

PARENTING AND TEMPERAMENT: ACTIONS IN THE MICROSYSTEM AND
CHILDREN'S ANXIETY AT SCHOOL

by

Tianna McCay

Submitted in partial fulfilment of the requirements
for the degree of Master of Arts in School Psychology

at

Mount Saint Vincent University

Halifax, Nova Scotia

June 2022

© Copyright by Tianna McCay, 2023

TABLE OF CONTENTS

Abstract.....	3
Chapter 1	4
Introduction: Anxiety	4
The Etiology of Anxiety: Bronfenbrenner’s Ecological Systems Theory	6
Temperament	7
Parenting	12
Anxiety at School	15
Anxiety and School Psychology.....	19
Consultation	20
Intervention	21
Conclusion	25
Chapter 2	26
Introduction	26
The Current Study.....	30
Methods.....	30
Participants	30
Materials.....	31
Procedure	33
Analyses.....	33
Results.....	34
Correlations	34
Multiple Regression.....	34
Table 1	35
Table 2	35
Discussion.....	36
Limitations	40
Future Research.....	41
Conclusion	43
References:.....	45

Abstract

School presents multiple common stressors for anxious children which regularly disrupts their ability to engage in school and develop academically and socially. The current study aimed to explore predictors of anxiety at school utilising Bronfenbrenner's Ecological Systems Theory. The current study scaffolded off past research studies to contextualise ways that individual and environmental vulnerability might inform the identification and treatment of anxiety at school for school psychologists. Specifically, high negative affect, as well as authoritarian parenting, have been separately associated with increased anxiety. The current study hypothesized that the inclusion of these two variables in a regression model would significantly predict increased anxiety within the school context. Participants consisted of caregivers to children aged between 7 and 12 years old who responded to surveys via an online platform. Parents responded about their own parenting style, as well as reported observations of their child's temperament (negative affect), and the degree to which anxiety negatively impacts their child at school. Correlations were conducted to observe associations between anxiety and parenting styles as well as negative affect and anxiety. Correlations corroborate past research which identifies a positive relationship between anxiety and negative affect ($r = .513, p = .003$). However, the current study did not replicate a negative association between anxiety and permissive parenting ($r = .453, p = .009$) or anxiety and authoritative parenting ($r = .056, p = .759$). Neither did the current study replicate a positive association between authoritarian parenting and anxiety ($r = .282, p = .117$). Regression analyses were used to assess the predictive relationship between anxiety at school utilising both high negative affect and an authoritarian parenting style. The findings indicate that when a student has high negative affect and a parent who uses an authoritarian parenting style, they are likely to experience increased anxiety ($F=5.84, p<.01, rsq\ adj=.24$). These findings support the identification of anxious students via the observation of behaviors associated with negative affect at school, as well as informs treatment to include parental education and support when applicable.

Chapter 1

Literature Review

Introduction: Anxiety

Anxiety is a negative emotional state which occurs when an individual experiences anticipation about events that may have a negative outcome (Killu & Crundwell, 2016). Anxiety is experienced by most individuals, and occurs in response to a perceived threat which can be physical (e.g., a tsunami is approaching), social (e.g., meeting new people), or performance related (e.g., failing a test) (Killu & Crundwell, 2016; Wood, 2006). Anxiety symptoms have the potential to manifest across behavioral, cognitive, and/or physiological domains simultaneously (Lawyer & Smitherman, 2004). According to The American Psychiatric Association (APA, 2022) cognitive symptoms of anxiety centers around thoughts of worry or anxious preoccupations regarding a perceived threat; this can be minute repressible thoughts or an intense barrage of mental preoccupations which cannot be ignored. Physiological symptoms of anxiety occur when an individual's arousal system heightens and responds to the threat; symptoms vary depending on the individual but can include flushing of the skin, increased heartrate, sweating, trembling, or difficulty breathing (APA, 2013). Behavioral symptoms also vary depending on the individual, but common symptoms include restlessness, difficulty sleeping, crying, irritability, or withdrawal/avoidance from the perceived threat (APA, 2013). Anxiety is adaptive when arousal across these domains motivates an individual to take action to respond to the perceived threat (Beesdo et al., 2009). However, anxiety becomes maladaptive when an individual is consistently in a negative state of worry in such a way where daily functioning is impaired by the symptoms of anxiety (Degnan et al., 2010). Patterned over-responding to perceived threats and maladaptive functioning is characterized as an anxiety disorder (Beesdo et al., 2009). Anxiety

disorders are heterogeneous in their centralization of anxiety but vary in their stimulus. Anxiety disorders include specific phobias, separation fears, obsessive-compulsive disorders, social phobia, and generalized anxiety disorders (DSM-5TR; American Psychiatric Association, 2013). Essau (2014) found that for adolescents, anxiety predicted poor life adjustment, familial problems, poor coping skills, more chronic stress, poor adjustment at work, and lower overall life satisfaction. Additionally, higher rates of anxiety at adolescence predicted higher rates of alcohol and substance abuse and use (Essau, 2014). Woodward and Ferguson (2001) also report that adolescents with anxiety disorders are less likely to engage in post-secondary education and training including university, trade programs, and skills courses. Later-life outcomes demonstrate that maladaptive symptoms and coping related to anxiety create distressing challenges.

Anxiety disorders are the earliest of all forms of psychopathology to emerge, and typically run a chronic course well into adulthood (Albano et al., 2003; Beesdo et al., 2009). Briggs-Gown et al. (2000) found that at any given time, between 6 and 10 percent of school age children meet the diagnostic criteria for anxiety. This is confirmed by Bitsko et al. (2022), who reported that 9.4% of American children ages 3 to 17 between 2016 and 2019 had been diagnosed with an anxiety disorder. These numbers identify an alarming number of children, however, this still does not represent the full scope of children who actively experience distressing levels of anxiety but have not encountered the opportunity to be diagnosed. Minahan and Rappaport (2013) propose that the nature of anxiety limits our ability to accurately identify anxious children, particularly because children with anxiety frequently attempt to minimize anxiety and control its effects before others can observe symptoms. Additionally, Huberty (2009) indicates that anxious children frequently “fly under the radar” because they are not disruptive and do not call attention to themselves. Anxiety most often manifests with internalizing

symptoms such as worrisome cognition or withdrawing from scenarios rather than externalizing behavior (Huberty, 2009). These considerations are illustrated by Costello et al. (2004), who used more sensitive measures which targeted internalized symptoms. Costello et al. (2004) identified that between 10 and 20 percent of children in both the general population and primary care settings report distressing levels of anxiety. Maladaptive levels of anxiety are clearly prevalent for many children and adolescents, which is concerning given the negative outcomes associated with anxiety.

The Etiology of Anxiety: Bronfenbrenner's Ecological Systems Theory

The development of pathological anxiety and anxious behaviors is a complex process involving a multitude of factors. A child's development is an interactive process where children can evoke changes in their environment in a way that shapes their experience, and thus their development. This principal indicates that the presence of anxiety can be mediated and influenced by both individual and environmental differences, and is described by Bronfenbrenner's Ecological Systems Theory (1979). According to this theory, development and socialization are influenced by different individuals, systems, and factors to different degrees (Bronfenbrenner, 1979). This theory assumes the individual has an influence on their environment, and that the environment is also evoking the person to adapt to its conditions and restrictions (Darling, 2007).

In Bronfenbrenner's model, environments are placed inside one another and demonstrate micro-, meso-, exo-, macro- and chrono-systems (Bronfenbrenner, 1979). A microsystem is a pattern of activities, roles, and interpersonal relationships experienced by the person in a direct setting, a description that also accounts for people outside of the individual (Bronfenbrenner, 1979). This system is made up of the persons closest surroundings. For example; home, day care

group, school, and work, as well as peers, classmates, close relatives, or coworkers (Härkönen, 2001). The microsystem is the closest environment to a child, and includes the people and structures the child has direct contact with (Bronfenbrenner, 1979). Bronfenbrenner cites that the relationship at this level is bi-directional, meaning the child and the system or individual reciprocally influence one another (1979). This is where parents have an influence on their child's beliefs and behavior, but likewise the child can also influence their parents' beliefs and behavior (Darling, 2007). Within this system the interplay of child characteristics and parental behavior can explain variations in developmental outcomes. In this context, research can observe different characteristics both individually and together to observe how predicted outcomes may change as a result of the intersection of multiple variables. For the current study, temperament will be used as a system by which to classify, observe, and understand how differences in individual traits may affect the development of anxiety. Further, parents are an integral part of a child's microsystem, and thus parenting behaviors will be discussed to examine the impact of an environmental factor which also has the ability to affect the development of anxiety. Both of these variables have research which examines and establishes a relationship with the development of anxiety, and the interaction of these two factors is a prime example of how Bronfenbrenner's theory was structured to support a multifactorial model of vulnerability for the development of anxiety.

Temperament

It is useful to utilize other theories and principles of individual differences to elucidate the kinds of behavioral patterns and developmental outcomes which may occur and interact with a child in their microsystem. Temperament theory is one such area of study which seeks to determine how individual variability can be categorically observed in order to predict and

understand developmental outcomes. Temperament acknowledges a child's own active part in their development, in that differences in qualities such as response to stimulation or individual capacity to regulate emotions and attention impacts social development by evoking differential responses from a child's environment. Temperament refers to constitutionally based differences in personality style, which includes varied patterns of responding to stimulus and differing individual capacity to regulate emotions and attention (Rothbart, 2011). These differences in affect, attentional reactivity, behavioral reactivity, and self-regulation are seen as inherent temperamental traits which can be observed from early infancy (Sanson et al., 2004). Specific definitions of temperament have been differentially operationalized across research. While the general theory of temperament remains consistent, specific behaviors, profiles, and attributes have been variably defined in research using either a typological or variable-centered approach. Typological definitions of temperament focus on identifying meaningful groupings or types of temperament, while variable-centered approaches define temperament by specific traits and dimensions (Beekman et al., 2015). A primary example of a typological approach is the characterization of behaviorally inhibited versus uninhibited/exuberant temperaments discussed by Kagan, et al. (1984) and Putnam and Stifer (2005). Behaviorally inhibited children are described as apprehensive, prone to crying, and adherent to their parent in uncertain or unfamiliar situations (Kagan et al., 1984). In contrast, uninhibited children are characterized by high positive emotionality and high levels of fearless social behaviour (Putnam & Stifter, 2005). While a typological approach is helpful to assist in gaining a broad understanding of a child's temperament, this approach restricts an individual by a group, lacking the detail to identify important traits and individual considerations (Beekman et al., 2015). As a result of this

limitation, variable-centered approaches are the primary method for operationalizing temperament.

