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At-Risk Children: Adult Perception and Recognition of Mental Health Concerns

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AT-RISK CHILDREN: ADULT PERCEPTION AND RECOGNITION OF
MENTAL HEALTH CONCERNS

by

ABBY D. LUCAS

(Under the Direction of C. Thresa Yancey)

ABSTRACT

Approximately 20% of children ages nine to 17 in the United States struggle with mental health concerns each year (Gamm et al., 2010). Early identification of child and adolescent mental health concerns is crucial for initiating treatment to prevent recurrence or persistence of pathology into adulthood (Logan & King, 2001). Children are primarily dependent upon adults in their lives (e.g., parents/caregivers, education professionals, healthcare providers) to recognize mental health concerns and seek services (Sayal et al., 2010). Providing these adults with guidance on how to appropriately identify and recognize these mental health needs in children is critical (Crouch et al., 2019). Despite this well-documented mental health crisis in children/adolescents, there is a marked delay in or underutilization of services (Reinke et al., 2011), suggesting a barrier to service attainment. The current study aimed to investigate this barrier by examining adults' recognition and response to at-risk or "pink flag" behaviors/symptoms of externalizing or internalizing concerns in a fictitious child. The study used vignettes depicting a child with various psychological concerns (i.e., externalizing, internalizing, or none-control) and then assessed the adult's ability to recognize presented concerns and their likelihood to refer for services. Participants who received either experimental vignette (externalizing or internalizing) reported higher likelihood to refer for services and those who were healthcare providers were the highest reporters (compared to parents and education professional). This study has strong clinical implications for those who have or work with children and/or in the field of teaching/education or developmental psychopathology.

INDEX WORDS: Children internalizing and externalizing disorders, Adult perceptions, At-risk children mental health

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DEDICATION

This dissertation is dedicated to my mother, Vicki Lucas, who passed away on March 21, 2013. Without her support and encouragement, both during her time here and her presence as I progressed through this journey, this would not have been possible.

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CHAPTER 1

INTRODUCTION

Mental Health Concerns in Children

Approximately 20% of children ages nine to 17 in the United States struggle with mental health concerns each year (Gamm et al., 2010). Having a mental health condition alters the way a child behaves, grows and learns, and copes with their emotions, leading to dysfunction (Okwori, 2022). Only a small proportion of children with mental health concerns have access to treatment (Crouch et al., 2019; Merikangas et al., 2011). Early identification of child and adolescent mental health concerns is crucial for initiating treatment to prevent recurrence or persistence of pathology into adulthood (Logan & King, 2001). Studies show children and adolescents who obtained services during their youth significantly reduced their likelihood of future concerns (Logan & King, 2001). Children are primarily dependent upon adults in their lives (e.g., parent/caregivers, education professionals, healthcare providers) to recognize mental health concerns and seek services (Sayal et al., 2010). There are many barriers to children obtaining needed mental health services; specifically, lack of knowledge of their concerns as well as availability of services are crucial barriers to adults seeking help for children (Sayal et al., 2010). Providing parent/caregivers, families, and those who work closely with children (e.g., general practitioners, school staff, pediatricians) with guidance on how to appropriately identify and recognize child mental health needs is critical to overcoming barriers to services (Crouch et al., 2019).

Internalizing Disorders

Internalizing disorders (i.e., depression and anxiety) have a lifetime prevalence rate for those ages three to 17 of 3.9%; the lifetime prevalence rate for those ages 12 to 17 is 12.8%

(Cuellar, 2015). Depression is the second most common mental health disorder in children and is linked to lower socioeconomic status (Cuellar, 2015). Other researchers note the possibly higher prevalence rates of anxiety compared to depression. Specifically, Okwori (2022) identified 3.7% of three- to 17-year-olds had depression while 8.0% had anxiety. In contrast to externalizing disorders discussed below, internalizing disorders appear to have less significant impact on academic performance.

Internalizing disorders, while relatively prevalent among children (Cuellar, 2015), are often difficult for parents and other caregivers to notice. By their nature and given the subjective perceptions of internal difficulties, internalizing disorders are less obvious to observers (Sourander & Helstela, 2005). Specifically, internalizing disorders are categorized by things like self-deprecating thoughts, withdrawal and isolation, which may be perceived as typical shyness and poor self-esteem. As children rely on adults to receive needed interventions, this discrepancy in children receiving mental health interventions depending on the visibility of symptoms to others often results in the lack of or delay in receiving needed services (Crouch et al., 2019; Sayal, 2006). Particularly, Merikangas and colleagues (2011) found lower rates of treatment use for children with internalizing disorders compared to those with externalizing (i.e., behavioral) concerns. Individuals with internalizing problems have a unique subjective perception of their internalized world and state, making it inherently more difficult for others to identify these disorders (Sourander & Helstela, 2005). Fewer than half of parents/caregivers whose children have mental health difficulties perceive a problem, suggesting difficulties in identifying these disorders and a lack of knowledge regarding children's mental health concerns. This failure to notice potential mental health concerns is particularly salient for children experiencing internalizing disorders (Sayal, 2006).

Externalizing Disorders

Externalizing disorders (e.g., behavioral disorders like oppositional defiant disorder and conduct disorder) are, unlike internalizing disorders, generally easy for parents/adults in a child's life to notice. Attention-deficit/hyperactivity disorder (ADHD) is inconsistently labeled in the literature, sometimes categorized as an externalizing disorder and sometimes categorized on its own due to unique characteristics differing from other externalizing disorders (Cianchetti et al., 2013). Cuellar (2015) considered ADHD an externalizing disorder and identified the lifetime prevalence of externalizing disorders for those ages three to 17 as 8.9%. Another study, not including ADHD as an externalizing disorder, identified behavioral disorders in 6.9% of children ages three to 17 (Okwori, 2022).

Externalizing disorders are the most common disorders for which parent/caregivers seek consultation from a mental health professional (Logan & King, 2001) and are associated with poor grades in school, poorer test grades overall, and grade remediation. Additionally, externalizing disorders put individuals at increased risk for future criminality (Cuellar, 2015). This increased risk of criminality is believed to be in part due to externalizing symptoms placing a significant amount of perceived awareness and "burden" on parent/caregivers. This burden to others leads the parent or other adult in a child's life to seek services for the child (Logan & King, 2001; Sayal, 2006). Specifically, children with externalizing disorders are more likely to obtain services compared to children with internalizing difficulties because their behaviors are more obvious to, and cause more burden on, others. Externalizing disorders are frequently characterized by impulse-control difficulties, rule-breaking behaviors, and aggressive outbursts (e.g., verbal or physical).

Intervention Needs

Early intervention is an essential element for identification of and proactivity toward children's mental health concerns. Literature suggests that identifying mental health problems during childhood and adolescence acts as a predictor for adult concerns (Sourander & Helstela, 2005). Specifically, Kim-Cohen and colleagues (2003) reported that half of the individuals they surveyed at age 26 who met criteria for a major psychological disorder first had a mental health condition between the ages of 11 and 15. Externalizing disorders (i.e., behavioral problems) reported at age three are predictively correlated with mental health problems at age 21 (Sourander & Helstela, 2005). Furthermore, literature confirms many contributing factors to children's mental health concerns. Particularly, factors such as maladaptive parent-child interactions and family dysfunction increase the likelihood of future development of psychological problems (Heberle et al., 2015). Targeting interventions toward those factors during the early years of life for a child may act as a preventive measure against developing psychological disorders. Especially for externalizing disorders, children raised in homes with deficient parenting styles (e.g., harsh and restrictive discipline) are at an increased risk (Heberle et al., 2015). Conversely, parents who have excessive control and are disengaged and withdrawn from their children increase the risk of their children developing internalizing concerns (Heberle et al., 2015). Heberle and colleagues (2015) found significant importance in identifying and intervening on parent/caregiver psychological distress, poor parenting behaviors, and lack of social support when children are within their first few years of life, reducing the possibility of both externalizing and internalizing disorders during the school-age years.

There are considerable potential consequences to missing early signs of mental health concerns in children and adolescents. For externalizing disorders, those displaying untreated

rule-breaking and oppositional behaviors are likely to have continuing problems in adolescence and early adulthood (Sourander & Helstela, 2005). Sourander and Helstela (2005) found externalizing problems in childhood independently predict externalizing problems in adulthood, consistent with other literature (Caspi et al., 1996; Hofstra et al., 2002, Hofstra et al., 2000; Kim-Cohen et al., 2003; Lavigne et al., 1998).

