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Eastern Kentucky University

Shy or Anxious? Examining the Efficacy of School-Based Interventions for Childhood Social Anxiety

Honors Thesis

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By

Samantha Neuhaus

Faculty Mentor

Dr. Dan Florell

Department of Psychology

Shy or Anxious? Examining the Efficacy of School-Based Interventions for Childhood Social Anxiety

Samantha Neuhaus

Dr. Dan Florell, Department of Psychology

Abstract

Social anxiety disorder and shyness share many overlapping features, leading to debate over where they become distinctive from each other. The theory of a shyness and social anxiety continuum has been suggested, depicting shyness on one end and social anxiety disorder as the more severe and maladaptive opposite end. Considering additional factors such as comorbidity and cultural differences, school based interventions can be implemented as a preventative and treatment measure for social anxiety across the continuum. Multiple intervention methods are utilized across school based interventions, and of eleven interventions specifically analyzed, it was found that the interventions are most often universal and seen most frequently for children between the ages of 7-12. The interventions also usually last 10-12 weeks in duration and utilize play-based methods to target coping and social skill development. The combination of methods used most frequently could allow for the development of a framework for future school-based interventions targeting social anxiety.

Keywords and phrases: social anxiety disorder, shyness, mental health, school, school-based interventions

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Shy or Anxious? Examining the Efficacy of School-Based Interventions for Childhood Social Anxiety

The diagnosis of social anxiety disorder (SAD) (previously referred to as social phobia) has garnered debate—specifically in its relation to shyness. Some researchers argue that individual experiences with both are largely identical, and that they have similar underlying causes due to both being products of social fears (Brook & Willoughby, 2019). However, others believe that shyness, sometimes referred to as behavioral inhibition or wariness, is a broader construct and exists on a continuum with SAD being on the opposite end as a pathological disorder (Brook & Willoughby, 2019; Rapee & Jacobs, 2002).

When comparing SAD and shyness, differences surrounding the terms SAD and social anxiety need to be noted. Keeping with the continuum model, social anxiety still exists as a more severe form of shyness, but it represents an individual's feelings of social embarrassment that may not meet the threshold for a clinical diagnosis of SAD (Van Roy, 2008). While the terminology of social anxiety and SAD are sometimes used interchangeably, and defining the threshold is often challenging, SAD is distinguishable by causing more significant impairment across several domains of an individual's life (Van Roy, 2008).

Figure 1: The shyness and social anxiety continuum

Knowing that shyness and SAD exist on a continuum, and that SAD can cause significant life impairment, the question remains where interventions should occur in order to increase quality of life outcomes. School-based interventions are often ideal due to the fact that they are more easily accessible and benefit a greater number of children (Miller et al., 2011). Because of this, they can provide earlier intervention and necessary treatment to children who may otherwise be overlooked. This paper will analyze the existence of shyness as it compares with SAD on a continuum, as well as examine the components of effective school-based interventions that serve a preventative purpose as well as a treatment method for maladaptive social anxiety.

Background on Shyness

Shyness is typically classified as a wariness in unfamiliar social situations and situations that evoke a sense of social evaluation (Poole et al., 2020). It is a common experience affecting as much as 40% of the population, and even 15% of infants are believed to demonstrate a level of behavioral inhibition (Crozier, 2014). Although it is a non-pathological personality trait common in childhood, it can pose a risk factor for the later development of SAD, especially considering social anxiety symptoms do not decrease with age like most other childhood fears (Crozier, 2014; Stein & Stein, 2008). That is not to say that shyness always leads to SAD, or that it is an inherent cause for concern; studies have shown that even though there is a greater risk factor for SAD in shy children, the majority never meet the diagnostic criteria (Tang et al., 2017).

The outcomes for children exhibiting shy behavior vary. In terms of negative outcomes, shy children tend to have lower educational attainment, perform worse on language development assessments, experience poor school adjustment, have more frequent school absences, and run a

greater risk of developing an anxiety disorder such as SAD than their non-shy peers. These negative outcomes bring up the matter of a continuum of severity that shyness and social anxiety exist across. Shyness in itself, despite the potential for poorer outcomes, does not qualify as a special education concern (Mjelve et al., 2019). This is likely because an experience of shyness can range from slight embarrassment to neurosis, in which it begins to approach a social anxiety threshold (Chęć, 2019).

Contrasting the negative outcomes seen in shyness, shyness can be seen as a more positive trait, especially among others who are more socially withdrawn, as they can be perceived as easier to get close to by their peers (Chęć, 2019). Additionally, shy individuals often exhibit behaviors such as modesty and compassion for others' feelings, and can use their shyness as a self-protective strategy when faced with unfamiliar or difficult social situations (Crozier, 2014). Although shyness does have some positive characteristics, the negatives tend to be a primary focus especially in Western cultures, leading to the potential for unnecessary pathologizing (Crozier, 2014).

Since shyness alone has both positive and negative characteristics and is a common personality trait, the question arises if shyness alone is a cause for intervention. Despite shyness not always being a risk-factor for the development of SAD, it does pose a greater risk than is experienced by non-shy children (Mjelve et al., 2019). To still create preventative interventions that avoid unnecessary pathologizing, it would be beneficial for schools to provide interventions that work on building social confidence in all students rather than a select few that demonstrate shy characteristics (Crozier, 2014).

Shyness and SAD Cultural Impacts

It was previously mentioned that Western cultures tend to view shyness as a negative trait, but that is not the case globally. Research on the cultural perspectives regarding shyness and SAD tend to focus on Western cultures primarily within the United States and Europe and Eastern cultures such as Japan, Korea, and China (Hoffman et al., 2010). We determine what traits are desirable or undesirable based on societal norms, so different perspectives regarding the shyness and SAD continuum are largely cultural (Crozier, 2014).

