

THE ROLE OF LONELINESS IN THE RELATIONSHIP BETWEEN ANXIETY AND DEPRESSION IN CLINICAL AND SCHOOL-BASED YOUTH

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Identifying mechanisms that explain the relationship between anxiety and depression are needed. The Tripartite Model is one model that has been proposed to help explain the association between these two problems, positing a shared component called negative affect. The objective of the present study was to examine the role of loneliness in relation to anxiety and depression. A total of 10,891 school-based youth (Grades 2–12) and 254 clinical children and adolescents receiving residential treatment (Grades 2–12) completed measures of loneliness, anxiety, depression, and negative affect. The relationships among loneliness, anxiety, depression, and negative affect were examined, including whether loneliness was a significant intervening variable. Various mediational tests converged showing that loneliness was a significant mediator in the relationship between anxiety and depression. This effect was found across children (Grades 2–6) and adolescent (Grades 7–12) school-based youth. In the clinical sample, loneliness was found to be a significant mediator between anxiety and depression, even after introducing negative affect based on the Tripartite Model. Results supported loneliness as a significant risk factor in youths' lives that may result from anxiety and place youth at risk for subsequent depression. Implications related to intervention and prevention in school settings are also discussed. © 2015 Wiley Periodicals, Inc

Research has consistently shown that anxiety and depressive disorders are highly prevalent forms of psychopathology in children, and adolescents and are less likely to be identified than are their externalizing counterparts (Albano, Chorpita, & Barlow, 2003; Compas, 1997). Youth anxiety and depressive disorders are frequently associated with a number of negative psychological sequelae, including significant functional impairment (Achenbach, Howell, Quay, & Connors, 1991; Langley, Bergman, McCracken, & Piacentini, 2004), impaired emotional functioning (Hughes, Gullone, & Watson, 2011), and poor outcomes (e.g., Compton, Burns, Egger, & Robertson, 2002), such as an increased risk of the development of substance abuse later in life (e.g., Rao et al., 1999) and lower levels of educational attainment (Roeser, Eccles, & Strobel, 1998). Unfortunately, internalizing disorders frequently go unnoticed in school settings until they have caused significant functional

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impairment, despite being present for a significant period of time. Additionally, school staff are not well trained in identifying internalizing disorders (Rones & Hoagwood, 2000). Even if these disorders are identified early in a child's life, employing the appropriate evidence-based treatment protocol is a difficult task, given systemic barriers in school settings (e.g., funding for purchasing treatment protocols, availability of diagnostic assessments, etc.; Adelman & Taylor, 1998; Perry & Weinstein, 1998).

Due to the prevalence of anxiety and depression (among other problems and psychiatric disorders) in school settings and their frequent co-occurrence (Carter et al., 2010), researchers over the past several decades have been seeking to understand the relationship between anxiety and depression with the ultimate goal of improving our approach to treatment (Merrell, 2008; Roeser et al., 1998). If we identify common underlying risk factors for anxiety and depressive disorders, we may be better able to design treatments that target these risk factors to prevent and alleviate these internalizing problems in children (Adelman & Taylor, 1998). The more we learn about the relationship between anxiety and depression, including the pathways of influence between them, the better able we will be to design treatment approaches that target all important aspects and sequelae of these disorders (Roeser & Eccles, 2000). Employing an effective, parsimonious transdiagnostic treatment would also be an ideal form of treatment within school settings, given the high rate of co-occurring problems in schools. Research conducted to date on anxiety and depression has begun to unravel this complicated relationship in children (e.g., Cacioppo, Hughes, Waite, Hawkley, & Thisted, 2006; Joiner, Lewinsohn, & Seeley, 2002; Lasgaard, Goossens, Bramsen, Trillingsgaard, & Elklit, 2011; Nolen-Hoeksema & Ahrens, 2002).