Internalizing disorders, like depression and anxiety, correlate with negative consequences in the areas of self-esteem, academia, physical health, interpersonal dynamics, and future adjustment to psychological challenges (Sourander & Helstela, 2005). Similar to predictability of externalizing disorders, children at young ages with internalizing problems tend to continue to experience symptoms as they age. Research shows a strong predictive correlation between perceived need of help (leading to a referral to services) and outcome. Specifically, Sourander and Helstela (2005) found more than half of children whose parent/caregivers noted they needed assistance for mental health difficulties at age eight continued to have major problems at age 16, regardless of whether the problems were internalizing or externalizing.

Adult Perceptions and Capabilities

Parents/Caregivers

Parents and other caregivers are “gatekeepers” of children’s access to mental health services (Crouch et al., 2019; Girio-Herrera et al., 2013) and are critical in recognizing a child’s needs and challenges for obtaining specialized care (Logan & King, 2001). Parents/caregivers are universally important in this process and are often the initial step in help-seeking (Sayal, 2006). A parent/caregiver's recognition of a child’s need for mental health services positively correlates with the child using said services (Crouch et al., 2019; Sayal et al., 2010). It is important for parents/caregivers to have readily available information about the signs and

symptoms of children's mental health concerns (particularly internalizing difficulties, given their less obvious nature) to provide them guidance on when to seek assistance (Crouch et al., 2019). Parents and other important adults in a child's life are critical to the initial identification of the need for mental health services (Logan & King, 2001). Given the unique difficulties of recognizing internalizing disorders, some literature proposes that parent/caregivers' reports are independently predictive of later internalizing difficulties for both boys and girls, suggesting parent/caregivers are more reliable than other adults in a child's life at recognizing internal distress (Sourander & Helstela, 2005).

Little guidance exists to help parents/adults identify early warning signs (i.e., "pink flags") of mental health concerns in children. This suggests a need to improve awareness by parents and other adults to recognize and preempt negative outcomes, prior to children experiencing severe symptomatology (Logan & King, 2001). This leaves parents/caregivers particularly challenged with knowing how and when to seek professional mental health services for internalizing/externalizing difficulties. Another barrier to help-seeking, particularly among adolescents, is the perception that emotional lability and dysregulation is always normative during this phase. This perception can cause adolescents to hesitate to discuss their feelings with their parent/caregiver and/or the parent/caregiver to dismiss the adolescent's feelings (Logan & King, 2001).

Some literature suggests a positive correlation between parent/caregiver education level and help-seeking behavior for their child/teen, indicating more highly educated parents/caregivers are more likely to seek mental health services than those who are less educated (Logan & King, 2001). Logan and King (2001) provided an extensive overview of the data to-date, discussing the models of help-seeking behaviors for children, primarily based on

help-seeking behaviors for adults, and the need for adaptation of these models to be useful for children/adolescents. Further, Logan and King (2001) identified the vast literature on the role of the parent/caregiver in service attainment for children/adolescents, including the variety of factors contributing to help-seeking (e.g., family history of use, parent/caregiver's social environment, parent/caregiver education level) and parental recognition of distress in a child/adolescent. Factors such as family stress, perceived parental burden, family history of psychopathology, communication and relationship of parent/caregiver and child/adolescent, and comorbidity play critical roles in whether a parent/caregiver recognizes and subsequently seeks services for their child/teen (Logan & King, 2001).

Education Professionals

Schools are often the first and most common environment to notice and address mental health problems in children. Therefore, education professionals need knowledge and skills to accurately identify and confront such concerns and provide services/referrals to families (Blackstock et al., 2018; Girio-Herrera et al., 2013). Parents/caregivers who reach out to education professionals (e.g., teachers, school counselors, principals) and are met with positive feedback (i.e., the professional provided mental health service resources and referrals) have the best outcome and those who do not receive positive responses have difficulty obtaining services. This pattern of attaining information and support from education professionals suggests these individuals can help or hinder the process (Crouch et al., 2019). Although education professionals can provide significant support and assistance to parents/caregivers of a child/adolescent with mental health concerns, they often do not do so unless the parent/caregiver first voices concern (Logan & King, 2001). Additionally, teachers often lack the resources and knowledge to provide mental health referral or care and behavioral management of children's

difficulties to those in need (Reinke et al., 2011). Reinke and colleagues (2011) found that teachers often report a need for additional training in working with children with externalizing and behavioral difficulties, despite nine out of ten of those teachers having experience working with children with such difficulties.

Research indicates teachers and other education professionals adopt a “wait and see” mentality toward child mental health concerns, which can be detrimental to the child receiving needed services (Girio-Herrera et al., 2013). Literature also indicates education professionals are less reliable at identifying internalizing problems for children than are their parents/caregivers. Specifically, Sourander and Helstela (2005) found parental perception of emotional difficulties in children independently predicted later problems in boys and girls with internalizing disorders. Teachers' evaluations did not predict later difficulties. Given these findings, parents/caregivers are apparently better than teachers at identifying children's risk for internalizing disorders. Teachers are, however, reliable at predicting externalizing problems (Sourander & Helstela, 2005).

Moreover, Girio-Herrera and colleagues (2013) worked to identify a profile of adults who refer children (with both low and high risks) to mental health services as well as identify the perceived barriers that parents/caregivers feel. They focused primarily on children in kindergarten and used rating forms completed by the parent/caregiver and teacher to assess overall behavior of children, impairment, and perceived barriers. Parents/caregivers identified more at-risk children than teachers; however, teachers more often viewed children deemed “at-risk” as being more impaired than parents/caregivers. It is suggested that parents/caregivers may report more children as “at-risk” due to their inability to compare a child's behaviors/presentation to hundreds of other children like teachers. Parents/caregivers also

reportedly have more intimate knowledge of their own children. Despite this, teachers are better able to discuss overall impairment of the child's behavior given they see them in a variety of settings (both structured and unstructured) and alongside children who are at the same developmental level.

Healthcare Providers

Primary care physicians (PCPs) and other healthcare providers are in unique positions to both identify mental health concerns in children as well as provide referrals and initial treatment management as applicable (Sayal, 2006). Primary care assessment and referral are the most common routes for help seeking behavior for children and adolescents, making PCPs and other healthcare providers distinctively suited to assist in this process. However, even this avenue to get children needed mental health care is still very much an underused service with research showing recognition rates of children's mental health concerns by healthcare providers is lower than expected given prevalence rates (Sayal, 2006). Sayal (2006) indicated healthcare providers' assessment of child/adolescent concerns often has high specificity but low sensitivity, suggesting that healthcare providers are lacking in the ability to recognize a child with mental health concerns.

Even for healthcare providers, there is the need for more education on how to identify such concerns, particularly among children with less obvious symptoms. Healthcare providers are better at identifying and more comfortable treating/recommending treatment for disorders where medication is the first line of treatment (e.g., ADHD) or when presenting concerns are externalizing with pronounced symptom severity than when presenting problems are internalizing or psychotherapy is the first line of treatment (Sayal, 2006). General practitioners (GPs) are more likely to recognize and refer a child with mental health needs if a

parent/caregiver voices concerns and desires a referral than if the parent/caregiver does not (Crouch et al., 2019; Sayal, 2006). Like with education professionals, parents/caregivers who sought help from a GP or healthcare provider and were met with positive feedback received the best outcome while those who did not receive a positive response had difficulty obtaining services, indicating that, like school officials, medical and healthcare professionals can act as gatekeepers to accessing mental health care for children and adolescents (Crouch et al., 2019).

About half of children whose mental health concerns are brought to their healthcare provider receive referrals to specialized care (Sayal, 2006). Overall, healthcare and education professionals play a key role in hindering or helping a family access child mental health resources (Crouch et al., 2019). Research supports the need to ensure professionals are equipped with adequate knowledge, skill, and understanding to accurately identify said concerns. Furthermore, like education professionals, even though healthcare providers can provide support and assistance to parents/caregivers, they often do not offer services until the parent/caregiver voices their own concerns (Logan & King, 2001). Healthcare providers, of all groups discussed (e.g., parents/caregivers and education professionals) may receive training addressing implementation of interventions that can aid in increasing access to mental health resources and decreasing barriers, suggesting that they may be uniquely qualified to identify mental health needs and provide or refer for services (Girio-Herrera et al., 2013). However, it is unclear if all healthcare provider training programs discuss how to perform mental health screenings and decrease barriers for service engagement. Assessing training of healthcare/education professionals is advantageous in helping children receive needed mental health services (through specialists and/or school-based mental health programs; Girio-Herrera et al., 2013). Girio-Herrera and colleagues (2013) posit that education and healthcare providers are at the “front

lines” for speaking with parents/caregivers about child mental health concerns, and this places them both as important steps in the process of help-seeking.