According to Chen et al. (2005), prosocial behavior is typically desirable in the United States, leading to greater peer relationships and academic outcomes, but it is not as desirable in China. Additionally, the shy and socially anxious behavior that tends to worsen school performance and strain peer relationships in the United States has the opposite effect in China. These outcomes are largely tied to traditional Chinese culture and values such as that of social restraint. As the Chinese economy has shifted to becoming a global superpower, societal norms have begun to reflect Western ideals and the positive shyness-related outcomes are becoming less common (Crozier, 2014). This shift in norms as well as outcomes for shy individuals further reflects perceptions of shyness being tied to culture.

The different perceptions of shyness and SAD across Western and Eastern cultures is also demonstrated through prevalence rates of SAD. Asian cultures tend to have the lowest rates of SAD, but that does not necessarily mean there are genuine differences in symptomatology causing the disparity; rather, the difference in prevalence could be related to cultural aspects like differing diagnostic criteria (Hoffman et al., 2010). Since the characteristics of SAD are typically valued in the East, the impairment required for diagnosis would need to be more severe than in

Western cultures. Instead, there are different diagnoses similar to SAD but with different presentations that are more frequently diagnosed.

One of the most common examples of a similar diagnosis with different presentations is taijin kyofusho (TKS); (Hoffman et al., 2010). TKS has the same social avoidance factor associated with SAD, though TKS differs as the primary fear is on offending or embarrassing another person in a social situation as opposed to embarrassing oneself (Hoffman et al., 2010). It is important to recognize how cultural perspectives impact the understanding of SAD and shyness, particularly when making interventions. Cultural factors could be a cause for symptoms and not necessarily a case for concern.

Background on SAD

SAD is becoming increasingly more prevalent in children and adolescents. The disorder is defined by a "marked fear or anxiety about one or more social situations in which the individual is exposed to possible scrutiny by others" (American Psychiatric Association, 2013). These situations may include peer interactions, being observed, and performing in front of others. The anxiety over these interactions stems from the fear of being negatively evaluated by others, usually as a result of doing something embarrassing (Hoffman et al., 2010). In children, special attention must be paid to whether the fear is associated solely with adult interactions, because peer interactions must be present for diagnosis (American Psychiatric Association, 2013).

The typical onset for SAD is 13-years-old, though research suggests the onset could be even younger, around 9-years-old (Burstein et al., 2011; National Institute for Health and Care Excellence, 2013). However, SAD may need to be considered at even earlier ages as social

anxiety symptoms are believed to occur in as many as 7.5% of children between the ages of 2 and 5 (Kiel et al., 2014). For these children, it is important to note that their symptomatology may differ from that of adults with SAD. Children may have more external reactions to their anxiety, such as crying or throwing tantrums. Additionally, the types of interactions that cause anxiety could differ, mainly interactions within school settings like classroom participation or peer activities (National Institute for Health and Care Excellence, 2013).

Acknowledging childhood social anxiety symptoms is crucial in preventing long-term detriment caused by SAD. According to the National Institute for Health and Care Excellence (2013), only half of individuals diagnosed with SAD seek mental health treatment, and even then, it is typically only after they have lived with the symptoms for 15-20 years. Untreated SAD can cause detrimental effects into adulthood, such as avoidance of peer interactions despite wanting company, functional disability, and a reduction in quality of life (Stein & Stein, 2008).

Untreated SAD can be detrimental in ways specific to the school environment as well. Students with SAD often have difficult times forming friendships and avoid participating in extracurriculars more often than their non-socially anxious peers (Van Roy et al., 2008). Academic impairment throughout an individual's educational career has also been demonstrated. This is likely due to fears over asking for academic help, and apprehension participating in classroom discussion (National Institute for Health and Care Excellence, 2013; Segool & Carlson, 2008). This academic impairment is most clearly evidenced by the consistent associations between SAD and higher drop-out rates (Stein & Stein, 2008).

While SAD’s impact in academic environments is overarchingly negative, social anxiety also has potential benefits in milder forms. The fear of embarrassment associated with social

anxiety can serve a function in social interactions, specifically through heightened attentiveness, greater preparation before social performances, and less-aggressive behaviors (Van Roy et al., 2008). It is important to mention that this does not refer necessarily to diagnosable SAD, but rather to a more general experience of social anxiety symptoms that would not meet the full diagnostic criteria for SAD. However, when discussing the spectrum of shyness and SAD, these potential benefits on the milder end of the spectrum are important to consider. If interventions target children who are just shy or experiencing mild and relatively normal social anxiety symptoms, it could interfere with experiences that might be advantageous in certain settings. It also adds to the debate over where the diagnostic threshold should be drawn on the shyness to SAD continuum (Van Roy, 2008).

SAD and Comorbidity

A distinguishing feature of SAD as compared to shyness or non-pathological social anxiety symptoms is the frequency of comorbidity, or the experience of an individual having more than one health condition (Valderas et al., 2009; Van Roy, 2008). Commonly seen comorbid disorders include generalized anxiety disorder (GAD), major depressive disorder (MDD), and selective mutism (SM) (American Psychological Association, 2013). For individuals with SAD and a secondary disorder, they may experience more severe symptoms, as well as reduced treatment outcomes and lower functioning (Koyuncu et al., 2019). SAD usually has an earlier onset than the comorbid disorders and can often be a precursor for their development (Koyuncu et al., 2019).

SAD typically does not occur without a comorbid condition as only about 30% experience SAD alone (Koyuncu et al., 2019). SAD may have overlapping symptoms with other

disorders, for example social withdrawal could be related to SAD or MDD, potentially making it difficult to distinguish between the two for an adequate diagnosis and subsequent treatment plan (Garber & Weersing, 2010; Koyuncu et al., 2019). Additionally, if two disorders exist in the same individual, and the intervention is only targeting one, the treatment plan is not going to adequately address the full scope of symptoms, allowing them to worsen and lead to poorer treatment outcomes (Koyuncu et al., 2019).

GAD is defined as excessive worry over multiple situations that is hard to control, impacts functioning, and is joined with symptoms such as restlessness, fatigue, a struggle to concentrate, irritability, muscle tension, and sleep issues (American Psychological Association, 2013). For children with comorbid GAD and SAD, the experience of social anxiety symptoms and generalized anxiety symptoms are greater, and more potentially negative outcomes exist (Whitmore et al., 2013). In both cases of GAD and SAD, children experience greater feelings of worry, struggle with uncertainty, and have pessimistic outlooks toward problems (Hearn et al., 2016). Since it is more common for the disorders to be comorbid than not, interventions targeting symptoms of both disorders and especially where they overlap should be emphasized for the best outcomes.

