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Social Distance, Stigma, and Help-Seeking: A Comparison of Lay and Professional Conceptualizations of Autism in the Southern US

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SOCIAL DISTANCE, STIGMA, AND HELP-SEEKING: A COMPARISON OF LAY AND PROFESSIONAL CONCEPTUALIZATIONS OF AUTISM IN THE SOUTHERN US

A Dissertation
Submitted in partial fulfillment
For the degree of Doctor of Philosophy
Department of Psychology
The University of Mississippi

by

CHRISTIAN S. COURSON

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ABSTRACT

Understanding stigma, help-seeking and barriers to treatment for persons with Autism Spectrum Disorder (ASD) is essential for informing interventions toward increased relevance and utility. An array of sociocultural and individual factors can influence lay beliefs and behavioral responses to ASD, including stigma and social distancing (i.e., preference for distance from autistic individuals). It is important to consider the Explanatory Models of ASD among helping professionals (e.g., health care, education) as they are likely touchstones along the help-seeking pathway for children with ASD. The purpose of this study was twofold: 1) to explore factors in the southern United States associated with different aspects of the EM, namely how background factors (demographics), knowledge, and familiarity with ASD are related to social distancing, autism stigma, and help-seeking; and 2) to elicit and compare beliefs about ASD among groups of lay persons and professionals (i.e., healthcare professionals, teachers) on the frontline of initiating the help-seeking pathway. Quantitative surveys (*n* = 343) and open-ended data were collected from individuals in the southern United States. Quantitative results indicated: increased knowledge was associated with lower levels of stigma and social distancing; more preference for social distance was associated with decreased help-seeking; more education and ASD knowledge were associated with increased help-seeking intentions. Similarly, the data suggests that individuals with higher levels of ASD knowledge were more likely to endorse positive attitudes towards help-seeking from professionals. Educators had more ASD knowledge than the lay community. However, educators were less likely to seek help from all sources on the measure of general help-seeking (GHSQ-V). Qualitative data indicated significant differences between groups in terms of causes and treatment of ASD. Educators and healthcare workers more frequently endorsed neurodevelopmental disorders as the cause of ASD-like symptoms compared to the lay community. While the lay community and healthcare professionals more frequently recommended psychological treatment, educators were more likely to suggest multiple, specific treatments. Overall, the present study indicated the importance of ASD knowledge and how that knowledge impacts each individual’s ability and willingness to provide access to the help-seeking pathway.

DEDICATION

This dissertation is dedicated to the many clients who taught me about their experiences as autistic individuals and inspired me to understand the stigma they face on a daily basis. I am forever grateful for these clients and their invaluable perspectives.

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I. LITERATURE REVIEW

While research on autism stigma is not a new endeavor, there is a paucity of research on how autism is understood and conceptualized among lay and professional populations. Negative perceptions about Autism Spectrum Disorder (ASD), such as stigma and social distancing, negatively affect individuals with autism and their families. These negative beliefs can reduce help-seeking behavior in the families of children, such as decreased likelihood that the person will seek out behavioral therapies. Other factors, including socioeconomic status, as well as familiarity and knowledge about ASD, could also influence a person's conceptualization; and as such, ameliorate or exacerbate ASD stigma and affect the help-seeking trajectory and outcomes. A better understanding of factors related to stigma within the lay community could allow for education initiatives that demystify misconceptions about people with ASD and aim to increase professional, psychological help-seeking. Additionally, an understanding of the stigma held by the local professional community (i.e., teachers, healthcare providers, and religious leaders) could point to the need for increased education and awareness and improved standards of care within those communities.

Autism Spectrum Disorder

According to the International Classification of Diseases and Related Health Problems – 10th Edition (ICD-10), ASD is a form of developmental disability characterized by impairments in social communication and the presence of restrictive, repetitive patterns of behavior, which are often referred to as stereotypy (World Health Organization, 1993). In 2013, ASD was reclassified to conglomerate the differing levels of impairment that are now encompassed by 'the spectrum.' However, it is important to consider that every individual with autism will present with a different behavioral repertoire and demeanor.

ASD falls under the Neurodevelopmental Disorder umbrella of diagnostic categories as outlined in the fifth edition, text revision of the (Table 1) Diagnostic and Statistical Manual of Mental Disorders, DSM-5-TR (American Psychiatric Association, 2022).

Table 1

DSM-5-TR Diagnostic Criteria for Autism Spectrum Disorder

A. Persistent deficits in Social Communication and Social Interaction across multiple contexts.
B. Restrictive, repetitive pattern of behavior, interests, or activities.
C. Symptoms must be present in the early developmental period (may be masked by learned strategies in later life).
D. Symptoms cause clinically significant impairment in social, occupational, or other important areas of current functioning.
E. These disturbances are not explained by intellectual disability or global developmental delay.

In recent years, the rate of autism has increased drastically. In 2000, 1 in 150 children were diagnosed with ASD. As of 2014, the rate of a child being diagnosed with an Autism Spectrum Disorder (ASD) had increased to 1 in 59 children (Baio et al., 2018). It is unclear whether this increase in diagnosis is a result of increased occurrence or by increased discovery due to awareness (Grinker, 2007). Because of the nature and wide variability within the spectrum, diagnostics are somewhat difficult. Despite biomedical advancements, there is currently no biological test to determine if a person is living with ASD. Therefore, in order to assess the disorder, researchers and clinicians must rely on behavioral tendencies of individuals to determine the presence or absence of ASD.

Regarding prevalence of ASD, White males appear to be diagnosed at the highest rates. In 2009, the rate of someone having a documented ASD diagnosis was lower in individuals who self-identified as Black, Hispanic, or "other" compared to those who identified as White or Asian (Mandell et al., 2009). This study also confirmed prior findings that males were more likely to have a diagnosis of ASD than females. Additionally, children with low (i.e. below 70) or undocumented IQ scores were more likely to have a documented ASD diagnosis. Lastly, children of educated mothers (i.e. mothers with at least some college education) were more likely to have a documented ASD diagnosis than mothers without their high school diplomas (Mandell et al., 2009). It is unclear, however, whether the differential rates of diagnosis reflect actual differences in ASD or other factors, such as elevated stigma and reduced help-seeking, which are well-known for contributing to other health and mental health disparities. When an individual or family encounters an explanation that does not fit their own explanation of a difficulty such as ASD, they are less likely to accept the diagnosis. This is especially true of ASD considering its diagnostic methodology.

Removing barriers to diagnosis is essential for early intervention. The best outcomes for ASD are achieved with early diagnosis and treatment. For example, integrating children back into the general education classroom has been linked to long-term social gains (Boutot & Bryant, 2005; Fenske et al., 1985). In fact, Boutot and Bryant (2005) found that students with developmental disabilities were just as likely to be invited to attend a birthday party, play outside, or work on schoolwork within the inclusive classroom, which had not previously been considered the case (Sabornie & Kauffman, 1985; Sabornie et al., 1990). Early detection, which leads to better treatment outcomes, is beneficial for a child's social integration with their neurotypical peers. However, there exists a common myth that individuals with ASD cannot benefit from treatment at older ages. If a person finds out their child has autism at the age of 16, treatment will still produce gains. Therefore, it is vital to dismantle barriers to treatment in all age groups, families, and communities.

Explanatory Models (EMs)

A thorough understanding of a patient's conceptualization of a problem (i.e., an explanatory model) is one of the first steps to deconstructing the barriers to treatment for individuals with autism. Arthur Kleinman (1980) proposed a method of assessing a patient's experience physically, mentally, and culturally. His model encompassed several aspects of the illness (or disorder) including the perceived etiology, symptomatology, severity, duration, prognosis, fears/stigma of the illness, desired treatment, and results expected from the patient-provided treatment of choice (Kleinman, 1980). These models of health have been adopted by many healthcare professionals for various disorders, including autism, diabetes, cancer, schizophrenia/psychosis, depression (Gray, 1995; Johnson et al., 2009; Jezewski & Poss, 2002; Lewis et al., 1993; McCabe & Priebe, 2004).

Because autism does not have a clear biological marker for diagnosis, the social and cultural interpretations of the disorder play a significant role in the conceptualization of the symptoms. In previous literature, the explanatory models of autism typically attributed ASD to biomedical causes; however, some research has also found supernatural/spiritual causal attributions (Gray, 1995; Shyu et al., 2010). This research also suggests that parents typically have difficulties with accepting the diagnosis due to the current behavioral diagnostic instruments. While a helping professional can hold one explanatory model, the patient can hold an opposing conceptualization. This discrepancy in culturally understanding the patient's problem can lead to a sense of confusion and condescension. Patients can often feel like the helping professional is not listening to them and knows better than they do. This may lead a patient to reduce future help-seeking from fear of being misunderstood or ignored; however, including the patient's explanatory model in the conceptualization of the problem can decrease a client's early discontinuation of therapy (Chrisman & Johnson, 1996).

