

Running head: PSYCHOSOCIAL CORRELATES OF SCHOOL REFUSAL

MULTI-DIMENSIONAL MODEL OF SCHOOL REFUSAL: FAMILY AND
PSYCHOSOCIAL CORRELATES OF PROBLEMATIC ABSENTEEISM

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Abstract

Youth school refusal (SR) is a pattern of difficulty attending school due to elevated levels of anxiety and is associated with a range of negative psychosocial correlates (e.g., negative cognitions and emotions; Berg, 1997). However, findings about which correlates are reliable predictors of SR remain heterogeneous and extant research has focused on samples of youth with clinical impairment, which poses a challenge in identifying dimensional aspects (e.g., sub clinical) or early signs of SR (e.g., Egger, Costello, & Angold, 2003; Lyon & Cotler, 2007). The present study examined the associations between SR and several psychosocial correlates (child, parent, family resources) across three groups of SR (i.e., clinical SR, subthreshold SR, and no SR (NSR)) in a clinical sample of 225 youth (ages 6-17 years) diagnosed with anxiety and/or depression. ANCOVAs, using Bonferroni-corrected pairwise comparisons, and chi-square tests of independence were used to examine the associations between three study groups and correlates, including youth reports of negative cognitions and affect and physiological arousal, youth, mother, and father reports of symptom severity and parent-intrusive behaviors, and mother and father reports of youth externalizing behavior difficulties, competencies, and socio-demographic factors. There were significant differences between SR conditions on various psychosocial correlates. Youth reports showed that SR youth had more severe panic symptoms than NSR youth and SR youth had less hostile thoughts compared to subthreshold youth. Across parent reports, results showed that SR youth had higher severity of internalizing symptoms (e.g., depression, separation anxiety) and lower social functioning compared to NSR youth. Parent reports also indicated that SR youth had more externalizing behavior difficulties than subthreshold youth groups, and that SR youth have greater panic symptom severity than both groups. These results suggest trends in the differences between groups distinguished by internalizing (e.g., anxiety and mood symptoms) and externalizing behaviors and overt

symptomology (e.g., rule-breaking behavior, panic disorder symptoms). There were also significant differences between groups on current youth educational supports, with more SR youth using services compared to other groups. The study's findings provide preliminary support for examining SR as a dimensional construct and help to elucidate some key psychosocial correlates of SR.

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Introduction

School refusal (SR) is a pattern of difficulty attending school due to elevated levels of anxiety, emotional distress, and/or somatic complaints (Berg, Nichols, & Pritchard, 1969; Berg, 1997). While SR is conceptualized as a child-motivated attendance problem, parents are typically aware of these absences and experience significant difficulty with motivating their children to attend school. Typical SR behaviors include protesting the night before school, ongoing disruptions in morning routine, and frequent visits to the school nurse or guidance counselor as a result of somatic symptoms, or requests to be picked up from school early. SR affects up to 28% of youth, who are at risk for a range of short- and long-term negative outcomes, including future school dropout, low social functioning, increased family conflict, high-risk behaviors (e.g., alcohol/drug use), and difficulty with occupational functioning (e.g., Kearney, 2008; Last & Strauss, 1990).

Research has shown that early identification of SR is critical in helping to mitigate the severity of these outcomes (Korematsu, Takano, & Izumi, 2016; Okuyama, Okada, Kuribayashi, & Kaneko, 1999). However, most of the research conducted on SR has focused on clinical samples in which youth attendance problems have escalated and caused significant impairment in school and at home (Lyon & Cotler, 2007). Other studies (e.g., Egger et al., 2003; Hughes, Gullone, Dudley, & Tonge, 2010; Maric, Heyne, de Heus, van Widenfelt, & Westernberg, 2012) have compared school refusers to nonclinical youth samples which typically exclude samples of youth who may be experiencing early symptoms of SR or meet subthreshold criteria who could benefit from early identification and prevention.

One recent study (Jones & Suveg, 2015) has examined the associated negative outcomes in a subset of youth who do not yet meet full criteria for school refusal, but experience resistance

to and distress from attending school or staying in class. Jones & Suveg (2015) classified this fear-based hesitation and child-motivated resistance as “school reluctance,” a relatively novel term in the literature. While youth ultimately attend school despite this fear and resistance, they may experience greater levels of distress and other difficulties (e.g., greater loneliness) compared to their non-school reluctant, anxious peers. To date, there is no formal way to measure school reluctance, but the investigators classified youth with reluctance if either parent or child endorsed the initial screening question of the Anxiety Disorders Interview Schedule for DSM-IV-TR (Silverman & Albano, 1996; i.e., “Do you get very nervous or scared about having to go to school?” or “Does your child get very nervous or scared about having to go to school?”) without endorsing sufficient symptoms or criteria to meet full criteria for SR (which generally requires evidence of clinical impairment when using a structured diagnostic instrument like the ADIS-IV-TR). Jones and Suveg examined the relationships between school reluctance, somatic problems, social and emotional functioning, and anxiety severity, and compared these relationships between reluctant youth and non-school reluctant youth. Findings revealed that reluctant youth exhibited greater severity on their primary diagnosis (on the ADIS-IV) compared to non-school reluctant youth based on clinician ratings. Reluctant youth also reported higher levels of negative affect, greater loneliness, and greater anxiety severity compared to non-school reluctant youth. These findings show that there are quantitative differences between reluctant and non-reluctant youth. These differences suggest that school reluctance reflects dimensional aspects of SR. While this study did not include SR youth in its sample, examining a spectrum of school refusal behaviors warrants further attention and investigation.

Skedgell and Kearney (2016) also examined the differences between groups of high school students (N = 118) aged 11-19 years with varying degrees of absenteeism severity and

clinical (e.g., anxiety, depression, aggressive behavior) and family (e.g., family conflict, engagement in recreational activities) variables. The unique aspect of this study is that absenteeism severity was examined both dimensionally (i.e., percentage of full school days missed on a scale from 0-100%) and categorically with different sets of categories. One set of categorical analyses included comparisons across two categories (i.e., 0-14% vs. 15-100%) based on previous definitions of “high absence,” which include at least 15% or greater days missed (Ingul, Klockner, Silverman, & Nordahl, 2012). The second set of categorical analyses included comparisons across three categories (i.e., 0-19%, 20-53%, and 54-100%) based on equivalent sample size distribution). Significant differences were found between dimensional and categorical analyses and among the categorical measurements. For example, absenteeism measured dimensionally (i.e., 0-100%) yielded one significant predictor (obsessions and compulsions), whereas categorical analyses comparing two categories (i.e., 0-14% vs. 15-100%) showed that students with 15-100% absenteeism reported higher levels on RCADS subscale scores (general anxiety, separation anxiety, panic, obsessions and compulsions, and depression) compared to students with 0-14% absenteeism. Significant differences were also found between three absenteeism severity categories (i.e., 0-19%, 20-53%, and 54-100%), showing that youth with 54-100% and 20-53% absenteeism reported significantly higher levels of RCADS subscale scores compared to youth with 0-19% absenteeism. No significant differences in RCADS subscale scores were found between the 54-100% and 20-53% absenteeism categories. Exploratory analyses were conducted based on percentage of days missed (i.e., 20%, 40%, 60%, 80%, 100%) yielding that students with 20-59% absenteeism across the year exhibited greater internalizing symptoms compared to youth who missed less than 15% of school days or greater than 60% of days. The authors explained this unexpected finding by suggesting that youth with

greater levels of absenteeism experience fewer internalizing symptoms by virtue of attending school less frequently compared to youth with less absenteeism severity. The significant differences between dimensional and categorical analyses also support the notion that moderate levels (e.g., 20-50%) of absenteeism are associated with psychosocial impairment in youth and that examining the relationship between a range of absenteeism levels and multiple psychosocial domains deserve attention.

Ingul and Nordahl (2013) also looked at the differences in anxiety levels in high school students ($N = 865$) in Norway with different levels of absenteeism, which were characterized either as high absence (i.e., ≥ 13.5 days) or low- or normal-absence (i.e., < 13.5 days). The findings show that there are significant differences between these groups, in which students with high anxiety and greater number of absences exhibit greater behavioral problems and greater psychiatric severity, including higher social anxiety, panic, and somatic symptoms, compared to the students with high levels of anxiety and infrequent absences. However, the anxious school attenders reported significantly more bullying experiences and feeling less respected by their peers compared to anxious school non-attenders. The authors explained this unexpected finding by suggesting that anxious school attenders may have been subject to greater number of adverse peer interactions by virtue of attending school more than the non-attenders. Nonetheless, findings support the notion that dimensional conceptualizations of absenteeism severity can have meaningful implications for severity and type of psychosocial impairment seen in SR/reluctant youth.

The extant literature examined different definitions and severity levels of school absenteeism. Meaningful impairment was found across social and personal domains across severity levels, emphasizing the importance of investigating school attendance problems and

their associated psychosocial correlates dimensionally. However, none of the existing studies included samples of both reluctant and fully SR youth (Ingul & Nordahl, 2013; Jones & Suveg, 2015; Skedgell & Kearney, 2016). The present study, therefore, aims to examine multiple domains (child, parent, and family resources) of psychosocial correlates across three levels of school refusal (clinical SR, “subthreshold” SR, and NSR) amongst a clinical sample of youth. These psychosocial correlates include youth report of negative cognitions, symptom severity of anxiety and depression, affect and physiological arousal, parent-intrusive behaviors, mother and father reports of youth symptom severity of anxiety and depression, parent-intrusive behaviors, youth externalizing behaviors, and youth competencies in activities, school, and social domains, and socio-demographic domains (e.g., parental marital status, parent employment).