The comorbidity between MDD and SAD is slightly less common than SAD and GAD; however, they are still often seen together as anxiety disorders like SAD often precede the development of MDD (Garber & Weersing, 2010). MDD is categorized by symptoms such as a nearly chronically experienced depressed mood, loss of pleasure over previously enjoyed activities, changes in appetite, slower thought processing and movement, fatigue, feelings of worthlessness, difficulty concentrating, and suicidal ideation (American Psychological Association, 2013). Issues regarding social functioning is a defining feature of SAD and a

common symptom of MDD, leading to the potential onset or worsening of depression (Maleki et al., 2020).

MDD and SAD differ in features like low positive affect with MDD and hyperarousal with SAD (Wright et al., 2009). Additionally, outcomes such as reduced problem-solving abilities and social support-seeking behaviors are associated specifically with MDD and not SAD (Wright et al., 2009). With GAD and SAD, interventions could target the overlap between disorders and still be beneficial, though with MDD and SAD, some core features are specific to the disorders, and focusing on the overlap would not be enough. Teaching coping strategies is a common intervention for both disorders, but it is important that they are taught in ways that consider the unique aspects of each disorder separately (Wright et al., 2009).

SM is defined by an inability to speak in situations where speech is expected, though speaking elsewhere (American Psychological Association, 2013). It is important to note that the failure to speak does not stem from lack of fluency or communication disorder, but rather anxiety (American Psychological Association, 2013). The relationship with SM and SAD is unique compared to other comorbid disorders as it could be considered to exist on the same continuum of shyness and social anxiety, and precedes SAD rather than having SAD be the predecessor (Chavira et al., 2007).

In terms of the continuum, the symptoms of SM could be looked at as severe social anxiety, the anxiety is so great it keeps them from speaking (Chavira et al., 2007). However, SM is usually specific to childhood with a typical age of onset being five, and only having an average duration of eight years (Muris et al., 2015). This is compared to SAD with a typical onset of thirteen and often a lifetime duration (Keller, 2003; National Institute for Health and Care

Excellence, 2013). Despite children typically "outgrowing" SM, SAD usually persists, suggesting SM could be an early onset form of SAD (Chavira et al., 2007). Knowing this, targeting interventions for children with SM could be a way to implement early interventions for SAD.

Potential Treatments for SAD

Only half of those with SAD seek treatment, and usually only after 15-20 years of symptoms (National Institute for Health and Care Excellence, 2013). Treatments for children with SAD include both medication and therapeutic-based methods, though therapeutic interventions are the most heavily researched and should be the first-line of treatment (Karabekiroglu et al., 2011; National Institute for Health and Care Excellence, 2013). Both have positives and negatives associated with treatment, and both must take into consideration the likelihood for comorbid disorders. Additionally, most of the research regarding the effects of various treatments on SAD only focus on adults with the disorder, and there may be doubts over the generalizability to child populations. (Segool & Carlson, 2008).

For the pharmacological route, selective serotonin reuptake inhibitors (SSRIs) are the most commonly prescribed for anxiety disorders (Karabekiroglu et al., 2011). For children specifically, Karabekiroglu et al. (2011), suggested that the SSRI Fluoxetine has a significant positive effect on SAD symptoms and that the effects increase with time. Favorable outcomes were more likely to occur when the participants were younger, did not have a family history or depression or anxiety, and also experienced a comorbid anxiety disorder such as GAD.

Research on the therapeutic route mainly looks at cognitive-behavioral therapy (CBT). CBT has been found to be an effective treatment method, leading to moderate to large decreases

in symptoms (Segool & Carlson, 2008). A central area of cognitive distortion for individuals with SAD resides in post-event processing, where they ruminate on negative thoughts about themselves after a social stressor (Asbrand et al., 2019). CBT has been shown to increase positive post-event processing in child participants compared to the control, and lower negative post-event processing from baseline, though not creating a large difference from the control (Asbrand et al., 2019). While various factors can impact the efficacy of CBT treatment in children, it has been shown to be an effective method at restructuring the cognitive distortions associated with SAD, and increasing social competency (Segool & Carlson, 2008).

While both pharmacological and therapeutic treatments have been shown to be effective individually at treating SAD, there is also research to suggest that treatment effects are even stronger when a combination of methods is used (Segool & Carlson, 2008). Both treatments target a different area that causes SAD symptoms: SSRIs target the biological mechanisms in the brain believed to cause anxiety symptoms, and CBT focuses on restructuring negative cognitions associated with SAD and building positive behavioral coping strategies. Targeting both pathways can lead to a more comprehensive treatment, but individual considerations based on the client need to be examined (Segool & Carlson, 2008).

Despite knowing effective treatment methods for SAD exist, only around half of individuals with SAD seek treatment, and even then, it is usually in later adolescence or adulthood after symptoms have persisted for a significant portion of their life (National Institute for Health and Care Excellence, 2013). A significant reason for this is a lack of access to mental health care. There exists a limited number of practitioners trained in CBT and in the mental health field in general (Kendall et al., 2010; Segool & Carlson, 2008). There is also the matter of socioeconomic barriers, and that a lack of comprehensive health insurance can keep an

individual from utilizing services (Segool & Carlson, 2008). In order to ensure treatment is accessible to children who need it, and to help bypass the various barriers that impact access, it is important to implement interventions in places such as schools where they can reach the largest number of children.

School-Based Interventions Overview

Despite a lack of individuals receiving treatment, early interventions for SAD are typically viewed as the most advantageous treatment (Miller et al., 2011). The nature of SAD makes identifying children experiencing symptoms difficult as they tend to withdraw in the classroom and avoid the attention of their teachers, allowing them to fly under the radar (Kendall et al., 2011). This is especially troubling when the academic and social impairments that come with untreated social anxiety are directly relevant at their age.