Table 2

Explanatory Model Domains Assessed by Each of Kleinman's Questions

1. Name and meaning of experienced symptoms
2. Cause of symptoms
3. Onset of the illness or problem
4. Impact of the illness
5. Illness severity and prognosis
6. Fears associated with the illness or problem
7. Identification of problems associated with physical health, finances, and psychological/emotional health.
8. Treatments and expected outcomes

Lay and Professional EMs

Not only do existing patients and families hold EMs, but so do lay people and various professionals in the community. Consideration of lay beliefs is a key aspect of culturally responsive therapy given that lay beliefs may, and often do, differ dramatically from professionally-held beliefs, understandings, and approaches to treatment (Johnson et al., 2009a; Johnson et al., 2009b). According to the seminal work of Kleinman (1980), if extant disparities in beliefs about ASD between lay and professional people are not acknowledged and resolved, then efforts to provide effective outreach, education, and awareness about ASD and available treatments will surely struggle. For this reason, it is vital for researchers to know the commonly held explanatory models of the lay population and that of helping professionals to bridge the gap and enhance help-seeking behavior.

Help-Seeking

When looking at ASD and all the mystique that it possesses in the lay and medical communities, negative beliefs and perceptions can lead to reduced help-seeking by those who need mental health services, such as individuals with autism and their families (Komiya et al., 2000). The primary concern when looking at the effects of autism stigma lie in the fact that if help is not actively sought, the child will miss an opportunity for treatment during critical developmental periods for milestones such as speech. With no or late-onset treatment, individuals with autism could be at a disadvantage regarding behavioral, educational, and intellectual gains. For example, suburban and rural areas are less likely to catch the signs of autism early. This can result in delayed help-seeking and diagnosis at a later age compared to their urban peers (Chen et al., 2008). Understanding factors associated with the patient's EM are vital to increase timely help-seeking and increase treatment gains as much as possible. Congruence between EMs between the patient and provider engender more acceptance of the diagnosis which may help to increase help-seeking. Research suggests that severity of symptoms and stress level also impact a person's willingness to seek help. As symptom severity increases, people are generally more likely to seek help; however, the opposite is true regarding current distress with symptoms. High distress levels appear to suppress help-seeking (Oliver et al., 1999; Meltzer et al., 2003). While children with autism sometimes have severe symptoms, they can also exhibit mild symptoms. Because someone with mild symptomatology with highly distressed parents may not get the help they need, it is important to understand the barriers in the help-seeking pathway in order to eliminate as many as possible as early as possible.

Generally, around 70% of individuals who live with mental illness receive no treatment from mental healthcare or general healthcare providers (Deane et al., 2001). However, the Theory of Planned Behavior found that individuals who have the intention to seek help are more likely to perform actual help-seeking behaviors (Ajzen, 2002). Some individuals seek help through their general practitioners, while others may ask teachers or religious leaders for help. However, mental health stigma is also a problem within medical professionals (Wallace, 2012). Health practitioners who treat individuals with mental health concerns may stigmatize their problems and discourage future help seeking behavior. Understanding contributing factors to this barrier to treatment may help inform education and clinical efforts to increase relevance and usefulness in treatment delivery and evaluation of ASD.

Stigma

For individuals who need mental health services, stigma is a very real and very important concern with negative consequences. Mental health stigma negatively affects employment, healthcare costs, and income level (Sharac et al., 2010). In a general sense, there are many challenges facing someone who seeks mental healthcare services. In many cases, they face a two-front battle with their area(s) of difficulty: the difficulty itself (i.e. the diagnosis) and also the stereotypes, prejudices, and discrimination from individuals in the community, which can impact how they think of themselves or their loved ones. Stigma refers to the devaluation and dishonor associated with some attribute. Those who have that attribute often feel subjected to harsh, negative criticism or judgments for possessing that attribute (Goffman, 1963). While there is stigma of the self, public stigma is characterized by the negative beliefs about the stigmatized people (stereotypes), such as dangerousness or aggressiveness. These beliefs determine how much the person experiences an emotional reaction towards or agrees with that belief (prejudice), such as fear. Stigma may lead to social distancing and discrimination, such as withholding a resource or avoiding contact with those individuals (Corrigan & Watson, 2002). This discrimination is influenced by factors such as gender, symptomatology, the type of mental health concern, and the person’s knowledge of that particular mental health concern (Phelan & Basow, 2007). Families of children with disabilities experience discriminative stigma as well. Stigma may be greater for individuals with ASD because they often blend in with their neurotypical peers (i.e. children with no known autism spectrum disorder) compared to children with visible disabilities.

Parents often experience considerable stigma due to the socially inappropriate behavior of the child with ASD (Gray, 2002). Mothers have been reported to experience more stigmatization by peers than fathers due to the traditional role of the mother being the primary caretaker. In fact, autism was at one time, thought to be caused by a cold and rejecting mother (Kanner, 1943). Some other folk beliefs include ideas that ASD is caused by God or some other supreme being for wrongdoings or that ASD is the result of a curse or “evil eye” upon the family. While most families with children affected by ASD experience these negative perceptions, some parents choose to ignore outside opinions, while others may avoid public places, and refuse advice on how to raise their child.

In terms of familial stigma in relation to the etiology of ASD, parents who report that their child’s autism is caused by early childhood traumatic experiences rely less on behavioral treatments, communication training, and assistive devices (Dardennes et al., 2011). While there has been a lot of controversy over whether vaccines cause autism in recent years, there is no evidence that supports this claim (Offit & Gerber, 2009). In a recent study in Canada, around 40% of parents with vaccinated children with autism attributed the cause of their child’s autism to routine vaccinations (Mercer et al., 2006). Therefore, even in the face of evidence, some aspects and facets of stigma continue to be pervasive not only in the lay community, but also in communities with closer proximity to those living with ASD such as their families. Awareness of these explanatory models may help a provider deliver feedback in a manner that increases acceptance of the diagnosis, decreases stigma, and increase overall help-seeking.

Social Distancing

Social distancing is an aspect of stigma and a common historic way of measuring stigma in research (Link et al., 2004). Social distance is defined as the extent to which someone is willing to be socially intimate with someone from the studied group (e.g., race, social class, someone with a mental health concerns, or medical illnesses). People often overestimate the likelihood of violence in individuals with mental health disorders (Link et al., 1999). This is also true of individuals with ASD. This false belief can have potentially harmful effects, such as increased social distance from individuals who suffer from mental health disorders. To avoid this stigma, individuals who need mental health services will often not seek help in order to avoid being labeled as “mentally ill” or deviant. This stigma has been associated with decreased help-seeking to avoid the loss of intimacy with loved ones and friends. In fact, less than 30% of individuals living with a psychiatric disorder seek mental health services (Regier et al., 1993). Stigma could be one of the contributing factors for the lack of help-seeking for mental health concerns along with partial engagement in mental health services, such as avoiding certain services like psychotherapy or behavioral treatments and the sole use medical interventions (Corrigan, 2004).

Demographic Factors

Some of the factors that have been repeatedly related to stigma are sex, age, and socioeconomic status. Young age has been associated with higher levels of stigmatized beliefs regarding mental health (Anglin et al., 2006). Males are more likely to prefer greater social distance from children with mental illnesses (e.g., depression and ADHD) and their families than their female counterparts (Martin et al. 2007). Additionally, it has been shown that mothers rate children more positively than fathers in the same dyad (Rosenbaum et al., 1987). Parents of young boys are more likely to expect a longer duration of symptoms from other neurological conditions (e.g., ADHD). Parents of young girls typically hold the belief that the symptoms will not last long and will resolve themselves over time (Bussing et al., 1998).

As with most race-based research, studies of racial differences in stigma and social distancing have been inconclusive. While Mukolo and Heflinger (2011) found that individuals who identified as Black were more likely to prefer greater social distance from the child with a mental illness, they did not have this preference for that child's family. However, it has been indicated that individuals with mental health concerns are more likely to be perceived as dangerous by individuals who identify as Black, Hispanic, or Asian/Pacific Islander (Anglin et al., 2006; Corrigan and Watson, 2007). Meanwhile, Martin et al. (2007) found that there were no significant findings between social distance preference and race. Therefore, more research is needed to determine if ethnic background plays a role in social distancing or if it was operating as a proxy for socioeconomic status and other confounding variables. Parents who identified as White, however, were more likely to endorse medical labels/diagnoses for other neurological conditions. They were also more likely to expect a longer duration of symptomatology and to include school supports and interventions in the treatment plan of ADHD (Bussing et al., 1998).