Variable-centered approaches are based on dimensions and traits rather than group-status (Beekman et al., 2015). Traits are drawn from theories of temperament, and then established with the use of factor analyses to determine stable and reliable dimensions (Beekman et al., 2015). Each behavioral descriptor or “dimension” within temperament describes a child’s characteristic style of response across various contexts, and is grouped by aspects of the behavior in question. Dimensions are then grouped by statistical clusters, which collate to identify different presentations or “profiles” of temperament. For example, early temperament research by Thomas and Chess (1973) defined an “easy-difficult” categorization for temperament. Thomas and Chess (1973) proposed nine dimensions of temperament to describe children’s interaction with their environment; approach-withdrawal, adaptability, quality of mood, intensity of reaction, distractibility, persistence/attention span, rhythmicity, responsiveness, and activity level. Thomas and Chess (1973) asserted that children with a typically negative mood who tended to withdraw, struggled to adapt, and were highly intense and arrhythmic, fell into the “difficult” category of temperament. Conversely, children who demonstrated the inverse behaviors were defined as “easy” in temperament. Thomas and Chess (1973) provide an early example of the clarity and detail a variable-centered approach can provide, however, current research has been unable to replicate their clusters. As such, this system is largely unused, but stands as an important precedent to more current and replicable definitions for measuring temperament.

Variable-centered approaches can be limited due to the individual examination of each dimension, as this assumes each dimension operates independently – ignoring how traits may work together (Beekman et al., 2015). However, the individual examination of traits allows us to

better predict later outcomes, and to gain detailed information about a single person (Beekman et al., 2015). Presently, three broad aspects of temperament have gained wide acceptance and replicability within temperament research (Sanson et al. (2004). These three are Reactivity/Negative Emotion, Self-Regulation, and Approach-Withdrawal. Reactivity/Negative Emotion refers to an individual's level of irritability, negative mood, high intensity negative reactions, and fearfulness. Self regulation is further divided into two components; effortful control of attention and of emotions. Effortful control of attention relates to behaviors such as persistence or non-distractibility, while control of emotion refers to behaviors like self-soothing. Finally, Approach-Withdrawal or Sociability, describes a child's tendency to either approach novel situations/people, or be wary of such situations/people. These three aspects have appeared with varied dimensions of measurement specifications as a result of the measures used to define an individual's temperament, but remain a consistent framework through which we can define and subsequently research differences in inherent personality traits.

The parameters for assessment are wide, meaning that measures need to encompass a wide range of behaviours and emotions for an accurate assessment. Adults are primarily given self-report measures, as they are able to effectively and accurately answer detailed questions about their behaviours and experiences to provide enough information for a detailed temperament report (Rothbart, 2011). However, self-report is not a possibility for younger age ranges. Preschool children may lack the insight, emotional vocabulary, or developmental capabilities to understand and answer questions about their emotional state and behaviours (Ryan & Edge, 2011). As such, the most prevalent tool to assess childhood temperament is the parent report measure: The Child Behavior Questionnaire (CBQ) (Rothbart et al., 2001). This assessment tool was established for use with children from early to middle childhood. The CBQ

measures temperament on fifteen different dimensions that are based on three underlying factors (Rothbart et al., 2001). These three dimensions are known as surgency or extraversion, negative affectivity, and effortful control (Rothbart, 2012). Factors such as positive emotionality, activity level, fearfulness, anger/frustration, attentional orienting, and effortful control are common dimensions of temperament in infancy and early childhood that fall under the three broader categories (Rothbart, 2012). Surgency is related to positive emotionality and activity, negative affectivity is related to negative emotions, and effortful control is related to attentional, inhibitory, and activational control (Rothbart, 2012). Shorter versions of the CBQ have been developed that show satisfactory internal consistency, criterion validity, longitudinal stability, and cross-informant agreement with the full CBQ (Putnam & Rothbart, 2006). Given its wide circulation and extensive use the CBQ is the primary way to assess child temperament in research settings.

Profiles of temperament help us to establish patterns that may emerge for children in a variety of areas. Externalizing and internalizing challenges are an example of behavioral typology where temperament can assist in compiling a profile of vulnerability from inherent traits. Low effortful control, high negative affect, and low surgency have been positively associated with internalizing problems such as fearfulness or withdrawal (Bagner et al., 2012). For example, research demonstrates that profiles with high negative affect correctly predict that the individual will experience above average levels of anxiety later in life (Clements & Bailey, 2010). Conversely, high positive affect, effortful control, and sociability positively predicts lower anxiety in individuals (Clements & Bailey, 2010). Externalising problems, such as aggressive, defiant, destructive, or hyperactive behavior, are associated with high negative affect and surgency, and low effortful control (Bagner et al., 2012). These associations are not solely

the effects of temperament, rather they demonstrate how inherent temperament might predispose individuals to specific outcomes. Environmental influences can interact with temperament traits to nullify expected outcomes or shape how temperament traits are exemplified by the individual (Shiner et al., 2012). Parenting is a dominant force in shaping a child's environment and behavior, and is an important interaction to consider when addressing temperament's role in the development of anxiety.

Parenting

A key evocable contingent in a child's environment is their parent(s), who differentially respond to their child. Parenting practices are directly observable behaviors which parents use to socialize their children (Kuppens & Ceulemans, 2019). Parenting can refer to narrative interactions with the child, which includes parent-led explanations about expected behaviors, as well as discussions regarding societal or familial norms. Additionally, parenting by this definition also consists of concepts such as positive reinforcement, discipline, and/or problem-solving approaches (Kuppens & Ceulemans, 2019). These types of practices fit within BronfenBrenner's (1979) theory and define directly observable differences in parent's responses to their children within the microsystem which influence a child's development.

In order to classify and study parenting, researchers have taken a variety of approaches to define and categorize parenting behaviors. Models typically define broad dimensions which describe a common set of characteristics and behaviors an individual uses for parenting, categorized by a consistent theme. For example, some researchers categorize parenting practices by behaviors which demonstrate parental support and parental control (Smetana, 2017). Parental support refers to a parent's demonstration of involvement in their child's life, acceptance of their personality and behaviors, emotional availability for their child, warmth, and responsivity – in

other words, the affective nature of the parent-child relationship (Cummings et al., 2000).

Parental control is a separate category by which researchers can define the level of influence a parent has on their child. This concept is further divided into two categories; psychological and behavioral control (Cummings et al., 2000). Psychological control references a type of control where parents attempt to manipulate their children's thoughts, emotions, or feelings. Behavioral control defines parenting behaviors which attempts to control, manage, or regulate child behavior via the enforcement of demands, rules, discipline, or reward and punishment.

Baumrind (1971) is well-known for her typology of parenting practices, and defines three parenting styles. Authoritarian parenting describes a pattern of behavior that attempts to shape, control, and evaluate a child's behavior on a distinct and consistent set of standards (Kuppens & Ceulemans, 2019). Authoritarian parents emphasize an orderly environment and monitor their children closely (Checa & Abundis-Gutierrez, 2018). These parents often show less trust in their children, and fear to lose control (Checa & Abundis-Gutierrez, 2018). A permissive parenting style characterizes practices that grant more autonomy, and are warmer rather than controlling (Kuppens & Ceulemans, 2019). These parents center their practices on their children in a way that places far less demand on the child, and parents using this approach are typically accepting of the child's impulses, desires, and actions (Checa & Abundis-Gutierrez, 2018). Permissive parents largely allow for children to self-regulate, make few demands for mature behavior, and generally avoid confrontation and power in the relationship with the intention of being non-punitive (Checa & Abundis-Gutierrez, 2018). The median between these two styles is defined as authoritative parenting (Kuppens & Ceulemans, 2019). Authoritative parenting is characterized by clear expectations and rule setting, as well as the use of reasoning and discussion to achieve a child's adherence to rules (Checa & Abundis-Gutierrez, 2018). These parents are demanding and

responsive, they are controlling but not restrictive, are open to communication, actively participate in the child's life with trust and acceptance, and encourage their children to be autonomous (Checa & Abundis-Gutierrez, 2018). A fourth parenting style, neglectful, is also occasionally identified in research (Smetana, 2017). Neglectful parents are low in responsiveness to their children, and make few demands of them (Checa & Abundis-Gutierrez, 2018). This parenting style is characterized by a lack of warmth, support, or involvement in their child's life (Checa & Abundis-Gutierrez, 2018). These parents minimize interaction time with their children, and demonstrate indifference to their child's needs and demands (Checa & Abundis-Gutierrez, 2018). This is demonstrated by a lack of monitoring of their child's activities and actions, failing to provide a structured environment, and neglecting to use discipline, or using extremely strict discipline sporadically (Checa & Abundis-Gutierrez, 2018).

Parenting styles have been used to research the interplay of parenting and child development in multiple ways. For example, researchers have used parenting styles to interrogate differences in academic outcomes. Researchers demonstrate that authoritative parenting is the most highly associated with positive academic outcomes (Checa & Abundis-Gutierrez, 2018). This is likely because warmth, and discipline with clear limits, promotes skills that foster academic success more than either permissiveness, strict obedience and punishment, or neglect (Checa & Abundis-Gutierrez, 2018). Both permissive and authoritarian parenting styles are positively correlated with increased internalizing and externalizing problems, while authoritative styles are associated with fewer internalizing and externalizing behaviors (Wittig & Rodriguez, 2019). Evidence of these outcomes can be observed in research that specifically examines parenting styles and anxiety, such as Wolfradt et al. (2003). In this study, children with authoritative or permissive style parents demonstrated higher scores on active problem coping,

while children with authoritarian style parents demonstrated higher scores on measures related to anxiety and depersonalization (Wolfradt et al., 2003). Examination of specific parenting traits within each style can help to further understand factors that affect children's outcomes. For example, parental warmth tends to be higher in permissive and authoritative parenting styles and is a trait associated with better active coping and negatively associated with anxiety (Wolfradt et al., 2003). These results help us understand how different parental behaviors associated with parenting styles can affect outcomes for children, such as the development of anxiety. Parenting styles are often analyzed using western measures and participants, so it is important to recognize that results, such as those in the aforementioned studies, may vary contingent on culture and country of the participants and research (Checa & Abundis-Gutierrez, 2018). Different contexts may affect the validity, effectiveness of result application, or conceptualizing the suitability of parenting styles (Smetana, 2017).

