discrepancies in subtype definition, Burstein et al. (2011) reported that only 0.7% in a community sample of 10,123 youth fulfilled criteria for a performance-only subtype, while Kerns et al. found no cases of the performance-only subtype in their clinical sample of 204 treatment seeking youth. On this basis, both studies called into question the validity and utility of the performance-subtype. These studies relied on clinically derived definitions of the subtype, as opposed to a statistically derived definition. This presupposes theoretical and preconceived conceptions of the meaning and relationships between fears. Thus, the specific fear situations on which Burstein et al. (2011) and Kerns et al. (2013) base their definition of a performance-only subtype differ. This highlights an important caveat not only in regards to the performance-only subtype, but also in regard to other clinically identified subtypes; which specific situations define the subtypes? The DSM-5 does not help in this concern, offering only a general description of the performance-only fears (American Psychiatric Association, 2013 Dalrymple & D'Avanzato, 2013). This leaves the definition of subtypes open to theoretical preference and interpretation. A statistical approach could help identify not only what situations might define subtypes, but, presupposing these subtypes represent underlying characteristics and processes, this approach might also help identify such dimensions.

In the few studies empirically investigating subtypes of SAD among children and youth, findings are inconsistent regarding the number and definition of identified subtypes. Subtypes identified in youth populations include one (i.e. general factor) (Knappe et al., 2011), two (i.e., interaction and performance; Piqueras, Olivares, & López-Pina, 2008), three (i.e., interaction, performance, and physical and cognitive symptoms associated with social anxiety; Cederlund & Öst, 2013), and five subtypes (i.e., assertiveness, public performance, physical/cognitive symptoms, social encounters, and avoidance; Aune, Stiles, & Svarva, 2008). Similar to most studies on subtypes of SAD in adults, the above mentioned studies differ in terms of population characteristics, assessment methods, and statistical methods, thus complicating both comparison and integration of results. Furthermore, the mentioned studies have specific shortcomings that limit the scope and interpretability of the findings. All the studies use moderately sized to very large populations (N = 108 in Cederlund & Öst, 2013; N = 3021 in Knappe et al., 2011), yet with the exception of Cederlund & Öst (2013), these are all non-clinical samples. Furthermore, the use of a restricted measure of feared social situations, e.g., assessing only six social situations (Knappe et al., 2011), limits the number of subtypes identifiable. Assessing a broader scope of social situations captures more heterogeneity among fear situations and provides more statistical support in favor of the factors that might be identifiable (Wang & Wang, 2012). Finally, none of the mentioned studies analyzed both youth and parent data regarding the feared situations.

Fear of social situations and avoidance of social situations are core features of SAD (American Psychiatric Association, 2013 Clark & Wells, 1995; Rapee & Heimberg, 1997). However, in previous studies of SAD subtypes in both adults and youth, fear and avoidance have either been equated, or fear alone has been examined (Aderka et al., 2012; Burstein et al., 2011; Kerns et al., 2013; Vriends et al., 2007). A main reason for using such a study design is that avoidance and fear are often highly correlated and thus are assumed to follow the same subtype structure (Heimberg et al., 1999; Oakman, Van Ameringen, Mancini, & Farvolden, 2003). Rapee and Spence (2004), however, proposed that in youth, avoidance develops independently of social fear, in the sense that the typical onset of SAD in early adolescence is reflected in an increase in avoidance rather than any increase in social fear (Rapee & Spence, 2004). Thus, they suggest that the propensity to avoid distressful situations increases more with age than does the level of fear. This argument was supported by Sumter, Bokhorst, and Westenberg (2009) who examined age-related differences of avoidance and fear in youth across three predetermined fear domains. In the situational domain labeled as formal speaking/interactions, they demonstrated that fear and avoidance follow different paths with increased age, with avoidance demonstrating a steeper increase than fear (Sumter et al., 2009). These related yet independent developmental patterns of fear and avoidance might indicate a need for independent assessment of each of these aspects of SAD, and subsequent treatment plans that address each aspect discretely. No study has examined and compared empirically derived subtypes of SAD based on avoidance and fear separately.

In summary, it is unclear if subtypes identified in youth populations are comparable to subtype findings in adult populations. Furthermore, few studies of youth have used data-driven exploratory classification methods to examine and identify content-based SAD subtypes empirically, using broad, established measures of social fear, and assessing both youth and parents scores. No studies of youth have empirically examined the subtype structure of avoided situations and compared these to the subtype structure of feared situations. Thus, the present study aimed to examine empirically derived SAD subtypes based on social situations that are feared and/or avoided among help-seeking youth. Fear and avoidance of situations were assessed using The Anxiety Disorders Interview Schedule, Child and Parent version (ADIS-C/P; Silverman & Albano, 1996).

2. Methods

2.1. Participants

Participants were drawn from the child part of the Assessment and Treatment—Anxiety in Children and Adults (ATACA) study. The study is a randomized controlled trial (RCT) examining the effectiveness of cognitive behavioral therapy (CBT) for anxiety disorders in youth, compared to waitlist, and studying the comparative effectiveness of individual and group CBT delivered in outpatient clinics (Wergeland et al., 2014). Referred youth aged 8–15 years meeting DSM-IV criteria for SAD, separation anxiety disorder and/or generalized anxiety disorder were included. Youth with pervasive developmental disorder, psychotic disorder, severe conduct disorder, and/or mental retardation were excluded. In total, 182 youth were included. Of these participants,