Individuals with higher levels of education have been found less likely to prefer social distance from both the child and the child's family (Mukolo & Heflinger, 2011). Contrary to the expected, income level does not trend with level of education. Even though education level is negatively related to social distance preferences, higher income levels are associated with greater social distancing. Additionally, higher income level was associated with beliefs that individuals with mental health concerns should be punished for aggressive and violent behavior (Anglin et al. 2006; Parcesepe & Cabassa, 2013). Individuals with high levels of education did not have this same belief regarding the use of punishment for aggressive behavior.

Familiarity with ASD

Research supports that people who are more familiar with individuals with mental illness are less likely to endorse stereotypes of that particular disorder (Corrigan et al., 2001a; Corrigan et al., 2001b; Holmes et al., 1999). Family members, teachers, and school counselors that have opportunities to observe or interact with an individual with ASD would, based on such exposures, develop some level of understanding and expectations for ASD-typical behaviors. Familiarity with a person or persons with mental health concerns could result in increased comfort over time and lead to less social distancing, increased knowledge, and decreased stigma (Corrigan et al., 2001b). Due to these factors, it is likely that individuals with increased knowledge are more likely to hold factual neurological EMs regarding the etiology of ASD.

Knowledge about ASD

Beyond familiarity, formal knowledge is an important aspect of predicting a person's level of stigma towards mental health concerns. Increases in knowledge have been found to increase a person's positive attitudes toward mental health in general (Milin et al., 2016). Research has found that intervention on the level of knowledge can increase the amount of help-seeking a person intends to perform in some domains of mental health (Han et al., 2006). This type of intervention is an easy and efficient method of addressing stigma in the southern United States due to the dearth of mental health resources in the area.

Considering all the factors related to stigma, it is surprising that more research does not focus on what factors are linked to stigma. In order to analyze their relationships to stigma, however, there needs to be a well-established measure to assess both knowledge and stigma of autism spectrum disorder. As of 2016, a large number of limitations were discovered within research regarding autism stigma. A literature review of the measures used in autism stigma research led to findings that suggest that current measures have subpar psychometric properties, lacked autism knowledge subscales, and had little cross-cultural utility (Harrison et al., 2017b). Harrison et al. (2017a) used the literature review to assemble a questionnaire from the pre-existing measures on autism stigma. This measure has been named the Autism Stigma and Knowledge Questionnaire (ASK-Q). This was the first step in creating a measure of autism knowledge and stigma that included subscales that measure etiology, treatment, symptoms, and stigma separately. Research using this scale can help us better understand stigma and identify areas to focus interventions. Additionally, EMs are likely to vary based on how much knowledge someone possesses about the etiology, diagnosis, and treatment of ASD. Understanding how knowledge, familiarity, and stigma affect EMs and help-seeking is vital in addressing the lay community's barriers to help-seeking.

Professional Views

As noted, professionals also hold EMs about ASD as well. Influenced by their education and professional training orientation, EMs capture social, cultural and personal meanings and are thus not immune from negative beliefs and behaviors, including stigma and social distancing. Investigating EMs is thus essential among frontline professionals involved in the screening and identification of children at risk for developmental disabilities, such as ASD. Teachers are professionals that commonly interact with children on the spectrum on a daily basis and are often considered some of the frontline workers for children with disabilities. According to a study that followed pre-service teachers throughout their education program, pre-service teachers have more knowledge by the end of their training program than their first year in the program. Knowledge, however, came with more frequent misconceptions surrounding children with ASD. Fourth-year teacher candidates were mostly unaware that intellectual disabilities are commonly comorbid with ASD. The majority of these same teachers assumed that students with ASD did not use any type of visual communication during conversations. Around 36% of these teachers also thought that the behavior of children with ASD is similar across all children and an educational intervention that worked for one student with ASD was likely to work for every student with ASD (Sans-Cervera et al., 2017). Alternatively, it has been found that the more knowledge a teacher possesses regarding ASD and the more experience he/she has in working with this population, the less likely they are to intentionally seek to punish children with ASD. This research also concluded that increasing teachers' levels of knowledge was not sufficient in reducing stigma in educators (Corrigan & Penn, 1999; Ling et al., 2010). Despite the increased need for intervention in the education community, many other professions face similar deficits in recognizing and improving stigma.

Families of children with ASD also often experience stigmatized language and/or behavior when seeking help from healthcare providers (Farrugia, 2009; Kinnear et al., 2016). Recent research suggests that healthcare professionals often express their bias through subtle cues in their language and behavior instead of through overt prejudicial statements. These typically occur in one of three ways: healthcare microaggressions, marginalization, or preconceptions (Como et al., 2020). Healthcare disparities exist in the assessment and treatment of autism when race is introduced. When race is considered in the intersectionality of the care of children with ASD, a disparity is noted. Individuals of Hispanic and urban Black families were less likely to be given culturally adequate information and appropriate assessment to initiate the necessary early intervention services (Blanche et al., 2015; Burkett et al., 2015). A survey study found that the majority of healthcare providers rated their knowledge of ASD in the fair to poor range (Zerbo et al. 2015). This suggests a deficit of explicit instruction in ASD-related knowledge. This training could be improved if common accommodations or treatment interventions that aid in delivering equitable care to individuals with ASD and their families were taught to these care providers.

Aside from secular healthcare institutions, stigma also exists in the religious community. Because mental and behavioral healthcare is not available in many rural parts of the world, religious leaders are often sought for advice, prayer, and counseling on treatment or the next steps in the help-seeking pathway. Research has found that communities and individuals with high levels of religiosity are more likely to have higher levels of stigma toward mental health concerns (Tzouvara & Papadopoulos, 2014). Likewise, cultural and religious beliefs about the cause of ASD prevail in many parts of the world. These beliefs include the presence of evil spirits that need to be exorcised, attribution to the “evil eye”, and curses placed on the child or household (Nwokolo, 2011; Alqahtani, 2012; Guler et al., 2018).

Stigma and Help-Seeking in the Southern U.S.

The southern region of the United States is notorious for a number of negative health outcome expectancies. One of the primary concerns is the access to mental healthcare professionals in rural areas of the South. When looking at access to mental healthcare services, the majority of the southern states in the US are in the bottom 20% of all states. For example, according to the Behavioral Health Barometer by SAMHSA (2015), only 38.3% of adults in Mississippi with mental illness receive treatment. In many states, it is not uncommon for the ASD evaluation waiting list to be between 6 months and 2 years. This waiting list can be just as extensive for children who need intensive behavioral intervention in order to learn pre-academic and communication skills, which widens the gap for individuals with mental health concerns.

Another factor contributing to negative health outcome expectancies is education. The lack of education has historically been linked to stigma and decreased help-seeking; therefore, education in the southern US has been on the forefront of many political campaigns in the last two decades. According to the US Census (2000), high school dropouts were more concentrated in the South compared to all other areas of the US. Nearly 25% of all people aged 25 or older did not attain a high school diploma in this geographic region; likewise, southern states have been more likely to cut state funding for public universities and higher education in recent years.

Contrary to the observed low levels of education, these southern states are also colloquially known as the “Bible Belt” because of their high levels of fundamental Christianity. These states also tend to be more socially and politically conservative than other regions of the United States. This heightened religiosity tends to create higher levels of stigma in the lay community. This elevated stigma, combined with limited rural resources, creates an environment of decreased help-seeking. This is why many people in these rural areas do not seek treatment for mental health concerns for themselves or their children. The use of EMs in rural communities can help break down these barriers to treatment by including spiritual, medical, and other cultural conceptualizations in the diagnosis and treatment planning phases of help-seeking.

Present Study

Given the disparities in treatment, the low access to behavioral health resources, poverty, and high levels of stigma in the South, the present study aims to help ameliorate some of these concerns by providing a framework for future research and intervention based on elucidation of Autism EMs and exploration of factors influencing the EM among various groups. A pilot study indicated that the most important factors of understanding autism stigma were knowledge and familiarity with autism. Familiarity with autism led to lower levels of social distancing. Individuals who had higher preferences for social distancing were less likely to seek help. The present study intends to replicate these findings as well as expand its applicability. The current study aims to: 1) explore how background factors (demographics), knowledge, and familiarity are related to social distancing, autism stigma, and help-seeking intentions/attitudes; and 2) to elicit and compare beliefs about ASD among lay persons and those professionals who are on the frontline in the identification of ASD and initiating and influencing the help-seeking pathway. These groups include lay people, healthcare professionals, teachers, and religious leaders. The southern U.S. may have particularly low rates of mental health knowledge and help-seeking. This could be related to lower education and income levels, decreased access in more rural areas, negative perceptions, and/or stigma. The southern U.S. is also more religious and individuals may harbor religious or spiritual beliefs that may lead to increased stigma and inhibit help-seeking.