Anxiety at School

Examination of the etiology of anxiety is a helpful tool to understand factors which can contribute to the development of anxiety for children and adolescents. Some physical environments present multiple anxious stimulants which can further impact those who are susceptible to experiencing maladaptive levels of anxiety. School is an especially salient context where anxiety is prone to agitation for children and adolescents. Langley et al. (2004) found that youth with anxiety disorders reported school related stressors to cause the most interference with their daily life. School presents multiple opportunities for common hassles. For example, Barret and Heubeck (2000) found that challenges with peers and schoolwork are prominent triggers for individuals with anxiety. The scholastic environment places a high academic and performance demand on students, and also presents multiple social opportunities and demands. These kinds of

pressures directly align with several focal points of anxious symptomology. For example, social phobias are marked by a persistent fear of social or performance situations where embarrassment may occur (APA, 2013). School provides a consistent saturation of scenarios which require social interaction, such as projects with classmates or encountering social connections with peers and friends. Further, performance tasks, such as class presentations or exams, are largely unavoidable at school and present evaluative tasks which are often public in nature. Another anxiety disorder which illustrates the provoking nature of school is separation anxiety disorder. This type of anxiety is characterized by excessive worry and fear regarding separation from home or a person one is attached to (APA, 2013). Formal schooling requires leaving home and/or comforting people (such as parents) and is often the first separation an individual experiences from home and caregivers (Mychailyszyn et al., 2010). The demands of school provoke specific worries associated with many anxiety disorders, and contains events and activities which can stoke generalized worry. Evaluative and performance scenarios, consistent social demands, and separation from comforting people and places at school creates an environment where many students with anxiety face multiple stressors each day (Mychailyszyn et al., 2010).

Children spend many of their waking hours in school, and as such, this is an especially prominent and challenging environment for children who are prone to experiencing anxiety or who have developed an anxiety disorder. Children and youth experiencing school related anxiety may demonstrate several maladaptive behaviors in response to attending school. Common difficulties include resistance to waking up, having tantrums in the mornings, repeatedly asking to stay home, feigning illness, frequently calling parents for early pick up, and skipping classes (Weissman et al. 2009). Weissman et al. (2009) identified the motivation behind these behaviors

primarily seek to avoid the negative emotions prompted by anxiety, as well as avoid stressors at school. Avoidance of this nature is common for individuals with anxiety, and behavior with this pattern often results in chronic school refusal for children with anxiety (Mychailyszyn et al., 2010). In a study by Kearney (2003), researchers found that nearly half of all school refusing youth met criteria to be diagnosed with anxiety, demonstrating the severity of the impact anxious avoidance has for many students. Further, early school refusal of this nature often becomes a pattern and can result in early leaving of school, or “dropping out”. Van Amerigan et al. (2003) found that in a sample of students with anxiety disorders, nearly half left school prematurely and permanently. Individuals who withdraw from school early, or chronic refusers that do not return, are shown to have less friends, engage in less social activities, experience criticism with greater sensitivity, demonstrate more friction in their familial relationships, and are shown to be convicted of more crimes (Weissman et al. 2009).

Anxiety related withdrawal and avoidance behaviors also create challenges for students who continue to attend school. Many anxious children are likely to appear “shy”, hesitant, or unwilling to initiate or continue interaction with peers in the face of social novelty or perceived social evaluation (Coplan et al., 2007). Unfortunately, these behaviors stand out to peers, who are shown to rate anxious students as less preferred playmates, and are less likely to accept their anxious peers (Coplan et al., 2007; Nelson et al., 2005). Anxious students often fear rejection, and are likely to avoid social scenarios, preferring to withdraw and independently cope with their anxiety rather than risk rejection (Weissman et al., 2009). By avoiding social interactions with their peers, anxious children’s social development is inhibited, and further skills deficits become more pronounced in a way that threatens their ability to interact with others (Rubin et al., 2009). This is evident in Scharfstein et al.’s examination of anxiety, where it was found that children

who experience anxiety are more likely to have difficulties fitting in with same-age peer groups, making and sustaining friendships, and participating in social based class activities (2011). Prior et al., (2000) also found that highly anxious children were less likely to be socially competent in comparison to their peers. Prior et al. (2000) postulate an additional reason these children may behave in socially inappropriate ways is due to an inability to focus on social cues as a result of a high cognitive load focused on anxious preoccupations. As social scenarios present a commonly challenging context for students with anxiety, difficulty navigating these scenarios can compound feelings of distress and increase social related anxiety (Coplan et al, 2007). Overall, children with anxiety are shown to have lower social skills and have fewer friends than non-anxious children (Scharfstein et al., 2011).

In addition to negative social outcomes, academic engagement and performance is often impacted by anxious symptomology. In one study investigating the effect of anxiety symptoms on academic domains, children with high levels of anxiety in the first grade were nearly eight times more likely to be in the lowest quartile for both reading and math achievement (Ialongo et al., 1994). An additional study in Italy found that overall academic performance was negatively associated with anxiety in a group of elementary students taken from the general population (Mazzone et al., 2007). One theory to explain these outcomes, Processing Efficiency Theory, suggests that anxiety related symptoms may divert cognitive resources from working memory in such a way that impairs a student's ability to recall information crucial for completing the task at hand (Shi et al., 2022). This theory may be most relevant for school subjects which draw more explicitly on working memory, such as math (Ashcraft and Krause, 2007; Shi et al., 2022). An additional theory to understand these deficits places importance on the physiological and emotional arousal that occurs for anxious individuals, which is detrimental to academic

performance as it narrows a student's focus of attention to the perceived threat rather than the academic task (Wood, 2006). While low-anxious individuals are able to fully concentrate on the task at hand while being evaluated, high anxious individuals tend to divide their attention between negative cognitions/emotions and the academic task (Aydin, 2019). This divide in mental focus is particularly relevant for test related anxiety, where a student's cognitions about performance and evaluation interfere with their ability to concentrate on the academic task (Putwain et al., 2010). These types of cognitions and resulting impairment frequently create a negative cycle, where a difficulty engaging with the task provokes greater anxiety and concern for the student about their performance on the task (Killu and Crundwell, 2016). This negative cycle often results in anxious students perceiving themselves as helpless and avoiding the tasks which they find difficult (Killu and Crundwell, 2016). These students are likely to have low levels of persistence, give up quickly on tasks, have lower motivation, decreased effort, and a tendency to withdraw from tasks where failure is perceived (Killu and Crundweel, 2016). These behaviors impact overall academic achievement as well as academic skill development over time (Killu and Crundwell, 2016). In the classroom, anxiety that impairs academic performance may present as a student taking more time than other peers to complete assignments or tests, poorer outcomes on evaluative tasks, difficulty with concentration and memory, attention problems, difficulties with problem solving, task avoidance or withdrawal, lack of participation in the classroom, and oversensitivity to correction, feedback and academic support (Aronen et al., 2005; Kill & Crundwell, 2016; Owens et al., 2012).

Anxiety and School Psychology

School is typically an inevitable environment for anxious children; thus it is important to understand how these students can be supported and responded to while at school. School

psychologists are uniquely able to provide a range of services to teachers, students, and their families within this environment. School psychologists are positioned within schools as mental health professionals who use their knowledge to assess psychological and learning challenges, as well as provide intervention, prevention, and consultation services in response to school, student, and family needs (Watkins et al., 2001). School psychologists are trained with a breadth of psychological knowledge and are often the first point of contact for school staff or parents to inquire about mental health concerns (Wright & Sulkowski, 2013). Within the school system, most students with mental health concerns go without identification or treatment (Mychailyszyn et al., 2010). School psychologists are positioned to ameliorate these effects, as they have the opportunity and expertise to identify anxious students, ensure that they receive evidence-based intervention, and monitor a students' progress (Wright & Sulkowski, 2013). Additionally, school psychologists are able to provide information and context about anxious students via consultation with parents, teachers, and other service providers (Wright & Sulkowski, 2013).

Consultation

Consultation is one example of a collaborative service delivery model where a practitioner, in this circumstance a school psychologist, incorporates multiple perspectives and members to address the needs of a consultee and a client by using problem-solving strategies (Auster et al., 2006). Within the school system, this team may include any number of relevant teachers, administration staff, service providers, and caregivers (Auster et al., 2006). In this model, intervention services are not directly provided by a school psychologist, rather it is an indirect service model where parents, teachers, or other service providers administer treatment plans (Auster et al., 2006). Consultation facilitates communication between home and school, and promotes the generalization of treatment when both school and home members are involved

(Auster et al., 2006). When both settings are integrated, researchers demonstrate that anxiety interventions are more effective and generalizable across multiple environments (Auster et al., 2006). Effective consultation for anxious children must promote all parties to share responsibility for a solution to the challenges and seek to improve the skills of all parties involved, as well as facilitate communication and interactions between the environments, especially for the sake of obtaining important functional information (Auster et al., 2006). Consultation is especially relevant to practice for school psychologists responding to concerns about anxious children, as it is integral to gathering contextual information about agitating stressors and protective supports that are relevant when recommending treatment approaches or action items for support. Additionally, this process is the cornerstone through which many anxious students are identified, as teachers can voice concerns about a child's performance or behavior and the psychologist can begin to build case notes for a child. For the sake of consultation, it is important that school psychologists understand precipitating factors, like temperament and parenting, which contribute to anxiety. In this example, gaining functional information regarding parenting behaviors as well as individual student emotional experiences assist in elucidating the most key factors in agitating the anxiety at school, and informs intervention selection.

Intervention

The Canadian Psychological Association's guidelines for school psychologists define five levels of intervention school psychologists are expected to deliver (CPA, 2007). According to these competencies, school psychologists should deliver indirect student interventions which require consultation and collaboration with a student's support network, direct student interventions which involve assessment and intervention with an individual student, school wide interventions and prevention programs, system or district wide interventions that intend to

improve the system as a whole, and research that relates to mental health and education systems (CPA, 2007).