Schools, however, have a unique advantage when it comes to the setting surrounding these interventions. Already, mental health services are implemented in school for 70-80% of children (Miller et al., 2011). Not every family can afford to take their child to a mental health clinic, whether it be due to cost, time, or the location. Their child being able to receive services in school during the school day allows parents to avoid making time arrangements, worrying about having to pay out of pocket, or having to drive an unreasonable distance to take their child for services (Johnstone et al., 2018). Due to a greater accessibility, and it is offered in a school with a large number of children all in one setting, early intervention programs can provide needed services to a wider span of children (Miller et al., 2011).

Additionally, school-based interventions can provide a natural setting for children and make both them and their families feel more comfortable (Fisher et al., 2004). A child may feel

uncomfortable in a clinical setting that is unfamiliar to them, and having the setting be the school they attend everyday could alleviate that stress and allow them to more fully open up. As part of the natural setting, a school-based intervention also allows for the building of real-world skills. Instead of trying to build interventions around the hypothetical school scenario, providers can help form interventions around the specific environment for an easier generalization to their daily school life (Fisher et al., 2004).

Despite all the advantages associated with school-based interventions for childhood social anxiety, there are some concerns that need to be considered when deciding to implement them. General concerns relate to issues of stigma and logistics of implementing interventions around a school schedule (Fisher et al., 2004). Getting called out of the classroom to participate in a program, even if the purpose is unknown to peers, can create feelings of being “othered”, which would be especially detrimental for a child who already feels heightened negative perceptions of their social experiences (Asbrand et al., 2019; Beaumont et al., 2019). Schools also often have little space for their daily instructional activities and creating extra space for a mental health program can be a particularly difficult task. Students are in school for the primary purpose of an education, so an intervention that would remove them from classroom instruction can be seen as too much of an interference (Fisher et al., 2004).

Potential issues regarding interventions specific to children experiencing social anxiety can be that it creates unnecessary pathologizing and fails to consider cultural influences (Chen et al., 2005; Crozier, 2014). Shyness is an attribute seen across populations and contexts, and can even be a virtuous trait as long as it does not cause significant impairment in a child's life (Crozier, 2014). When interventions target these children who do not need treatment, they can

experience a separation from their peers, and be led to believe they have an impairment where they might not legitimately have one (Crozier, 2014).

When it comes to cultural contexts, as previously mentioned, shyness is viewed as a negative trait through Western lenses, while in some Asian cultures this trait can actually be more of a societal norm (Chen, 2019). Especially for children from other cultures, it is important to consider that they may be used to feeling slight social unease or fear of embarrassment as a part of normal social interaction (Crozier, 2014). In the cultural context of China, shy and anxious behavior, which would be viewed to negatively impact peer relationships and school performance in Western cultures, has a positive effect on these areas (Chen et al., 2005). This should be considered when choosing children to participate in a school-based intervention, as some socially anxious behaviors may not be indicative of an underlying issue needing to be treated, but rather just a different societal perception.

Types of School-Based Interventions

There is no single model for a school-based intervention aimed at the treatment and prevention of SAD, and the implementation can vary in a multitude of ways. Despite the various ways of implementation, there seem to be three general intervention types: universal, selective, and indicated (Johnstone et al., 2018). These terms refer to the process of targeting students for intervention and who gets included.

Universal programs are seen most commonly and are typically preferred. They target a whole school population and do not require at-risk students to be singled out (Johnstone et al., 2018). These types of intervention could look like creating school-wide initiatives for confidence building, rather than risking unessaraily pathologizing children’s shyness by singling them out of

class to attend a program (Crozier, 2014). Because children do not have to participate in a screening process to determine their eligibility for the intervention, the stigma surrounding being "abnormal" compared to peers is diminished (Johnstone et al., 2018).

Selective programs are also fairly common and choose children to participate in the interventions after they have been identified as "at-risk" (Johnstone et al., 2018). These interventions are helpful because they can place special focus to particularly at-risk groups, such as shy girls who are at an increased risk of developing social anxiety (Tsui et al., 2016). This can be a preferred intervention method because a more general universal approach may fail to meet the needs of individual at-risk students. Students can be considered at-risk due to a variety of internal and external factors; for example, a selected intervention could focus on students from a lower socioeconomic background, who might have additional barriers in obtaining social competency than their peers, than what might be addressed in a typical universal intervention. It also makes for easier implementation as a teacher would not have to implement it in the classroom and take away from whole-class instruction. Rather a practitioner could conduct the intervention on a small group of students outside of the classroom (Tomb & Hunter, 2004).

Indicated interventions are seen the least frequently in school settings, and there could be several reasons why. Indicated interventions focus on individuals who show a mild form of a mental disorder and are at a greater risk of the symptoms worsening into a more severe form of the disorder (Johnstone et al., 2018). This is likely seen less in elementary school due to the fact that the typical age of onset for SAD is around thirteen years old, so early indicated interventions would not be practical (National Institute for Health and Care Excellence, 2013). Even if the intervention is conducted in adolescence, the likelihood that a child with the disorder is identified and referred for diagnosis and treatment is slim considering the way symptom presentation

overlaps with shyness (Keller, 2003). Not many children are going to be diagnosed with SAD, and especially for interventions geared towards an elementary school population, indicated-type interventions are difficult to conduct.

School-Based Intervention Methods

Through analyzing several different types of school-based interventions aimed at relieving internalized symptoms in children, different approaches could be seen with varying levels of effectiveness. These differences included the type of intervention used, symptom areas focused on, the duration of the intervention, and the targeted age group. Additionally, whether an intervention is computer assisted and whether it is play-based are a recurring factor of these interventions.

While debate exists over the most effective type of intervention (universal, selective, or indicated) guidance does exist on other aspects of treatment methods. For instance, National Institute for Health and Care Excellence (2013) suggests that effective treatments should last between 8 to 12 sessions for children experiencing social anxiety disorder. In terms of weekly sessions, which is the case for many school-based interventions, this translates to 8 to 12 weeks. A common ideology is that the more sessions an intervention has, the more effective it is (Mertens et al., 2020). However, this is not a universal truth, and the length of time it takes for an intervention or treatment to be effective largely depends on the contexts surrounding the intervention (Yeager & Walton, 2011).