Because the rates of autism are rising among the overall population, it is increasingly important to study what prevents people with autism and their families from seeking out early interventions. Even though behavioral treatments for autism, such as applied behavior analysis, have been proven to be effective, there are still gaps in treatment seeking due to income, education level, negative beliefs, and degrees of stigma. When a person faces higher levels of stigma, they are less likely to seek help, such as diagnostic or therapeutic services in a timely manner (Evans-Lacko et al., 2012). Social distance is another component of stigma and may also be associated with reduced help-seeking and poorer overall outcomes. Previous studies have found that sex, age, race, education level, and socioeconomic status contribute to a person's level of stigma toward mental illness; however, there has been conflicting research about whether racial background plays a role.

Although some research has been conducted on lay stigma, the historical research specific to autism stigma is illusive and methodologically lacking. The use of the new measure by Harrison et al. (2017a) contributes to the small pool of research done on populations outside the family of individuals with autism. In this study, I first consider which demographic factors, and to what extent, are gender, age, ethnicity, income and education related to ASD knowledge, stigma and help-seeking. Next, I will ask to what extent familiarity and formal ASD knowledge contribute to stigma and help-seeking and to what extent stigma predicts help-seeking intentions and beliefs over other factors. Lastly, I will elucidate EMs, explore socio-cultural material and compare EMs of the lay community and the professional groups.

The following hypotheses were proposed: 1) Demographics (religious importance, age, ethnicity, income and education) along with familiarity and knowledge would predict autism stigma. Specifically, individuals of higher income, lower education, lower levels of autism knowledge, and decreased familiarity with someone with autism will have increased levels of autism stigma. Knowledge and familiarity will contribute more variance in stigma than demographics 2). Demographics along with familiarity and knowledge will predict social distancing. Specifically, individuals of higher income, lower education, lower levels of autism knowledge, and decreased familiarity with someone with autism will have increased levels of social distancing. Again, knowledge and familiarity will contribute more variance in stigma than demographics 3) Individuals who have higher levels of stigma and social distancing are less likely to seek help for a loved one with autism-like symptoms 4) Group differences will exist between the lay community and the measured professional groups. It is expected that individuals in the professional groups will have higher levels of familiarity and help-seeking intentions with lower levels of stigma. There is expected to be group differences between the professional groups as well. This is especially true for the etiology and treatment of ASD. 5) There are expected differences in the explanatory models of these groups as well with healthcare professionals having more biomedical explanations than other groups and more likely to suggest behavioral therapies.

II.METHODS

Participants

Participants were purposefully sampled to include individuals within the southern U.S. These participants were originally from and residing in one of the following states: Alabama, Arkansas, Florida, Georgia, Mississippi, North Carolina, South Carolina, Louisiana, Oklahoma, Texas, and Tennessee. Qualtrics, MTurk, and social media (e.g., Facebook, Instagram) were used to create and collect the data electronically. Participants (*N* = 346) were mixed gender (54% male) with an average age of 37 (SD = 10.83). The following information describes the participants' racial/ethnic composition: White (N = 246; 71.1%), Black (N = 53; 15.3%), Asian (N = 26; 7.5%), Latinx (N = 15; 4.3%), and Multiracial (N = 5; 1.4%). The mean reported household income was between $40,000 and $50,000. Over three-fourths of the sample had at least a bachelor's degree (80.4%). The following information describes the participants' religions: Christian/Catholic (N = 273; 78.9%), Atheist/Agnostic/None (N = 22; 6.4%), Hindu (N = 10; 2.9%), Buddhist (N = 7; 2%), Muslim (N = 4; 1.2%), Jewish (N = 1; 0.3%), and Prefer Not to Say/No Response (N = 29; 8.4%). Additionally, 77.7% of the sample reported having at least one child.

Procedure

Data was collected and organized at a mid-sized university in the southern United States, where the institutional review board approved the study. Everyone who participated via MTurk was paid $0.50 (USD). Additionally, individuals who choose to participate through social media were entered to win one of two $50 (USD) Amazon gift cards. Participants completed a questionnaire online using Qualtrics. The questionnaire began with a brief description of the study, including requirements for participation, explanation of incentives, and an opportunity to deny participation. After participants completed the questionnaire, they were provided with a link to optional information about ASD from the National Institute of Mental Health (NIMH).

Measures

The questionnaire included the following measures: a basic demographic questionnaire, the adapted Level of Familiarity Scale with autism, the Autism Stigma and Knowledge Questionnaire (ASK-Q), the Autism Social Distance Scale (SDS), Arthur Kleinman's Eight Questions from the Patient Explanatory Model, the General Help-Seeking Questionnaire – Vignette Version (GHSQ-V), and the Attitudes Toward Seeking Professional Psychological Help – Short Form (ATSPPH-SF).

Demographics Questionnaire

A basic demographics questionnaire was administered to collect data on socioeconomic status, gender, education level, and occupation.

Level of Familiarity Scale for Autism

The Level of Familiarity Scale (LOF) for Autism was originally developed to look at endorsement of stereotypes for individuals with serious mental illness. This was adapted to specify the "mental illness" as ASD. Participants read a total of 11 items that varied in how familiar the participant was with individuals on the autism spectrum. This measure was taken from "A Toolkit for Evaluating Programs Meant to Erase the Stigma of Mental Illness" by Patrick Corrigan (2012).

This is a well-used measure that has demonstrated psychometric support in determining how intimately someone knows an individual with the "mental illness" in question (i.e., ASD in the current study). The participant checked the statement that represented their experience with a person with autism. The questions vary from “I have never observed a person that I was aware had an autism spectrum disorder” to “I have an autism spectrum disorder.” The scores range from 11 (most intimate contact) to 1 (little intimacy). If the participant endorsed more than one statement, the score considered the highest level of intimacy endorsed was the assigned score.

According to the National Assessment of Adult Literacy, the Mid-South’s average rate of illiteracy at a Basic level is around 14% with rates reaching 30% in rural and impoverished locations (National Center for Education Statistics, 2003). Because this limitation likely appeared in the sample to be collected, the grade level of this measure was calculated. Using the Flesch-Kincaid readability test, the grade level was determined to be at the 7th grade level, meaning that the average 12-year-old should be able to read and understand the measure.

Autism Stigma and Knowledge Questionnaire

The ASK-Q was developed by Harrison et al. (2017a) as a methodology for looking at autism stigma in populations outside of the measures developed for isolated and specific groups of people (e.g., mothers of children with autism, healthcare professionals). These older, more specific measures have been criticized for their limitations in cross-cultural utility, exclusion of clear knowledge subscales, and subpar psychometric properties (Harrison et al., 2017b). Participants read 49 statements that compose 4 different subscales. Participants were asked whether they agree or disagree with each statement.

The knowledge subscales measure specific knowledge regarding Diagnosis/Symptomatology (D/S), Etiology (ET), Treatment (TR), and Stigma (ST). Questions in the Diagnosis/Symptomatology subscale assess knowledge regarding the diagnosis and common symptoms associated with an autism spectrum disorder diagnosis. Items within the

Diagnosis/Symptomatology subscale include statements such as “Some children with autism may lose acquired speech” and “Most children with autism may not look at things when you point to them.” Items in the Etiology subscale assess knowledge regarding the cause(s) and classifications of autism. These items included statements such as “Vaccinations cause autism” and “Autism is a brain-based disorder.” Treatment subscale items assess the knowledge of possible treatments. These statements included the following: “Medication can alleviate the core symptoms of autism” and “The earlier treatment of autism starts, the more effective it tends to be.” The Stigma subscale is the last of the subscales and measures the endorsement of stigma related to the diagnosis, etiology, and treatment outcomes of individuals with autism. The Stigma items included statements such as “Autism is caused by God or a supreme being” and “Autism is caused by cold, rejecting parents.” The overall scores range from 0 to 48 due to the first item acting as a screener for personal experience with an individual on the autism spectrum. Although cutoff scores are defined (Table 3), the present study will use the scores in each subscale on a continuous basis in order to maintain power for statistical analysis.