When selecting a direct intervention for anxious students, the goal is to provide the student with an understanding of their anxious thoughts and behaviors, as well as provide a set of skills the student can use to respond to their anxious cognitions and behavioral symptoms (Mychailyszyn et al., 2011). Broadly speaking, Cognitive Behavioral Therapy (CBT) is commonly used for this purpose and is an effective, evidence-based intervention that is frequently selected or recommended in an intervention plan for students with anxiety (Mychailyszyn et al., 2011). CBT programs for anxiety vary in their service delivery methods, but include providing psychoeducation, behavioral techniques, and cognitive restructuring skills to anxious individuals (Beck, 2020). CBT focuses on the relationship between thoughts, feelings, and behaviors, and can be implemented with a variety of formats. This process relies on the principle that there is a close interrelationship among thoughts, feelings, and behavior, and that distressing emotions can be relieved by changing patterns of thinking and behaviors (Beck, 2020). The behavioral component of CBT for anxiety focuses on identifying and changing individual behaviors that are maintaining or worsening the negative emotional experiences associated with anxiety. For example, focused and controlled breathing techniques, along with other mindfulness activities, have been shown to be an effective behavioral strategy to lessen the impact of anxiety (Mendelson et al., 2010). CBT also seeks to identify unhelpful thinking patterns and subsequently challenge maladaptive cognitions related to anxiety (Beck, 2020). For example, teaching the individual to challenge negative self-labeling using phrases such as “what would I tell a friend if he or she had this thought about themselves”. CBT strategies seek to build skills that target both cognition and behavior in order to ameliorate the effects of anxiety on a

student (Beck, 2020). These approaches would be especially relevant for students who present with high negative affect, or can be observed within the school as being especially susceptible to experiencing negative emotions.

Selecting an intervention for an anxious student may also include targeting environmental factors. Within the ecological systems theory, parents are established as a primary environmental factor to influence a child's socialization and development (Darling, 2007). Parenting behaviors can agitate or provide a risk factor for developing anxiety, particularly the cold behaviors or rigid involvement that is associated with authoritarian parenting styles (Wolfradt et al., 2003). Conversely, parental warmth tends to be higher in permissive and authoritative parenting styles and is a trait associated with better active coping and negatively associated with anxiety (Wolfradt et al., 2003). These results help us understand how different parental behaviors associated with parenting styles can affect outcomes for children, such as the development of anxiety. These differences indicate that parenting behaviors have a heavy influence on individual's experience with and susceptibility to distressing anxiety. Commensurate with this evidence is research that studies the positive effects of targeting parenting behaviors to improve child anxiety outcomes. This context provides an opportunity where parents may be able to intentionally alter their behavior to support positive outcomes for their anxious child. Research has explored ways to provide therapy in this context, and multiple studies have found support for parent-centered intervention for child anxiety. One approach focuses on teaching parents' skills to provide cognitive behavioral therapy skills to their children in the context of daily life (Thienemann et al., 2006). Thienemann et al., (2006) followed a group of such parents for seven months and found that children demonstrated significant improvement on both parent and child

reported levels of anxiety, with many children experiencing a reduction in symptoms so great that an anxiety diagnosis was no longer applicable.

Selecting intervention methods for anxiety, for both recommendation or direct intervention, is a key responsibility for school psychologists (CPA, 2017). Consultation is an important precedent for this step, firstly to identify the student's needs, but subsequently to gather information that informs intervention selection based off of the individual's stressors and protective factors that can be directly addressed to provide the "best-fit" intervention that will have the greatest impact (Meyers, 2017). Consistent and positive long-term sustained results are more often demonstrated when interventions are aimed at environmental variables in addition to individual treatment (Myers, 2017). Brendel and Maynard (2014) performed a meta-analysis to review the effects of child-only intervention in comparison to strategies that also included the family. In this review, Brendel and Maynard (2014) uncovered those interventions including both parent and child were more effective in treating child anxiety disorders in comparison to child-only approaches. Thus, while CBT is an effective and integral piece of comprehensive treatment to target an individual's susceptibility to anxiety, it is important to consider environmental stressors and challenges to support long term growth. At this intersection, it is especially clear that knowledge of individual differences and environmental risk factors for anxiety are especially relevant. An understanding of temperamental vulnerability helps to select and identify at-risk individuals who may benefit from individual treatment, such as CBT. Consultation also provides the opportunity to gain functional information that may indicate which additional parties will be especially beneficial. Through the process of consultation, school psychologists could use knowledge of parental behaviors that agitate anxious

vulnerability to identify behaviors which may be important to target in family-oriented intervention approaches.

Conclusion

School is an integral environment for students to encounter multiple opportunities to develop academically, socially, and behaviorally. This context presents multiple challenges for anxious students, who especially struggle with the evaluative and social contexts at school (Barrett & Heubeck, 2000; Langley et al., 2004; Mychailyszyn et al., 2010). Many children and youth experience high levels of anxiety (Bitsko et al., 2022; Briggs-Gown et al., 2000; Costello et al., 2004). An individual's likelihood to develop or be susceptible to these kinds of experiences can be precipitated by both environmental and individual differences. Temperament is one such element, which predicts that children with higher negative affect are likely to experience anxiety (Clements & Bailey, 2010). Parenting is an environmental element in a child's life, which research has shown can exacerbate and/or predict anxiety when parents are authoritarian, and demonstrating less parental warmth (Witteg & Rodriguez, 2019; Wolfradt et al., 2003). School psychologists are positioned to support these students, and can assist their students by consulting with teachers and parents to create supportive environments, selecting correct interventions, and delivering services to students. It is important for school psychologists to be aware of precipitating factors for anxious students, as it can help inform these areas of practice.

Chapter 2

Parenting and Temperament: Actions in the Microsystem and Children's Anxiety at School

Introduction

School psychologists provide a range of services to teachers, parents, and students to support those experiencing anxiety at school (Watkins et al., 2001). School psychologists typically do this through consultation with school staff to gain information about students, recommending classroom strategies to classroom teachers, consulting with parents, and providing or recommending intervention services directly to students (Canadian Psychological Association, 2017). With limited time to provide services, school psychologists should consider both the individual student and their context to select the best-fit response for treatment efficacy (Meyers, 2017). Understanding a student's vulnerability to develop anxiety helps to elucidate both individual and environmental factors which prompt challenge or can be utilized as supports within intervention (Meyers, 2017). Integrating contextual elements into response approaches has been shown to increase the effectiveness of intervention for anxiety (Meyers, 2017). Thus, researching individual vulnerability and environmental factors relevant to treatment would broaden evidence-based ways to support students with anxiety at school. The current study seeks to understand how parenting behaviors and temperament contribute to anxiety at school.

Bronfenbrenners Ecological Systems Theory (1979) provides a framework to understand the interplay of individual and environmental factors which can mediate and influence an individual's experience of anxiety. According to this theory, development and socialization are influenced by different individuals, systems, and factors, to different degrees, and assumes that an individual influences their environment as the environment also evokes the person to adapt to

its conditions and restrictions (Darling, 2007). In Bronfenbrenner's model, environments are placed inside one another and demonstrate micro-, meso-, exo-, macro-, and chrono- systems (1979). The closest environment, the microsystem, designates the direct setting closest to the individual and thus with the most influence (Bronfenbrenner, 1979). Within this system, the daily pattern of activities, roles, interpersonal relationships, and closest surroundings exist – including home, day care, school, peers, classmates, and parents (Harkonen, 2001). Here, the bi-directional relationship of individual and environment reciprocally influence one another (Bronfenbrenner, 1979). In this context, researchers can observe different variations of individual characteristics and environmental factors to explain variations in developmental outcomes, such as anxiety.

One way to operationalize individual characteristics related to the development of anxiety is via temperament theory. Temperament theory seeks to determine how individual variability can be categorically observed in order to predict and understand developmental outcomes (Sanson et al., 2004). Temperament refers to constitutionally based differences in personality style, particularly an individual's capacity to regulate emotions and attention, as well as patterns of responding to environmental stimulus (Rothbart, 2011). Three broad dimensions of temperament have gained wide acceptance and replicability within research and show stability from early infancy to adulthood. These include reactivity/negative affect, self-regulation, and approach withdrawal/sociability (Beekman et al., 2015; Rothbart, 2012; Sanson et al., 2004). Reactivity/negative affect refers to an individual's level of irritability, negative mood, high intensity negative reactions, and fearfulness. Self-regulation is further divided into two components; effortful control of attention and of emotions. Effortful control of attention relates to behaviors such as persistence or non-distractibility, while control of emotion refers to

behaviors like self-soothing. Finally, approach-withdrawal/sociability, describes a child's tendency to either approach novel situations/people, or be wary of such situations and people. Research using these dimensions establishes patterns of traits which can be used to understand and predict developmental outcomes, such as anxiety, in early years through adulthood (Sanson et al., 2004). Because of its stability across the lifespan, temperament has been frequently utilized in research related to anxiety, as it is a helpful tool to isolate individuals who persistently experience anxiety apart from individuals who experience state-specific or temporal anxiety (Clements & Bailey, 2010). For this reason, Clements and Bailey (2010) used temperament as a predictor for anxiety in the first phase of a study for stress-related anxiety. In this study, they found that elevated levels of anxiety and stress were strongly predicted by high negative affect (Clements & Bailey, 2010). Further, higher effortful control and high positive affect strongly predicted lower anxiety in individuals (Clements & Bailey, 2010). These findings are consistent across research which consistently associate high levels of negative affect with high levels of anxiety and/or stress (Clark et al., 1994; Lonigan et al., 2004; Perez-Edgar & Fox, 2005).