Sayal (2006) discussed how even when GPs recognize mental health concerns in children, they may not refer them for specialized services. The rates of referral depend on individual factors of the GPs as well as service availability, interestingly with rates being particularly lower if just specialized mental health interventions are considered (Sayal, 2006). Some explanation for the lack of referral of those who GPs identify as needing mental health care is the perception of a fleeting nature of the problems or the confidence of the GP that primary care providers can manage the concerns.

In summary, the literature shows that parents/caregivers, education professionals, and healthcare providers play a critical role in identifying mental health concerns in children, particularly for externalizing disorders because of their overt nature (Logan & King, 2001). No known literature has compared the abilities of these different adults in recognizing less obvious difficulties (i.e., “pink flags”) in children. The current study examined differences among these groups at identifying “pink flags” in children's mental health.

Rurality

Most of the United States is classified as rural land and approximately 20% of the population lives in rural areas. This rural population includes approximately 25% of K-12 students and 33% of K-12 schools (Blackstock et al., 2018). It is estimated that 20% of those ages nine to 17 struggle with mental health concerns each year (Gamm et al., 2010). Many rural areas are designated as mental health shortage areas and 85% of all federally designated mental health shortage areas are in rural areas (Mohatt et al., 2005). Residing in a rural community creates a disadvantage for receiving mental health resources and care. Additionally, being a child

or adolescent also places one in a disadvantaged group regarding receiving needed mental health care. These disparities in care mean children/adolescents in rural communities are at a double disadvantage in receiving mental health services (Blackstock et al., 2018; Gamm et al., 2010).

Children in rural areas are more likely to receive a psychopharmacological intervention (8.0% vs. 6.4%) and less likely to receive therapeutic services (4.3% vs 6.7%) compared to non-rural children (Anderson et al., 2013). This discrepancy in type of care is problematic as research suggests that behavioral and therapeutic interventions are equally effective as pharmacological interventions and better at achieving long-term benefits (Blackstock et al., 2018). Treating children with psychotropic medication alone is not best practice for most mental health concerns; this is particularly relevant to children in rural areas who are more likely to receive such intervention (Anderson et al., 2013). Furthermore, children in rural areas are more often living in low-income homes or in poverty compared to their non-rural/urban counterparts, making paying for services difficult (Blackstock et al., 2018). An additional barrier for rural children and adolescents is the distance between their residence and available services, creating travel-related barriers to accessing care.

Further, there is an overall lack of providers and lack of public transportation in rural communities, adding additional barriers for rural children's access to mental health care. Stigma is also a more salient barrier to obtaining mental health services in rural compared to non-rural areas because of the close-knit nature of rural communities, making anonymity more difficult (Blackstock et al., 2018; Gamm et al., 2010; Howell & McFeeters, 2008). Individuals in rural communities, compared to those in urban areas, are more likely to utilize informal resources, like friends or pastors, for their (or their children's) mental health needs, which can delay onset of professional mental health services (Girio-Herrera et al., 2013). Overall barriers to children's

mental health care are greater among those residing in rural vs. urban areas (Blackstock et al., 2018; Girio-Herrera et al., 2013).

Current Study

Despite considerable research regarding pronounced mental health concerns of children and adolescents, there continues to be a marked delay in or underutilization of mental health services for this population (Reinke et al., 2011). The need for services is well documented and the recent development of empirically supported treatments means quality care exists for this population. Therefore, it appears that there is another problem leading to the lack of service attainment for children in need of mental health care. Reinke and colleagues (2011) suggested it is possible that there are significant barriers to implementation and, prior to that, difficulties with identification of children and teens in need of care. This barrier of identification of children and adolescents in need of care was the impetus for the current study. The current study investigated the identification of externalizing versus internalizing symptoms in children by various adults (i.e., parents/caregivers, education professionals, and healthcare providers). Specifically, the study examined the abilities of these groups of adults to recognize subtle, “pink flag” symptoms of externalizing and internalizing difficulties in descriptions of children’s current behaviors. The aim of the current research was to provide potential answers as to whether the identification of children with less obvious difficulties is a stumbling block to children receiving referrals for early intervention for mental health concerns.

Hypotheses

1. Given past research findings suggesting adults are better able to identify externalizing versus internalizing difficulties in children (Logan & King, 2001; Sourander & Helstela, 2005; Sayal, 2006), it was expected that adults who read about a child with subtle

externalizing behavior problems would be more likely to suggest that child be referred for services compared to adults who read about a child with subtle internalizing symptoms. Further, participants who read about a child not showing any externalizing or internalizing symptoms would be the least likely to suggest a mental health referral for the child.

2. Based on previous research regarding rural citizens' under-utilization of mental health resources (Blackstock et al., 2018; Girio-Herrera et al., 2013), greater likelihood to use informal supports (e.g., pastors, friends, family members) for mental health needs (Girio-Herrera et al., 2013), and lack of available resources (Blackstock et al., 2018; Gamm et al., 2010; Howell & McFeeters, 2008), it was hypothesized that participants residing in rural areas would be less likely to refer a child for formal services than those from non-rural areas.

Study Aim

No known previous research compared different types of adults (i.e., parents/caregivers, education professionals, healthcare providers) on likelihood of referring children for mental health resources. The current study examined differences in referral decisions across these populations. No directional hypotheses were made, but participant status (parent/caregiver, education professional, or healthcare provider) and child vignette type (internalizing vs. externalizing vs. control) were examined.

CHAPTER 2

METHOD

Participants

Initially, prior to any data management, 244 individuals logged onto the Qualtrics survey. Prior to assessing the manipulation check, 77 individuals were removed due to not completing the study, leaving 167 participants. A further 11 individuals were removed due to failing the manipulation check, leaving 156 participants. Two additional participants were removed for not identifying their relationship to children (e.g., parent/caregiver, education professional, or healthcare provider), leaving 154 participants. A final two participants were removed before data analysis for failing to complete at least 90% of study questionnaires, making them unable to participate in any mean squared replacement strategy. This left 152 participants, with 11 of those individuals requiring mean squared replacement for 10% or fewer study items (7% of the total 152 participants used for analyses).

The final sample included 152 participants who were currently parents/caregivers ($n = 39$; 25.7%), education professionals (e.g., teachers, school counselors, principals; $n = 65$; 42.8%), and/or healthcare providers (e.g., physicians, pediatricians, psychologists, social workers, nurses; $n = 48$; 31.6%) who have or work with children between the ages of six and 17. Participants were recruited through professional listservs, graduate and undergraduate departments of relevant fields (e.g., nursing, education, social work, mental health, and pediatrics), and parenting organizations/groups (e.g., parent/teacher organizations and online parent informational groups). All participants were at least 18 years old and currently have or work with children between the ages of six and 17. For participants who identified as both a parent and an education professional or healthcare provider, they were coded for data analysis

according to their career to appreciate unique qualities/education related to their profession that are different from those of a typical parent. Of the 152 participants, 39 were only parents (25.7%), 44 were only education professionals (28.9%), 36 were only healthcare providers (23.7%), 21 were both education professionals and parents (13.8%), and 12 were both healthcare providers and parents (7.9%). Most of the sample identified as White (84.2%), with 5.3% identifying as African American, 2.6% as Asian, 2.0% Bi/multi-racial, 2.6% as Hispanic, and 1.3% as another race/ethnicity. Participants indicated the geographic information of both their hometown and current city. Specifically for hometown, 54% reported being from a rural area and 47.4% from a non-rural area. For current location, 48.7% of participants reported living in a rural area and 48% in a non-rural area. See Table 1 for participant demographics.