Psychosocial Correlates of School Refusal

Current reviews of SR have sought to understand and identify the key risk factors for youth with SR (e.g., Kearney, 2008). These reviews share some overlap in their examination of the aforementioned psychosocial correlates. Despite some overlap, findings about which correlates are reliable predictors of SR remain heterogeneous and many studies have examined these correlates in the context of school absenteeism more broadly (e.g., Ingul et al., 2012; Kearney, 2008). This review aims to synthesize and highlight several salient psychosocial correlates of SR.

Youth Individual Functioning

Cognitions. Various types of cognitions are hypothesized to be associated with SR; however, the extent of this association is unclear. Few studies examined the association between negative cognitions and the use of cognitive restructuring in treatment of youth with SR (e.g.,

Heyne et al., 1998; Kennard, Ginsburg, Feeny, Sweeney, & Zagurski, 2005; Maric et al., 2012, Place, Hulsmeier, Davis, & Taylor, 2000). Some studies have shown that youth with SR have negative expectations about their abilities to cope in school-related situations (Heyne et al., 1998; Place et al., 2000), with one study (Place et al., 2000) that indicated the potential benefit of using cognitive therapy to help youth with identifying and restructuring their negative thoughts about their abilities related to school attendance. Another study (Kennard et al., 2005), in which SR was identified as an obstacle in treating adolescents with depression, also suggested that identifying and restructuring youth's negative automatic thoughts was important in facilitating the child's school attendance. However, this study did not specify which negative cognitions might have correlated with SR specifically, as opposed to other comorbidities (e.g., depression). Despite these aforementioned findings, there are almost no studies to date that have systematically examined the explicit association between specific cognitive factors (e.g., negative automatic thoughts) and SR, particularly along dimensional severity.

Maric et al. (2012) conducted one of the first studies that systematically examined the association between negative automatic thoughts, negative cognitive errors, and positive automatic thoughts and SR in a sample of school-refusing youth ($n = 50$) and non-clinical community youth ($n = 181$) in the Netherlands. Using the Children's Automatic Thoughts Scale-Negative/Positive (CATS-N/P; Hogendoorn et al., 2010) and the Children's Negative Cognitive Error Questionnaire-Revised (CNCEQ-R; Maric, Heyne, van Widenfelt, & Westernberg, 2011), Maric et al. (2012) found significant differences between groups related to thoughts and identified several significant cognitive predictors of SR. Compared to the non-clinical community sample, the school-refusing sample had significantly higher levels of thoughts related to social threat and personal failure, and significantly lower levels of positive thoughts and

thoughts related to hostility. These differences remained significant when anxiety was added as a covariate, with the exception of thoughts related to social threat, suggesting that thoughts related to personal failure are critical. Regression analyses revealed that three unique cognitive predictors of SR included higher frequency of automatic thoughts related to personal failure, lower frequency of automatic thoughts related to hostility, and a greater likelihood of engaging in the cognitive error of overgeneralizing. These cognitions were still significant after controlling for anxiety levels; higher anxiety levels were significantly associated with an increased likelihood of being a school refuser. These findings highlight the unique contribution of negative cognitions in predicting SR and provide evidence that there are distinct differences between school-refusing and non-clinical community samples in regards to negative automatic thoughts. Further research investigating the associations between specific cognitive factors and SR are warranted.

Emotion and physiological arousal. Many studies have emphasized the role of emotion and physiological arousal in youth with SR, given that SR is defined as a pattern of difficulty in attending school due to elevated levels of anxiety and distress, and that it often co-occurs with other anxiety disorders (e.g., Honjo et al., 2001; Hughes et al., 2010). However, aspects of emotional functioning (e.g., emotion regulation, physiological arousal, affect) have been defined and examined differently across studies, yielding heterogeneous conclusions about the association between emotion and SR.

Hughes et al. (2010) examined the association between use of emotion regulation (ER) strategies and SR by comparing their use in a sample of school-refusing ($n = 21$) and non-clinical community youth ($n = 21$) in Australia. The authors specifically looked at cognitive reappraisal, which has been classified as an adaptive ER strategy, and expressive suppression, which has

been classified as a maladaptive strategy in that it has been associated with poorer psychological well-being. They found a significant difference between groups such that SR youth reported significantly less use of cognitive reappraisal and significantly greater use of expressive suppression than youth in the non-clinical community sample. These findings suggest that youth with SR report less use of adaptive ER strategies and greater use of maladaptive or unhelpful strategies compared to nonclinical youth.

Despite the limited research on the association between emotion regulation and SR, there is accruing evidence regarding the association between SR and physiological arousal and somatic complaints, which have also been categorized as emotional functioning. Findings from both community and clinical samples have shown that youth with SR experience somatic difficulties, including autonomic (e.g., nausea, headaches), gastrointestinal (vomiting), and muscular (e.g., tension, shaking) (Bernstein et al., 1997; Egger et al., 2003), with one study finding that poor school attendance and autonomic complaints (i.e., dizziness, nausea, headaches) were significantly correlated (Bernstein et al., 1997). However, this sample included youth with SR and comorbid anxiety and depressive disorders, which presents a challenge in identifying the association between somatic complaints and SR specifically.

The presence of comorbid diagnoses and school refusal both complicates and enhances the field's understanding of the association between emotional functioning and SR.

Subsequently, studies have attempted to determine if there are distinct differences between the emotional functioning of youth with SR and youth with SR and comorbid disorders. In one study, Honjo et al. (2001) compared the differences in somatic complaints between youth with major depressive disorder (criteria established by using the *Children's Depression Inventory*) and school non-attendance ($n = 10$), youth with school non-attendance ($n = 34$) exclusively, and

normal controls ($n = 243$) in Japan. Youth with school non-attendance was defined as included youth who refused school less than a total of 30 days of school, as well as other criteria (e.g., remained at home with parent knowledge, distressed by having to go to school). The authors included several types of somatic symptoms (gastrointestinal, pain, cardiopulmonary, and autonomic) in their analyses and found that a majority (27 of 34; 79.4%) of the SR-only cases reported somatic complaints, compared to 30% (3 of 10 participants) of comorbid depression- and school non-attendance cases. While the analyses did not examine the association between the type of somatic symptom and group, this result supported the notion that there are quantitative differences in somatic complaints between youth with school non-attendance and comorbid depression and youth with SR. Given that individuals with depression often experience somatic symptoms regardless of school attendance difficulties, these findings suggest that somatic symptoms may also be uniquely associated with SR.

Psychopathology and symptom severity. In a systematic review of extant literature investigating the role psychological factors in school refusal, Ek & Eriksson (2013) found evidence that there is diagnostic overlap between youth with SR and other anxiety and depressive disorders. One key study reviewed (Egger et al., 2003) had examined the association between SR and psychiatric disorders in a community sample of 1,422 children ages 9 through 16. Approximately 25% of youth with SR had at least one psychiatric diagnosis, compared to 6.8% of youth without SR, with depression and separation anxiety disorder (SAD) significantly associated with SR even after controlling for the effects of comorbid disorders. While a majority of the sample did meet criteria for a psychiatric disorder, the findings support the hypothesis that youth with SR also experience difficulties in psychological functioning that may be distinct from SR symptoms. Earlier studies (e.g., Berg et al., 1993; Bools, Foster, Brown, & Berg, 1990) also

found high rates (i.e., 50% in each study) of psychopathology in SR samples. However, one key difference between Egger et al.'s sample and samples in earlier studies is the severity of SR.

Egger et al. characterized SR as youth who missed at least one half-day of school due to anxiety and worry. By this characterization, it is likely that Egger et al.'s sample includes a wide range of severity levels of SR, supporting the notion that youth with less severe presentations of SR also experience notable psychological difficulties.

More recent studies have examined the role of psychological functioning and impairment in samples of youth with school absenteeism. Using a community sample of high school students in Norway, Ingul et al. (2012) examined the relationship between adolescents' degree of school absenteeism (i.e., no absence = <1.5 days of absence; normal absence = >1.5 and <13.5 days of absence; high absence = ≥ 13.5 days of absence) and various psychosocial predictors, including internalizing problems (anxiety, depression), personality problems, externalizing problems (conduct, hyperactivity/inattention), substance use, school factors (e.g., feeling safe in school, being bullied), and demographic variables (e.g., gender, parent education), which also included family work and health (e.g., parent employment, chronic illness). The authors first examined the associations between the psychosocial predictors and the high and normal absent groups. The factors that were significantly different between groups were included and then tested in a model using Exploratory Structural Equation Modeling (ESEM). Primary analyses revealed that there were significant differences between groups in internalizing and externalizing behaviors, all health-related factors, school factors (i.e., not feeling safe, not being treated with respect), and all sociodemographic factors except gender and father's education level, suggesting that these psychosocial factors are strongly associated with school absenteeism. ESEM analyses revealed that total absence was significantly positively predicted by externalizing problems, positively

predicted by family work and health (mother/father unemployment, chronic illness, perception of poor health), and negatively predicted by school environment (feeling safe, being treated with respect). Externalizing problems was the main predictor of school absenteeism, followed by family work and health factors. Internalizing problems was no longer significant when included in the model. This finding was surprising given that internalizing problems were significant when examined in isolation. The authors provided several explanations for this unexpected finding by suggesting that high correlations between internalizing and externalizing problems might have reduced the predictive power for internalizing problems, or that adolescents with internalizing problems may have protective factors that prevent them from missing school. One notable explanation included the finding that many adolescents attend school despite reporting high levels of social anxiety ($n = 67$) compared to adolescents who report high levels of social anxiety but do not attend school ($n = 20$). This finding suggests that predicting absenteeism based on specific factors of internalizing problems (e.g., social anxiety) may be less likely in certain cases. These explanations also highlight the importance of examining various psychosocial predictors simultaneously in one comprehensive model in addition to examining them in isolation.