Reflective of Bronfenbrenner's (1979) Ecological Systems Theory, temperament alone cannot encapsulate the process of developing anxiety. Rather, an individual is both the product and producer of their environment as reciprocal actions occur between the active child and environmental context (Lerner et al., 1991). Thus, it is integral to isolate an element in a child's closest environment, the microsystem, to better represent the etiology of anxiety. Within the microsystem, one of the most powerful agents of development is a child's parent(s), who differentially respond to their child and structure the home environment. Parenting practices are directly observable behaviors parents use to socialise their children including narrative interactions with their child, positive reinforcement, discipline, and problem-solving approaches

(Kuppens & Ceulemans, 2019). Parenting practices of this nature are frequently used in research and are operationalized in a variety of ways. Baumrind (1971) defines three parenting styles which have frequently been used in research; authoritarian, permissive, and authoritative styles. Authoritarian parenting describes a pattern of behavior that attempts to shape, control, and evaluate a child's behavior on a distinct and consistent set of standards, with an orderly environment and close monitoring of children (Kuppens & Ceulemans, 2019). A second style, permissive parenting, characterizes practices that grant more autonomy, and are warmer rather than controlling, and largely allow the child to self-regulate (Kuppens & Ceulemans, 2019). The median between the two aforementioned styles is authoritative parenting (Kuppens & Ceulemans, 2019). Authoritative parenting is characterized by clear expectations and rule setting, as well as the use of reasoning and discussion to achieve a child's adherence to rules (Checa & Abundis-Gutierrez, 2018). Of these styles, Wolfradt et al. (2003) found that children with authoritarian style parents demonstrated higher scores on measures related to anxiety, a finding consistent in research (Cheung et al., 2014; Timpan et al., 2010; Wittig & Rodriguez., 2019). This is consistent both when parent's report their own parenting styles as authoritarian, and also when students perceive their parents as authoritarian (Bakhla et al., 2013; Erozkhan, 2012). Conversely, research demonstrates that authoritative or permissive style can lead to better active problem coping and comparatively lower levels of anxiety than those with authoritarian parents (Wolfradt et al., 2003). These conclusions illustrate the way that parenting can exacerbate and/or predict anxiety, and can be used to understand the context of a student's environment related to anxious behavior.

The Current Study

Within the school context, anxious students struggle with a variety of challenges relevant to school psychology practice. Temperament and parenting have been utilized in research separately to identify trait vulnerability and environmental factors related to anxiety. Research provides a strong basis to conclude then that the presence of both negative affect and authoritarian parenting would strongly predict anxiety. However, this scenario has not specifically been interrogated within the school context. The objective of this study is to identify how negative affect and parenting styles interact and can be observed to help predict increased anxiety, specifically within the school setting.

I hypothesize, consistent with past research, that temperament profiles with high negative affect will be associated with higher levels of anxiety at school. I also hypothesize that the current study will corroborate past research which indicates an authoritarian parenting style is associated with higher levels of anxiety. Conversely, because researchers have demonstrated that permissive and authoritative parenting styles are associated with lower levels of anxiety, these patterns will similarly be demonstrated in the results. Finally, I hypothesize that the inclusion of negative affect and authoritarian parenting style together will be predictive of anxiety, and thus account for significant variance in anxiety at school.

Methods

Participants

For this study, recruitment focused on caregivers to Canadian students between the ages of 7 and 12 years of age. The sample consisted of 32 parent-child dyads who were residents of Canada and with children enrolled in Canadian schools. Four parent respondents identified as male and 28 identified as female, ranging from 33-57 years of age ($M = 41.20$, $SD = 5.32$). Of

the children, parents identified 18 as male, 13 as female, and one did not report their child's gender. The children ranged in age from 7-12 ($M = 9.65$, $SD = 1.66$). Five parents reported their child was in grade 2, 5 in grade 3, 2 in grade 4, 9 in grade 5, 4 in grade 6, 5 in grade 7, 1 in grade 8, and one parent did not disclose their child's grade ($M = 4.68$, $SD = 1.80$). Twenty-nine parents identified as Caucasian, one identified as Caucasian and First Nations, one parent identified as African North American / Black, and one parent identified as Caucasian and African North American / Black. Parents reported 25 children as Caucasian, two identified their children as African North American / Black, one reported their child as Caucasian and First Nations, one reported their child as Caucasian and African North American / Black and Caucasian, and three parents did not identify their child's ethnicity.

Materials

Demographic Questionnaire: Participants were asked to complete a demographic questionnaire at the beginning of the survey. This was used to collect information on participant demographics including Canadian residency, age of responding parent, gender of responding parent, ethnicity of responding parent, age of respondents child, gender of the respondents child, ethnicity of the respondents child, and current grade level of the respondents child.

The Temperament in Middle Childhood Questionnaire (TMCQ) (Simonds & Rothbart, 2005) uses caregiver reports to provide a detailed profile of children's temperament beginning at age 7. This scale was developed from the *Childhood Behavior Questionnaire (CBQ)* (Rothbart, 2001). The questionnaire has 197 items, with responses on a Likert-type scale ranging from 1 ("almost always untrue") to 7 ("almost always true"). Parents are also provided with a "not applicable" response option when the child has not been observed in the situation described. The TMCQ items measure temperament based on seventeen different factors, which can be averaged

to compute scale scores of three main dimensions (Rothbart et al., 2001). These three dimensions are known as surgency or extraversion, negative affectivity, and effortful control (Rothbart, 2012). For the purpose of the current study, only items pertaining to negative affect were administered to participants, this factor contains 44 items. This measure is widely used, and has shown both good reliability and validity to assess temperament (Rothbart et al., 2001).

The Child Anxiety Impact Scale Parent Version (CAIS-P) (Langley et al., 2004) measures children's anxiety-related impairment across three domains; academic, social, and family/home environments. This measure contains 27 items for which parents are asked to rate the level of difficulty their child has had completing each activity in the last month. Responses are provided on a 4-point Likert-type response scale to indicate the degree to which anxiety has caused challenges in the task, ranging from 0 ("not at all") to 3 ("very much"). A total score is generated by summing the individual factor scores. The measure has reliably demonstrated impairment in at least one area (academic, social, family/home) in children and adolescents with anxiety disorders, and shows good internal consistency and construct validity for both individual subscales and total score (Langley et al., 2004). For the current study, only items on the school scale will be administered, a total of 10 items.

The Parenting Practices Questionnaire (PPQ) (Robinson et al., 1995) measures parent's behavioral strategies with their children. The PPQ consists of 62 items measuring authoritative, authoritarian, and permissive styles of parenting using definitions set by Baumrind (1971). Each item is rated on a five-point Likert-type scale to define the frequency of a behavior, ranging from 1 ("never") to 5 ("always"). This measure has shown good measurement reliability and validity (Olivari et al., 2013)

Procedure

Data was collected through an online survey hosted by Lime Survey from May 31st to October 30th, 2023. A flyer with relevant information, as well as the link to the survey, was posted on social media via personal profiles as well as through online parent/research groups. Timing was estimated to take 60 minutes, was voluntary, and anonymous. This survey included a demographic questionnaire and the three measurement scales. First, the TMCQ, then the PPQ, followed by the CAIS-P. Incentive was offered via a separate survey, unattached from study responses, where participants could enter their email for a draw to win a \$100.00 Amazon gift card. Participants were able to click on the URL and be directed to the survey.

Analyses

Analyses were performed using IBM's Statistical Package for the Social Sciences Software (SPSS) version 29. Respondents who omitted > 5 responses from a single measure were not included in the data set, otherwise missing responses were scored according to their respective measure's protocols. One of the questions on the TMCQ was omitted due to irregularities in response pattern – responses on the online format did not export into a readable format. Thus, Q51, relating to Factor 4 – “Being good natured/easy going” which loads into authoritative parenting style (factor loading = .37), was excluded from scoring.

Pearson correlations were used to explore correlations between variables. Subsequently multiple regressions were used to examine Parenting Styles and Negative Affect in predicting anxiety at school. The assumptions of the correlation and regression analyses were normality and linearity.

Results

Correlations

Parent-Reported anxiety scores were significantly associated with negative affect ($r = .513, p = .003$) at the .01 level. Parent-Reported anxiety scores were also significantly associated with permissive style parenting at the .05 level ($r = .363, p = .041$). Permissive style parenting was also significantly associated with negative affect ($r = .453, p = .009$) and authoritarian style parenting ($r = .674, p < .001$) at the .01 level. No significant correlations were found between anxiety and authoritative parenting style ($r = .056, p = .759$) or anxiety and authoritarian parenting style ($r = .282, p = .117$). Pearson correlations are reported in Table 1.

Multiple Regression

Multiple regressions were conducted to look at the combination of parenting style and negative affect in the prediction of anxiety. As hypothesized, the combination of negative affect and authoritarian style parenting significantly predicted anxiety ($F=5.84, p < .01, rsq\ adj=.24$). Approximately 24% of the variance in anxiety was accounted for with these two variables. Coefficients are reported in Table 2.

Table 1*Results of Pearson Correlation Analysis Between Variables*

	Anxiety	N. Affect	Authoritarian	Authoritative	Permissive
Anxiety	--	.513**	.282	.056	.363*
N. Affect	.513**	--	.258	-.159	.453**
Authoritarian	.282	.258	--	-.104	.674**
Authoritative	.056	-.159	-.104	--	-.282
Permissive	.363*	.453**	.674**	-.282	--

**Correlations are significant at the <0.01 level (2-tailed)

*Correlations are significant at the <0.05 level (2-tailed)

Table 2*Results of Multiple Regression – Negative Affect and Authoritative Parenting Coefficients*

	Std. Error	Beta	t	Sig
(Constant)	5.030	---	-1.376	0.179
N. Affect	1.550	0.471	2.904	0.007
Authoritarian	0.115	0.161	0.990	0.330

a. Dependent Variable: Anxiety

Discussion

The current study sought to further the understanding of individual and environmental predictors of anxiety within the school context to be applied to the school psychology profession. In particular, Bronfenbrenner's Ecological Systems Theory (1979) provided a context to query how temperament, specifically negative affect, as well as parenting behaviors contribute to anxiety within the microsystem at school. The purpose of this study aimed to extend previous research's connection between negative affect and authoritarian parenting with anxiety by including both variables as predictors of anxiety within the school context. This informs practice for school psychology by providing evidence-based indicators for identification as well as considerations for intervention with anxious students.