When it comes to guidance on targeted age groups, the typical age of onset for social anxiety is in early adolescence, but research has shown children as young as 2-years-old have demonstrated social anxiety symptoms (Kiel, 2014; National Institute for Health and Care

Excellence, 2013). Because of the young age of onset and even earlier symptom demonstration, early intervention is vital for prevention and treatment of SAD. Interventions have been established in children as young as preschool age, but they typically focus on parental training (LaFreniere & Capuano, 1997). Most school-based interventions that focus on prevention and early intervention occur in older elementary school students when children are between the ages of seven to twelve. This coincides with the age range of 8-11 which CBT protocols were created for (Bennett et al., 2013). This could also relate to Jean Piaget's theorized concrete operational stage, where children begin to understand their feelings and thoughts are not universal, and thus that their negative cognitions in regard to social performance may be something in need of change (Huitt & Hummel, 2003).

Computer-based interventions are a relatively new approach to mental health treatment and prevention, and they are especially useful in school settings. While the school-setting is ideal for mental health treatment, there are not enough trained personnel in CBT to adequately conduct these interventions in the school system (Kendall et al., 2010). This is where computers become a preferred method, as therapeutic interventions can be delivered anywhere there is a computer without the need of hiring a trained practitioner which might be inaccessible due to lack of funds or a general shortage in the field. As a result, more children have access to needed interventions.

Computer-based interventions are also useful as they make the implementation of play-based methods easier through the use of video games (Kendall et al., 2010). With or without computers, play-based interventions have shown effectiveness in treating anxiety through a variety of different ways. The enjoyment that comes through play can help boost a positive affect and diminish feelings of anxiety (Schaefer & Drewes, 2018). Additionally, imaginative play can

provide a form of exposure therapy in a safe environment which could be useful in gradually exposing children to social stimuli (Schaefer & Drewes, 2018).

Play-based methods are useful in providing role-play and modeling experiences (Schaefer & Drewes, 2018). Like in the Camp Cope-A-Lot intervention, children play as a video game character, Charlie, and go through different interactive tasks that help teach coping skills for anxiety (Kendall et al., 2010). Through doing this, children are actively engaged with their treatment, and pretending to be a character that is capable of overcoming their anxiety could make them feel more confident they would be able to overcome their own anxiety symptoms in real-life situations (Schaefer & Drewes, 2018). The character is also modeling effective coping strategies, allowing them to mimic real-life situations as well, further adding to the effectiveness of play-based interventions.

Most school-based interventions focusing on social anxiety symptoms utilize cognitive-behavioral therapy techniques such as exposure and cognitive restructuring (Segool & Carlson, 2008). These techniques address features of SAD, like the focus on negative aspects that occur during social situations, and work on reframing them so that children can feel more confident in their social skills (Asbrand et al., 2019). By allowing children to practice their social skills in constructed situations, they not only further build their skills, but also work on alleviating the anxiety that arises in these situations (Kampmann et al., 2016). Additionally, meta-analyses of school-based interventions have found that, especially in universal interventions, positive social behaviors, problem solving, and social emotional skills have all seen positive effects (Mackenzie & Williams, 2018). This research suggests that effective interventions focus on social skill building as well as anxiety-soothing techniques.

Finding the effectiveness of these intervention programs is difficult, because while many of the programs have efficacy studies that have been conducted, not all of the examined studies over the various programs determine efficacy by the same measures. Some use teacher, student, or parent reports, while others may use more structured assessment measures. Even if these remained static across interventions, not all of them target the same components of anxiety or other internalizing concerns. Some may focus on building social skills, while others aim to reduce behavioral inhibition. Because the studies are not focusing on the same areas, even if they are found to be effective, it is difficult to compare the two.

Analysis of Previous Interventions

To find which school-based intervention components are utilized most frequently, eleven specific school-based interventions are analyzed, despite not all being specific to social anxiety and shyness symptomatology. By analyzing the various school-based interventions, their core components and methodologies can be identified for comparison, as well as findings regarding effectiveness. From there, the frequency of use for each component and method can be determined as well as a potential suggestion for their effectiveness.

"Secret Agent Society"

The Secret Agent Society, originally called the Junior Detective Training Program, is an intervention developed for children with Autism Spectrum Disorder but focuses on social skill building that is beneficial for symptoms of social anxiety disorder as well. The initial trial was implemented over the course of 7 weeks, and with participants between the ages of seven and eleven years old (Beaumont & Sofronoff, 2008). The program utilized computer and play-based intervention methods, as well as more traditional group therapy methods, in order to build social competence through coping strategies for anxious feelings and bullying, as well as skills in

conversing and playing with others. The original study was not conducted in a school setting but recruited qualifying children with a diagnosis of Asperger's Syndrome from schools, and worked with teachers to provide handouts going along with the intervention (Beaumont & Sofronoff, 2008).

A study examining the efficacy of the Secret Agent Society specifically for peer relationship difficulties and social anxiety in a school setting was conducted by Beaumont et al. (2019). It was implemented for children between the ages of seven and twelve and utilized a selective intervention type. The total intervention lasted a course of 10 weeks, although one of those sessions was a follow-up booster session. Clinical studies have shown that children post-intervention have significant increases in social emotional functioning, social adjustment, and anger and anxiety coping strategies as evidenced in parental reports. However, there is only partial support for reductions in overall anxiety and social anxiety, but for those who did demonstrate treatment gains, the gains were maintained at follow-up assessments, supporting effectiveness (Beaumont et al., 2019).

“Pyramid Plus”

The Pyramid Plus intervention was originally developed in the 1970s but has been modified since. The goals of the intervention are to desensitize children to social situations and reduce perceived threats, nurture their emotional and social competence, reduce loneliness, self-esteem, and feelings of general anxiety and depression. Recent implementations have targeted children aged between seven and eight years old, through a selective method of recruiting based on professional assessments of at-risk factors. The intervention is conducted over a course of ten weeks, and uses a play-based model in which children come to “club meetings” and can

participate in a variety of games and activities with therapeutic goals. It has been shown that children participating in this intervention have improvement in emotional symptoms and peer problems, though the lack of a randomized procedure posed difficulties in the evaluation of results (McKenna et al., 2013).