With several key differences, Wood et al. (2012) also tested a model to examine the relationship between school absenteeism and psychological factors in youth. The authors tested a model of reciprocal influences between school absenteeism and youth psychopathology using three longitudinal datasets ($Ns = 20,745, 2311$, and 671), with their samples including students in grades 1st through 12th who were interviewed annually or bi-annually. Two datasets (JHU-PIRC and LIFT) were part of universal prevention studies conducted in at-risk elementary student populations and one dataset (Add Health) was a nationally representative longitudinal study of

middle- and high-school students. Psychological factors examined were externalizing (conduct problems) and internalizing (anxiety and depression) problems, and demographic (parent level of education, household income, family composition) factors were included in the model. Analyses yielded several critical findings. Across datasets, results showed that previous school absenteeism was a significant predictor of future absenteeism and previous psychopathology was a predictor of future psychopathology, and that higher levels of absenteeism were significantly associated with higher levels of psychopathology. More nuanced results were found within datasets. In the Add Health dataset, which included middle- and high-school students, findings revealed that higher levels of absenteeism at the first assessment were significantly associated with higher reported levels of anxiety and depression and conduct problems at follow-up assessment in middle school students only. However, higher reported levels of anxiety and depression and conduct problems at first assessment were associated with higher levels of absenteeism at the follow-up assessment in both groups. In the JHU-PIRC dataset, high levels of anxiety and depression in 6th grade were marginally associated with an increased predicted probability of chronic absenteeism in 7th grade. This did not remain true for other grade levels and the reciprocal analyses were not significant. Chronic absenteeism in 5th grade was marginally associated with higher predicted probability of high conduct problems in 6th grade, but this did not remain true for other grade levels. In the LIFT dataset, which also included elementary school students, yielded discrepant findings related to internalizing problems and absenteeism. While in some grades (5th, 7th, 8th, 10th), chronic absenteeism was associated with an increased predicted probability of high anxiety and depression, this association was the inverse for those in 6th grade. In regards to conduct problems, chronic absenteeism was associated with higher conduct problems in some grade levels and vice versa, but not in others. The discrepancies in

findings across datasets and within datasets may be accounted for by several factors, including differences in samples regarding age, grade level, type of assessments used, and definition of absenteeism. However, these findings provide evidence that school absenteeism and psychopathology may act as reciprocal risk factors for each other in youth and multiple risk factors (e.g., absenteeism, internalizing and conduct problems) could be identified and targeted for prevention and early intervention.

Another study (Park et al., 2015) also found support that individual psychological factors serve as predictors for SR. The authors prospectively observed the development of SR behavior and identified predictors for SR behavior in a community sample of children aged six to seven years old who were beginning primary school in South Korea. Participants included 277 children who were expected to enter first grade in two months. The children and their parents completed surveys assessing the children's psychological symptoms (e.g., SR behavior, separation anxiety, behavior problems, state-trait anxiety) two months prior to school and then again three months after school started. SR behavior was defined as missing at least one half-day of school; staying home in the morning; missing school or leaving school early for at least seven days; and/or experiencing difficulty attending school for at least two weeks. Children who developed SR behavior ($n=19$) in their first three months of school scored significantly higher on baseline measures (e.g., Korean CBCL), which were collected two months prior to school, that assessed for anxiety/depression, thought problems (e.g., strange ideas, hears things) and externalizing problems, and significantly lower on social functioning scales, compared to youth who did not develop SR behavior in the first three months of school. These findings suggest that specific psychological factors may serve as key predictors of SR and that early identification of these factors can benefit at-risk youth.

Externalizing behaviors. There has been mixed evidence demonstrating a link between youth externalizing problems (e.g., attention and social difficulties, aggressive and rule-breaking behavior) and school absenteeism, with some studies showing a relationship with SR more specifically (Ingul et al., 2012; Ingul & Nordahl, 2013; Park et al., 2015; Skedgell & Kearney, 2016). One study (Ingul et al., 2012) found that, among a range of risk factors (e.g., anxiety, depression) examined simultaneously in an exploratory structural equation model, externalizing problems (including conduct, hyperactivity, and inattention difficulties measured by the *Strengths and Difficulties Questionnaire* (SDQ)) was the main positive predictor of school absenteeism. Another study (Ingul & Nordahl, 2013) found that anxious youth with higher school absences had more behavioral problems (also using the SDQ subscales) than anxious youth with lower school absences. As previously mentioned, another study (Park et al., 2015) found that children aged 6 -7 years old who developed SR behavior in their first three months of primary school in Korea had greater externalizing problems, attention problems, aggressive behavior, and lower social functioning (using the Korean CBCL subscales), compared to youth who did not develop SR behavior in the first three months of school. Wood et al. (2012) also found that youth in adolescence (but not childhood) exhibiting higher rates of school absenteeism are at significantly greater risk for increases in conduct problems in subsequent grades. These findings across studies suggest that different facets of youth externalizing behaviors are associated with youth school absenteeism, more broadly, and SR, more specifically. However, another study (Skedgell & Kearney, 2016) found no associations between varying severity levels of school absenteeism and attention problems, rule-breaking behavior, and aggressive behavior (using the *Youth Self Report* (YSR) measure). Additionally, another study (Kearney, 2007) found that some of the externalizing behavior subscales of the CBCL

(delinquent and aggressive behavior) were not significant predictors of school absenteeism. The discrepancies in findings across studies might be due to differences in samples (e.g., sizes, age range, cross-cultural) and measures (e.g., CBCL, SDQ, YSR), and varying definitions of school refusal and absenteeism. Given preliminary evidence for an association between externalizing difficulties and youth school absenteeism, further examination of these factors is warranted, particularly within a SR population.

Youth competencies. As previously demonstrated, studies have often examined the link between the aforementioned risk factors and correlates pertaining to youth difficulties (e.g., negative cognitions, symptom severity, externalizing behaviors) and SR, with few studies investigating an association between youth competencies and SR (e.g., Ingul et al., 2012; Ingul & Nordahl, 2013; McShane et al., 2001). One study (McShane et al., 2001) compared a sample of inpatient and outpatient youth with SR in Australia across several domains and found that there were reduced CBCL competencies for activity (e.g., sports), social (e.g., friends), and school (e.g., academic performance). However, the lack of a comparison group (e.g., control or clinical non-SR) makes it difficult to conclude how these competencies compare with youth with varying levels of SR severity (i.e., subthreshold) or a clinical sample without SR, more generally. In addition to risk factors and correlates, further investigation is warranted in examining the relationship between youth protective factors, such as competencies, and varying severity levels of SR.

Parenting Factors

Parenting styles and behaviors, such as parent intrusiveness (e.g., restricting child's autonomy in completion of tasks, invasion of child's privacy), have contributed to the maintenance of children's anxiety (Barmish & Kendall, 2005; Hummel & Gross, 2001; Rork &

Morris, 2009). Few studies have investigated a link between parent-intrusive behaviors and SR in youth (Corville-Smith, Ryan, Adams, & Dalicandro, 1998). Corville-Smith et al. (1998) found that students with school attendance difficulties (i.e., missed 15 or more classes in any course) scored higher on measures related to parental control and lower on measures related to parental acceptance and parental discipline compared to youth without school attendance difficulties. This finding provides preliminary evidence that there is an association between parent intrusiveness and school absenteeism. However, additional research is warranted to further examine this relationship and explore if parent intrusiveness may be a psychosocial correlate to SR.

Socio-demographic Correlates

In addition to individual functioning and family-related variables, there is evidence suggesting that youth's social environment and demographic factors also influence school attendance (e.g., Ingul et al., 2012; Kearney, 2008). Parent employment, parent level of education, parent marital status, and youth educational supports has been linked to youth school absenteeism and SR. These factors embody the type of resources (e.g., financial) that may be available and accessible to youth, including the amount of parental supervision and family modeling of school values or avoidance (e.g., Bahali et al., 2011; Egger et al., 2003; Park et al., 2015; Wood et al., 2012). For example, international studies conducted in Turkey and South Korea have suggested that parent occupational status, specifically mother's unemployment and therefore presence in the home, could either model school avoidance or facilitate children's school attendance and engagement in school (Bahali et al., 2011; Park et al., 2015). Examining the association between these socio-demographic factors and SR can elucidate which variables are correlates of SR.