Table 1. Participant Demographics

Variable	Frequency	Percentage
<i>Current Relationship to Children ages 6-17</i>		
Parent	39	25.7%
Education Professional	44	28.9%
Healthcare Provider	36	23.7%
Parent + Education Professional	21	13.8%
Parent + Healthcare Provider	12	7.9%
<i>Race</i>		
African American	8	5.3%
Asian	4	2.6%
Bi/Multi Racial	3	2.0%
Hispanic	4	2.6%
White	128	84.2%
Better Description Not Specified	2	1.3%
<i>Gender Identity</i>		
Female	141	92.8%
Genderqueer	1	0.7%
Male	6	3.9%
Nonbinary	1	0.7%
<i>Geographic Description of Current City</i>		
Rural	74	48.7%
Non-Rural	73	48%
<i>Self or loved one with mental health concerns</i>		
Yes	128	84.2%
No	20	13.2%
<i>Ever referred child to professional for mental health concerns</i>		
Yes	104	68.4%
No	44	28.9%
<i>Ever been a parent/primary caregiver of a child between the ages of 6-17</i>		
Yes	87	57.2%
No	61	40.1%

Procedures

Following recruitment, participants followed a link to the study, which was hosted on Qualtrics, an online data collection software. Participants read an informed consent document (see Appendix A) and if they choose to participate, they selected the “I give my consent freely” option. Next, participants reported a yes/no response to the question, “Do you have or work with children between the ages of 6 and 17?” Participants who answered “no” to this question were immediately directed to the debriefing message. Participants who answered “yes” to the question were then prompted with another question about their current interactions with children. Specifically, they were asked to check all that apply to the question “Which of the following terms describes your current interactions with children between the ages of 6 and 17?” The answer options were: “I am currently the parent/caregiver of a child between 6 and 17,” “I am currently an education professional (for example, teacher, school administrator, etc.) for children between 6 and 17,” and/or “I am currently a healthcare provider (for example, a nurse, pediatrician, mental health provider, social worker, etc.) for children between 6 and 17.” After answering this question, participants were randomly assigned to read one of three vignettes (“at-risk internalizing;” $n = 51$; 33.6%, “at-risk externalizing;” $n = 56$; 36.8%, or “control;” $n = 45$; 29.6%). See Table 2 for group counts. Next, they completed a manipulation check to ensure attention to the vignette. Participants then completed three questionnaires: one about child behaviors, another about their assumption of the child’s gender represented in the vignette, and a final one about their likelihood of referral and to whom they would refer (e.g., informal sources like clergy members or friends, or formal sources like mental health specialists or physicians) given their perceptions of the child in the vignette. Finally, participants provided demographic information (e.g., gender, age, geographic location, occupation, parent status). Participants were

debriefed following completion of all measures. Participants were invited to participate in a separate survey where they could enter their emails for a randomized drawing for one of five \$10 Amazon gift cards offered at the conclusion of data collection.

Table 2. Participant Relationship Type by Condition Type Group Count

Condition	Parent	Education Professional	Healthcare Provider	Total
At-Risk Externalizing	10	27	19	56
At-Risk Internalizing	16	16	19	51
Control	13	22	10	45
<i>Total</i>	<i>39</i>	<i>65</i>	<i>48</i>	<i>152</i>

Measures and Materials

The current study included vignettes created by the researcher, a manipulation check, a questionnaire on child symptoms, a referral questionnaire, and a demographic questionnaire. All materials created for the current study are available in Appendix B.

Vignettes

Participants were randomly assigned to read one of three vignettes depicting a child who exhibited either at-risk internalizing disorder behaviors (“at-risk internalizing”), at-risk externalizing disorder behaviors (“at-risk externalizing”), or typical child behaviors (“control”). All vignettes depicted a 9-year-old child, “Taylor,” with no gender indicated. Each vignette had an identical number of behaviors/concerns varying on specific behaviors (e.g., externalizing, internalizing, no concerns/control). Please see Appendix B for vignettes.

Manipulation Check

After reading the assigned vignette, participants completed a two-question manipulation check to ensure they attended to the information presented. Participants answered multiple-choice questions related to the child's age and name. Participants must have answered both questions correctly for data to be used. For the age question, correct was considered within one year of the stated age (i.e., 8, 9, or 10 years old). Please see Appendix B for the two questions.

Child and Adolescent Behavior Inventory (CABI; Cianchetti et al., 2013)

Participants completed a modified version of the CABI after reading their assigned vignette. The CABI is a free, valid, and reliable option for clinical and epidemiological use and offers similar information as the widely used Child Behavior Checklist for children ages six to 17 (Cianchetti et al., 2013; Cianchetti et al., 2017). The CABI captures a wider range of pathology than other questionnaires and has a moderate number of items when compared to longer measures (suggesting stronger rater collaboration). The language from the original measure was adjusted to meet the needs of the current study (e.g., rather than saying "your son/daughter" and the default male gender pronouns "he/his/him," the modified version says, "the child" and "they"). The participants did not complete the two qualitative items in the CABI. Participants answered the modified CABI (30 items) based on their perceptions of the child in the assigned vignette.

The CABI yields five subscales: internalizing symptoms, externalizing symptoms, ADHD symptoms, OCD symptoms, and relationships symptoms. The current study only used the internalizing and externalizing symptom scales. Sample questions when adapted included, "They appear tense and/or anxious (internalizing)," and "They often tell lies or cheat (externalizing)." Items were rated on a 3-point Likert scale, ranging from Not True (1) to Very

True (3). The internalizing subscale score ranges from 16 to 48 and the externalizing subscale ranges from 14 to 42, with higher scores on both subscales indicating greater presence of those difficulties. The CABI is standardized for multiple populations (originally on 6- to 8-year-olds, Cianchetti et al., 2013; also, on 6- to 17-year-olds, Cianchetti et al., 2017; and then on U.S. children, Burns et al., 2021). The CABI shows good internal consistency ($\alpha = 0.82$ - internalizing subscale; $\alpha = 0.87$ - externalizing subscale; Cianchetti et al., 2013). Alphas for both the CABI internalizing and externalizing subscales for the current study were computed and indicated good internal consistency: Internalizing: $\alpha = 0.87$ and Externalizing: $\alpha = 0.93$.

Referral Questionnaire

Participants rated (on a scale from 0 - no need to refer to 100 - definite need to refer) how likely they were to refer the child mentioned in the vignette for mental health services. Following this question, participants selected an option of to whom they would refer Taylor: pastor/priest/clergy member, family member/friend, healthcare provider, school counselor, psychologist/therapist/mental health provider, or other (with a fill in the blank option). For analyses purposes, individuals who chose past/priest/clergy member or family member/friend were coded as informal while healthcare provider, school counselor, or psychologist/therapist/mental health provider was coded as formal. Responses provided for the fill in the blank option were read and coded as either formal or informal. Please see Appendix B for these questions.

Assumption of Gender

Participants reported the assumed gender of the child in the vignette. While no gender was given in the vignette, participants' assumed gender was used to determine if certain

vignettes were more likely to be erroneously perceived as a specific gender. Please see Appendix B for this question.

Attitudes toward Mental Health

Participants also answered two questions regarding their thoughts and feelings related to interacting with someone who has a mental health concern. These questions are listed in the demographic questionnaire seen in Appendix B.

Demographic Questionnaire

Participants provided their basic demographic information including gender, race, marital status, sexual orientation, education level, geographic location, and employment status. In addition, participants reported their occupation and their parenting status (i.e., are they now or have they been the parent to a 6- to 17-year-old child). See Appendix B for full demographic questionnaire.

CHAPTER 3

RESULTS

Preliminary Analyses

Preliminary analyses were conducted to gain a better understanding of any assumption of gender based on presented child psychopathology. Additionally, preliminary analyses were completed to assess participant attitudes about mental health concerns, mental health treatment, and comfort in interacting with people with mental health concerns.

Assumption of Gender

A chi-square test of independence was used to examine differences in vignette type (i.e., externalizing, internalizing, or control) and assumed gender. The relationship between these variables was statistically significant, $X^2([4], N = 150) = 13.925, p = .008$, suggesting significant differences between vignette type and the assumed gender of the child represented. Most (68.4%) participants responded correctly that no gender was specified, 17.8% indicated the gender as girl, and 12.5% identified the gender as boy. See Table 3 for results. Of those who mistakenly identified a gender ($n = 46$), more assumed Taylor was a boy ($n = 14$) if they read the externalizing vignette and that Taylor was a girl ($n = 10$) if they read the internalizing vignette.

Table 3. Total Count of Assumed Gender by Condition Type

What is Taylor's gender?	Externalizing	Internalizing	Control	Total
Boy	14	1	4	19
Girl	9	10	8	27
No gender specified	32	39	33	104
Total	55	50	45	150

Attitudes toward Mental Health Concerns

Participants responded to two questions about their attitudes toward mental health concerns. Specifically, the first item asked about their thoughts regarding treatment for those with mental health concerns. The choice options were, I: (1) think it is important for people who have mental health concerns to receive adequate and effective treatment from a professional, (2) think it is important to first try and solve the problem within the family and social support (e.g., pastor, family, friends), (3) think most of these concerns can be handled by the person without any outside help, and (4) think most people who have mental health concerns do not really have a problem, they are just seeking attention. The second item asked about the participants' comfort in interacting with someone who has mental health concerns. The choice options were, I: (1) try to go out of my way to help them get the support that they need, (2) think they are just like any other person and deserve to be treated with respect, (3) do not really give them much thought in my day-to-day life, (4) usually think that they are not someone I want to interact with, and (5) think these people usually need to be in a locked facility for the sake of the public.