Table 3

Recommended Classifications Using Subscore Ranges (ASK-Q)

	Inadequate Knowledge	Adequate Knowledge
D/S	0-10	11-18
ET	0-10	11-16
TR	0-9	10-14
	Endorse Stigma	Does Not Endorse Stigma
ST	3-7	0-2

Once again, the grade level of this measure was calculated. Using the Flesch-Kincaid readability test, the grade level of the measure was determined to be between 7th and 8th grade, which means that an average 12-year-old would be able to read and understand the measure.

Psychometrics for this measure were calculated using diagnostic classification model (DCM-based classification) analyses. The resulting test-retest reliability coefficients are as follows: 0.982, 0.954, 0.984, and 0.933 for the four subscale classifications of the measure. To ensure the strong psychometric properties, Harrison et al. (2017a) calculated the internal consistency and found Cronbach's Alpha to be 0.88, which is considered high consistency.

Items that did not hang well within each subscale were removed. Items in the Stigma subscale that measured knowledge of stigma instead of assessing stigma itself were also removed to make the Stigma subscale a measure of the participant's stigma. The psychometric properties of the measure have only preliminary support, but the current study aimed to help provide additional support for the pre-existing positive psychometrics. A limitation of the use of the ASK-Q is the use of the measure on a continuous basis instead of using the categorical classifications established by the DCM analyses. This is why the measure of social distance was used alongside it because it is a long standing measure of stigma that has excellent psychometric properties (i.e. Autism Social Distance Scale).

Autism Social Distance Scale

The ASDS has been adapted by Gillespie-Lynch et al. (2015) from the longstanding, psychometrically sound measure of stigma, the Social Distance Scale (Bogardus, 1933). Bogardus originally used the measure to examine social distance from non-clinical outgroups, such as racial minorities. Participants were instructed to read 6 questions and rate how likely they would be to do certain things with individuals with autism. The measure included items like "How willing would you be to move next door to someone with autism?" and "How willing would you be to marry or date a person with autism?" The Likert-type scale responses ranged from 1 (*definitely willing*) to 4 (*definitely unwilling*). Therefore, scores range from 6 to 24 with higher scores signifying greater social distance, hence greater stigma as well.

The grade level for this measure using the Flesch-Kincaid readability test indicated that the measure is on a 5th grade reading level. Therefore, the measure would be appropriate for the average 10-year-old.

General Help-Seeking Questionnaire – Vignette Version

The General Help-Seeking Questionnaire – Vignette Version (GHSQ-V) is a well-established and validated measure that has been used to measure help-seeking intention for many years (Wilson et al., 2005). As mentioned by Ajzen (2002), intentional behavior is predictive of future behavior occurrence. The questionnaire provided participants with a case vignette describing an individual who presented with diagnostic criteria for Autism Spectrum Disorder. They were then asked to rate how likely they would be to seek help if their child were experiencing the same difficulties of the person in the vignette. The following are some of the individuals assessed as sources of help within the GHSQ-V: intimate partner, parents, friends, mental health professionals, doctors, and religious leaders. This vignette was adapted from a pre-existing vignette created by the mobile medical reference. Participants are then asked what, if anything, they perceived to be wrong with the character in the vignette and whether or not the character should seek help.

Arthur Kleinman's 8 Questions from The Patient Explanatory Model

Kleinman (1980) proposed 8 questions that help define and compare explanatory models. These 8 questions include: 1) What do you think caused the problem? 2) Why do you think it started when it did? 3) What do you think the problem/sickness does to him/her? 4) How severe is the problem? Do you think it will last a long time, or will it be better soon in your opinion? 5)

What [do you think] are the chief problems this issue has caused him/her? 6) What would you fear most about this problem? 7) What kind of treatment do you think he/she should receive? 8) What are the most important results he/she should hope to get from treatment? These questions were provided after the vignette used in the GHSQ-V was received by participants.

Attitudes Toward Seeking Professional Psychological Help – Short Form

The Attitudes Toward Seeking Professional Psychological Help – Short Form (ATSPPH-SF) was used to assess participants' attitudes toward seeking mental healthcare services. The ATSPPH-SF has a coefficient alpha of .84 and a test-retest reliability of .8 after one month (Elhai et al., 2008). Items are rated on a Likert scale between 1 (*disagree*) and 4 (*agree*). Some scale items of the include "A person with an emotional problem is not likely to solve it alone; he or she is likely to solve it with professional help" and "I would want to get psychological help if I were worried or upset for a long period of time." Reverse coding is applied to items 2, 4, 8, 9, and 10. Higher scores are suggestive of more positive attitudes towards seeking mental health services.

The grade level for this measure using the Flesch-Kincaid readability test indicated that the measure is on a 10th grade reading level. This measure may prove to be too difficult for some members of the Southern lay community. Caution will be used while interpreting this measure.

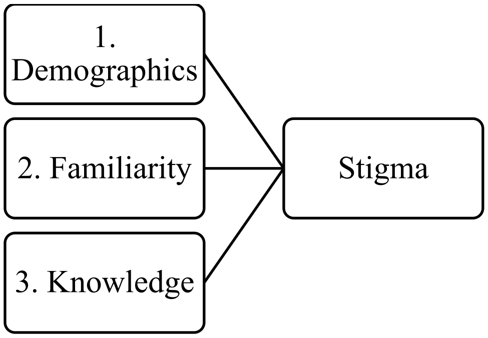
Analytic Strategy

Descriptive statistics were conducted on all measures. Data was analyzed for univariate outliers and multivariate outliers using Mahalanobis distance. Outliers ± 3 standard deviations from the mean were excluded from the analysis. Likewise, completed survey responses missing more than 5% of the data were removed. Skewness and kurtosis were also analyzed and determined to have no impact on the analyses. After these checks were completed and normality assumptions were met, hypotheses testing was conducted as described below.

Data was analyzed with a series of multiple regressions and a MANOVA. To test hypothesis 1, a regression was used to explore the predictive abilities of demographics, knowledge, and level of familiarity on stigma (Figure 1).

Figure 1

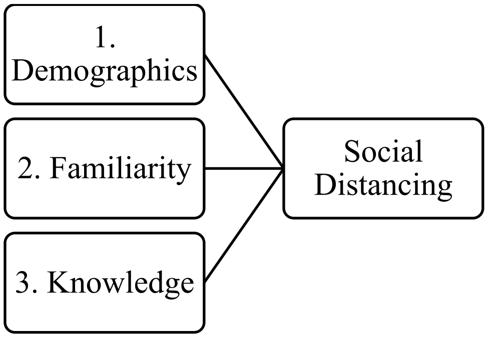
Proposed Model for Hypothesis 1



To test hypothesis 2, a multiple regression was used to explore the predictive abilities of demographics, knowledge, and familiarity on social distancing (Figure 2).

Figure 2

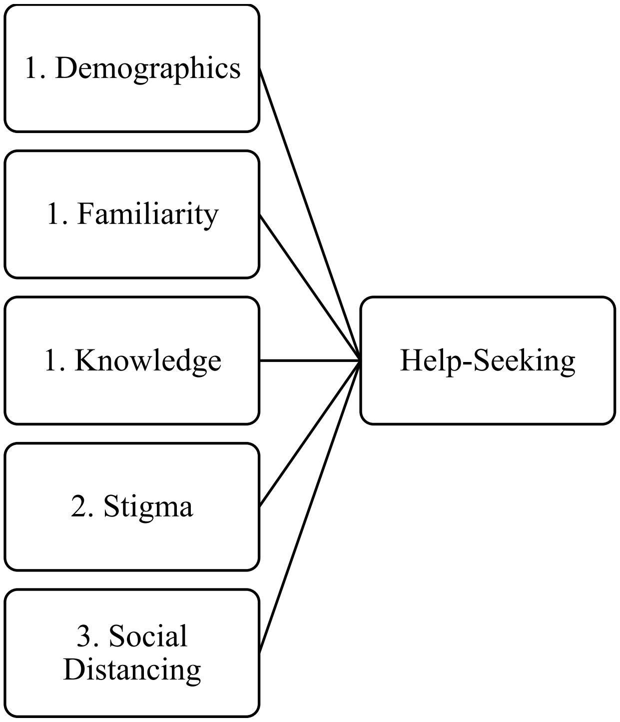
Proposed Model for Hypothesis 2



Next, to test hypothesis 3, two hierarchical multiple linear regressions were conducted to analyze the predictive qualities of stigma, social distancing, and any significant predictors from previous analyses, such as demographics, knowledge, and familiarity (Figure 3). This was used to predict help-seeking intentions and help-seeking attitudes respectively.