Parent marital status has been linked to school absenteeism (e.g., Egger et al., 2003; Wood et al., 2012). More specifically, youth living in a single-parent household has been significantly associated with both school absenteeism and school refusal. One study found that living in a single parent household was significantly associated with higher levels of absenteeism, and in some cases, was associated with an increased predicted probability of chronic absenteeism many years later (Wood et al., 2012). Efforts have also been made to investigate the relationship between this correlate and school refusal, with one descriptive study (McShane et al., 2001) finding that one-third of youth with SR ($n = 74$; 39%) lived in a single-parent household, another study (Egger et al., 2003) finding that living in a single-parent home was a significant predictor of SR, and an even more recent study (Bahali et al., 2011) finding that parent relationship status was not a significant predictor of SR. These discrepant findings highlight that further examination between parent marital status and SR is warranted. Additional research can help to elucidate whether or not parent marital status may be a psychosocial correlate of SR.

Parent level of education has also been indicated as a correlate of SR, with evidence supporting that low levels of parent education are associated with school-refusing youth. In one descriptive study (McShane et al., 2001), mothers ($n = 79$; 41%) and fathers ($n = 77$; 40%) of youth with SR had completed the equivalent of six years of secondary schooling. However, because there was no control group, it is difficult to determine whether or not this level of education is common among youth SR. A more recent study (Park et al., 2015) found that children in South Korea had 2.92 and 4.26 times higher risk for developing SR with mothers and fathers whose educational levels were no greater than a high school graduate, respectively. However, in another descriptive study (Egger et al., 2003), parent level of education was not

significantly related to SR, but parents without a high school diploma was a significant predictor of youth who were considered “mixed school refusers,” a category that describes youth having both characteristics of school refusal (e.g., children who did not attend school due to anxiety) and truancy (e.g., children who did not attend school, provided no excuse, and was not granted permission by school authorities). Taken together, these findings indicate that parent level of education is associated with SR; however, the differences in categorization of youth (e.g., SR, mixed SR) and levels of parent education (e.g., less than high school, high school graduate) highlight that further examination is warranted to elucidate the extent to which parent education is a psychosocial correlate of SR.

Educational supports. School absenteeism has been linked to a range of short- and long-term negative outcomes, including future school dropout, low social functioning, high-risk behaviors, and worsening psychological functioning (Kearney, 2008; Last & Strauss, 1990). Given these concerns and risks, many students with school attendance difficulties may encounter and use various services, including educational supports (e.g., individualized education plans; IEPs) in school. Despite this natural association, little is known about the relationship between SR and educational supports. One population-based study ($N = 8,988$; Askeland, Haugland, Stormark, Boe, & Hysing, 2015) in Norway examined service use in school (e.g., school health services, special needs education, educational psychological service) and more broadly in the community (e.g., mental health counseling, general practitioner) in adolescents (ages 16 and 18) with school absenteeism. Approximately 40.6% of adolescents with low levels of absence (i.e., absent less than 3% of the total school hours in the past semester) had been in contact with one or more services, compared to 53.8% with moderate absence (i.e., absent within 3% and 15% of total school hours) and 60% with high absence (i.e., absent 15% or more of the school hours in

the past semester). Furthermore, students with high absence were more likely to be in contact with multiple services, including mental health, adolescent health clinics, and their general practitioner. However, 40% of youth who demonstrated high levels of absence reported that they had no contact with any of the services studied. These findings imply that there is room for early identification of adolescents with school absenteeism, particularly the subset of youth who do not receive any services. Furthermore, more research is needed to investigate the relationship between SR more specifically and educational supports across ages.

The Current Study

Based on the extant literature, there is accruing evidence that various psychosocial correlates across individual functioning, parenting behaviors, and socio-demographic domains, are linked to school absenteeism and refusal (e.g., Ingul et al., 2012, Kearney, 2008; McShane et al., 2001; Park et al., 2015). However, few studies have examined these correlates dimensionally within a clinical sample, and many studies have used varying definitions of school absenteeism, different measures of psychosocial factors, and cross-cultural samples (e.g., Bahali et al., 2011; Ingul & Nordahl, 2013; Jones & Suveg, 2015; Skedgell & Kearney, 2016). Therefore, the present study aims to examine the associations between three levels of school refusal (SR, subthreshold SR, and NSR) and several psychosocial correlates, including youth cognitions, symptom severity, externalizing behaviors, competencies, affect and physiological arousal, parent-intrusive behaviors, and socio-demographic factors, amongst a clinical sample of youth. Elucidating which factors are psychosocial correlates of SR can have important implications for prevention and treatment and results from the present study can help to identify which correlates are associated with varying levels of SR severity.

Several hypotheses were examined:

Hypothesis 1: To compare individual functioning correlates between three study groups, NSR, subthreshold, and SR. I predict that, there will be significant differences between groups in that, a) compared to NSR youth, subthreshold youth will have significantly greater levels of the following indices, and b) compared to NSR and subthreshold youth, SR youth will have significantly greater levels of the following indices:

H1_a: frequency of negative automatic thoughts (as measured by CATS total score, physical threat, personal failure, and social threat subscales)

H1_b: symptom severity of depression and anxiety symptoms (as measured by youth and parent reports of RCADS subscales and total scores)

H1_c: levels of negative affect and physiological arousal (as measured by AFARS subscales and total scores)

H1_d: parent-intrusive behaviors (as measured by MMM and MMF intrusive subscale)

H1_e: Because the literature has not been consistent in elucidating the nature of the relationship between SR and externalizing behaviors, we are treating the hypothesis pertaining to externalizing difficulties (as measured by mother and father reports on CBCL of youth's aggressive behavior, attention problems, rule-breaking behavior, social problems, and total externalizing scores) as exploratory.

I also predict that there will be significant differences between groups in that, compared to NSR youth:

H1_f: subthreshold and SR youth will have significantly less competence in activities, school, and social relationships (as measured by CBCL subscales and total scores)

H1_a: subthreshold and SR youth will have significantly less hostile automatic thoughts (as measured by CATS hostile subscale)

Hypothesis 2: To compare parent-intrusive behaviors between three study groups: NSR, subthreshold, and SR. I predict that, there will be significant differences between groups in that, a) compared to NSR youth, subthreshold youth will have significantly greater, and b) compared to NSR and subthreshold youth, SR youth will have significantly greater:

H2_a: parent-intrusive behaviors (as measured by PCIQ intrusive subscale)

Hypothesis 3: To compare socio-demographic variables between three study groups: NSR, subthreshold, and SR. I predict that the groups will be independent of one another on these socio-demographic variables: parent marital status, parent level of education, and youth current educational supports.

Method

Participants

Table 1 reports descriptive statistics of youth age, gender, ethnicity, socioeconomic status, and primary diagnosis for total sample and each of the three study groups. Participants were 225 youth aged 6-17 years ($M = 11.79$ years, $SD = 2.46$ years) seeking psychological therapy for anxiety and depression at a university-based research clinic. Approximately 50% of the sample was male ($n = 112$) and 50% was female ($n = 113$). Approximately 70.7% identified as White, 4% as African American, 6.2% as Asian, 5.8% as Latino, 1.8% as Other, and 8.9% identified as multi-racial. Approximately 2.7% ($n = 6$) did not report their ethnicity.

Approximately 15.1% of youth reported income less than \$40,000, 23.1% reported an income between \$40,000 and \$80,000, 52.2% reported an income over \$80,000, and 8.9% of the sample did not report an income.

All participants had principal DSM-IV diagnoses of one or more of the following: generalized anxiety disorder (29.8%), social phobia (16.9%), major depression disorder (14.2%), separation anxiety disorder (7.1%), panic disorder (5.8%), specific phobia (5.3%), selective mutism (3.6%), dysthymia (2.7%), obsessive compulsive disorder (2.7%), and minor depression (0.4%). Approximately 2% met criteria for two principal disorders (i.e., CSR ratings were equal for at least two distinct anxiety or depressive disorders).

Participants were categorized into one of three distinct diagnostic groups: no school refusal (NSR; $n = 93$), subthreshold ($n = 56$), or SR ($n = 76$). Youth in the SR group were categorized based on clinician severity ratings of ≥ 4 on the Anxiety Disorders Interview Schedule – Child and Parent Version (ADIS-IV-C/P; Silverman & Albano, 1996). Youth with severity ratings of ≥ 4 required endorsement of several symptoms, including parent and/or child

report of difficulty attending or staying in school, and at least one other symptom (e.g., child feeling nervous/scared about going to school, trying to stay home from school), and evidence of clinical impairment and interference in the child's life across domains (e.g., school, home, friendships). Youth were categorized in the subthreshold group based on meeting either of two definitions: 1) if youth received clinician severity ratings ranging from 0 to 3 on the ADIS-IV-C/P, or, 2) if parent had endorsed "yes" to the question, "Does your child get very nervous or scared about having to go to school?" or if child had endorsed "yes" to the question, "Do you get very nervous or scared about having to go to school?" on the SR module of the ADIS-IV-C/P, which is consistent with Jones & Suveg's (2015) definition of school reluctance. If youth were categorized as subthreshold based on the latter definition, it also meant that youth did not meet the required criteria to warrant a clinician severity rating (i.e., 0 through 8) for clinical impairment or interference in the SR module. The remainder of the sample was classified as NSR.