The Tripartite Model (positing a common, general risk factor known as negative affect underlying both anxiety and depression) has received much attention in both adult samples (Clark & Watson, 1991; Watson, Clark, & Carey, 1988) and youth samples (Lonigan, Phillips, & Hooe, 2003) to explain to how anxiety and depression are related. Research in other areas has examined whether this high rate of co-occurrence is also due, in part, to shared genetic predispositions (Kendler, Gardner, Gatz, & Pedersen, 2007) and/or overlapping diagnostic criteria (Lilienfeld, Waldman, & Israel, 1994). Researchers have also examined the temporal sequencing of these disorders and found that anxiety disorders typically precede the onset of depressive disorders (e.g., Avenevoli, Stolar, Li, Dierker, & Ries Merikangas, 2001; Cole, Peeke, Martin, Truglio, & Seroczynski, 1998; Parker et al., 1999). Early traumatic stressors and dysfunctional beliefs also have been found to set the stage for the development of depression in later years (Beck, 2008).

INTERVENING VARIABLES RELATED TO ANXIETY AND DEPRESSION

Other researchers have attempted to identify intervening/mediating variables between anxiety and depression to help understand their co-occurrence and relationship. Seligman, Schulman, DeRubeis and Hollon (1999) examined whether hopelessness, self-esteem, and dysfunctional attitudes mediated the relationship between anxiety and depression; however, they achieved null results. The search for other significant intervening variables in this relationship continues. One promising area is the experience of loneliness—the negative emotion arising from subjective evaluations of one's desired and achieved levels of social contact (Perlman & Peplau, 1981). Research has shown that childhood anxiety is often associated with interpersonal difficulties, including social skills deficits and poor peer relations (Erath, Flanagan, & Bierman, 2007; Rubin & Burgess, 2001). Anxious children also evidence deficits in understanding emotion (Southam-Gerow & Kendall, 2000) and evaluating negative social expectancies, and also report lower self-confidence (Chansky & Kendall, 1997)—all of which may contribute to impaired social involvement and an increased risk of loneliness. Social skills deficits related to anxiety also appear to elicit negative peer reactions,

contributing to the inability to form meaningful peer relationships (Greco & Morris, 2005), which in turn may perpetuate a cycle of social withdrawal and social avoidance. Especially in the absence of protective factors, anxious children may suffer the cumulative effects of social avoidance and disengagement because such symptoms limit their exposure to critical developmental experiences in which important social skills are learned and anxiogenic maladaptive beliefs are corrected. Through these mechanisms, anxiety appears to contribute to heightened levels of loneliness.

Depressive symptoms in youth have also been associated with social skills deficits and difficulties in initiating and maintaining social relationships (Young, 1982). Interpersonal theories of depression have also emphasized the importance of positive interpersonal relationships as a protective factor against the development of depression (Hammen, 1999). For example, numerous studies have found a significant association between poor interpersonal relationships and depressive outcomes (Borelli & Prinstein, 2006; Eberhart & Hammen, 2006). Qualter, Brown, Munn, and Rotenberg (2010) conducted a test of the relationship between depression and loneliness via a longitudinal study and found that loneliness prospectively predicted depressive symptoms over the 8-year study period. In a cross-sectional study, Lasgaard and colleagues (2011) also found loneliness to be significantly correlated with depressive symptoms. Although anxiety appears to lead to increased levels of loneliness (e.g., Greco & Morris, 2005) and loneliness appears to precede and lead to increased levels of depression (e.g., Qualter et al., 2010), no studies have yet examined the specific role of loneliness as a mediating variable between anxiety and depression in youth.

THE PRESENT STUDY

Based on the research noted previously, loneliness is likely a significant pathway through which anxiety leads to depression. In the current study, we sought to gain a better understanding of the relationship between anxiety and depression across various types of youth, including school-based children and adolescents, by examining whether loneliness significantly mediated the relationship between anxiety and depression in these samples. Being able to identify significant mediators of the relationship between anxiety and depression could, among other developments, lead to improved methods for treating anxious youth and preventing depression.