Figure 3

Proposed Model for Hypothesis 3



Lastly, qualitative explanatory model data was coded using thematic analysis. Codes and categorical designations (i.e., after using a bottom-up strategy) were reviewed by the researcher and trained research assistants to determine meaningful units and calculate interrater reliability coefficients (i.e., Kappa coefficients). Meaningful units refers to words or phrases that are related to the research question or epitomize a theme. Each of the two trained research assistants were given a copy of the database containing the open-ended responses and a list of the obtained categories. These research assistants were asked to code the data using a top-down strategy to sort each response using the provided categories. After coding all responses, the research assistants were asked to discuss items on which they did not agree. These items were then recategorized for further analysis.

To test Hypothesis 5, a chi square cross tabulation analysis was conducted to determine differences in explanatory models.

III. RESULTS

Preparing Data for Analysis

Prior to completing any statistical analyses, the data set was cleaned by excluding individuals who were not from one the included southern states and who did not complete over 5% of the measures. Descriptive statistics were calculated, and the mean response score was used on the GHSQ and ASDS to replace any missing, nonrandom data, and to calculate and exclude univariate and multivariate outliers. Outliers ± 3 standard deviations from the mean were excluded from the analysis. Three univariate outliers were removed. The dataset was analyzed for multivariate outliers using Mahalanobis distance. One multivariate outlier was removed based on Mahalanobis distance. After the removal of these outliers, homoscedasticity and linearity assumptions were met. First, descriptive data is presented, followed by the results of each regression and the qualitative outcomes.

Descriptive Statistics

Before performing regression analyses, descriptive statistics were calculated and analyzed. Reverse scoring was used for the ASK-Q using the algorithm/scoring template provided by the creators. The mean scores and standardizations deviations for all variables are reported in Table 4.

Table 4

Descriptive Statistics

Variable	Full Sample		Females		Males	
	Mean	SD	Mean	SD	Mean	SD
Social Distance (ASDS)	9.86	3.64	9.61	3.82	10.10	3.49
Stigma (ASK-Q)	3.85	2.45	3.04	2.46	4.56	2.22
Knowledge (ASK-Q)	31.29	7.92	33.59	8.59	29.33	6.75
Familiarity (LOF-A)	6.93	2.65	7.27	2.46	6.63	2.78
Help-Seeking (GHSQ-V)	48.88	10.33	47.76	10.65	49.81	10.01
Help-Seeking Attitudes (ATSPPH)	27.16	5.01	28.62	5.33	25.91	4.37
Age	37.10	10.83	37.66	11.68	36.56	10.03
N	346		158		187	

Overall, the sample of individuals was fairly knowledgeable about ASD. Scores on the Knowledge subscale ranged from 14 to 47 with a mean score of 31.29. The mean response of the Knowledge subscale was just below the *adequate knowledge* descriptor of the ASK-Q. The mean responses for the Diagnosis subscale of the ASK-Q were within the adequate range (*M* = 13.08, *SD* = 3.01). The mean responses for the Etiology (*M* = 9.21, *SD* = 3.50) and Treatment (*M* = 9.00, *SD* = 2.87) subscales were within the inadequate range.

Scores on the LOF-A ranged from 2 to 11 with a mean response of 6.93. The mean response on the level of familiarity scale was determined to be in the “medium intimacy” range as described by Corrigan (2012). Scores on the ASDS ranged from 6 to 20 with a mean response of 9.86. This mean response indicates a mild preference of social distance from individuals with ASD.

Scores on the GHSQ-V ranged from 16 to 70 with a summative mean response of 48.87. The mean response on individual items of the GHSQ-V was 4.9 which equates to a score between “likely” and “unlikely” on the scale. There were no statistically significant differences in help-seeking based on the sex of the child in the vignette. The mean response for the male child vignette was 4.75 which equates to a score between “likely” and “unlikely” on the scale. The mean response for the female child vignette was 5.05 which equates to a score of “likely” on the scale. Participants rated their doctor and a psychologist highest when seeking help for the child in the vignette, regardless of the vignette, as there were no statistical differences in seeking help from professionals based on the child’s sex.

Due to an insufficient sample size of religious leaders (n = 28) and evidence of unequal variance, they were not included in the original analyses; however, descriptive statistics were calculated. The sample of religious leaders was fairly knowledgeable about ASD. Scores on the Knowledge subscale ranged from 22 to 47 with a mean score of 31.5. The mean response of the Knowledge subscale was just below the *adequate knowledge* descriptor of the ASK-Q. The mean responses for the Diagnosis subscale of the ASK-Q were within the adequate range ($M = 13.66$, $SD = 3.04$). The mean responses for the Etiology ($M = 9.68$, $SD = 3.89$) and Treatment ($M = 8.82$, $SD = 2.96$) subscales were within the inadequate range. Scores on the LOF-A ranged from 2 to 11 with a mean response of 6.39. The mean response on the level of familiarity scale was determined to be in the “medium intimacy” range as described by Corrigan (2012). Scores on the ASDS ranged from 5 to 13 with a mean response of 9.25. This mean response indicates a mild preference of social distance from individuals with ASD. Scores on the GHSQ-V ranged from 28 to 66 with a summative mean response of 47.68. The mean response on individual items of the GHSQ-V was 4.8 which equates to a score between “likely” and “unlikely” on the scale.

Bivariate Correlations

Bivariate correlations were conducted as part of the regressions to explore relationships among variables to determine any potential multicollinearity among predictor variables. Overall autism knowledge was significantly correlated with age (r (343) = .15, p = .003), religious importance (r (343) = -.26, p < .001), income (r (343) = .23, p < .001), education (r (343) = -.17, p = .001), stigma (r (343) = -.72, p < .001), social distancing (r (343) = -.42, p < .001), and help-seeking (r (343) = .43, p < .001). Stigma was significantly correlated with age (r (343) = -.15, p = .002), religious importance (r (343) = .32, p < .001), income (r (343) = -.29, p < .001), education (r (343) = .16, p = .002), social distancing (r (343) = .24, p < .001), and help-seeking (r (343) = .43, p < .001). Regarding discriminatory behavior, social distancing was significantly correlated with religious importance (r (343) = .10, p = .036), income (r (343) = -.11, p = .020), and help-seeking (r (343) = .43, p < .001). Additional results are reported in Table 4

Table 5

Bivariate Correlations for Study Variables

Variable	*n*	*M*	*SD*	1	2	3	4	5	6	7	8	9
1. Age	343	37.05	10.81	---								
2. Religious Importance	343	3.93	1.19	.12*	---							
3. Income	343	19.82[a]	2.75	-.03	-.03	---						
4. Education	343	7.74[b]	1.38	.07	.07	.23**	---					
5. Knowledge	343	31.24	7.94	.15*	-.26**	.23**	-.17*	---				
6. Stigma	343	3.87	2.45	-.15*	.32**	-.29**	.16*	-.72**	---			
7. Social Distancing	343	9.88	3.64	-.04	.10*	-.11*	.02	-.42**	.24**	---		
8. Help-Seeking Intentions	343	48.87	10.37	.00	.28**	-.03	.27**	-.45**	.43**	.06	---	
9. Help-Seeking Attitudes	343	27.19	4.98**	.15**	.20**	.19**	-.19**	.71**	-.65**	-.30**	-.38**	---

** $p < .001$ * $p < .05$

[a] equates a mean income between $40,000 and $49,999 (USD)

[b] equates a mean education level between an Associate's and Bachelor's degree

Hypothesis 1: Prediction of Stigma

Hypothesis 1 stated that demographics, familiarity, and knowledge would predict stigma as measured by the ASK-Q Stigma subscale. A hierarchical multiple linear regression was used to test this hypothesis. Overall, the final model (Table 6) predicted 56.3% of the variance ($R^2 = .563$, $F(6,335) = 74.301$, $p < .001$). Significant predictors in Step 3 included religious importance (ß = 0.162, $p < .001$), income (ß = -0.149, $p < .001$), education level (ß = 0.092, $p = .018$), age (ß = -0.081, $p = .03$), and autism knowledge as measured by the total ASK-Q score (ß = -0.618, $p < .001$).