"Fun FRIENDS"

The Fun FRIENDS intervention was created by Dr. Paula Barrett as a universal intervention targeting children aged four through six, focusing on building social-emotional skills, coping skills, and resilience as a preventative measure for the later development of emotional and behavioral disorders like anxiety and depression. The program was built around CBT methods, and each of the ten sessions utilized a combination of learning and play activities (Pahl & Barrett, 2007). Teachers were crucial in the implementation as they act as adult facilitators of the program being conducted in the classroom, and parents also played an important role by continuing implementation of the intervention at home.

The Fun Friends intervention program was evaluated in a follow-up study conducted by Pahl and Barret (2010). The program was still universal but targeted slightly younger children between the ages of three and five. Sessions were conducted during the school day for children, and sessions over coping strategies were also given to parents to implement at home. The total duration of the intervention lasted 9 weeks and sought to reduce anxiety and behavioral inhibition as well as increase social and emotional strength. Children showed significant improvement in behavioral inhibition and social emotional strength as compared to control groups, but children in both the intervention and control experienced different starting levels of

behavioral inhibition, so the finding must be interpreted with caution. Children also decreased anxiety for both groups, making the effect hard to determine.

"Camp Cope-A-Lot"

Camp Cope-A-Lot is an intervention created by Khanna and Kendall (2008) for children between the ages of seven and thirteen experiencing anxiety disorders, making it an indicated intervention. It is a computer-assisted approach, so it utilizes computer methods in addition to more traditional CBT methods. The program is set up like a game with levels to be completed over the course of 12 weekly sessions. The goal is to reduce the severity of the child's anxiety, and efficacy studies have shown success. Children who participated in the Camp Cope-A-Lot intervention showed greater improvements in anxiety and overall functioning than those in the comparison group, and the improvement was maintained at follow-up assessments (Khanna & Kendall, 2010). However, since the study was not blind to parents, there is the potential for bias in these results.

"Baltimore Child Anxiety Treatment Study in the Schools"

While this intervention was originally unnamed, it was created as a school-based intervention for general anxiety symptoms to be used in Baltimore inner-city schools with a large African-American student population. The purpose of the intervention was to help these students understand their symptoms through psychoeducation, as well as provide exposure experiences and coping skills. The intervention was originally conducted as an indicated-type intervention, requiring students to meet the diagnostic criteria for a primary anxiety disorder. Participants in the intervention were between the ages of 14 and 17, and lasted over the course of ten weeks. Because of the older age of participants, the intervention was conducted through typical CBT-

methods and therefore play-based or computer-based methods were not utilized (Ginsburg & Drake, 2002).

The pilot study conducted regarding the intervention found that by implementing the CBT methods in these schools, 75% of participants no longer met the criteria for their disorder at post intervention and also reported lower overall anxiety and social anxiety (Ginsburg & Drake, 2002). Another study conducted of clients receiving the intervention as compared to clients receiving usual care, referring to participants receiving treatment without CBT methods, found that there were no significant differences between the two. This suggests that even with deliverance of a school-based intervention by novice CBT clinicians, treatment is similar to that of usual care, showing that school-based interventions can be effective as well as accessible (Ginsburg et al., 2012).

"Aussie Optimism Program"

The Aussie Optimism: Positive Thinking Skills Program (AOPTP) is a universal intervention with a duration of ten weeks that targets both shyness and depressive symptoms in children between the ages of eight and ten. It uses CBT methods given through physical rather than online games and other activities like workbooks, making it play-based but not computer-based. In a trial of the intervention, children were assessed pre and post intervention based on their internalizing and externalizing behaviors, as well as their symptoms of anxiety and depression. The trial found that anxiety and depression symptoms did not experience a significant decrease, but externalizing behaviors did (Rooney et al., 2013).

Other efficacy studies conducted over the intervention, though varied with slightly older age groups, found that children receiving the full program displayed greater prosocial behaviors

and lower rates of suicidal ideation at post-intervention. However, there was no significant reduction in depressive and anxiety disorder instances (Roberts et al., 2018). This reflects similar results to the trial conducted by Rooney et al. (2013), as well as results from other universal interventions.

"Penn Resiliency Program"

The Penn Resiliency Program is a universal intervention program that focuses on the prevention of depressive symptoms in youth. This intervention has been implemented and researched since the 1990s, however the core focus that has remained unchanged is the teaching cognitive-behavioral, social problem-solving skills, and coping strategies. In the implementation, Gillham et al. (2007) used participants between the ages of eleven and fourteen and the intervention lasted over the course of 12 weekly sessions. More traditional group CBT methods were implemented making the intervention not play or computer-based.

It was found that of the three schools studied, depressive symptoms were prevented in two relative to the control group and the effects were maintained at 3-year follow-up assessments. While the more specific effects varied by school, this does suggest at least some effectiveness for the program's implementation, and it is possible that the lack of positive effect in the third school was due to climate conditions that were unable to be controlled (Gillham et al., 2007). Because of the frequent comorbidity and overlap of select symptoms between MDD and SAD, the effects of the intervention are still relevant to our study of interventions and social anxiety. However, the older age group is something to consider, as the participants were in young adolescence rather than childhood.

“Skills for Academic and Social Success”

Skills for Academic and Social Success (SASS) is a selective intervention targeted specifically for social anxiety disorder in adolescents. The core areas targeted by the intervention include exposure, social skills, problem-solving, cognitive restructuring, and relaxation. It was made for use in high schools, so the targeted age group is between 14 through 18 (Fisher et al., 2014). The sessions last over 12 weeks and utilize a combination of methods: most sessions are conducted in a traditional group therapy method, though a few consist of social events in which students engage in fun activities with their peers, making it somewhat play-based. Computers are not utilized.