METHOD

Participants

School-Based Sample. The school-based sample was derived from children and adolescents in Grades 2 to 12 in public schools across the state of Mississippi (median grade = 7). A total of 10,891 participants completed the questionnaires with no missing data and were thus included in the present study. Of these youths, 5,227 (48.0%) were boys and 5,664 (52.0%) were girls. Youths' ethnicities were as follows: 5,824 (53.5%) White; 4,111 (37.7%) African American; 280 (2.6%) Latino/Hispanic; 194 (1.8%) Asian; and 443 (4.1%) Other. Thirty-nine (0.4%) youths did not provide ethnicity data. Regarding family composition, 2,700 (24.8%) youths reported living with both biological parents, 5,802 (53.3%) reported living with their biological mother only, 1,789 (16.5%) reported living with their biological father only, and 579 (5.3%) reported living with neither their biological mother nor father. Twenty-one youths (0.2%) did not report this information. The number of youth from both samples who reported symptoms consistent with elevations in anxiety, depression, and loneliness may be seen in Table 1.¹

¹An important note should be made about the elevated number youth in the anxiety, loneliness, and depression categories relative to each other. It is tempting to presume that if the temporal model proposed in the present study is

Table 1

Number of Youth in the Elevated Range for Anxiety, Depression, and Loneliness in the School-Based and Residential Samples

Measure	School-Based Sample Elevations (<i>N</i> = 10,891)		Residential Sample Elevations (<i>n</i> = 254)	
	N	%	N	%
RCADS-Anxiety	990	9.1	23	9.1
RCADS-Depression	1,827	16.8	46	18.1
LQ-Loneliness	3,122	28.7	78	30.7

Note. RCADS = Revised Child Anxiety and Depression Scale; LQ = Loneliness Questionnaire. Elevated scores were defined as scores associated with a T score ≥ 65 .

Clinical Residential Sample. The present clinical sample was derived from youth in Grades 2 to 12 referred to a residential treatment facility in the Southeastern region of the United States. Inclusionary criteria included youth who completed our measure of loneliness and measure of anxiety and depression on admission to the residential facility. Of the 299 youth who were administered the instruments on admission to the residential facility, 254 (85%) had 90% or more completed data and were included in the present study. Of these youth, 124 (49%) were males and 129 (51%) were females. Gender data was missing for one youth. These youth stayed an average of 162 days at the residential treatment facility prior to being discharged (range: 20–288 days).

Procedure. The school-based data were collected as part a broader school-based mental health screening initiative in Mississippi designed to provide scientifically supported mental health screenings to youth in Grades 2 through 12. The study utilized a passive consent procedure, and all procedures were approved by the Mississippi Department of Education, each school involved in the Behavioral Vital Signs (BVS) project, and the University of Mississippi Institutional Review Board. On the date of data collection, BVS project staff (clinical psychology doctoral students) distributed assessment instruments to each classroom at a given school. Teachers were then provided with a brief set of instructions to read to their students in their respective classrooms prior to handing out assessment packets. Participation was optional and anonymous. Assistance was offered to any students who had difficulty reading the questionnaires.

The clinical data were collected as part of an effort to conduct a thorough assessment of youth presenting at a residential treatment facility through the use of a comprehensive, empirically supported assessment battery (Ebesutani, Ale, Luebbe, Viana, & Young, 2011). Informed consent was obtained from youths' guardian(s) on admission to the facility. Additionally, youth assent was confirmed prior to the administration of all instruments, which was conducted by clinical psychology predoctoral residents. The residents read forms aloud to any of the youth who had difficulty reading the questionnaires themselves. Completion of these assessment measures was also optional and

correct (i.e., that negative affect contributes to anxiety, leading to depression through loneliness), then there should be at least as many youth with anxiety as there are with loneliness and depression. In the present sample, however, there were fewer youth with clinically elevated anxiety than there were with depression. These numbers, however, are not problematic. This is because (a) it is not *clinical elevation*, per se, that confers risk to related outcomes; subclinical risk factors could certainly play a role in these causal chains; second, (b) preceding, contributing agents (e.g., anxiety) can dissipate and diminish over time while the resulting problems (e.g., depression) may persist.

was conducted typically within a week of their admission to the residential treatment facility (see Ebesutani et al., 2011 for more details on procedures).