Consistent with existing literature, the current study supports an association between individual temperament, specifically negative affect, and anxiety. Negative affect was correlated with anxiety ($r = .363$, $p = .041$), demonstrating that inherent proneness to irritability, negative mood, high intensity negative reactions, and fearfulness predispose an individual to experiencing anxiety in broad contexts (Clements & Bailey, 2010; Lonigan et al., 2004), as well as within the school environment. This extension of temperament research is especially relevant to the school psychology profession, as it helps to provide markers of attitude and behavior which may assist in identifying students with anxiety. Minahan and Rappaport (2013) discuss that the nature of anxiety limits our ability to accurately identify anxious children - particularly because children with anxiety frequently attempt to minimize anxiety and control its effects before others can observe symptoms. Internalizing symptoms associated with anxiety, such as worrisome cognition or withdrawing from scenarios, complicates teachers', parents', and school psychologists' ability to observe maladaptive behaviors to prompt support and intervention (Huberty, 2009). With the

inclusion of negative affect as a predictor for anxiety, additional behaviors and attitudes can be used to flag and identify students who are vulnerable to anxiety or are experiencing anxiety. Anxiousness is likely to be covert, and as such, elucidating further behavior and personality typologies can broaden school psychologists' ability to identify anxious students during observation or throughout consultation with parents, teachers, and school staff.

It was also hypothesized that an authoritarian parenting style would be associated with anxiety at school. However, authoritarian parenting style was not associated with anxiety in the current study ($r = .282$, $p = .117$). Further, the current study did not replicate past research which indicates a negative association between an authoritative parenting style and anxiety ($r = .056$, $p = .759$). The current study's differential context is a potential mitigating factor, however, given such a strong research foundation, I rather propose that limitations of the current study are more likely the interferent variable in extending this research to the school context. In particular, the small sample size and resulting power to identify a significant correlation. Refer to the limitations section for a further discussion.

Based on past research, it was expected that a permissive parenting style would be negatively associated with anxiety at school. However, results from the current study demonstrate a positive association between permissive parenting styles and anxiety ($r = .363$, $p = .041$). Research has previously associated permissive parenting styles with lower levels of anxiety (Clements & Bailey, 2010; Wolfradt et al., 2003). An association between a permissive parenting style and anxiety is less likely according to past research; however, Bronfenbrenner's ecological systems theory represents the complexity of development (1979). Here, numerous temporal, environmental, and behavioral influences interact to produce variations in development (Bronfenbrenner, 1979). Within this model, an association between permissive parenting and

anxiety can be postulated as a discussion to illustrate the bi-directional relationship of anxiety and parenting behaviors. Thus, permissive style parenting may differentially interact with facets of temperament, which may explain the current study's converse finding. In the current study, permissive parenting style was also associated with negative affect ($r = .453, p = .009$). In particular, parental stress and coping may explain why some parents adopt a permissive parenting style in response, rather than as a precursor to, a child with difficult behaviors. Parental stress refers to the emotional and psychological strain experienced by parents raising children, where stress factors include financial pressure, family conflicts, and behaviorally difficult children (Crnic & Low, 2002). When a child has a high negative affect, they are likely to be prone to distress, irritability, reactivity, and negative emotions (Lonigan et al., 2004). These behaviors are difficult and can create parental stress (Crnic & Low, 2002), as can the behaviors associated with anxiety in children (Hiebert-Murphy et al., 2012). Temperament theory suggests that some parents align with permissive parenting practices, including a lack of rule setting, boundary enforcement, and punishment, to attempt to maintain a harmonious relationship with the child and avoid stress (Baumrind, 1966). This is especially valid when parents are attempting to reduce parental stress (Deater-Deckard, 1998), and some parents enact lenient parenting practices as an attempt to avoid emotional intensity or behavioral responses associated with either negative affect or anxiety. In these contexts, the relationship between negative affect/anxiety and a parenting style is less bi-directional, rather the child's state evokes stress for the parent and they adapt a differential parenting style in order to cope. The association between a permissive parenting style and anxiety/negative affect should be discussed to understand the complexity of development. This nuanced relationship may be more apparent when the sample size is small, and may not represent a predictive relationship in a larger context. Alternatively,

permissive parenting's interaction with temperament may require further research to understand how this relationship may impact a student's experience with anxiety.

Regarding the main hypothesis, negative affect and authoritarian style parenting together predicted a significant amount of variance in anxiety scores ($rsq_{adj} = .24$). The current study could not replicate past findings supporting an association between authoritarian parenting style and anxiety ($r = .282$, $p = .117$). However, the inclusion of both variables together did predict anxiety as expected. This finding corroborates that individual and environmental variations in the microsystem are important considerations to understand vulnerability to anxiety. As previously mentioned, behavioral observations related to negative affect may support school psychologists' process of identifying anxious students. School psychologists should be mindful that parenting practices which attempt to shape, control, and evaluate a child's behavior with rigid standards through close monitoring can antagonize or precede anxiety, particularly when a student is prone to experiencing negative emotions (high negative affect). These findings directly apply to practice for school psychology in the context of informing treatment approaches for anxious students. It is typical for school-based support to include communication and information between both the school and home environments through consultation when a student is experiencing challenges at school (Watkins et al., 2001). Within this context, knowledge of antagonists of anxiety can be utilized to inform collaborative efforts between parents and school psychologists when selecting treatment approaches. When providing treatment options to schools and families, school psychologists would benefit from being able to encourage parenting behaviors which support anxious students, as well as include parents in the intervention if necessary. Research demonstrates that parents can be a key factor in improving treatment for anxious students (Thienemann et al., 2006), and this may be particularly true when parental

behaviors misalign with anxious vulnerability and symptomology. In this way, school psychologists benefit from markers of parental behavior to initiate support when an inclusion of parent centric treatment or education may be crucial to student progress.

Limitations

Some limitations arise in the current study. Of primary concern is the small sample size employed during data collection ($n = 32$). This number reaches sufficient power requirement for the analysis used, however, the relatively small sample size results in greater proneness to random variation, nominal effects, and susceptibility to confounding factors. Thus, the findings should be interpreted with caution, as the use of a limited number of participants may undermine the generalizability of the findings. For the current study, sample size was limited by both time and resources, as the current study may not have provided enough incentive to garner participants, nor was their resources to promote the survey across platforms beyond personal social media accounts. Further, temporal completion of this study limited the ability to continue to wait for participant responses.

The online nature of data collection provides a convenient method for collecting data under time and financial limitations. However, one significant challenge is an inherent sampling bias where those without internet access, those uncomfortable with using online platforms, and those who do not use social media are excluded from the sample. Further, online data collection is biased in its self-selective nature, which means participants with specific characteristics may be more likely to respond – and as such, there may be a lack of diversity within the sample (Lefever et al., 2007). Another main concern is an inability to control the survey environment; the quality of responses may be called into question as participants may have been multitasking or experienced the presence of distractors (Latkovikj & Popovska, 2019). Thirdly, online data

collection does not provide an ability to verify a respondents identity – including whether a participant understands the selection criteria or is truly representing themselves.

Data used in the study combined self-report (parenting style in the PPQ), and parent report (child temperament in the TMCQ, and child anxiety in the CAIS-P). The PPQ is vulnerable to social desirability bias, where reported behavior reflects “proper” or socially expected actions rather than true behavior (Morsbach & Prinz, 2006; Van de Mortel, 2008). Both mothers and fathers are likely to lessen the degree to which they align with practices which may be seen as “harsh” or “neglectful” (Bornstein et al., 2014). This is of particular concern for the PPQ whose items directly interrogate all parenting styles, including less involved and harsher parenting styles like permissive and authoritarian parenting styles (Baumrind, 1971). The CAIS-P and the TMCQ rely on secondary account which should be utilized with the knowledge that definitions and descriptions provided in these measures may be interpreted in a manner specific to the individual reporting (Aspland & Gardner, 2003). This differential interpretation results in a lack of contextual information, which may impact accurate interpretation by researchers and inhibit a true representation of the individual being reported on (Aspland & Gardner, 2003).

Future Research

Individual temperament can assist in furthering the definition of behavioral and personality types who are vulnerable to experiencing anxiety, and it may be beneficial to translate this finding to measures school psychologists can readily use. School psychologists primarily use observation and consultation to identify anxious students (Wright & Sulkowski, 2013). School psychologists may also use self-report measures to gain information about a students subjective experience (Zanko, 2022). In particular, school psychologists regularly use the Behavior Assessment System for Children–Self-Report of Personality (BASC-SRP;

Reynolds & Kamphaus, 2015). This instrument is particularly useful during a diagnostic process where multiple behaviors are topographically similar to multiple disorders and further information is needed (Zanko, 2022). For example, when a student presents with restlessness and distractibility, behaviors common to both attention deficit hyperactivity disorder (ADHD) and anxiety, internalizing symptoms inform the root of the symptoms. However, as anxiety is often covert and individuals frequently attempt to mask, hide, or deny their anxious experience (Minahan & Rappaport, 2013), both observation and self-report measures can be confounded by anxious symptomology. In this context, future research may benefit from developing a self-report measure which could be quickly administered in the school setting and would measure negative affect as a construct. This kind of tool would be useful to help differentiate mood-related disorders from other behaviorally similar disorders, and could also help identify students who are prone to experiencing perpetual anxiety versus students who are experiencing state-related anxiety specific to a single stressor in the school environment. This kind of diagnostic distinction would inform diagnosis and treatment selection. Further, a self-report measure regarding temperament could be developed with items that pertain to a frequency of non-subjective behaviors rather than self-evaluated feeling states. For example, rather than asking to rate the how true it is that a student “feels down often”, a negative affect questionnaire might ask whether it is often true that they “are told by others to “cheer up” and be happier”. Rating these kinds of objective behaviors may help to circumvent symptom masking or denying. In this manner, temperament theory could be utilized to support diagnosis and intervention for anxious students in the school context.

Understanding the ecological systems surrounding a student, particularly the microsystem involving parents, can inform collaborative efforts between school psychologists, parents, and

students to create a supportive environment for anxious students. The current study indicated that students who are vulnerable to experiencing anxiety (negative affect), are likely to experience anxiety when also confronted with strict authoritarian parenting in the home environment. This research could be extended to apply more directly to the school environment, potentially through examining classroom management behaviors teachers utilize. Specifically, the investigation of teacher's behaviors which could exacerbate or support anxiety at school would be useful for school psychologists to support teachers. This could inform consultation between school staff and the school psychologist when there are anxious students present or when teachers have question about how to best support their students.