Exclusion criteria were youth who had a principal diagnosis of a non-anxiety or depression DSM-IV disorder (e.g., anorexia nervosa, posttraumatic stress disorder, attention-deficit hyperactivity disorder) or who received any diagnosis of an intellectual disability, a pervasive developmental disorder, schizophrenia, or bipolar disorder; youth suicidal ideation or intent (by child or parent report) severe enough to require current hospitalization, or youth who had attempted suicide within the past three months.

Procedure

Data was used from a larger treatment outcome study for anxious and depressed youth. Participating families in the original trial were naturally referred to the clinic from community sources (e.g., schools, pediatricians, psychiatrists). Parents provided written consent and youth

provided written assent and then completed a diagnostic intake procedure over the course of 2-4 hours in one day. The initial assessment included parent and child self-report measures and diagnostic interviews, which were conducted by independent evaluators who interviewed parent and youth separately. Children were provided refreshments (e.g., juice boxes, granola bars) and encouraged to take frequent breaks between each set of assessments or during natural breaks in the interview to prevent fatigue. Participants were considered eligible for the current study if they completed the initial intake interview regardless of whether they received subsequent treatment.

Measures

Demographics. Parents completed socio-demographic and background packets that assessed multiple domains including parent level of education, marital status, family income, and current youth educational supports in school, among other variables. Assessment of youth educational support was conducted by asking caregivers whether or not (yes/no) their child received in-school educational supports (e.g., IEPs, 504 plans, and/or special instruction in a particular subject).

Diagnoses and severity. The **Anxiety Disorders Interview Schedule – Child and Parent Version** (ADIS-IV-C/P; Silverman & Albano, 2000) is a semi-structured interview consisting of independent but comparable parent and child interviews that have good interviewer reliability (e.g., $\kappa = .98$, parent interview; $\kappa = .93$, child interview; Silverman & Nelles, 1988), test retest reliability (i.e., $r = .76$, parent interview; Silverman & Eisen, 1992). Diagnosticians conduct the parent and child interviews individually and derive parent-reported, child-reported, and composite (parent and child) diagnoses and severity ratings. Diagnosticians were trained to

reliability, reaching a minimum agreement of kappa greater than or equal to .80 and then achieved reliability of $\kappa = .91$ (range = .78 –1.00) in actual study interviews.

Individual functioning. The **Children’s Automatic Thoughts Scale – Youth Report** (CATS; Schniering & Rapee, 2002) is a 40-item child-report measure designed to assess negative self-statements in children and adolescents and was validated on a wide age range of youth (7 – 16 years old). Youth rate the frequency with which they had a thought (e.g., “kids will think I’m stupid,” “bad people deserve to get punished”) over the past week using a 5-point scale (0 = not at all, 4 = all the time). It was found to effectively discriminate between non-clinical youth and youth with clinical anxiety, depression, and behavior disorders. The internal consistency of the total score and subscales was high ($\alpha > .85$) and test–retest reliability at 1 and 3 months was acceptable ($r = .91$). All subscales (physical threat, failure, hostile, social), including the total score, were used in analyses.

The **Revised Children’s Anxiety and Depression Scale –Youth report** (RCADS; Chorpita, Yim, Moffitt, Umemoto, & Francis, 2000) is a 47-item self-report measure with items that corresponds closely with DSM-IV anxiety and major depressive disorders. There are six subscales and items are rated on a four-point Likert scale, with higher scores indicating higher frequency of symptoms. Test-retest reliability was high over a one-week period across subscales; separation anxiety disorder ($r = .78$), social phobia ($r = .81$), generalized anxiety disorder ($r = .80$), major depressive disorder ($r = .76$), obsessive-compulsive disorder ($r = .71$), and panic disorder ($r = .85$) (Chorpita et al., 2000). All subscales, including the total score, were used in the present study.

The **Affect and Arousal Scale** (AFARS; Chorpita, Daleiden, Moffitt, Yim, & Umemoto, 2000) is a 27-item child-report measure that assesses affective dimensions related to anxiety and

depression. The scale has three subscales, which are the factors of the tripartite model of emotion: Negative Affect (NA), Positive Affect (PA), and Physiological Hyperarousal (PH). Using a 4-point scale (0 = never true to 3 = always true), youth rate how true each item is with respect to their usual feelings (e.g., “other people upset me,” “I love going to new places,” “my heart beats too fast”). The internal consistency estimates for the subscales were adequate: PA ($\alpha = .66$), NA ($\alpha = .64$), and PH scales ($\alpha = .78$) (Daleiden, Chorpita, & Lu, 2000). All subscales, including the total score, were used in the present study.

The **Child Behavior Checklist—Parent Report** (CBCL; Achenbach & Dumenci, 2001) is a 118-item parent-report scale assessing their children’s behavioral difficulties and relative competence in activity, social, and school domains. Using a 3-point scale (0 = not true, 2 = very true or often true), parents rate the frequency of their children’s behavior problems across a variety of subscales (i.e., affective, anxiety, attention-deficit/hyperactivity, conduct, oppositional defiant, and somatic). The CBCL’s reliability coefficients were favorable, ranging from .71 (Somatic Problems items) to .89 (Conduct Problems items) (Nakamura, Ebesutani, Bernstein, & Chorpita, 2009). The following subscales were used in the present study: aggressive behavior, attention problems, rule-breaking behavior, social problems, and total externalizing to evaluate the frequency of youth externalizing difficulties.

The *activities competence scale* assesses youth participation in sports, hobbies, and jobs/chores. For each area, parents listed up to three activities in which their youth participated. Using a four-point scale (“less than average” to “more than average” with “don’t know as the fourth option), parents rated the amount of time spent in each activity relative to same-aged peers. The raw scores on the activities competency scale were summed (range=0.0-15.0) and then translated into age- and sex-normed T scores.

The *social competence scale* measures the youth's engagement in clubs and organizations, number of friends and time spent with friends, and behavior with others. Parents listed up to three social organizations in which their youth participated and then rated the youth's participation level relative to same-aged peers (4-point scale from "less active" to "more active" with "don't know" as the fourth option). The raw scores on social competency scale range from 0.0-14.0 and can be translated into age- and sex-normed T scores.

The *school competence scale* is measured with four items assessing the youth's academic performance, existence of special education or remedial service (Yes/No), whether the child has repeated a grade (Yes/No), and if the youth has had any academic or other problems in school (Yes/No). The academic performance item asked parents to list each subject the youth studies and then to rate the youth's performance in each subject (4-point scale with response options of "failing," "below average," "average," and "above average"). The raw scores on the school competency scale are summed (range=0.0-6.0) and then are translated into age- and sex-normed T scores.

A *total competence scale* can be summed for a total raw score (range=0.0-35.0) and then converted to T scores ranging from 10 to 80 ($M=50$, $SD=10$). All competency subscales, including total, were used in analyses.

Parent behaviors. The **Parent-Child Interaction Questionnaire** (PCIQ; Wood, Kiff Jacobs, Ifekwunigwe, & Piacentini, 2007) is the parent-report version of the Me and My Father (MMF) and Me and My Mother (MMM) measures, which are 33-item child-report scales designed to assess the child's perspective of observable parent-child interactions that have occurred during a one-week timeframe. The parent version (PCIQ) uses a 4-point rating scale that is based on the frequency of behaviors (e.g., "I encourage my child to make choices about

something”) throughout one week (1 = never occurs to 3 = almost always occurs). There is evidence of internal consistency reliability ($\alpha = 0.71$ for parent-report and $\alpha = 0.73$ for child-report) and inter-rater reliability was high ($r = 0.73$).

Analytic plan

Descriptive data regarding the sample’s demographic information across SR conditions (see Table 1) and means, standard deviations, and sample sizes of each aforementioned study measure across SR conditions (see Tables 2, 4, and 5) were examined. One-way analysis of variance (ANOVA) tests of assumptions were checked including homogeneity of variance. Total score and subscale data were normally distributed with skewness and kurtosis in acceptable ranges; therefore, all data was included in analyses. For hypotheses 1 and 2, separate one-way analyses of covariance (ANCOVA) were conducted to examine differences in the aforementioned variables of interest across youth’s individual functioning and parenting behavior between the three study groups while controlling for youth age and gender. Bonferroni-corrected ($\alpha = 0.05$) pairwise comparisons were conducted to confirm where the differences occurred between groups. For hypothesis 3, chi-square tests of independence were used to evaluate differences on socio-demographic variables between the three study groups. All analyses were conducted with IBM SPSS Statistics version 25.0.

Missing data. Not all measures were administered to all participants. Some measures were added to the assessment battery at later dates. Data replacement procedures were not conducted; instead, analyses were conducted with pairwise-deletion such that comparisons were only made between participants with both pairs of data to reflect analysis on observed data.

Results

Hypothesis 1: Youth-reported Functioning Across SR Groups

Table 2 reports descriptive statistics of thoughts, symptoms, affective responses, and parent-intrusive behaviors for the three study groups: NSR, subthreshold, and SR. Total score and subscale data were normally distributed with skewness and kurtosis in acceptable ranges. Additionally, there were no outliers.