Measures

Loneliness Questionnaire. The Loneliness Questionnaire (LQ; Asher, Hymel, & Renshaw, 1984) is a 24-item self-report questionnaire that measures loneliness in youth. The LQ contains 16 scorable items (plus 8 filler items included to prevent acquiescence), all of which are rated on a 5-point Likert-type scale, ranging from 1 (*always true*) to 5 (*not true at all*). Scores from the 16 scorable items are summed (after reverse scoring appropriate items) to obtain a total loneliness score. Total scores range from 16 to 80, with higher scores reflecting higher levels of loneliness. The 16-item scale has shown adequate estimations of internal reliability ($\alpha = .90$) and stability over a 12-month period (Asher & Wheeler, 1985; Cassidy & Asher, 1992). Reliability of the instrument was high in both the school ($\alpha = .89$) and clinical ($\alpha = .85$) samples in the present study.

Revised Child Anxiety and Depression Scales. The Revised Child Anxiety and Depression Scales (RCADS; Chorpita, Yim, Moffitt, Umemoto, & Francis, 2000) is a 47-item questionnaire that assesses the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.) oriented depression and anxiety symptoms in children and adolescents. The RCADS yields an Anxiety Total score and a Depression Total score, which we used as our measures of anxiety and depression, respectively. The RCADS asks youths to respond to items according to how often each applies to them. Responses range from 0 to 3, corresponding to *never*, *sometimes*, *often*, and *always*, respectively. Scores from the RCADS have been associated with good internal consistency, high convergent and discriminant validity, and an adequate factor structure supported in both community and clinical child and adolescent samples (Chorpita, Yim et al., 2000; Chorpita, Moffitt, & Gray, 2005). Reliability of these scale scores in the current study met the cut-off of .80—the recommended threshold of adequate reliability for scale scores to be used in clinical samples (Nunnally & Bernstein, 1994; school sample: $\alpha_{\text{Anxiety}} = .94$, $\alpha_{\text{Depression}} = .83$; clinical sample: $\alpha_{\text{Anxiety}} = .93$, $\alpha_{\text{Depression}} = .80$). All analyses were conducted using raw scores. Because the RCADS was normed on students in Grades 3 to 12, we used the 3rd-grade normative data when creating T-scores for the 2nd graders in the present study.

Data Analytic Plan

The Mediation Model. In the school-based sample, we examined a model whereby anxiety predicts depression. This relationship between anxiety and depression in youth is very robust and well supported in the literature (Compas, 1997; Kashani & Orvaschel, 1990). The temporal relationship between anxiety and depression—whereby anxiety precedes the onset of depression—is also well-supported (Avenevoli et al., 2001; Cole et al., 1998). In this model, we hypothesized that, in addition to (a) anxiety predicting depression, (b) loneliness would serve as an important pathway through which anxiety exerts its (negative) effects on depression (Figure 1).

The Mediation Model in the Context of the Tripartite Model. In the clinical sample, we built on this mediation model by incorporating the Tripartite Model—a well-supported theory that has been used to explain the relationship between anxiety and depression in both adults (Watson et al., 1988) and children (Chorpita, Daleiden, Moffitt, Yim, & Umemoto, 2000). Given that (a) anxiety has been found to often precede depression (Avenevoli et al., 2001; Cole et al., 1998), and (b) negative affect is viewed in the Tripartite Model as a common distress component underlying these problems, we tested the mediation model, whereby negative affect leads to anxiety, which then in turn leads to depression via the pathway of loneliness. This model may be seen in Figure 2.

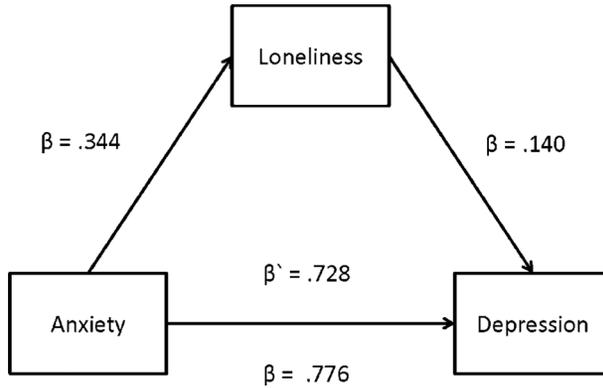


FIGURE 1. Mediation Model based on the school sample.