For each item, higher mean scores indicated less acceptance toward those with mental health concerns. For the first question, the mean score was 1.18 while the second was 1.62. Most (121; 79.6%) participants chose the first response for the first question while 27 (17.8%) chose the second and none chose the remaining responses. For the second question, 59 (38.8%) participants chose the first item, 86 (56.6%) chose the second, and three (2.0%) chose the third; no participants chose the remaining options. See Appendix B for exact items under the demographics.

Hypothesis 1

A two way, between-groups MANOVA was used to analyze the differences by condition (externalizing, internalizing, control vignettes) on the CABI-Externalizing subscale, CABI-Internalizing subscale, and likelihood to refer for services. Overall, there was a statistically significant relationship between the vignette received and the above variables, Wilk's $\Lambda = .196$, $F(6, 284) = 59.46$, $p < .001$, partial $\eta^2 = .56$. Specifically, follow-up one-way ANOVAs showed a statistically significant relationship between vignette type and CABI- Externalizing subscale scores ($F(2, 144) = 90.56$, $p < .001$, partial $\eta^2 = .56$), vignette type and CABI-Internalizing subscale scores ($F(2, 144) = 17.84$, $p < .001$, partial $\eta^2 = .20$), and vignette type and likelihood to refer ($F(2, 144) = 38.85$, $p < .001$, partial $\eta^2 = .35$).

Post-hoc tests using Fisher's LSD showed individuals who read the externalizing vignette reported statistically significantly higher CABI-Externalizing subscale scores than those who received the internalizing and control vignettes. Furthermore, individuals who received the internalizing vignette reported statistically significantly higher CABI-Internalizing subscale scores than those who received the externalizing and control vignettes. Interestingly, there was also a statistically significant difference between the CABI-Internalizing subscale scores between those who read the externalizing vignette and those who read the control vignette. Specifically, those who read the externalizing vignette reported statistically significantly higher CABI-Internalizing subscale scores than those who read the control vignette. Lastly, regarding likelihood to refer the child in the vignette for mental health or counseling services or assessment, there was a statistically significant difference between those who read the externalizing and internalizing vignettes and those who received the control vignette. Specifically, those who received either at-risk internalizing or externalizing vignette were

statistically more likely to refer the child in the vignette for mental health services than those who received the control vignette, displaying a child with no at-risk concerns. See Table 4 for mean scores.

Table 4. Mean Scores on CABI-Externalizing, CABI-Internalizing, and Likelihood to Refer Across Condition

Variable	Mean	SD
<i>CABI-Externalizing Subscale</i>		
Externalizing	23.53 ^a	4.93
Internalizing	15.82 ^b	2.40
Control	14.91 ^b	2.37
$F(2, 144) = 90.56, p < .001$		
<i>CABI-Internalizing Subscale</i>		
Externalizing	22.71 ^a	5.59
Internalizing	25.61 ^b	4.39
Control	19.74 ^c	5.22
$F(2, 144) = 17.84, p < .001$		
<i>Likelihood to Refer</i>		
Externalizing	51.02 ^a	28.56
Internalizing	58.88 ^a	18.08
Control	15.63 ^b	30.66
$F(2, 144) = 38.85, p < .001$		

Note. Means with different superscripts are significantly different at the $p < .002$ level. Higher scores on the CABI-Externalizing indicate greater externalizing problems; higher scores on the CABI-Internalizing indicate greater internalizing problems; higher scores on Likelihood to Refer indicates a higher likelihood to refer for mental health services.

Hypothesis 2

A one way, between-groups ANOVA was used to analyze the difference between individuals who received either the externalizing or internalizing vignettes and rurality status on

their likelihood of referral. Participants' report of their current geographic information was used to categorize them as rural (rural and small city/town; $n = 56$) or non-rural (urban/large city and suburban; $n = 45$). The results do not indicate a statistically significant difference, $F(1,99) = .397, p = .530$, partial $\eta^2 = .004$, suggesting no difference in likelihood to refer based on location. The mean likelihood to refer score for non-rural participants was 52.76 ($SD = 28.49$) and the mean for rural participants was 56.25 ($SD = 27.06$).

Additionally, a chi-square test of independence was used to examine differences in referral type (i.e., formal vs. informal) and rural status. It was expected that rural participants would suggest referral to informal servicers (e.g., clergy, family, friends) more than non-rural participants. The relationship between these variables was not statistically significant, $X^2([1], N = 134) = 1.100, p = .294$, suggesting no significant differences between rural and non-rural participants on referring to a particular referral type.

Study Aim

A 3 x 3 factorial between-groups ANOVA was used to analyze the effect of participant relationship type (i.e., parent/caregiver, education professional, healthcare provider) and condition (i.e., at-risk externalizing, at-risk internalizing, control) on likelihood to refer a child for mental health services. Analyses revealed no statistically significant interactions between relationship type and condition, $F(4, 138) = 1.011, p = .40$, partial $\eta^2 = .03$. Simple main effects show condition was statistically related to likelihood to refer, $F(2, 138) = 33.49, p < .001$, partial $\eta^2 = .33$. Specifically, those who read either the externalizing or internalizing vignettes reported higher likelihood to refer than those who read the control vignette. See Table 4 for results. Simple main effect analysis also showed relationship type was statistically significantly related to likelihood to refer, $F(2, 138) = 3.58, p = .03$, partial $\eta^2 = .05$. Specifically, healthcare

providers had higher ratings of likelihood to refer on average than both parents and educational professionals. See Table 5 for results.

Table 5. Mean Scores on Participant Relationship Type on Likelihood to Refer

Relationship Type	Mean	SD
Parent	38.71 ^a	31.55
Education Professional	38.44 ^a	29.19
Healthcare Provider	53.39 ^b	29.99

$F(2, 138) = 3.58, p = .03$

Note. Means with different superscripts are significantly different at the $p = .03$ level.

CHAPTER 4

DISCUSSION

Approximately 20% of children ages nine to seventeen in the United States struggle with mental health concerns each year (Gamm et al., 2010). Early identification of these concerns is crucial for treatment initiation and prevention of future persistent pathology (Logan & King, 2001). As the literature suggests, early identification and prevention of children's mental health concerns are crucial (Heberle et al., 2015; Sourander & Helstela, 2005). Children are dependent upon the adults in their lives to recognize concerns and seek/recommend services on their behalf (Sayal et al., 2010). Adults need education and guidance on appropriately identifying and recognizing "pink flags" in children's mental health to ensure children receive needed intervention (Crouch et al., 2019; Logan & King, 2001). No known literature examined the capability of various adults in a child's life (i.e., parent, education professional, healthcare provider) to recognize at-risk behaviors. The current study aimed to investigate the early identification of children with at-risk externalizing and/or internalizing behaviors by the aforementioned adults and assess their likelihood to refer children for services.

Based on vignette type, participants rated a child's perceived behavior, their likelihood to refer the child for services, and to whom they would refer. Previous literature suggests adults better identify externalizing compared to internalizing problems in children (Logan & King, 2001; Sayal, 2006; Sourander & Helstela, 2005). In the current study, adults who read a vignette about a child with subtle externalizing behavior problems were expected to report greater likelihood of referring that child for services compared to participants who read about a child with subtle internalizing symptoms or those who read about a child with neither externalizing nor internalizing symptoms. Additionally, previous literature notes rural populations underutilize

mental health resources (Blackstock et al., 2018; Girio-Herrera et al., 2013) and rely more on informal resources for mental health concerns (e.g., pastors, friends, family members; Girio-Herrera et al., 2013). Therefore, participants from rural areas were expected to be less likely to refer for formal mental health services and more likely to refer to informal services (i.e., clergy, friends, family) than non-rural participants. Lastly, it was expected that there would be a difference in referral decision based on the type of adult participant (i.e., parent/caregiver, education professional, healthcare provider) and condition (i.e., internalizing, externalizing, control).

Preliminary Findings

In addition to the current study's hypotheses, other areas of interest were investigated. Specifically, the assumed gender of the child in the vignette was examined. Most participants correctly remembered that no gender was provided in the vignettes. Among those who incorrectly recalled a gender, those who read the externalizing vignette were much more likely to report "Taylor" was a boy. This is in accordance with common behaviors in the field where boys are more often diagnosed with externalizing behavioral problems compared to girls (Mayes et al., 2020).

Participants also answered two questions related to their attitudes toward mental health concerns/those with mental health diagnoses (see Appendix B for questions). Most participants responded positively to the items, indicating a high degree of appreciation/acceptance and support of treatment for people with mental health concerns. No participants responded to the more negative answer choices (e.g., "I think these people usually need to be in a locked facility for the sake of the public"). It is possible that social desirability may have played a role in the responses.