Table 3 reports ANCOVA omnibus F -values and mean differences of pairwise comparisons between the three aforementioned groups regarding youth-reported thoughts (CATS), symptoms (RCADS), affective responses (AFARS), and parent-intrusive behaviors (MMM and MMF). All analyses controlled for youth gender and age and applied Bonferroni corrections. Results from the omnibus ANCOVA found significant differences between groups on frequency of thoughts related to hostility, $F(2, 164) = 3.01$ and Bonferroni-corrected pairwise comparisons identified youth in the SR groups had significantly lower levels of hostile thoughts compared to subthreshold youth ($p = 0.05$). Omnibus ANCOVA also found significant differences between groups on severity of panic symptoms, $F(2, 215) = 3.12$, and Bonferroni-corrected pairwise comparisons identified youth in the SR group had significantly higher panic-symptom severity compared to youth in the NSR group ($p = 0.40$). No differences were found on the remaining subscales of the CATS and RCADS. Additionally, no differences were found regarding AFARS, MMM, and MMF subscales.

Hypothesis 2: Parent-reported Youth Functioning Across SR Groups

Tables 4 and 5 report descriptive statistics of mother- and father-reported youth symptom (RCADS), parent-intrusive behaviors (PCIQ), youth externalizing behaviors and competencies (CBCL) for the three study groups: NSR, subthreshold, and SR. Total score and subscale data were normally distributed with skewness and kurtosis in acceptable ranges. Additionally, there were no outliers.

Tables 6 and 7 report ANCOVA omnibus F-values and mean differences of pairwise comparisons between the aforementioned three groups regarding mother- and father-reported youth symptoms (RCADS), parent-intrusive behaviors (PCIQ), youth externalizing behaviors and competencies (CBCL). All analyses controlled for youth gender and age and applied Bonferroni corrections.

Mother report. Results from the omnibus ANCOVAs (see Table 6) found significant differences between groups on mother-reported symptom severity of youth depression, panic, separation anxiety, and total anxiety disorder. Bonferroni-corrected pairwise comparisons identified that mothers of youth in the SR group reported higher symptom severity of youth depression, $F(2, 204) = 7.05, p = 0.001$, panic, $F(2, 204) = 9.62, p < 0.0001$, separation anxiety, $F(2, 204) = 7.88, p < 0.0001$, and total anxiety, $F(2, 204) = 4.48, p = 0.02$ compared to mothers of youth in the NSR group. Mothers of youth in the SR group reported significantly greater severity of youth panic symptoms compared to mothers of youth in the subthreshold group ($p < 0.0001$). Omnibus ANCOVAs also found significant differences between groups on mother-reported rule-breaking behaviors, total externalizing behaviors, and social competencies. Bonferroni-corrected pairwise comparisons identified mothers of youth in the SR group subthreshold group had reported significantly greater rule-breaking behaviors, $F(2, 190) = 4.24,$

$p = 0.02$, and total externalizing behaviors, $F(2, 190) = 3.53, p = 0.03$, compared to mothers of subthreshold youth. Mothers of SR youth reported significantly less social competency compared to mothers of NSR youth, $F(2, 178) = 3.46, p = 0.03$. No other differences were found regarding parent-intrusive behaviors and the remaining subscales of the RCADS and CBCL.

Father report. Results from the omnibus ANCOVAs (see Table 7) found significant differences between groups on all father-reported RCADS subscale scores regarding youth symptom severity (depression, social phobia, panic, generalized anxiety, separation anxiety, obsessions and compulsions, and total anxiety disorder symptoms). Bonferroni-corrected pairwise comparisons revealed that fathers of SR youth reported significantly higher symptom severity of depression, $F(2, 132) = 4.85, p = 0.03$, panic, $F(2, 131) = 11.56, p < 0.0001$, generalized anxiety, $F(2, 131) = 3.54, p = 0.03$, separation anxiety, $F(2, 130) = 9.12, p < 0.0001$, obsessions and compulsions, $F(2, 131) = 4.48, p = 0.03$, and total anxiety, $F(2, 131) = 9.71, p < 0.0001$, compared to NSR youth. Fathers of SR youth also reported significantly greater symptom severity of depression ($p = 0.03$) separation anxiety ($p = 0.01$), and obsessions and compulsions ($p = 0.04$) compared to fathers of NSR youth. Fathers of subthreshold youth reported significantly higher symptom severity of social anxiety compared to fathers of NSR youth ($p = 0.03$). Omnibus ANCOVAs also found significant differences between groups on father-reported CBCL subscale scores of rule-breaking behavior, aggressive behavior, and total competencies. Bonferroni-corrected pairwise comparisons found that fathers of SR youth reported significantly higher levels of rule-breaking behavior, $F(2, 124) = 3.79, p = 0.03$, and aggressive behavior, $F(2, 124) = 4.02, p = 0.03$, compared to fathers of subthreshold youth. Bonferroni-corrected post-hoc analyses also revealed that fathers of SR youth reported

significantly lower levels of total competencies compared to fathers of NSR youth, $F = (2, 102) = 3.69, p = 0.04$. No other father-reported differences were found regarding parent-intrusive behaviors (PCIQ) and the remaining subscales of the RCADS and CBCL.

Hypothesis 3: Socio-demographic Differences Across SR Groups

A chi-square test of independence was performed to examine whether or not there were differences between the three diagnostic groups on socio-demographic variables, including current youth educational supports in school, parent marital status, and mother and father level of education. Analyses revealed significant group differences on current youth educational supports ($\chi^2 = 5.90, p = .05$) between the study groups (see Figure 1). Disproportionate numbers of SR and subthreshold youth made current use of educational supports. Approximately 36% ($n = 32$) of NSR youth used current educational supports compared to 64% who did not; 50% ($n = 26$) of subthreshold youth used compared to 50% who did not, and 55% ($n = 39$) of SR youth endorsed current use of educational supports compared to 45% who did not. No significant group differences were found on parent marital status, or mother or father level of education.

Discussion

This study sought to explore SR as a dimensional construct by examining the differences between three diagnostic groups of a clinical youth sample (i.e., NSR, subthreshold, and SR) on several psychosocial correlates commonly associated with SR, including youth cognitions, anxiety and depression symptom severity, affect and physiological arousal, parent intrusiveness, externalizing behavior difficulties, competencies, and sociodemographic factors. Results provide preliminary support for examining and conceptualizing SR dimensionally, as some findings revealed group differences between no SR and subthreshold youth, as well as subthreshold and

SR youth. Unique patterns seemed to distinguish the differences between SR youth and either category. Furthermore, some differences between groups were consistent across youth, mother, and father reports, while others were not. Collectively, these findings suggest that some variables might be more strongly associated with school refusal than others.

Hypothesis 1: Youth-report of Individual Functioning

Cognitions. Based on youth-report, youth in the SR group reported having lower levels of hostile automatic thoughts compared to youth in the subthreshold group when controlling for age and gender. This finding was somewhat expected, given that a previous study (Maric et al., 2012) investigating the association between automatic thoughts and SR found that SR youth reported having lower frequency of hostile thoughts compared to a community sample. One explanation for the present study's finding is that youth in the SR group might experience lower levels of hostile thoughts by virtue of not attending school and are therefore less exposed to situations that could precipitate hostile thoughts. Therefore, because youth in the subthreshold group are attending school more frequently than youth with SR, it is possible that subthreshold youth are more likely to have distressing or hostile experiences that could precipitate hostile thoughts. These explanations are plausible given that subthreshold youth experience distress about attending school but are most typically still attending school (e.g., forced/urged by parent). Another consideration is that youth in the subthreshold group might have comorbid diagnoses (e.g., oppositional defiant disorder, conduct disorder) that could better explain why youth are having hostile thoughts. Additionally, because most of the extant literature has often examined school refusal as a singular/confined construct, it is possible that differentiating between SR severity in the present study has allowed for novel and nuanced findings about this population to emerge. The hypotheses that there would be differences between groups regarding

negative thoughts related to personal failure and social threat were not supported. These findings were inconsistent with results from previous studies. Maric et al. (2012) found that SR youth experienced higher levels of negative thoughts related to personal failure and social threat compared to a nonclinical community sample. One explanation for these inconsistent findings could be related to the nature of the present study's clinical sample, in which youth have met criteria for anxiety and/or depressive disorder(s) and likely experience a range of negative automatic thoughts, and therefore the frequencies may not widely differ across groups.

Anxiety and depression symptom severity. The hypothesis related to differences between groups regarding panic disorder symptoms was partially supported. Youth with SR reported greater panic disorder symptoms than NSR youth. This finding is consistent with results from previous studies (e.g., Bernstein et al., 1997; Egger et al., 2003; Honjo et al., 2001) that found that youth with SR experience physiological arousal and symptoms (e.g., racing heart, feeling faint, dizzy, or shaky), which are also common symptoms of panic disorder. It is possible that youth with SR experience panic symptoms (e.g., physiological arousal) associated with school attendance and subsequently avoid school to avoid experiencing these alarming and distressing symptoms. There were no differences between NSR and subthreshold groups, nor between subthreshold and SR groups. This suggests an in-between level of PD symptoms (not significantly different from either) for subthreshold youth, which is consistent with a dimensional model.

Contrary to the present study's hypotheses, there were no differences between groups on the remaining anxiety and depressive symptom subscales, including major depression, social phobia, generalized anxiety disorder, separation anxiety disorder, obsessions and compulsions, and total score of anxiety and depression. One explanation for the lack of differences between

groups might be due to the clinical sample of youth with anxiety and/or depression, as there might be less variance in anxiety and depression symptom severity among the sample.