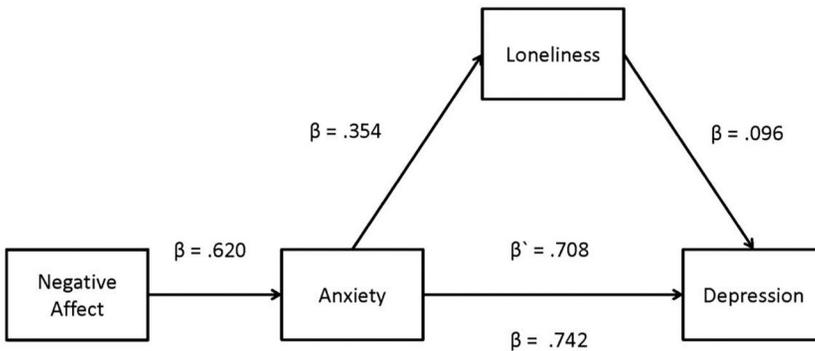


FIGURE 2. Mediation Model based on the clinical (residential) sample.

Tests of the Mediated Pathway. To examine the intervening effects of loneliness as a mediator between anxiety and depression, we employed a combination of tests as recommended by MacKinnon, Lockwood, Hoffman, West, and Sheets (2002). We first examined Baron and Kenny's (1986) causal link test, which requires the following conditions to be met to support mediation: (1) the independent variable (i.e., anxiety symptoms) is significantly associated with the outcome variable (i.e., depressive symptoms); (2) the independent variable (i.e., anxiety symptoms) is significantly associated with the proposed mediator (i.e., loneliness); (3) the proposed mediator (i.e., loneliness) is significantly associated with the dependent variable (i.e., depressive symptoms) while controlling for the independent variable (i.e., anxiety symptoms); and (4) the significant relationship between the independent variable and the dependent variable becomes nonsignificant on including the mediator in the model (for full mediation). If, however, the relationship between the independent variable and the dependent variable does not become nonsignificant on including the mediator in the model (i.e., the relationship remains significant despite dropping), this would be support for partial mediation.

Second, we conducted the Freedman and Schatzkin (1992) difference-in-coefficients test to examine the significance of the mediated effect on the relationship between anxiety and depression. This test examines whether the difference between the unadjusted and adjusted regression coefficients of the independent variable on the dependent variable (before and after accounting for the hypothesized mediating variable) is significantly greater than zero (i.e., did the relationship between anxiety and depression drop significantly on including the mediator of loneliness in the model?).

Table 2
Means, Standard Deviations, and Correlations among the Scales

Measure	1. RCADS-Anxiety	2. RCADS-Depression	3. LQ-Loneliness	4. NA
School Sample ($N = 10,891$)				
1. RCADS-Anxiety	–			
2. RCADS-Depression	.78	–		
3. LQ-Loneliness	.34	.39	–	
Mean	26.95	7.10	34.67	–
SD	19.53	5.59	12.77	–
Clinical Sample ($n = 254$)				
1. RCADS-Anxiety	–			
2. RCADS-Depression	.74	–		
3. LQ-Loneliness	.35	.35	–	
4. NA	.62	.53	.32	–
Mean	29.06	7.52	35.22	2.1
SD	18.56	5.18	12.08	.89

Note. RCADS = Revised Child Anxiety and Depression Scale; LQ = Loneliness Questionnaire; NA = negative affect; SD = standard deviation.