The ages of participants in the intervention range from fourteen to eighteen, so it is important to consider that these effects are not necessarily related in childhood. However, the effects could speak to the use of school-based interventions as a whole. Participants in the program felt fewer social anxiety symptoms and social avoidance at post-intervention, and for students who met the criteria for a social anxiety diagnosis, many no longer did at follow-up assessments, suggesting the program is effective (Fisher et al., 2014).

“Open Circle Program”

The Open Circle Program focuses on building skills for social competence in children ages 8 through 12 and was originally conducted in 1987. The intervention lasts throughout the school year (approximately 25 weeks) and is a universal type of intervention. Children and their teachers work in groups to help facilitate discussions, boost social skills, social problem-solving, and self-esteem. These discussions are built around lessons that are taught in-person, so computer-based and play-based methods were not utilized (Hennessy, 2007).

It was found that after the program, children, particularly from participating urban schools, were described in teacher reports to demonstrate more social skills and to be less likely to demonstrate problem behaviors. However, compared to the control, student responses were largely similar between the study and control group. This could have been due to a variety of reasons, such as the students who have not participated in an intervention being more likely to rate their performance highly. It could also be due in part that teachers were actively involved in the implementation of the study and not blind to it (Hennessy, 2007). However, the findings still suggest reasonable effectiveness for the program.

"REACH for RESILIENCE"

REACH for RESILIENCE is a universal intervention, conducted over 12 weeks, designed to be conducted within preschools. The aim of the intervention is to modify parenting styles for parents of preschool children (between the ages of three and six), in order to build a secure attachment and reduce behavioral inhibition in the children (Dadds & Roth, 2008). Children at the preschool level are largely too young to get the full benefits of a typical CBT-modeled intervention, as they cannot accurately describe their feelings or behaviors, and approaches have to focus on concrete cognitive abilities due to a lack of abstract reasoning (Minde et al., 2010). As a result, the intervention is still conducted in the preschool system, but targets parents, meaning that traditional intervention methods are used over the play-based and computer-based methods that are particularly helpful for young children (Dadds & Roth, 2008).

A study conducted to show the efficacy of this intervention found that at post-intervention, the intervention group had lower scores of anger, angry-aggressiveness, and anxious-withdrawn behavior, as well as significantly lowered reticence, but not an improvement

on social competence. Additionally, the overall findings supported that parents who attended the intervention were less stressed, and their children were less shy, emotional, and difficult to soothe. These findings have to be interpreted with caution though, as the effect sizes for various factors were small. This is commonplace for a universal intervention, so it does not necessarily discredit the effectiveness of the program, and it supports the notion that early interventions can be effective for children of preschool age (Dadds & Roth, 2008).

"Playing and Learning Social Skills"

The school-based intervention, Playing and Learning Social Skills (JAHSO) is a play-based intervention that focuses on building social skills for children between the ages of 9 and 14. The intervention lasts 14 weeks, with the first half being devoted to teaching social skills to children through more traditional therapeutic techniques, and the second half to practicing these skills through a game called "Sokill Galaxy" where students complete tasks and answer questions in order to receive stars and compete for the most (Caballo et al., 2015). The game is conducted in in-person sessions and the use of computers is unnecessary.

A study focusing on the effectiveness of this program, specifically regarding children displaying disruptive behaviors in addition to social anxiety was conducted by Caballo et al. (2015). The implementation was universal and narrowed the age range to between 9 and 12. The results of the study found that students improved on their social anxiety symptoms both globally and in specific social anxiety dimensions at post-intervention, and these improvements were maintained across six-months in the follow-up assessment. This improvement was seen for both children displaying high levels of social anxiety, and those with normal social anxiety. However, there was no control group to compare these findings to, as leaving a group untreated posed ethical concerns.

Table 1: Comparison of different school-based intervention methods

Interventions	Age	Length of Intervention	Intervention Type	Play-Based?	Computer-Based?	Targeted symptom Area
Secret Agent Society	7-12	10 weeks	Selective	Yes	Yes	Emotion regulation, confidence in using social skills
Pyramid Plus	7-8	10 weeks	Selective	Yes	No	Social withdrawal, social problem solving skills
Fun FRIENDS	3-6	9 weeks	Universal	Yes	No	Self-talk, coping with physiologi-cal symptoms, empathy
Baltimore Child Anxiety Treatment Study in the Schools	14-17	10 weeks	Indicated	No	Bo	General anxiety symptom psycho-education, exposure, coping skills
Camp Cope-A-Lot	7-12	12 weeks	Indicated	Yes	Yes	General anxiety symptoms, functioning
Aussie Optimism Program	8-10	10 weeks	Universal	Yes	No	Anxiety and depression symptoms, attributional styles
Penn Resiliency Program	11-14	12 weeks	Universal	No	No	Problem-solving depression stressors

Skills for Academic and Social Success	14-18	12 weeks	Selective	Play methods used	No	Cognitive distortion, social skills, social avoidance
Open Circle Program	8-12	School year (approx. 25 weeks)	Universal	No	No	Problem-solving skills, self-esteem peer cooperation
REACH for RESILIENCE	3-6	Approx. 12 weeks	Universal	No	No	Parental insecure attachment styles and child tempera-ment
Playing and Learning Social Skills	9-14	14 weeks	Universal	Yes	No	Social skill building

Previous Interventions Analysis Findings

Despite efficacy being hard to determine because multiple effects are measured differently across interventions, the frequency of use for certain methods suggests an outline for different methods that could be beneficial. These different interventions have been modeled after previous interventions, and so finding patterns in how frequently different aspects can be useful at determining what components should go into a school-based intervention.

After reviewing the literature, the most common school-based intervention type was universal. Likely due to the fact they are often the easiest to conduct in schools as no extra time needs to be devoted from the school day for screening (Rooney et al., 2013). A major issue with school-based interventions is the chance of stigmatization, especially when attempting to intervene with a disorder that is often defined by a fear of judgement from peers (American

Psychological Association, 2013; Johnstone et al., 2018). Using a universal approach helps avoid this stigma, with the additional benefit of making sure children who might have developed protective strategies to hide their impairment still get the help that they need (Crozier, 2014).