Affect and physiological arousal. Contrary to the present study's hypotheses, there were no differences between groups on measures assessing youth affect and arousal symptoms, including subscales of physiological hyperarousal, negative affect, or positive affect, and total scores. These findings are inconsistent with results from previous studies (e.g., Honjo et al., 2001), which have shown that youth with SR experience various physical and autonomic complaints. However, the presence of comorbid disorders have posed a challenge in determining whether or not there is a unique association between SR and affect and arousal. Given this challenge, it is possible that the lack of differences in the present study might be attributable to the nature of the sample, which consists of a clinical sample of youth with anxiety and depression disorders as well as comorbid diagnoses. As previously mentioned, there might be less variance among the sample regarding affect and physiological arousal symptoms given their strong correlation with anxiety and depression (Bernstein et al., 1997; Egger et al., 2003).

Parent intrusiveness. There were no differences between groups regarding youth reports of their parents' intrusiveness. To date, there is limited research investigating the relationship between SR in youth and parent intrusiveness, so further research is warranted in this domain. However, extant literature has shown that parenting styles and behaviors (e.g., intrusiveness) contribute to the development and maintenance of anxiety disorders in children (Barmish & Kendall, 2005; Hummel & Gross, 2001; Rork & Morris, 2009). It is possible that given the current study's clinical sample of youth with high rates of comorbidity with anxiety disorders, there is less variance among the sample regarding parent intrusiveness.

Hypothesis 2: Parent-report of Youth's Functioning

Youth anxiety and depression symptom severity. There were differences in mother- and father-report of youth's depression symptom severity between youth in the NSR and SR groups. More specifically, mothers and fathers of youth with SR reported greater severity of symptoms compared to mothers and fathers of youth with NSR. As previously mentioned, one explanation for these consistent findings is that youth with SR have comorbid depression (Honjo et al., 2001; Wood et al., 2012) that could better explain this severity. It is also likely that youth depression severity is contributing to their absence from school (e.g., anhedonia), which is observed by parents. Fathers also reported that SR youth had more severe depressive symptoms compared to subthreshold youth, but mothers did not report this difference. This discrepancy in reports could suggest that fathers are more likely than mothers to identify and report any observable distress in their children with varying severity of SR.

There were differences in father-report of youth's social phobia severity between youth in the NSR and subthreshold groups. More specifically, father reports indicate that subthreshold youth had greater social phobia symptom severity compared to NSR youth. There were no mother-reported differences between groups. As previously mentioned, it is possible that this discrepancy in reports indicates that fathers might be more likely than mothers to observe and over-report youth distress. Furthermore, fathers might be observing higher severity of social phobia symptoms in their children with subthreshold SR by virtue of their children's school attendance, in which they are more likely to be encountering anxiety-provoking social situations. This finding also provides support to examine school refusal dimensionally and further examination warrants consideration.

There were differences in mother- and father-report of youth's panic symptom severity

between youth in the NSR and SR groups. More specifically, mothers and fathers of youth with SR reported greater severity of symptoms compared to mothers and fathers of youth with NSR. These findings are also consistent with youth self-report, which suggests that SR youth are experiencing higher levels of panic symptoms than NSR, and that these symptoms are observed and corroborated by both parents. These consistent reports across multiple informants suggest that SR youth are more likely to experience frequent panic disorder symptoms compared to NSR youth in a clinical population. One study (Ingul & Nordahl, 2013) found that one of the distinguishing differences between anxious non-attenders and anxious attenders was the experience of panic symptoms; the higher frequency of panic symptoms the more likely school absenteeism would occur. One explanation is that youth experience panic symptoms (e.g., physiological arousal) associated with school attendance, fear these sensations, and subsequently avoid school to avoid experiencing these alarming and distressing symptoms. The present study's results support the literature that youth with SR experience high severity of panic symptoms.

There were differences in father-report of youth's generalized anxiety and obsessions and compulsions symptoms between groups. Fathers reported that youth with SR had more severe symptoms of generalized anxiety compared to youth with NSR. Fathers also reported that youth with SR had higher severity of obsessions and compulsions compared to youth in both NSR and subthreshold groups. There were no youth- or mother-reported differences on either of these measures. These discrepant reports across informants supports the proposed explanation that fathers of youth with subthreshold and SR might identify and report any observable distress in their children, perhaps without discerning among distinct difficulties.

There were also differences in mother- and father-report of youth's separation anxiety

symptom severity between youth in the NSR and SR groups, in which both parents report higher severity of separation anxiety in SR youth compared to NSR youth. These findings are consistent with findings from previous studies. One study (McShane et al., 2001) found that at least 20% of SR youth had a diagnosis of separation anxiety disorder, while other studies (Ingul et al., 2012; Skedgell & Kearney, 2016) found significant differences between three groups of school absenteeism, with higher absenteeism associated with higher symptom severity. It is also worth noting that youth-reports did not yield any differences related to separation anxiety disorder. It is possible that both parents ascribe youth's school attendance difficulties to separation anxiety (e.g., protesting during the morning, clinging to parents), when it might be due to other functions (e.g., receiving attention from parents, avoidance of anxiety-provoking stimuli; Kearney, 2007). There were also differences in father-reports of youth's symptom severity between subthreshold and SR youth, in which fathers reported SR youth having higher symptom severity compared to subthreshold youth. This finding continues to support the idea that fathers of youth with SR might identify and report any observable distress in their children.

Mothers and fathers also reported differences in youth's RCADS total anxiety scores between youth in the NSR and SR groups, in which SR youth have higher anxiety severity compared to NSR youth. This finding supports previous studies that have found that youth with SR are more likely to have a comorbid anxiety diagnosis compared to NSR youth (Egger et al., 2003). Ingul & Nordahl (2013) also found that youth with high absences and high anxiety have greater psychiatric anxiety compared to youth with low absences and high anxiety. This finding might apply to the present study's sample in the sense that even when youth has anxiety (e.g., anxiety disorder), parents of youth with SR—not parents of NSR youth—are identifying and observing higher anxiety severity. One explanation is that parents of SR youth might more

easily able to identify a source or trigger of their children's anxious avoidance due to youth's functional impairment and observable behaviors, such as protesting the night before or morning of school, and frequent nurse visits due to somatic complaints, compared to parents of NSR youth who might have anxiety disorders but due to their internalizing nature, might not appear as severe.

In conclusion, results from mother and father reports of youth symptom severity revealed distinct trends between SR and NSR groups. Overall, both parent reports showed that there were significant differences between SR and NSR youth across multiple internalizing subscales (i.e., MDD, PD, Total Anxiety), with SR youth having more severe symptoms compared to NSR youth. There were also some distinct differences between mother and father reports on these internalizing subscales in which fathers reported more significant differences between NSR and SR groups. These differences in reporting between parents suggest that fathers of youth with SR might be more likely than mothers to report and perceive their children's distress as global and be less likely to discern among their children's internalizing symptoms.

Externalizing behavior difficulties. Both mothers and fathers reported differences between subthreshold and SR youth regarding rule-breaking behaviors, in which youth with SR had higher severity of rule-breaking behaviors compared to subthreshold youth. This finding partially supports findings from earlier studies (e.g., McShane et al., 2001) that examined SR behavior in youth, which historically had encapsulated truant and delinquent behavior. One descriptive study (McShane et al., 2001) found that at least 24% and at least 3% of youth with school refusal have a co-occurring oppositional defiant disorder (ODD) and conduct disorder (CD) diagnoses, respectively. However, these rates have varied widely for several reasons due to studies' exclusion criteria, some of which have excluded youth with disruptive behavior

disorders, which makes it challenging to fully understand the relationships between SR and externalizing behavior difficulties. One recent study (Ingul & Nordahl, 2013) also found that anxious school non-attenders had higher rates of behavioral problems compared to anxious attenders. One explanation the authors posited was that anxious non-attenders were also more likely to experience other difficulties at a higher rate (e.g., negative life events) compared to anxious attenders, which could be contributing to disruptive behavior difficulties. However, another recent study (Skedgell & Kearney, 2016) did not find any significant associations between school absenteeism and rule-breaking behaviors. Nonetheless, the present study's findings suggest that both parents are observing more rule-breaking behaviors in their children with SR compared to subthreshold. It is possible that parents are observing typical SR behaviors (e.g., protesting the night before school, disobeying morning routines), which appear as rule-breaking and noncompliant behaviors, but are likely driven by youth's distress anxious avoidance from attending school. Future studies should examine the associations between SR and rule-breaking behaviors. Although this hypothesis was exploratory in nature, these results add nuanced findings to the extant literature, which has typically compared SR youth's rule-breaking behaviors to non-clinical controls or community samples.

Fathers also reported aggressive behavior differences between youth in the subthreshold and SR groups, in which SR youth had higher levels of aggressive behavior compared to subthreshold youth. One explanation for this finding is that subthreshold youth, who experience less functional impairment and interference related to school attendance, might exhibit less overt aggressive behavior related to school attendance compared to youth with SR. As previously mentioned, it is possible that parents perceive SR youth's behaviors as aggressive and noncompliant in efforts to avoid distressing and aversive stimuli (e.g., school). Mothers did not

report any differences between groups regarding aggressive behavior. Given aforementioned discrepancies between mother and father reports of youth's functioning, it is possible that fathers are misattributing their children's behaviors as motivated by aggression rather than anxious avoidance. Two recent studies (Kearney, 2007; Skedgell & Kearney, 2016) did not find aggressive behavior to be a significant predictor of SR. In the present study, it is possible that some of SR youth's behaviors can be attributed to comorbid disruptive behavior disorders, and future research is warranted to elucidate the extent to which comorbidities are contributing factors.