Hypothesis 1

Results show a statistically significant relationship between the type of vignette and CABI-Externalizing subscale score, CABI-Internalizing subscale score, and the likelihood to refer for services. Specifically, scores on child outcomes were aligned with vignette type, with participants reading the externalizing vignette reporting higher externalizing scores and participants reading the internalizing vignette reporting higher internalizing scores. Further, those who read the externalizing vignette reported significantly higher internalizing scores than those who read the control vignette. It is possible that participants attributed displayed externalizing difficulties in the vignette to internalizing in addition to externalizing problems. Also, despite the current study not obtaining information about participant current pathology, literature suggests that parental pathology is a risk factor for child pathology (Everett et al., 2021). This may mean that participants who identified as parents, if struggling with their own pathology, may be a contributing factor to them identifying or self-imposing those symptoms on the child represented in the vignette. This is an important future direction of study. In contrast to the past research suggesting adults are better able to recognize externalizing vs. internalizing difficulties (Logan & King, 2001; Sayal, 2006; Sourander & Helstela, 2005), participants in the current study noted internalizing and externalizing difficulties in alignment with vignette type. As expected, there was a statistically significant relationship between vignette type and likelihood to refer. Specifically, those who received either at-risk vignette were more likely to refer for services compared to participants reading the control vignette. Taken together, these findings show adults recognize “pink flags” in children’s behaviors and are more likely to refer children showing these at-risk symptoms for some type of intervention/assistance than children showing no concerns.

Hypothesis 2

Despite research showing rural individuals' under-utilization of mental health services and greater likelihood to use informal supports (e.g., pastors, friends, family members; Blackstock et al., 2018; Girio-Herrera et al., 2013), no statistically significant differences were found between rural and non-rural participants on likelihood to refer the child in the vignette for mental health services. This lack of significance may be partially related to power in the current study.

Further, to investigate any relationship between rurality status and type of referral, we assessed referral type (i.e., informal vs. formal) and rurality status. No statistically significant relationship was found between these variables. These results may indicate a shift in thinking among rural citizens regarding receiving care for mental health needs. It is also possible the inclusion of participants with higher educational attainment (education professionals must have at least a bachelor's level education; healthcare providers typically have a masters or doctoral level education) impacted the findings. Research shows greater utilization of mental health care among those with greater educational attainment (Logan & King, 2001). This aspect of participants' identities may impact thoughts about mental health services to a greater level than geographic identity.

Study Aim

There is no known previous literature comparing different types of adults (i.e., parents/caregivers, education professionals, healthcare providers) and a child's psychological concerns (internalizing vs. externalizing vs. control) on likelihood to refer a child for mental health services. Given this lack of literature, the current study aimed to offer new light on adult capabilities and perceptions at recognizing at-risk children's mental health concerns. No

statistically significant interaction was found between relationship type/type of adult and the condition received; however, the effect size of this analysis was very small, so low power may have impacted the analysis. Main effects for both relationship type and condition and likelihood to refer were statistically significant. Specifically, adults who read either of the at-risk mental health concern vignettes (i.e., externalizing or internalizing) reported higher likelihood to refer the child for mental health services than those who read the control vignette. This suggests that regardless of the type of concern presented, adults recognized at-risk mental health concerns and noted some need to obtain intervention for the child.

Participants who identified as healthcare providers were much more likely than other participants to refer at-risk children to services. Individuals in healthcare are often in unique positions for identifying mental health concerns in children and understand the need to provide referrals for treatment (Sayal, 2006). Further, individuals in healthcare are the most likely of the participant groups in the current study to have training in addressing mental health concerns and interventions, making it more likely they recognized the need for referral for the child in the vignette (Girio-Herrera et al., 2013). Another possible explanation for this finding is parents/caregivers and education professionals tend to adopt a “wait and see” mentality toward child mental health concerns (Girio-Herrera et al., 2013).

Advancement of Theory

Overall, this study’s contribution to the field is trifold. First, this study adds more information to the understanding of child psychopathology and at-risk behaviors as well as adults’ abilities to recognize children displaying “pink” flag behaviors. Secondly, this study enhances awareness and understanding of how adults (parents, education professionals, healthcare providers) differ in recognizing children’s at-risk mental health concerns. Thirdly, in

conjunction with the aforementioned influences, this study offers unique clarifications on various adults' likelihood to refer at-risk children for services.

Limitations

Critically, the current study had several limitations. Importantly, the sample size of the study was small, contributing to a lack of demonstrated power. Sample size potentially impacted the results, and a larger sample size possibly would show significant differences where we found none. Additionally, the sample was comprised primarily of individuals who identified as either White, women, and/or heterosexual. The current results may not generalize to people with other identities. The current study had participants self-report the geographic location of their hometown and current city. Participants' self-reports may not provide the most accurate data regarding geographic location. No definitions for the categories listed were provided, so it is impossible to confirm the accuracy of participants' reported location. Lastly, for the sake of obtaining sufficient group power, and in conjunction with the lack of literature, the current study analyzed the data utilizing broad groups where participants identified whether they were a parent, education professional, or healthcare provider. Participants were not asked to provide what specific profession they aligned with within those groups (e.g., a principal and a school resource officer would both identify as education professional, even though their jobs and interactions with children are quite different). We were unable to determine if there were differences between types of profession within a category used in the study.

Strengths

While there were notable limitations in the current study, there are unique strengths as well. First, a control condition and random assignment were utilized. These features of study design make the results more robust compared to research not utilizing these features in design.

Secondly, the study incorporated multiple reporters (teachers, clinicians) beyond the usual parent report common with child behavior research. Including adults who have varying relationships with children provided a broader understanding of an adult understanding of child psychopathology across multiple adult-child relationships. Lastly, despite having a small sample size, this study found several results that will aid significantly in the literature surrounding child mental health.

Future Directions

As this study provides foundational and theoretical underpinnings for child psychopathology identification, there are clear future directions. Specifically, a critical next step is to identify the threshold by which adults referring a child need to see impairment for them to refer (e.g., what level of impairment needs to be there and how long does it have to have been going on before an adult will refer the child to a professional?). Furthermore, knowing what the literature identifies as the importance of early intervention and prevention, particularly with children, another future direction is to examine how to facilitate and encourage people to refer a child for services when they are needed. Future studies should also use a larger sample size to parse out the details of which particular sub-population or type of adult might have greater strengths/areas of growth in identifying “pink flags” in children. The current study briefly looked at the assumption of child gender with regard to type of mental health concern presented and adult participant attitudes about mental health concerns. Future studies could examine these areas in greater depth. Specifically, a possible future direction might be to assess the child’s assumed gender by adult relationship type and condition and to examine whether attitudes toward mental health influence adults’ likelihood to refer children to needed services.

Clinical Implications/Rurality

The current study offers valuable clinical implications. Healthcare providers were the most likely to refer an at-risk child for mental health concerns. There was no statistically significant difference between parents and education professionals on likelihood to refer. This is an area of clinical utility as it may be that psychoeducation should be offered more uniquely to parents and education professionals to help build their skills and knowledge surrounding early identification of child mental health concerns. In fact, comparing the curricula of education professionals and healthcare providers may elucidate which aspects of education are related to this difference and using it to better educate education professionals on identification of child mental health concerns. This is especially notable as education professionals have more contact with children than do healthcare professionals (for example, teachers likely see children five days per week, whereas pediatricians may see children only a few days per year). Furthermore, despite literature showing adults have a greater ability recognizing externalizing compared to internalizing difficulties, the current study found no differences in identification of or likelihood to refer between externalizing and internalizing symptoms. Recognizing that adults are equally adept at recognizing at-risk internalizing issues and externalizing symptoms is powerful clinically and deserves more work moving forward.

Regarding rurality, there is substantial literature surrounding the disadvantage for receiving mental health services if one lives in a rural area. There are barriers like lack of providers and transportation, stigma, travel distance for service attainment, and expenses which are often profound in rural locations (Blackstock et al., 2018; Gamm et al., 2010; Howell & McFeeters, 2008). When comparing rural mental health vs. urban, individuals in rural areas are more likely to seek informal services like speaking with friends, pastors, or family members to

offer assistance with their child's mental health concerns. As a result of this literature, it was expected that individuals who reported being from a rural area would (1) refer less overall and (2) refer less to formal services and more to informal than those from urban areas; however, no statistically significant results were found related to rurality. It is proposed that this lack of significance is due to a small effect size; however, it is also possible that rural status did not play as significant a role as expected and that the participant relationship type may be more powerful.