Third, we conducted path analysis with Mplus version 7.11 (Muthén & Muthén, 2011) and employed bias-corrected bootstrapping methodology to obtain confidence intervals of the mediated effect. The bias-corrected bootstrapping method is a nonparametric, re-sampling method that has been recommended for examining the significance of hypothesized mediating effects. Notably, this procedure applies an adjustment over a large number of bootstrapped samples—1,000 resampling iterations as used in the present study—to yield more accurate confidence intervals (Efron, 1987). Through this method, we were able to examine whether the mediated (indirect) effect was significantly different from zero (Efron, 1987). This approach has recently been recommended as a more contemporary and effective strategy to test for the “Sobel effect” due to greater sensitivity in detecting mediational effects when they are present (see Fritz & Mackinnon, 2007). In addition, the computation of *asymmetrical* confidence intervals inherent in this analysis is important, given that *symmetric* confidence intervals tend to yield less accurate parameter estimates and increase type I error rates (Efron & Tibshirani, 1993). For all analyses that follow, we considered the mediated effect to be significant if the 95% confidence interval did not overlap with zero, given widely cited metrics for guiding this interpretation (Preacher & Hayes, 2008). Additionally, we reported all coefficients as standardized parameter estimates.

RESULTS

The means and standard deviations for each of the scale scores from both samples used in the present study appear in Table 2.

School-Based Sample

The various tests based on the school-based sample converged to support our hypothesis that loneliness plays a significant mediating role in the relationship between anxiety and depression. First, Baron and Kenny’s (1986) causal link test supported this mediational model. Specifically, results (based on the full sample) demonstrated that (a) anxiety symptoms (the independent variable) significantly predicted depressive symptoms without the mediator included in the model ($\beta = .776$, $p < .05$); (b) anxiety symptoms (the independent variable) significantly predicted the hypothesized

mediator of loneliness ($\beta = .334, p < .05$); and (c) the hypothesized mediator (loneliness) significantly predicted depressive symptoms (the dependent variable) while controlling for the independent variable (anxiety symptoms; $\beta = .140, p < .05$). Partial—but not full—mediation was supported because the relationship between anxiety and depression remained significant on including the mediator in the model ($\beta = .728, p < .05$).

Second, the Freedman and Schatzkin (1992) difference-in-coefficients test also supported loneliness as a significant mediator in the relationship between anxiety and depression, $t(10,889) = 19.98, p < .05$. Lastly, the bias-corrected bootstrapping test of the mediated effect also supported the significance of loneliness as a mediator ($\gamma = .048, 99\%$ confidence interval [CI; .041, .056]).

We re-conducted these results on the younger (Grades 2–6; $n = 4420$) and older (Grades 7–12; $n = 6471$) participants in our school-sample. An identical pattern of results was found across both of these subsamples, thus supporting loneliness as a significant mediator between anxiety and depression across development.

Clinical Sample

The mediation tests based on our second, independent residential sample of youth also converged to support our hypothesis that loneliness mediates the relationship between anxiety and depression in the context of the Tripartite Model. The Baron and Kenny's (1986) causal link test results supported loneliness as a mediator in this relationship. Specifically, negative affect significantly predicted anxiety ($\beta = .620, p < .05$), consistent with the Tripartite Model. In addition, the mediation model showed that (a) anxiety symptoms significantly predicted depressive symptoms when the mediator was not included in the model ($\beta = .742, p < .05$); (b) anxiety symptoms significantly predicted the hypothesized mediator of loneliness ($\beta = .354, p < .05$); and (c) loneliness significantly predicted depressive symptoms while controlling for the independent variable (anxiety symptoms; $\beta = .096, p < .05$). Partial—but not full—mediation was again supported because the relationship between anxiety and depression remained significant on including the mediator in the model ($\beta = .708, p < .01$).

The Freedman and Schatzkin (1992) difference-in-coefficients test also supported loneliness as a significant mediator in the relationship between anxiety and depression [$t(252) = 2.18, p < .01$]. Finally, the bias-corrected bootstrapping test of the mediated effect also supported loneliness as a significant mediator in the relationship between anxiety and depression ($\gamma = .010, 95\%$ CI [.001, .019]). This mediation model can be seen in Figure 2.