Table 6

Multiple Regression Results for Hypothesis 1: Prediction of Stigma

	Predictor	B	ß	T	R^2	Δ R^2
Step 1					.251***	.259
	Age	-0.05	-0.20	-4.20***		
	Education	0.41	0.23	4.72***		
	Income	-0.29	-0.32	-6.62***		
	Religious Importance	0.65	0.32	6.71***		
Step 2					.258*	.009
	Age	-0.04	-0.19	-4.08***		
	Education	0.43	0.24	5.00***		
	Income	-0.28	-0.32	-6.54***		
	Religious Importance	0.67	0.33	6.89***		
	Familiarity	-0.09	-0.10	-2.06*		
Step 3					.563***	.302
	Age	-0.02	-0.08	-2.18*		
	Education	0.16	0.09	2.38*		
	Income	-0.13	-0.15	-3.87***		
	Religious Importance	0.33	0.16	4.29***		
	Familiarity	-0.03	-0.04	-0.94		
	Knowledge	-0.19	-0.62	-15.36***		

*** p < .001 **p < .01 *p < .05

Hypothesis 2: Prediction of Social Distancing or Discriminatory Behavior

Hypothesis 2 indicated that demographics, familiarity, and knowledge would predict social distancing as measured by the ASDS. An additional multiple regression was used to test this hypothesis. The final model (Table 7) predicted 17% of the variance (R^2= .170, *F*(6,335) = 12.608, p < .001). The only significant predictor in the final model was overall autism knowledge as measured by the total ASK-Q score (ß = -0.446, *p* < .001).

Table 7

Multiple Regression Results for Hypothesis 2: Prediction of Social Distancing

	Predictor	B	ß	T	R^2	ΔR^2
Step 1					.014	.025
	Age	-0.02	-0.05	-0.95		
	Education	0.11	0.04	0.73		
	Income	-0.16	-0.12	-2.10*		
	Religious Importance	0.30	0.10	1.78		
Step 2					.012	.001
	Age	-0.02	-0.05	-0.91		
	Education	0.12	0.05	0.82		
	Income	-0.15	-0.12	-2.07*		
	Religious Importance	0.30	0.10	1.82		
	Familiarity	-0.05	-0.04	-0.67		
Step 3					.170***	.158
	Age	0.01	0.03	0.62		
	Education	-0.17	-0.06	-1.19		
	Income	0.01	0.01	0.10		
	Religious Importance	0.06	0.02	0.36		
	Familiarity	0.01	0.01	0.19		
	Knowledge	-0.21	-0.45	-8.05***		

*** $p < .001$ **$p < .01$ *$p < .05$

Hypothesis 3: Prediction of Help-Seeking Intentions and Attitudes

Hypothesis 3 stated that demographics, familiarity, knowledge, stigma, and social distancing would predict a person's help-seeking intentions for a child experiencing symptoms of ASD. This regression included significant predictors from the two previous regressions. The measure used for help-seeking was the total of the GHSQ-V. Overall, this model (Table 8) predicted 28.7% of the variance ($R^2 = .287$, $F(7,335) = 20.668$, $p < .001$). Significant predictors included education (ß = 0.164, $p < .001$), religious importance (ß = 0.138, $p < .01$), knowledge (ß = -0.347, $p < .001$), stigma (ß = 0.164, $p < .05$), and social distancing (ß = -0.137, $p < .01$). Previous research suggests a positive relationship between overall knowledge and help-seeking

(Fekih-Romdhane, 2021). To determine why the results of the current study were opposite of those seen in previous research, post hoc analyses were conducted.

Table 8

Multiple Regression Results for Hypothesis 3: Prediction of Help-Seeking Intentions

	Predictor	B	ß	T	R^2	ΔR^2
Step 1					.261***	.272
	Age	0.02	.023	0.49		
	Education	1.41	.187	3.78***		
	Income	0.07	.020	0.39		
	Religious Importance	1.45	.166	3.41***		
Step 2					.274*	.014
	Age	0.04	.038	0.80		
	Education	1.29	.171	3.46***		
	Income	0.18	.048	0.94		
	Religious Importance	1.20	.137	2.77**		
	Knowledge	-0.36	-.274	-4.07***		
	Stigma	0.77	.183	2.60**		
Step 3					.287**	.015
	Age	0.04	.041	0.86		
	Education	1.24	.164	3.35***		
	Income	0.17	.046	0.91		
	Religious Importance	1.20	.138	2.81**		
	Knowledge	-0.45	-.347	-4.82***		
	Stigma	0.69	.164	2.34*		
	Social Distancing	-0.39	-.137	-2.70**		

*** $p < .001$ **$p < .01$ * $p < .05$

Hypothesis 3 also indicated that demographics, familiarity, knowledge, stigma, and social distancing would predict a person's help-seeking attitudes toward seeking professional psychological supports. This regression also included significant predictors from the two previous regressions In first step, demographic factors (i.e., education, income, religious importance, and age) were added alongside overall autism knowledge. These variables accounted for 51.1% of the variance in help-seeking attitudes from professional psychological services ($R^2 = .519$, $F(5,337) = 72.615$, $p < .001$). In step two, the total stigma score from the ASK-Q was added into the model and accounted for an additional 3.4% of the variance in professional help-seeking attitudes ($R^2 = .552$, $F(6,336) = 69.038$, $p < .001$). In the last step, total social distancing was added into the model and accounted for an additional 0.0% of the variance in attitudes towards seeking professional psychological help ($R^2 = .552$, $F(7,335) = 59.035$, $p < .001$). Significant predictors in the second step included knowledge ($ß = 0.313$, $p < .001$) and stigma ($ß = -0.566$, $p < .001$). Both knowledge ($ß = 0.308$, $p < .001$) and stigma ($ß = -0.570$, $p < .001$) remained significant in the final model despite the final step not reaching significance.

Exploratory Post-Hoc Analyses

Because there was a negative relationship between knowledge and help-seeking in hypothesis 3, a supplemental regression was conducted to provide additional clarity regarding the relationship between the independent variables and help-seeking intentions. Bivariate correlations for this analysis are reported in Table 9. Overall, the model (Table 10) predicted 21.1% of the variance ($R^2 = .211$, $F(7,335) = 14.052$, $p < .001$). Significant predictors included education ($ß = 0.150$, $p < .01$), autism knowledge ($ß = 0.273$, $p < .001$), and social distancing ($ß = -0.107$, $p < .05$).

Table 9

Bivariate Correlations for Post-Hoc Analysis

Variable	*N*	*M*	*SD*	1	2	3	4	5	6	7	8
1. Age	343	37.05	10.81	---							
2. Religious Importance	343	3.93	1.19	.12*	---						
3. Income	343	19.82[a]	2.75	-.03	-.03	---					
4. Education	343	7.74[b]	1.38	.07	.07	.23**	---				
5. Knowledge	343	31.24	7.94	.15*	-.26**	.23**	-.17*	---			
6. Stigma	343	3.87	2.45	-.15*	.32**	-.29**	.16*	-.72**	---		
7. Social Distancing	343	9.88	3.64	-.04	.10*	-.11*	.02	-.42**	.24**	---	
8. Help-Seeking[c]	343	11.52	2.21	.13*	-.08	.24**	.11*	.41**	-.35**	-.26**	---

** p < .001 * p < .05

[a] equates a mean income between $40,000 and $49,999 (USD)

[b] equates a mean education level between an Associate's and Bachelor's degree

[c] indicates from professional help only (i.e., psychologists, mental healthcare professionals, medical doctors)

Table 10

Post-Hoc Analysis: Regression Results for Help-Seeking from Professionals

	Predictor	B	ß	T	R^2	ΔR^2
Step 1					.200***	.212
	Age	.010	.050	.993		
	Education	.233	.145	2.812**		
	Income	.092	.114	2.196*		
	Religious Importance	.024	.013	.252		
	Knowledge	.112	.401	7.442***		
Step 2					.204	.006
	Age	.008	.040	.799		
	Education	.249	.155	2.992**		
	Income	.077	.096	1.810		
	Religious Importance	.058	.031	.601		
	Knowledge	.092	.329	4.667***		
	Stigma	-.105	-.116	-1.584		
Step 3					.211*	.009
	Age	.009	.042	.847		
	Education	.241	.150	2.898**		
	Income	.076	.094	1.785		
	Religious Importance	.059	.032	.612		
	Knowledge	.076	.273	3.599***		
	Stigma	-.118	-.131	-1.782		
	Social Distancing	-.065	-.107	-1.996*		

*** p<.001 **p<.01 *p<.05

Hypothesis 4: Group Differences between Educators, Healthcare Professionals, and the Lay Community

To determine if the groups differed on the variables of interest, a one-way multivariate analysis of variance (MANOVA) was conducted to explore differences. There were significant differences between some of the variables (i.e., knowledge, stigma, help-seeking intentions, and help-seeking attitudes) across the different groups, $F(14,612) = 2.534$, $p = .002$; Wilk's $\Lambda = .893$, partial $\eta^2 = .06$. A series of ANOVAs was conducted for each of the significant variables in the

MANOVA. All ANOVA results were statistically significant for knowledge, stigma, help-seeking intentions, and help-seeking attitudes (Figures 4 and 5).