Conclusion

The current study aimed to investigate the early identification of children with at-risk externalizing and/or internalizing behaviors by various adults (e.g., parents, education professionals, healthcare providers) and assess their likelihood to refer children for services. Findings show participants on average rated the correct psychopathological concern (i.e., internalizing, externalizing) with the corresponding vignette type and were more likely to refer children showing these difficulties for services compared to those who read the control vignette. Additionally, healthcare providers reported higher likelihood to refer at-risk children than parents or education professionals. However, not all findings were statistically significant. Rurality status did not appear to have any significant relationship with likelihood to refer for services nor the type of services (i.e., formal vs. informal). The current study identifies unique pathways for further research regarding various adult types and their capabilities to recognize and understand child mental health concerns as well as clinical implications in the forms of recognizing which adults might benefit from more education on identifying children who are displaying at-risk mental health concerns and the need to refer them for necessary formal services.

REFERENCES

- Anderson, N. J., Neuwirth, S. J., Lenardson, J. D., & Hartley, D. (2013). Patterns of care for rural and urban children with mental health problems. *Rural Health Research & Policy Centers, 49*, 1–15.
- Blackstock, J., Chae, K. B., Mauk, G. W., & McDonald, A. (2018). Achieving access to mental health care for school-aged children in rural communities. *The Rural Educator, 39*(1). <https://doi.org/10.35608/ruraled.v39i1.212>
- Burns, G. L., Preszler, J., & Becker, S. P. (2021). Psychometric and normative information on the child and adolescent behavior inventory in a nationally representative sample of United States children. *Journal of Clinical Child and Adolescent Psychology, 50*, 1-10. <https://doi.org/10.1080/15374416.2020.1852943>
- Caspi, A., Moffitt, T. E., Newman, D. I., & Silva, P. A. (1996). Behavioral observations at age 3 predict adult psychiatric disorders: Longitudinal evidence from a birth cohort. *Archives of General Psychiatry, 53*, 1033-1039.
- Cianchetti, C., Pasculli, M., Pittau, A., Campus, M. G., Carta, V., Littarru, R., Fancello, G. S., Zuddas, A., & Ledda, M. G. (2017). Children and adolescent behavior inventory (CABI): Standardization for ages 6-17 years and first clinical application. *Clinical Practice and Epidemiology in Mental Health, 13*, 20-26. DOI: 10.2174/1745017901713010020
- Cianchetti, C., Pittau, A., Carta, V., Campus, G., Littarru, R., Ledda, M. G., Zuddas, A., & Fancello G. S. (2013). Child and adolescent behavior inventory (CABI): A new instrument for epidemiological studies and pre-clinical evaluation. *Clinical Practice and Epidemiology in Mental Health, 9*, 51-61.

- Crouch, L., Reardon, T., Farrington, A., Glover, F., & Creswell, C. (2019). "Just keep pushing": Parents' experiences of accessing child and adolescent mental health services for child anxiety problems. *Child Care Health Development, 45*, 491-499. DOI: 10.1111/cch.12672
- Cuellar, A. (2015). Preventing and treating child mental health problems. *The Future of Children, 25*, 111-134.
- Everett, Y. Martin, C. G., Zalewski, M. (2021). A systematic review focusing on the psychotherapeutic interventions that impact parental psychopathology, child psychopathology, and parenting behavior. *Clinical Child and Family Psychology Review, 24*, 579-598. DOI: 10.1007/s10567-021-00355-3
- Gamm, L., Stone, S., & Pittman, S. (2010). Mental health and mental disorders- a rural challenge: A literature review. *Rural Healthy People, 1*, 97-113.
- Girio-Herrera, E., Owens, J. S., & Langberg, J. M. (2013). Perceived barriers to help-seeking among parents of at-risk kindergarteners in rural communities. *Journal of Clinical Child and Adolescent Psychology, 42*, 68-77. DOI: 10.1080/15374416.2012.715365
- Heberle, A. E., Krill, S. C., Briggs-Gowan, M. J., & Carter, A. S. (2015). Predicting externalizing and internalizing behavior in kindergarten: Examining the buffering role of early social support. *Journal of Clinical Child and Adolescent Psychology, 44*, 640-654. DOI: 10.1080/15374416.2014.886254
- Hofstra, M. B., Van Der Ende, J., & Verhulst, F. C. (2002). Child and adolescent problems predict DSM-IV disorders in adulthood. A 14-year follow-up of Dutch epidemiological sample. *Journal of American Academy of Child and Adolescent Psychiatry, 41*, 182-189.

- Hofstra, M. B., Van Der Ende, J., & Verhulst, F. C. (2000). Continuity and change of psychopathology from childhood into adulthood: a 14-year follow-up study. *Journal of American Academy of Child and Adolescent Psychiatry, 39*, 850-858.
- Howell, E., & McFeeters, J. (2008). Children's mental health care: Differences by race/ethnicity in urban/rural areas. *Journal of Health Care for the Poor and Underserved, 19*, 237-247. <https://doi.org/10.1353/hpu.2008.0008>
- Kim-Cohen J., Caspi A., Moffitt T. E., Harrington H. L., Milne B. J., & Poulton R. (2003) Prior juvenile diagnoses in adults with mental disorder. *Archives of General Psychiatry, 60*, 709–717
- Lavigne, J. V., Arend, R., Rosenbaum, D., Binns, H. J., Christoffel, K. K., & Gibbons, R. D. (1998). Psychiatric disorders with onset in the preschool years: 11. Correlates and predictors of stable case status. *Journal of American Academy of Child and Adolescent Psychiatry, 37*, 1255-1261.
- Logan, D. E., & King, C. A. (2001). Parental facilitation of adolescent mental health service utilization. A conceptual and empirical review. *Clinical Psychology: Science and Practice, 8*, 319-333. <http://dx.doi.org/10.1093/clipsy.8.3.319>
- Mayes, S. D., Castagna, P. J., & Waschbusch, D. A. (2020). Sex differences in externalizing and internalizing symptoms in ADHD, autism, and general population samples. *Journal of Psychopathology and Behavioral Assessment, 42*, 519-526. DOI: 10.1007/s10862-020-09798-4
- Merikangas, K. R., He, J. P., Burstein, M., Swendsen, J., Avenevoli, S., Case, B., ... Olfson, M. (2011). Service utilization for lifetime mental disorders in US adolescents: Results of the

- National Comorbidity Survey—Adolescent Supplement (NCS-A). *Journal of the American Academy of Child & Adolescent Psychiatry*, 50, 32–45. <https://doi.org/10.1016/j.jaac.2010.10.006>
- Mohatt, D. F., Bradley, M. M., Adams, S. J., & Morris, C. D. (2005). *Mental health and rural America: 1994-2005*. U.S. Department of Health and Human Services, Health Resources and Services Administration, Office of Rural Health Policy. Retrieved from <ftp://ftp.hrsa.gov/ruralhealth/RuralMentalHealth.pdf>
- Okwori, G. (2022). Prevalence and correlates of mental health disorders among children & adolescents in U.S. *Children and Youth Services Review*, 136, 1-9. <https://doi.org/10.1016/j.chilyouth.2022.106441>
- Reinke, W. M., Stormont, M., Herman, K. C., Puri, R., & Goel, N. (2011). Supporting children’s mental health in schools: Teacher perceptions of needs, roles, and barriers. *School Psychology Quarterly*, 26, 1-13. DOI: 10.1037/a0022714
- Sayal, K. (2006). Annotation: Pathways to care for children with mental health problems. *Journal of Child Psychology and Psychiatry*, 47, 649-659. DOI: 10.1111/j.1469-7610.2005.01543.x
- Sayal, K., Tischler, V., Coope, C., Robotham, S., Ashworth, M., Day, C., Tylee, A., & Simonoff, E. (2010). Parental help-seeking in primary care for child and adolescent mental health concerns: qualitative study. *The British Journal of Psychiatry*, 197, 476-481. DOI: 10.1192/bjp.bp.110.081448
- Sourander, A., & Helstela, L. (2005). Childhood predictors of externalizing and internalizing problems in adolescence: A prospective follow-up study from age 8 to 16. *European Child and Adolescent Psychiatry*, 14, 415-423. DOI: 10.1007/s00787-005-0475-6

APPENDIX A

Informed Consent

COLLEGE OF BEHAVIORAL AND SOCIAL SCIENCES

DEPARTMENT OF PSYCHOLOGY

Informed Consent

For

Adult Perceptions of Children's Behaviors

Dear Participant:

The primary investigator of the current study is Abby Lucas, M.S. a graduate student at Georgia Southern University. Thresa Yancey, Ph.D., professor, is the co-investigator and research advisor for the current study. This research is being conducted within the Department of Psychology to advance knowledge in the field of mental health research.

The purpose of this research is to investigate how various adults perceive children's differing behaviors.