DISCUSSION

The present study examined the relationships among anxiety, depression, and loneliness, including the mediating pathway of loneliness in this relationship. The mediation model examined in the present study was based on previous findings establishing a temporal relationship between anxiety and depression, wherein anxiety is believed to often precede the onset of depression (Avenevoli et al., 2001; Cole et al., 1998; Parker et al., 1999). The model was also based on previous findings that loneliness is related to both anxiety (e.g., Erath et al., 2007) and depression (e.g., Lasgaard et al., 2011; Qualter et al., 2010). As predicted, the present results across both our school-based and separate clinical sample supported our hypothesis that loneliness is a significant mediator of the relationship between anxiety and depression. Given the multiple pathways through which anxiety may confer risk to depression, it is not surprising that the magnitude of this effect related to loneliness was small (yet significant). Notably, this mediation effect was replicated in our second (clinical) sample based on a mediation model that incorporated negative affect in the context of the Tripartite Model. The present study thus builds on the Tripartite Model by presenting preliminary

support for the notion that anxiety (uniquely associated with high physiological arousal) could lead to depression (uniquely associated with low positive affect) through the pathway of the experience of loneliness.

Identifying loneliness as a significant mediator in the relationship between anxiety and depression has implications in various areas related to research, practice, and care in school settings. Perhaps due to the pervasiveness of loneliness among youth in present times across such settings, researchers have begun to target loneliness directly via intervention efforts and trials (Frankel et al., 2010; Masi, Chen, Hawkey, & Cacioppo, 2011; Menesini, Codecasa, Benelli, & Cowie, 2003). This trend in the field is consistent with emerging data related to current evidence-based standards for anxiety treatment—particularly for social anxiety—which involves assisting clients with increasing social contact with others (which could have the cascading effect of reducing social isolation and loneliness).

For these reasons, researchers have begun to introduce loneliness measures as secondary outcomes in intervention trials that target related problem areas (e.g., Flannery-Schroeder & Kendall, 2000). Loneliness—being recognized as an important and relevant experience associated with various youth problem areas—indeed deserves increased attention by both researchers, clinicians, and school counselors alike, as its alleviation may have cascading positive effects that may begin to disentangle the distressing and complicated connection and interplay between anxiety and depression in school settings for youth. Continued assessment and tracking of loneliness outcomes in research trials, as well as continued development of interventions specifically targeting loneliness, are thus recommended to inform both future clinical and school-based work. The mediational effect of loneliness, however, needs to be replicated and confirmed in future longitudinal study designs. Future clinical and school-based efforts should then seek to more fully integrate loneliness as a direct treatment and assessment target domain.

Although the implications noted previously highlight the importance of the present findings, there were limitations to the study. One of the limitations was that data were based on self-report and thus lacked a higher degree of measurement precision to be able to identify youths' problem areas specific to each anxiety subtype. The loneliness data were also based on the LQ, which is a measure developed over three decades ago. The degree to which the LQ still represents relevant constructs of loneliness in today's population should be considered in future studies. The introduction of diverse measurement strategies, such as behavioral and physiological markers and reports from other informants (e.g., parents, teachers), would have also allowed for the utilization of structural equation modeling (as opposed to path analysis) to provide more accurate estimates of the mediation parameters. Further, although the present study included two independent samples to replicate the present mediational effect, both samples were from the same (southeastern) region of the United States. Although this does represent a new, under-researched population, it is possible that this sample population may not represent other areas well, and thus the findings may not be as broadly generalizable. Lastly, yet importantly, this study relied on assessment from a single time point, which makes the direction of the effects difficult to determine. Although the present mediation effect was replicated across two independent samples, it is important that future studies pursue longitudinal designs to examine this study question. Such longitudinal studies will also be important, given the developmental transience of the disorders examined in the present study. Such work would also open the doors to a wide range of additional study questions and clinical and research pursuits.

Despite these limitations, the present findings advance the field a small step forward by confirming the mediating role of loneliness in the relationship between anxiety and depression in two independent samples. This represents a contribution to the literature, given interest in the relationship between these constructs over the past decade—as seen with the studies conducted on the Tripartite Model of anxiety and depression in youth (e.g., Cannon & Weems, 2006; Chorpita, Yim et al., 2000;

Lonigan et al., 2003)—and the noted difficulty of the field to identify significant mediators of the relationship between anxiety and depression (cf. Seligman et al., 1999). If significant and relevant mediators (such as loneliness) can be identified to help explain the relationship between anxiety and depression, preventative interventions may be further developed to better target these intervening variables and risk factors related to these highly prevalent youth problems in both clinical and school settings.

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