Both mothers and fathers did not report any significant differences between groups related to attention problems or social problems. To date, there is not a great deal of research investigating the relationship between SR and attention difficulties specifically; however, one recent study (Skedgell & Kearney, 2016) did not find any associations between school absenteeism and attention difficulties. However, given that this study (Skedgell & Kearney, 2016) examined school absenteeism as a construct more broadly, as opposed to school refusal, it is difficult to compare these findings to those of the present study. In regards to social problems, previous studies have found that youth with SR have difficulties with peer relationships, with one study (Egger et al., 2003) finding that compared to non-school refusers, anxious school refusers had the most difficulty in peer relationships related to bullying, being more shy, and having difficulties due to withdrawal and increased conflict. One explanation for parents not reporting social problems as a difficulty could be that these difficulties are likely to occur in the context of school, and that parents are not aware of these difficulties by virtue of not being informed or witnessed.

Mothers reported a difference in total externalizing symptoms on the CBCL between

subthreshold and SR youth, in which SR youth had higher levels of externalizing symptoms compared to subthreshold youth. Although mother reports yielded significant differences between these groups on rule-breaking behavior, it is possible that mothers endorsed a cluster of symptoms throughout the CBCL measure resulting in differences on the total externalizing score. Fathers did not report any differences between groups on total score of externalizing symptoms.

Overall, results from parent reports revealed differences between SR and subthreshold groups in externalizing behaviors (i.e., rule-breaking behavior, aggressive behavior, and total externalizing behavior) in which SR youth had more severe behavior difficulties than subthreshold youth. These trends suggest that the intensity of youth's externalizing symptoms is a distinguishing factor when comparing subthreshold and SR groups. One plausible explanation is that SR youth, in attempts to avoid attending school, are more likely to engage in behaviors that might be perceived by parents as overt acts of noncompliance and breaking rules compared to subthreshold youth.

Competencies. Mothers reported a difference in social competency between NSR and SR youth in that SR youth had less social competency compared to NSR youth. One explanation for this difference is that youth with SR might not demonstrate, or have had the chance to develop, social competency by virtue of attending school less often compared to their peers without SR. While mothers did not report any differences between groups on the social problems subscale, it is possible that mothers were reporting their children's social difficulties on this scale. Fathers did not report any differences between groups related to youth social competency.

Mothers and fathers did not report any differences between groups on youth activities or school competencies. Although not many studies to date have examined the link between these

competencies and SR explicitly, one study (McShane et al., 2001) found that there were reduced competencies for activity, social, and school (also using the CBCL) within the sample of youth with SR, which consisted of both inpatient and outpatient adolescents. Despite the reported reduced competencies, there were no differences between groups on any of these measures. It is possible that this rationale is applicable to the present study's sample, in which the clinical sample of youth with anxiety and depression might be experiencing reduced competencies across these domains and therefore there is little variance among the sample to detect meaningful differences.

Lastly, fathers reported a difference in total competencies between NSR and SR groups, in which youth with SR had lower ratings of total competencies compared to NSR youth. One explanation for this is that NSR youth are more likely than SR youth to engage in and experience opportunities to develop and hone competencies in activity, social, and school domains by virtue of attending school to develop friendships and participate in activities. Mothers did not report any differences between groups on total competencies. It is possible that fathers have more difficulty discerning which competencies their children have and pertinent to which domains, but can overall observe and report competencies and strengths in their children, whereas mothers might be more likely to discern in which domains their children demonstrate competency; in this study, social competency.

Parent intrusiveness. Mothers and fathers did not report any differences on the measure of parent intrusiveness, which are consistent with youth self-report in this study. To date, there is limited research investigating the relationship between parent intrusiveness as a construct and SR in youth. However, as previously mentioned, parenting styles and behaviors (e.g., intrusiveness) have been found to contribute to the development and maintenance of anxiety

disorders in children (Barmish & Kendall, 2005; Hummel & Gross, 2001; Rork & Morris, 2009). Given the nature of the present study's clinical sample of youth with anxiety disorders, it is possible that parent informants reported similar frequencies of interaction types resulting in little variance among the sample to detect meaningful differences. Another consideration is that this measure was completed by a lower number of youth and parents, compared to other measures used in the present study, and there might not have been enough power to detect differences.

Hypothesis 3: Socio-demographic Correlates

Youth's current receipt of educational supports in school was the only variable that detected meaningful differences between groups. This finding is consistent with national data that suggests that students diagnosed with a learning disability disproportionately meet criteria for chronic absenteeism (U.S. Department of Education, 2016). Although there is limited research investigating this relationship, our finding is consistent with one study (Askeland et al., 2015) that found that adolescents with high levels of school absenteeism had higher levels of school service use compared to youth with low levels of absenteeism. This difference makes sense given the level of functional impairment and difficulties that SR youth have in school. Askeland et al. (2015) also found that students with higher levels of absence were more likely to use multiple services (e.g., mental health); however, almost half of the high-absent youth sample did not have any contact with services. In the present study's sample, a little less than half (40%) of SR youth endorsed receiving school services. Given the limited research in examining the association between youth use of educational supports in school and SR, further investigation is warranted.

There were no differences between groups on parent marital status, mother education

level, or father education level. These findings are inconsistent with previous studies that have found associations between these correlates and SR (Bahali et al., 2011; Hysing et al., 2017; Park et al., 2015). One explanation is that a majority of youth in the sample had parents who were either married or living together, resulting in little variance across groups. Additionally, the present study's sample consisted of mothers and fathers with relatively high levels of education, which also can limit the variance across groups. Future research should continue to examine the association between these correlates and SR severity given previous studies' significant findings.

Strengths

The present study had several strengths pertaining to sample, methodology, and findings. First, this study had a relatively large sample size of youth and included both parent reports, allowing for rich data to add to our understanding of youth's functioning across a variety of domains. This study also included a clinical sample of youth, which allowed for comparisons between groups of youth with anxiety, depression, and SR. This study is also one of the first to date that includes a clinical sample with varying levels of SR severity, which allows for examination of youth experiencing relatively less, or more, impairing symptoms, depending on the comparison group. Furthermore, most studies have often compared SR youth to nonclinical samples, often excluding youth who might be experiencing subthreshold interference and impairment of SR. The study's findings also provide preliminary support for examining SR dimensionally across some variables of interest, even when controlling for age and gender, which can help to better understand youth experiencing mild to moderate functional impairment related to SR and who could benefit from early identification.

Limitations and Future Directions

There are several limitations to consider regarding the present study. One important consideration is the cross-sectional design, which precludes any causal links or longitudinal conclusions to be drawn. Future studies could benefit from using a longitudinal design to examine the risk factors and long-term effects for subthreshold and SR youth. Future research could also benefit from considering examining psychosocial correlates and predictors in a comprehensive model, instead of examining them in isolation, to elucidate which factors are uniquely associated with SR. As previously mentioned, while one of the present study's strengths included a clinical sample of youth, one limitation is that the sample did not include a control group or nonclinical sample for further comparison and examination between groups. Another limitation is that the current study did not examine relevant correlates of SR, including number of days absent from school, and other psychometrically-validated measures that assess for other parenting factors that could provide insight into behaviors and interaction styles that could be inadvertently contributing to or maintaining youth's SR behaviors. Lastly, the field would benefit from replication studies, with consideration of these limitations, to further investigate the association between psychosocial correlates and varying severity of SR in youth. Findings can provide a more nuanced understanding of SR as a dimensional construct and allow clinicians and researchers to improve ways to identify youth early and provide education to parents and schools about treatment and prevention.

Conclusion

In conclusion, this study provides preliminary support in the examination of youth SR as a dimensional construct to elucidate its relationship to key psychosocial correlates. Overall, youth, mother, and father reports revealed meaningful trends between SR youth and either subthreshold or NSR youth on various psychosocial correlates. Youth reports of their own

functioning showed that differences between SR and NSR youth were distinguished by panic disorder symptom severity, in which SR youth had more severe panic symptoms than NSR youth. Differences between SR and subthreshold groups were found on youth-reported frequency of hostile automatic thoughts, in which SR youth had less hostile thoughts compared to subthreshold youth. Across parent reports, results showed that differences between NSR and SR groups were distinguished primarily by internalizing symptoms (e.g., depression, separation anxiety) and social functioning. Parent reports also indicated differences between SR and subthreshold groups based on youth externalizing behaviors (e.g., rule-breaking) in which SR youth had more behavior difficulties than subthreshold youth. In addition to externalizing behaviors, parent reports revealed differences in panic disorder severity between groups. Mothers reported differences between SR and both groups, and fathers reported differences between SR and NSR groups, in which both parent reports showed that SR youth have greater panic symptom severity. These results suggest trends in the differences between groups distinguished by internalizing (e.g., anxiety and mood symptoms) and externalizing behaviors and overt symptomology (e.g., rule-breaking behavior, panic disorder symptoms). These findings are a meaningful contribution to the fields of research and clinical work in helping to identify significant psychosocial correlates of youth SR with varying levels of severity and impairment.

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