Procedures to be followed: This study is survey-based. You will read a vignette about a child's current functioning and behavior. Next, you will respond to several items about that child's behavior and your thoughts about any need to refer the child for other services. This study will be completed through the internet using the Qualtrics platform.

To the best of our knowledge, the things you will do have no more risk of harm than what you would expect to experience on a normal day. There are no questions asking about sensitive issues. All information will be kept anonymous and confidential. It is not expected that participants will be harmed by taking the online survey. However, if you do feel upset or distressed from participating in this study you may contact the National Suicide Prevention Hotline at 1-800-273- 8255, the National Sexual Assault Hotline at 1-800-656-4673, or contact the Crisis Text Line by texting 'home' to 741741 or online at <https://www.crisistextline.org/as>. These services are free and are equipped to handle questions and concerns about emotional distress. Also, if you experience discomfort, you have the right to withdraw at any time without loss of benefits.

Voluntary participation in this study indicates the following:

There is no guarantee that you will get any benefit from taking part in this study. However, some people have obtained a deeper understanding of themselves, others, and the world they live in by participating in psychological research. Additionally, some people have also gained a greater understanding of how to conduct psychological research.

Today's survey will take approximately 30 minutes to complete. Once completed, you will have the opportunity to click a link to a separate, unconnected survey to provide their information for the drawing to win one of five \$10 Amazon gift cards. This second survey will not be connected to your responses in the initial survey. You do not need to enter the drawing to participate, but to enter the drawing, an email address must be provided. Email addresses cannot be linked to participants' answers to survey questions.

Statement of Confidentiality: The primary investigator will have full access to all information and will ensure data are housed in a secure location that only the PI can access. All data and accompanying research documents will be destroyed in 7 years' time following completion of this study. All researchers have completed ethical trainings in research as enforced by the Institutional Review Board at Georgia Southern University.

Your information will be confidential and anonymous. That is, your name or personal information will not be collected or reported with the data. This ensures that your responses will not be linked to your personal information, such as your name.

Participants have the right to ask questions and have those questions answered. If you have questions about this study, please contact the researcher named above, whose contact information is located at the end of the informed consent. For questions concerning your rights as a research participant, contact Georgia Southern University Institutional Review Board at (912) 478- 5465 or irb@georgiasouthern.edu.

You must be 18 years of age or older to consent to participate in this research study. If you consent to participate in this research study and to the terms above, please indicate your willingness by choosing "Yes, I read the terms above and consent to participate in this research" below. This project has been reviewed and approved by the GS Institutional Review Board under tracking number H23088.

Title of Project: Adult Perceptions of Children's Behaviors

Principal Investigator: Abby Lucas, Graduate Student, al04014@georgiasouthern.edu

Co-Investigator and Research Advisor: Thresa Yancey, Ph.D., Professor of Psychology, tyancey@georgiasouthern.edu

Please select an option below to indicate whether you agree to participate in this research:

- Yes, I read the terms above and consent to participate in this research.
- No, I do not consent to participate in this research.

APPENDIX B
Measures Created for the Current Study

Inclusionary Criterion Check

1. Do you have or work with children between the ages of 6 and 17?
 - a. Yes
 - b. No

2. Which of the following terms describes your current interactions with children between the ages of 6 and 17? Check all that apply.
 - a. I am currently the parent/caregiver of a child between 6 and 17.
 - b. I am currently an education professional (for example, teacher, school administrator, etc.) for children between 6 and 17.
 - c. I am currently a healthcare provider (for example, a nurse, pediatrician, mental health provider, social worker, etc.) for children between 6 and 17.

Vignettes

- At-risk externalizing disorder vignette:

Please read the following story about a child's recent behavior and experiences.

Taylor is 9 years old and in the 4th grade. At times, Taylor does not listen to teacher or parent direction, but overall engages appropriately. Sometimes, they are irritable toward others at home and school and struggle to follow rules. There have been times when they do not appear to feel guilty after misbehaving or breaking a rule. Taylor once engaged in a verbal argument with another student after school but was redirected by the teacher. At times, they are argumentative and have tantrums. Despite these behaviors, Taylor performs well in school.

- At-risk internalizing disorder vignette:

Please read the following story about a child's recent behavior and experiences.

Taylor is 9 years old and in the 4th grade. They are somewhat shy about making friends, but overall engages appropriately. Taylor tells teachers they miss their mother during schooltime and sometimes becomes tearful stating they want to return home. Taylor seems reluctant to stay at school at drop off. They occasionally complain of headaches during the school day. During times of tearfulness, Taylor is difficult to console. They have also asked to return home during breaks in the school day to see their mother. Despite these behaviors, Taylor performs well in school.

- Control vignette (no risk):

Please read the following story about a child's recent behavior and experiences.

Taylor is 9 years old and in the 4th grade. Overall, they engage appropriately. They never get in trouble with others. They appear happy at school with the exception of one drop off when they did not want their parent to leave. They have friends at school and are kind with others. When they do something wrong, they usually apologize. They have occasionally complained of a stomachache and asked to use the restroom and returned within an appropriate time. They have never displayed extreme behaviors or emotional outbursts. Taylor performs well in school.

Manipulation Check

1. What was the name of the child in the story you read?
 - a. Charlie
 - b. Taylor**
 - c. Jamie
 - d. Morgan

2. What was the age of the child in the story you read?
 - a. 11 years old
 - b. 8 years old**
 - c. 9 years old**
 - d. 14 years old

Referral Questionnaire

1. How likely would you be to refer Taylor for mental health or counseling services or assessment?
 - a. Scale from 0 (no need to refer) -100 (definite need to refer)

2. If you did choose to refer, to whom would you refer?
 - a. Pastor/priest/clergy member
 - b. Family member/friend
 - c. Healthcare provider
 - d. School counselor
 - e. Psychologist/therapist/other mental health provider
 - f. Other _____

Assumption of Gender

1. What is Taylor's gender?
 - a. Boy
 - b. Girl
 - c. Another gender
 - d. No gender specified**

Demographics Questionnaire

Gender Identity:

- Female
- Genderqueer, neither exclusively male nor female
- Male
- Female to Male (FTM)/Transgender Male/Trans Man
- Male to Female (MTF)/Transgender Female/Trans Woman
- Nonbinary
- A better description not specified above _____

Race:

- African American
- Asian
- Bi/Multi Racial: _____
- Hispanic
- American Indian/Alaska Native
- Middle Eastern/North African
- Pacific Islander
- White
- A better description not specified above _____

Sexual Orientation:

- Asexual
- Bi-Sexual
- Heterosexual
- Lesbian/Gay
- Pansexual
- Undecided
- A better description not specified above _____

Highest Education Level:

- Post-graduate degree
- Some post-graduate
- Bachelor's degree
- Associate's degree
- Some college; Not currently enrolled
- Currently enrolled in college
- High school diploma or GED
- Less than high school diploma

Population Size and Geographic Information of Hometown (where you lived most often prior to age 18):

- Urban/Large city
- Suburban
- Small city/Small town
- Rural

Population Size and Geographic Information of Current City:

- Urban/Large city
- Suburban
- Small city/Small town
- Rural

Occupation Status:

- Full-time
- Unemployed
- Stay-at-home parent/Caregiver
- Part-time
- Student
- Retired

Current Occupation:

- Education/K-12 Teaching
- Nursing
- Stay-at-home parent/Caregiver
- Social Work
- Pediatrics
- Mental/Behavioral Health
- A better description not specified above _____

Do you or someone who you are close to have mental health concerns (e.g., depression, anxiety, bipolar, disrupted behaviors, ADHD):

- Yes
- No

Have you ever referred a child between the ages of 6-17 to a professional (e.g., psychologist, therapist, psychiatrist) for mental health concerns?

- Yes
- No

When I am interacting with someone who has a mental health concern, I:

Think it is important for people who have mental health concerns to receive adequate and effective treatment from a professional

Think it is important to first try to solve the problem within the family and social support (e.g., pastor, family, friends)

Think most of these concerns can be handled by the person without any outside help

Think most people who have mental health concerns do not really have a problem, they are just seeking attention

When I am interacting with someone who has a mental health concern, I:

Try to go out of my way to help them get the support that they need

Think they are just like any other person and deserve to be treated with respect

Do not really give them much thought in my day-to-day life

Usually think that they are not someone I want to interact with

Think these people usually need to be in a locked facility for the sake of the public

Are you currently a parent/primary caregiver of a child between the ages of 6-17?

Yes

No

Have you ever been a parent/primary caregiver of a child between the ages of 6-17?

Yes

No

Please tell us how you found the study:

Recruitment email

Social Media

In another way (please state how) _____