Conclusion

The current study sought to identify how individual and environmental factors in the microsystem predispose student's to experiencing anxiety at school. Consistent with past research, the current study supports that individual temperament, specifically high negative affect, is associated with increased anxiety at school. Further, a model using both negative affect and authoritarian style parenting accounted for significant variance in students' anxiety. When a student with high negative affect, who is vulnerable to experiencing anxiety, has parents who utilize authoritarian parenting, this susceptibility is exacerbated. This finding contextualizes which students are likely to experience anxiety and informs how school psychologists may include parents in their children's treatment for highest impact. Past research strongly supports a relationship between permissive and authoritative parenting styles with decreased anxiety, as well as a relationship between authoritarian parenting and increased anxiety. These correlative associations between anxiety and parenting styles were not replicated. Limitations of the current study underscore the need for caution in generalizing the results to the greater population. In

particular, small sample size and issues with online participation should be considered and ameliorated before generalization. Previously, permissive parenting has been associated with lower levels of anxiety. The current study found a significant association between permissive parenting and anxiety: these variables may differentially interact in the presence of negative affect, which was also corelated with permissive parenting in the current study. Future research would benefit from investigating this interaction. Research on parenting and temperament related to anxiety for the school psychology profession has the potential to inform the development of diagnostic measures as well as classroom-based practices for teachers at school to support anxious students. As we strive to enhance evidence-based practices in school to support students with anxiety, this study encourages comprehensive considerations in both individual and environmental realms when approaching diagnosis and treatment in the school context.

References:

- Albano, A. M., Chorpita, B. F., & Barlow, D. H. (2003). Childhood anxiety disorders. In E. J. Mash & R. A. Barkley (Eds.), *Child psychopathology* (pp. 279–329). The Guilford Press.
- American Psychiatric Association. (2022). Diagnostic and statistical manual of mental disorders (5th ed., text rev.). <https://doi.org/10.1176/appi.books.9780890425787>
- Aronen E. T., Vuontela V., Steenari M. R., Salmi J., Carlson S. (2005). Working memory, psychiatric symptoms, and academic performance at school. *Neurobiology of Learning and Memory*, 83(1), 33–42. doi: 10.1016/j.nlm.2004.06.010.
- Ashcraft M. H., Krause J. A. (2007). Working memory, math performance, and math anxiety. *Psychonomic Bulletin & Review*, 14(2), 243–248. doi: 10.3758/BF03194059.
- Aspland, H., & Gardner, F. (2003). Observational Measures of Parent-Child Interaction: An Introductory Review. *Child and Adolescent Mental Health*, 8(3), 136–143. <https://doi.org/10.1111/1475-3588.00061>
- Auster, E. R., Feeney-Kettler, K. A., & Kratochwill, T. R. (2006). Conjoint behavioral consultation: Application to the school-based treatment of anxiety disorders. *Education and Treatment of Children*, 243-256.
- Aydin, U. (2019). Test anxiety: Gender differences in elementary school students. *European Journal of Educational Research*, 8(1), 21-30. doi: 10.12973/eu-jer.8.1.21
- Bagner, D. M., Rodríguez, G. M., Blake, C. A., Linares, D., & Carter, A. S. (2012). Assessment of behavioral and emotional problems in infancy: A systematic review. *Clinical Child and Family*

- Bakhla, A. K., Sinha, P., Sharan, R., Binay, Y., Verma, V., & Chaudhury, S. (2013). Anxiety in school students: Role of parenting and gender. *Industrial Psychiatry Journal*, 22(2), 131.
- Barrett, S., & Heubeck, B., G. (2000). Relationships between school hassles and uplifts and anxiety and conduct problems in grades 3 and 4. *Journal of Applied Developmental Psychology*, 21, 537-554.
- Baumrind, D. 1971. Current patterns of parental authority. *Developmental Psychology Monographs*, 4(2), 1–103.
- Beck, J. S. (2020). *Cognitive behavior therapy: Basics and beyond*. Guilford Publications.
- Beekman, C., Neiderhiser, J.M., Buss, K.A., Loken, E., Moore, G.A., Leve, L.D., Ganiban, J.M., Shaw, D.S., & Reiss, D. (2015). The development of early profiles of temperament: Characterization, continuity, and etiology. *Child Development*, 86(6), 1794-1811.
- Beesdo, K., Knappe, S., & Pine, D. S. (2009). Anxiety and anxiety disorders in children and adolescents: developmental issues and implications for DSM-V. *Psychiatric Clinics*, 32(3), 483-524.
- Bitsko, R.H., Claussen, A.H., Lichtstein, J., Black, L.J., Everett Jones, S., Danielson, M.D., Hoenig, J.M., Davis Jack, S.P., Brody, D.J., Gyawali, S., Maenner, M.M., Warner, M., Holland, K.M., Perou, R., Crosby, A.E., Blumberg, S.J., Avenevoli, S., Kaminski, J.W., & Ghandour, R.M. (2022). Surveillance of Children’s Mental Health – United States, 2013 – 2019 MMWR, 2022 / 71(Suppl-2);1–42.
- Bornstein, M. H., Putnick, D. L., Lansford, J. E., Pastorelli, C., Skinner, A. T., Sorbring, E., Tapanya, S., Tirado, L.M.U., Zelli, A., Alampay, L.P., Al-Hassan, S. M., Bacchhini, D., Bombi, A.S., Chang, L., Deater-Deckard, K., Giunta, L.D., Dodge, K.A., Malone, P.S., & Oburu, P. (2014). Mother and father socially desirable responding in nine countries: Two kinds of agreement and relations

to parenting self-reports. *International Journal of Psychology*, 50(3), 174–185.

doi:10.1002/ijop.12084

Brendel, K. E., & Maynard, B. R. (2014). Child–parent interventions for childhood anxiety disorders: a systematic review and meta-analysis. *Research on Social Work Practice*, 24(3), 287-295.

Briggs-Gown, M. J. , Horwitz, S. M., Schwab-Stone, M. E., Leventhal, J. M., & Leaf, P. J. (2000). Mental health in pediatric settings: Distribution of disorders and factors related to service use. *Journal of the American Academy of Child and Adolescent Psychiatry*, 39, 841-849.

Bronfenbrenner, U. 1979. *The ecology of human development: Experiments by nature and design*, Cambridge, MA: Harvard University Press.

Canadian Psychological Association. (2007). *Professional Practice Guidelines for School Psychologists in Canada: The CPA Section of Psychologists in Education*. Retrieved from <https://cpa.ca/cpsite/UserFiles/Documents/publications/CPA%20Practice%20Guide.pdf>

Checa, P., & Abundis-Gutierrez, A. (2018). Parenting styles, academic achievement and the influence of culture. *Psychology and Psychotherapy: Research Study*, 1(4), 1-3.

Chess, S., & Thomas, A. (1973). Temperament in the normal infant. *Individual Differences in Children*, 83-103.

Cheung, C. K., Cheung, H. Y., & Wu, J. (2014). Career unreadiness in relation to anxiety and authoritarian parenting among undergraduates. *International Journal of Adolescence and Youth*, 19(3), 336-349.

- Clements, A. D., & Bailey, B. A. (2010). The relationship between temperament and anxiety: Phase I in the development of a risk screening model to predict stress-related health problems. *Journal of Health Psychology, 15*(4), 515-525.
- Coplan, R.J., Girardi, A., Findlay, L.C., & Frohlick, S.L. (2007). Understanding solitude: Young children's attitudes and responses towards hypothetically socially withdrawn peers. *Social Development, 16*, 390-409.
- Costello, E., Mustillo, S., Keeler, G., & Angold, A. (2004). Prevalence of psychiatric disorders in children and adolescents. In B. Levine, J. Petrila, & K. Hennessey (Eds.), *Mental health services: A public health perspective* (pp. 111-128). New York, NY: Oxford University Press
- Crnic, K., & Low, C. (2002). Everyday stresses and parenting. In M. H. Bornstein (Ed.), *Handbook of parenting: Practical issues in parenting* (pp. 243–267). Lawrence Erlbaum Associates Publishers.
- Cummings, E. M., Davies, P. T., & Campbell, S. B. (2000). *Developmental Psychopathology and Family Process*. New York, NY: The Guilford Press.
- Darling, N. (2007). Ecological systems theory: The person in the center of the circles. *Research in Human Development, 4*(3-4), 203-217.
- Deater-Deckard, K. (1998). Parenting stress and child adjustment: Some old hypotheses and new questions. *Clinical Psychology: Science and Practice, 5*(3), 314-332.
- Degnan, K. A., Almas, A. N., & Fox, N. A. (2010). Temperament and the environment in the etiology of childhood anxiety. *Journal of Child Psychology and Psychiatry, 51*(4), 497-517.

- Erozkan, A. (2012). Examination of Relationship between Anxiety Sensitivity and Parenting Styles in Adolescents. *Educational Sciences: Theory and Practice*, 12(1), 52-57.
- Essau, C. A., Lewinsohn, P. M., Olaya, B., & Seeley, J. R. (2014). Anxiety disorders in adolescents and psychosocial outcomes at age 30. *Journal of Affective disorders*, 163, 125-132.
- Guo, Y. (2018). The Influence of Academic Autonomous Motivation on Learning Engagement and Life Satisfaction in Adolescents: The Mediating Role of Basic Psychological Needs and Satisfaction. *Journal Of Education And Learning*, 7(4), 254. <https://doi.org/10.5539/jel.v7n4p254>
- Härkönen, U. (2001). The Bronfenbrenner ecological systems theory of human development. University of Joensuu, Finland.
- Hiebert-Murphy, D., Williams, E. A., Mills, R. S., Walker, J. R., Feldgaier, S., Warren, M., Freeman, W., McIntyre, M., & Cox, B. J. (2012). Listening to parents: The challenges of parenting kindergarten-aged children who are anxious. *Clinical child psychology and psychiatry*, 17(3), 384-399.
- Huberty, T. J. (2009). Interventions for internalizing disorders. In A. Akin-Little, S. G. Little, M. A. Bray, & T. J. Kehle (Eds.), *Behavioral interventions in schools: Evidence-based positive strategies* (pp. 281–296). *American Psychological Association*. <https://doi.org/10.1037/11886-018>
- Iaiongo, N., Edelsohn, G., Werthamer-Larsson, L., Crockett, L., & Keliham, S. (1995). The significance of self-reported anxious symptoms in first grade children: Prediction to anxious symptoms and adaptive functioning in fifth grade. *Journal of Child Psychology and Psychiatry*, 36, 427-437