Another significant finding was that the majority of interventions, especially those geared at younger age groups, are play-based. This finding is also backed by research. Allowing children to learn through play alleviates the stress that may come from therapeutic treatments, as well as allows them to actively engage in roleplay and modeling techniques (Schaefer & Drewes, 2018). Children are more likely to learn when they are engaged in the material being taught, which is a concept that can extend past classroom curriculum and into a mental health setting (Jablon & Wilkinson, 2006). In these ways, being able to play and learn can benefit a child's treatment outcomes, and play can be a useful tool in conducting interventions.

One relatively surprising aspect reviewing past interventions was the lack of computer-based programs. Computer-based interventions provide a lot of advantages such as lowered costs and greater accessibility, so they are particularly ideal for school settings (Kendall et al., 2010). This could be partially due to limited research in the use of computers for mental health treatments (van der Meulen et al., 2019). The use of technology in mental health is a method still actively growing and many may be unfamiliar with it, thus choosing to favor more traditional and more heavily researched intervention methods.

Ten and twelve week length interventions were also the most commonly seen. This is in-line with the suggestions from National Institute for Health and Care Excellence (2013). Time is a big concern regarding the feasibility of school-based interventions as there should be as little disruption to academic courses as possible (Fisher et al., 2005). This length of time, between ten and twelve weeks, ensures that enough sessions are able to be conducted so that effective

treatment and prevention efforts can be provided, but it still does not take up a full school semester. This helps alleviate concerns over the intervention interrupting academic instruction.

Additionally, the most common age range was between the ages of seven and twelve. As previously mentioned, earlier treatments are usually targeted at the parents, since children themselves are too young to fully benefit from interventions targeted at them alone. By the age of seven, according to Piaget's theory of development, children are in a concrete operational stage where they can begin to use logical thinking (Huitt & Hummel, 2003). Because of this, they can begin to think logically about their own situations, and grasp skills they can use to help alleviate their anxiety. Having the maximum age be 12 makes sense due to the onset of the disorder typically being around the age of 13 and the preventative benefits of early interventions; however, it is important to note that interventions targeting older populations have also been successful despite taking on a slightly different focus (Bernstein et al., 2005; Fisher et al., 2014; National Institute for Health and Care Excellence, 2013).

The symptoms most frequently targeted were difficult to assess considering the interventions varied in what they were assessing—for instance, some of the interventions examined depression, generalized anxiety, or parental attachment. However, a recurring theme appeared to be a focus on building coping and social skills. For children experiencing symptoms on the shyness and SAD continuum, they likely experience a deficit in social skills and forming and maintaining peer relationships due to their fears of judgement (Beaumont et al., 2019). Effective interventions should allow for the forming and maintenance of social skills as well as coping skills during anxiety-inducing situations in order to fully address the issues that come with social anxiety (National Institute for Health and Care Excellence, 2013).

Conclusion

Looking at the frequency of methods each of these interventions utilized, it could be argued that the most effective school-based interventions are universal, geared towards children seven through twelve, last between ten and twelve weeks, target coping and social skills, and utilize play-based methods whether through physical play or computer methods. As mentioned before, determining effectiveness is difficult due to different interventions utilizing various types and styles, as well as intervening with different symptom areas. As a result, a clear comparison of efficacy is not able to be conducted, as it would in studies where the same methods are being measured using assessments and controlling for the same factors.

A limitation that occurred frequently while gathering research was the lack of available research regarding school-based interventions. Many were based on models formed as far back as the 1970s, and with each efficacy study slight alterations were made to the original design (McKenna et al., 2013). The framework and core components for these interventions were typically left, but changes to aspects such as duration and age of participants varied to address the unique needs of the school. Because of this, where applicable, the information for the methods used in specific interventions were ranges seen across studies.

Another limitation mentioned briefly were small effect sizes for universal interventions. Because of the nature of the design, some students participate in the intervention who are not experiencing the significant symptoms the intervention is targeting, therefore they will likely not demonstrate a big improvement at post-intervention. Having a small effect-size for universal interventions does not discredit their effectiveness for children experiencing symptoms, it just makes it difficult to measure. For most of the studies, the universal intervention did show at least some improvement at post-intervention, and knowing the added benefits such as avoiding

stigmatization, universal interventions are still a preferred method for many school-based programs.

The debate surrounding shyness and social anxiety also directly impacts the issue of the effectiveness of school-based interventions. There is no clear line to be drawn of where shyness becomes pathological, or where social anxiety symptoms become a cause for concern. Because of this, it is hard to perform selective or indicated interventions in a school setting without the potential for leaving students just below the imaginary threshold overlooked (Van Roy, 2008). In addition to the practicality and logistical benefits of using universal-based interventions, it can also intervene with children across the spectrum, so no matter where the line is drawn, students who need help are able to receive it.

A core concern within the debate is the potential for unnecessarily pathologizing normal childhood behaviors (Crozier, 2014). By implementing universal interventions, children are not being selected for at-risk behaviors that may be entirely normal, such as some degree of social withdrawal associated with typical childhood shyness, or demonstrations of typical social anxiety symptoms that could be regarded as advantageous (Crozier, 2014; Van Roy, 2008). Especially for older children verging on adolescence, stigma becomes a primary concern as they are beginning to care more about their peers' opinion, and that adolescents tend to think negatively of anxious peers (Lynch et al., 2021). Finding ways to prevent stigma and unnecessary pathologizing should be a focus for the implementation of interventions, to help children think more positively of their behaviors as well as help build peer relationships which are critical in the treatment of SAD.

For future implementations of school-based interventions, mental health providers and school administrators should not only consider what components are commonly utilized and

have been shown to be effective, but the larger picture of how the intervention plays into our understanding of social anxiety and SAD as a whole. Different schools will have different needs, and methods will need to be adjusted to accommodate the specific needs of students within the school system. The question should be asked of whether the intervention is unnecessarily pathologizing students, and if shy children are really just shy or experiencing significant social anxiety that could manifest into a disorder.

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