



The relationship among social phobia, objective and perceived physiological reactivity, and anxiety sensitivity in an adolescent population

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ABSTRACT

Physiological theories may be important in the development and maintenance of social phobia in youth. A limited literature base indicates that youth with social phobia experience increases in objective physiological arousal during social-evaluative situations and are more aware of such increases compared to nonanxious youth. Recent research suggests that youth with social phobia also evidence heightened levels of anxiety sensitivity, which may lead to interpretation of physiological arousal as dangerous or distressing, and, as a result, in avoidance of situations which produce increased physiological arousal. The purpose of the current study was to examine interaction among objective physiological arousal, perceived physiological arousal, and anxiety sensitivity among adolescents diagnosed with social phobia. A sample of community adolescents participated in two anxiety-provoking tasks during which objective physiological arousal was monitored, and after which perceived physiological arousal and anxiety sensitivity were evaluated. Results from this study evidenced no differences between social phobic and nonanxious adolescents with regard to objective physiological arousal during either anxiety-provoking tasks. Adolescents with social phobia, however, were more aware of measured increases in physiological arousal, as well as more afraid of the potential social implications of that arousal compared to nonanxious adolescents. Implications for theory and treatment are discussed.

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Social phobia has been one of the least researched and least recognized disorders in adolescence, despite its high prevalence rate in this population (Kashdan & Herbert, 2001). Social phobia is defined as a “marked and persistent fear of one or more social or performance situations in which the person is exposed to unfamiliar people or to possible scrutiny by others” (DSM-IV; American Psychiatric Association, 1994, p. 416). Research has suggested that the average age of onset for social phobia occurs in early to mid-adolescence (Albano & Detweiler, 2001; Beidel, 1998;

Beidel & Randall, 1994), and prevalence rates in childhood and adolescence average around 1%, with a lifetime prevalence rate of approximately 5–15% (Kashdan & Herbert, 2001; Kendall & Warman, 1996).

Researchers have proposed a number of theories examining factors associated with the development and maintenance of social phobia, but recently there has been a proliferation of physiological theories. Such theories suggest that individuals with social phobia experience heightened physiological arousal when they enter social situations, which they interpret as an indication of danger or anxiety (Gerlach, Murlane, & Rist, 2004). Social phobic individuals report, furthermore, that such an interpretation of physiological arousal leads to increased symptoms

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of anxiety such as a racing heart, or blushing (Mauss, Wilhelm, & Gross, 2003). Physiological arousal, thus, may play an important role in the development of fear in social situations if individuals perceive physiological symptoms in social situations as dangerous. Perceptions about the dangerousness of such physiological arousal, furthermore, may maintain symptoms of social phobia as individuals learn to avoid social situations in order to evade such physiological arousal.

The extent to which individuals with social phobia experience higher levels of physiological arousal in social-evaluative situations compared to nonanxious individuals remains somewhat unclear. Most research regarding the role of physiological reactivity in social phobia has been conducted with adult samples. Some research has found differences in physiological arousal, as measured by heart rate and blood pressure, such that socially anxious and social phobic individuals exhibit higher arousal compared to nonanxious individuals (i.e., Beidel, Turner, & Dancu, 1985; Eckman & Shean, 1997). Other studies, however, have failed to differentiate socially anxious and nonanxious adults with regard to physiological arousal (i.e., Edelman & Baker, 2002; Hofmann, Newman, Ehlers, & Roth, 1995).

There are several possible explanations for apparent inconsistencies in previous research with regard to the relationship between physiological arousal and social phobia. First, many of these investigations have small sample sizes and limited power for statistical analyses. Second, the nature of anxiety-provoking tasks differs across studies. Some investigations used an impromptu speech to evoke anxiety, but others used conversation tasks, digit recall tasks, and tasks of viewing of anxiety-provoking videos, which may have produced differential levels of physiological arousal. Third, baseline and task period measurements were as short as 3 min in some investigations, and as long as 10 min in other investigations, and thus the duration of some tasks may not have been long enough to produce physiological arousal. Lastly, postural changes may have led to inconsistencies in physiological arousal because few investigations reported whether or not participants were seated or standing during measurement periods.

Although there is a large literature on physiological arousal in adults, only three studies have investigated this construct in youth. All three studies found that youth with social anxiety (Matthews, Manuck, & Saab, 1986) or test anxiety (Beidel, 1988, 1991) evidenced higher heart rates compared to nonanxious adolescents during oral speeches and oral reading sessions. Differences with regard to blood pressure, however, were equivocal. Two studies found evidence for higher blood pressure in test-anxious and socially anxious youth (Beidel, 1991; Matthews et al., 1986), although the latter study found elevated systolic blood pressure, but not diastolic blood pressure. One study found no difference in blood pressure between test-anxious children and nonanxious children during anxiety-provoking tasks (Beidel, 1988). Taken together, these investigations suggest that socially anxious youth evidence elevated heart rates compared to nonanxious adolescents in social-evaluative situations, but the evidence with regard to blood pressure is mixed.

Because socially anxious individuals fear that their physiological arousal will be visible to others (McEwan & Devins, 1983), perceived levels of physiological arousal may be more important than objective physiological arousal. As yet, though, no studies have investigated the relationship between perceived and objective physiological arousal in youth with social phobia. Several researchers found evidence for a misperception of physiological arousal among adults with social phobia, such that these individuals report higher physiological arousal compared to nonanxious individuals, although objectively they are not more physiologically aroused (Edelman & Baker, 2002; Mauss, Wilhelm, & Gross, 2004). Mauss et al., in fact, found only low to moderate correlations between objective and perceived physiological arousal during social-evaluative situations. One explanation for this misperception of physiological arousal is that social phobic individuals may exhibit more self-focused attention, and, thus, may be more aware of any increases in physiological arousal than non-socially anxious individuals in anxiety-provoking situations (Gerlach et al., 2004). Such increased awareness may then lead to greater reports of physiological arousal in socially phobic individuals despite the absence of objective differences compared to nonanxious counterparts.

In addition to being more aware of physiological arousal, individuals with social phobia also may perceive physiological arousal as a visible indication of their anxiety and as a potential source of embarrassment, which is related to the construct of anxiety sensitivity. Anxiety sensitivity has been defined as a belief that physical sensations associated with anxiety will lead to catastrophic outcomes, such as dangerous physical symptoms or social embarrassment (Walsh, Stewart, McLaughlin, & Comeau, 2004). Initial support has been garnered for a relationship between anxiety sensitivity and social anxiety symptoms in adults (Barlow, 2002; Muris, Schmidt, Merckelbach, & Schouten, 2001) and in a sample of adolescents, such that socially anxious adolescents exhibited higher levels of anxiety sensitivity compared to nonanxious adolescents (Eley, Stirling, Ehlers, Gregory, & Clark, 2004). More research, however, is needed to elucidate the relationship between anxiety sensitivity and social phobia in youth.

Taken together, physiological theories and previous research suggest there are several factors that likely play a causal role in the development and maintenance of social phobia in youth. First, social phobic youth experience heightened physiological arousal in social-evaluative situations compared to nonanxious youth. Second, extrapolating from the adult literature, due to lack of research with youth, social phobic youth are likely more aware of increases in physiological arousal due to higher levels of self-focused attention. Third, a limited research base indicates that social phobic youth experience heightened levels of anxiety sensitivity, which leads them to interpret physiological arousal as a potential source of social embarrassment, and thus may lead these individuals to avoid social-evaluative situations which produce this increased physiological arousal.

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