- Kagan, J., Reznick, J.S., Clarke, C., Snidman, N., & Garcia-Coll, C. (1984). Behavioral inhibition to the unfamiliar. *Child Development*, 55, 2212–2225.
- Kearney, C. A. (2003). Bridging the gap among professionals who address youths with school absenteeism: Overview and suggestions for consensus. *Professional Psychology: Research and Practice*, 34, 57-65.
- Killu, K., Marc, R., & Crundwell, A. (2016). Students with anxiety in the classroom: Educational accommodations and interventions. *Beyond Behavior*, 25(2), 30-40.
- Kuppens, S., & Ceulemans, E. (2019). Parenting styles: A closer look at a well-known concept. *Journal of Child and Family Studies*, 28(1), 168-181.
- Langley, A. K., Bergman, R. L., McCracken, J., & Piacentini, J. C. (2004). Impairment in childhood anxiety disorders: Preliminary examination of the child anxiety impact scale—parent version. *Journal of Child and Adolescent Psychopharmacology*, 14(1), 105-114.
- Latkovikj, M. T., & Popovska, M. B. (2019). Online research about online research: Advantages and disadvantages. *E-methodology*, 6(6), 44-56.
- Lawyer, S. A., & Smitherman, T. A. (2004). Trends in anxiety assessment. *Journal of Psychopathology and Behavioral Assessment*, 2(6), 101-106.
- Lefever, S., Dal, M., & Matthíasdóttir, Á. (2007). Online data collection in academic research: advantages and limitations. *British Journal of Educational Technology*, 38(4), 574-582.
- Lerner RM, Hess LE, Nitz KA. Developmental perspective on psychopathology. In: Herson M, Last CG, editors. *Handbook of child and adult psychopathology: a longitudinal perspective*. Elmsford (NY)7 Pergamon Press; 1991. p. 9 – 32.

- Lonigan, C. J., Vasey, M. W., Phillips, B. M., & Hazen, R. A. (2004). Temperament, anxiety, and the processing of threat-relevant stimuli. *Journal of Clinical Child and Adolescent Psychology*, 33(1), 8-20.
- Mazzone, L., Ducci, F., Scoto, M. C., Passaniti, E., D'Arrigo, V. G., & Vitiello, B. (2007). The role of anxiety symptoms in school performance in a community sample of children and adolescents. *BMC public health*, 7(1), 1-6.
- Mendelson, T., Greenberg, M. T., Dariotis, J. K., Gould, L. F., Rhoades, B. L., & Leaf, P. J. (2010). Feasibility and preliminary outcomes of a school-based mindfulness intervention for urban youth. *Journal of Abnormal Child Psychology*, 38
- Meyers, J., Meyers, A. B., & Grogg, K. (2017). Prevention through consultation: A model to guide future developments in the field of school psychology. In *Journal of Educational and Psychological Consultation* (pp. 257-276). Routledge.
- Minahan, M., & Rappaport, N. (2013). Anxiety in students: A hidden culprit in behavior issues. *Phi Delta Kappan*, 94, 34-39.
- Morsbach, S. K., & Prinz, R. J. (2006). Understanding and improving the validity of self-report of parenting. *Clinical Child and Family Psychology Review*, 9, 1-21.
- Mychailyszyn, M. P., Beidas, R. S., Benjamin, C. L., Edmunds, J. M., Podell, J. L., Cohen, J. S., & Kendall, P. C. (2011). Assessing and treating child anxiety in schools. *Psychology in the Schools*, 48(3), 223-232.

Nelson, L. J., Rubin, K. H., & Fox, N. A. (2005). Social withdrawal, observed peer acceptance, and the development of self-perceptions in children ages 4 to 7 years. *Early Childhood Research Quarterly*, 20, 185- 200.

Olivari, M. G., Tagliabue, S., & Confalonieri, E. (2013). Parenting style and dimensions questionnaire: A review of reliability and validity. *Marriage & Family Review*, 49(6), 465-490.

Owens, M., Stevenson, J., Hadwin, J. A., & Norgate, R. (2012). Anxiety and depression in academic performance: An exploration of the mediating factors of worry and working memory. *School Psychology International*, 33(4), 433-449.

Pérez-Edgar, K., & Fox, N. A. (2005). Temperament and anxiety disorders. *Child and Adolescent Psychiatric Clinics*, 14(4), 681-706.

Prior, M., Smart, D., Sanson, A., & Oberklaid, F. (2000). Does shy inhibited temperament in childhood lead to anxiety problems in adolescence? *Journal of the American Academy of Child and Adolescent Psychiatry*, 39, 461-468.

Psychology Review, 15, 113–128. <http://dx.doi.org/10.1007/s10567-012-0110-2>

Putnam, S. P., & Rothbart, M. K. (2006). Development of short and very short forms of the Children's Behavior Questionnaire. *Journal of Personality Assessment*, 87(1), 102–112.
https://doi.org/10.1207/s15327752jpa8701_09

Putnam, S.P., & Stifter, C.A. (2005). Behavioral approach-inhibition in toddlers: Prediction from infancy, positive and negative affective components, and relations with behavior problems. *Child Development*, 76(1), 212-226.

- Putwain D. W., Connors L., Symes W. (2010). Do cognitive distortions mediate the test anxiety-examination performance relationship?. *Educational Psychology*, 30(1), 11–26. doi: 10.1080/01443410903328866
- Reynolds, C. R., & Kamphaus, R. W. (2015). Behavior assessment system for children (3rd ed.). San Antonio, TX: Pearson
- Robinson, C. C., Mandleco, B., Olsen, S. F. and Hart, C. H. 1995. Authoritative, authoritarian, and permissive parenting practices: development of a new measure. *Psychological Reports*, 77(3): 819–830.
- Rothbart, M K, Ahadi, S. A., Hershey, K. L., & Fisher, P. (2001). Investigations of temperament at three to seven years: The Children’s Behavior Questionnaire. *Child Development*, 72(5), 1394–1408. (11699677).
- Rothbart, M.K. (2012). *Encyclopedia on Early Child Development: Temperament*. University of Oregon.
- Rothbart, Mary K. (2011). *Becoming who we are: Temperament and personality in development*. New York, NY, US: Guilford Press.
- Rubin, K. H., Coplan, R. J., & Bowker, J. C. (2009). Social withdrawal in childhood. *Annual Review of Psychology*, 60, 141-171.
- Sanson, A., Hemphill, S. A., & Smart, D. (2004). Connections between temperament and social development: A review. *Social Development*, 13(1), 142-170.

- Scharfstein, L., Alfano, C., Beidel, D., & Wong, N. (2011). Children with generalized anxiety disorder do not have peer problems, just fewer friends. *Child Psychiatry & Human Development, 42*, 712-723.
- Shi, X., Xu, J., Wang, F., & Cai, D. (2022). Cognitive processing features of elementary school children with mathematical anxiety: Attentional control theory-based explanation. *Journal of Experimental Child Psychology, 224*, 105513.
- Shiner, R. L., Buss, K. A., Mcclowry, S. G., Putnam, S. P., Saudino, K. J., & Zentner, M. (2012). What Is Temperament Now? Assessing Progress Temperament Research on the Twenty-Fifth Anniversary of Goldsmith et al. *Child Development Perspectives, 6*(4), 436–444.
<https://doi.org/10.1111/j.1750-8606.2012.00254.x>
- Simonds, J., & Rothbart, M. K. (2005). Temperament in Middle Childhood Questionnaire (TMCQ) [Database record]. APA PsycTests.
- Smetana, J. G. (2017). Current research on parenting styles, dimensions, and beliefs. *Current Opinion in Psychology, 15*, 19-25.
- Thienemann, M., Moore, P., & Tompkins, K. (2006). A parent-only group intervention for children with anxiety disorders: pilot study. *Journal of the American Academy of Child and Adolescent Psychiatry, 45*(1), 37–46.
- Timpano, K. R., Keough, M. E., Mahaffey, B., Schmidt, N. B., & Abramowitz, J. (2010). Parenting and obsessive compulsive symptoms: Implications of authoritarian parenting. *Journal of Cognitive Psychotherapy, 24*(3), 151-164.

- Van Ameringen, M., Mancini, C., & Farvolden, P. (2003). The impact of anxiety disorders on educational achievement. *Journal of anxiety disorders*, 17(5), 561-571.
- Van de Mortel, T. (2008). Faking it: Social desirability response bias in self-report research. *Thea van de Mortel*, 25.
- Watkins, M. W., Crosby, E. G., & Pearson, J. L. (2001). Role of the school psychologist: Perceptions of school staff. *School Psychology International*, 22(1), 64-73.
- Weissman, A. S., Antinoro, D. I. A. N. A., & Chu, B. C. (2008). Cognitive-behavioral therapy for anxious youth in school settings. *Cognitive-behavioral interventions for emotional and behavioral disorders: School-based practice*, 173-203.
- Wittig, S. M. O., & Rodriguez, C. M. (2019). Emerging behavior problems: Bidirectional relations between maternal and paternal parenting styles with infant temperament. *Developmental Psychology*, 55(6), 1199–1210. <https://doi.org/10.1037/dev0000707>
- Wolfradt, U., Hempel, S., & Miles, J. N. (2003). Perceived parenting styles, depersonalisation, anxiety and coping behaviour in adolescents. *Personality and Individual Differences*, 34(3), 521-532.
- Wood, J. (2006). Effect of anxiety reduction on children's school performance and social adjustment. *Developmental psychology*, 42(2), 345.
- Woodward, J. L., & Fergusson, D. M. (2001). Life course outcomes of young people with anxiety disorders in adolescence. *Journal of the American Academy of Child and Adolescent Psychiatry*, 40, 1086-1093.
- Wright, S., & Sulkowski, M. L. (2013). Assessing and Treating Childhood Anxiety in School Settings. *Communique*, 41(8), 1-12.

Zanko, A. E. (2022). Screening for internalizing disorders in college students: Exploration of predictive utility of the Behavior Assessment System for Children, (BASC-3) College Self-Report Form.

The Pennsylvania State University.