Figure 4

Group Differences in Knowledge, Help-Seeking Intentions, and Help-Seeking Attitudes

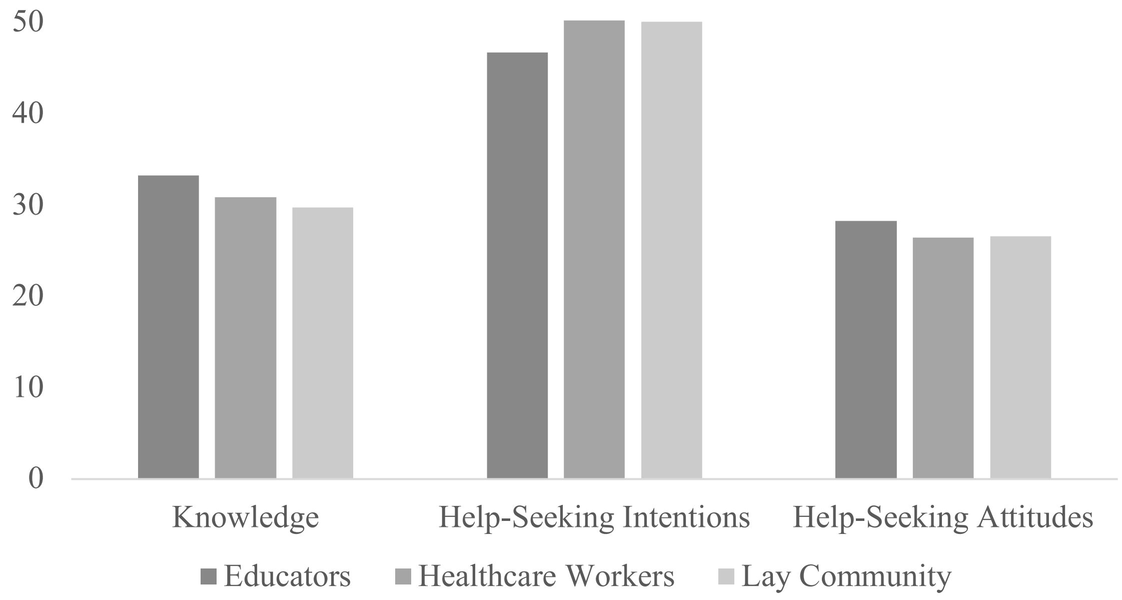
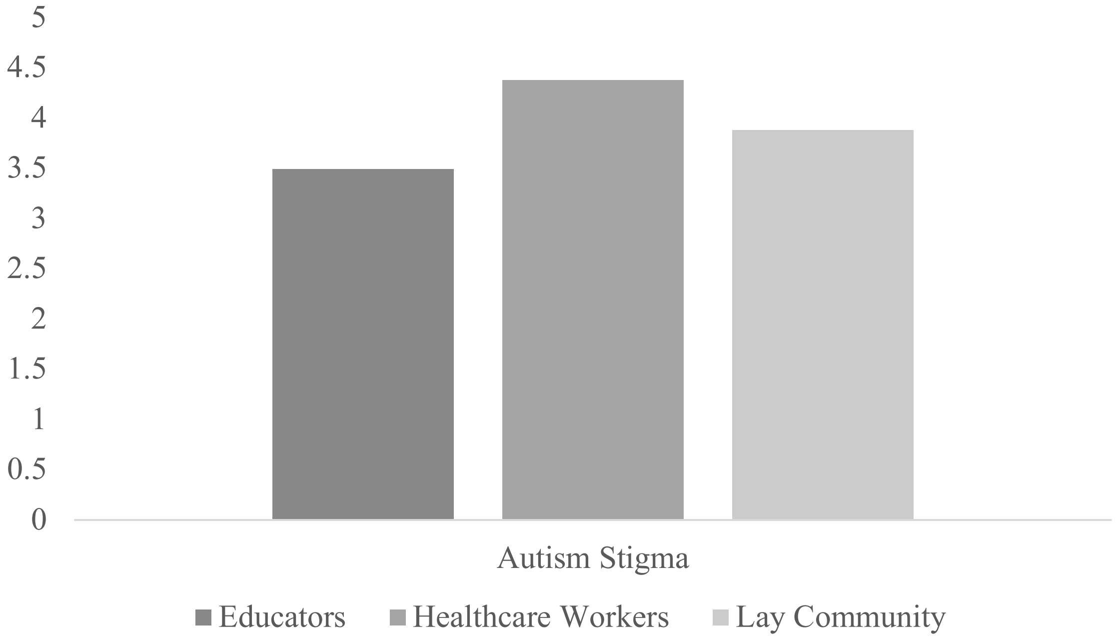


Figure 5

Group Differences in Autism Stigma



Qualitative Data Analysis

Using thematic analysis, the researcher identified meaningful units and explored themes that emerged from the responses of the open-ended questions to explore participants' explanatory models (Ratner, 2001). The researcher then created themes for each of Kleinman's eight questions by sorting units of meaning into broad categories. For each of the eight questions that piece together a person's conceptualization of a problem, interrater reliability between two independent raters was assessed using Cohen's kappa. Kappa values ranged from weak to almost perfect, although the majority of the kappa values reflected a strong level of agreement between raters. The strongest agreement typically fell in categories with fewer responses. When interrater agreement was below 80%, consensus coding was used to come to an agreement between raters.

Explanatory Model: What Do You Think Caused the Problem?

In response to the causes of autism depicted in the vignette, the following 10 themes emerged which are reported with their corresponding kappa values: Neurodevelopmental Disorders ($\kappa = .73$), Typical/Normal Childhood Behavior ($\kappa = 1.00$), Speech/Language Disorder ($\kappa = .88$), Lack of Parental Education/Intervention ($\kappa = .93$), Other Mental Health Concerns/Disorders ($\kappa = .81$), Loneliness ($\kappa = 1.00$), Vaccinations ($\kappa = 1.00$), Genetic Disorders/Birth Defects/Physical Health Concerns ($\kappa = .80$), Don't Know/Unsure ($\kappa = 1.00$), and Unclear Meaning ($\kappa = .82$). Table 12 details the frequencies of each category among the different groups. Refer to Table 13 for example quotes from each category. Significant differences were noted between the different groups, X^2 (18, 253) = 30.545, $p<.05$. Of those different groups, 44% of Educators endorsed Neurodevelopmental Disorders (e.g., "I believe Jake is on the Spectrum" and "I think it's a developmental disorder") as the cause, while only 37% of Healthcare Workers and 23% of the Lay Community endorsed this etiology. Another commonly endorsed cause across the different groups was Speech/Language Disorders (e.g., "She did not combine words" and "She did not talk normally"), with 23% of Educators, 19% of Healthcare Workers, and 16% of the Lay Community attributing the symptoms to this cause. 12% of the Lay Community attributed symptoms of the child in the vignette to a Lack of Parental Education/Intervention (e.g., "a problem of parental education" and "parents don't take it seriously when they are young"). 10% of the Lay Community also attributed the symptoms of autism to Loneliness (e.g., "alone" and "Jake is alone"). Roughly 13% of the overall sample endorsed incorrect attributions (i.e., vaccinations, lack of parental education, and loneliness) to the symptoms of autism in the vignette.

Table 12

Categories for the Causes of Autism by Group

Categories	Educators (N = 82) %	Healthcare Workers (N = 79) %	Other/Lay Community (N = 92) %	Clergy (N = 15) %
Neurodevelopmental Disorders	43.9	36.7	22.8	14.3
Speech/Language Disorder	23.2	19.0	16.3	40.0
Other Mental Health Concerns/Disorders	11.0	16.5	16.3	6.7
Typical/Normal Childhood Behavior	4.9	1.3	7.6	-
Don't Know/Unsure	4.9	2.5	2.2	6.7
Loneliness	3.7	3.8	9.8	-
Lack of Parental Education/Intervention	2.4	3.8	12.0	6.7
Genetic Disorders/Birth Defects/Physical Health Concerns	2.4	6.3	6.5	6.7
Unclear Meaning	2.4	10.1	5.4	6.7
Vaccinations	1.2	-	1.1	-

Figure 6

Top Four Categories for the Causes of Autism for Overall Sample

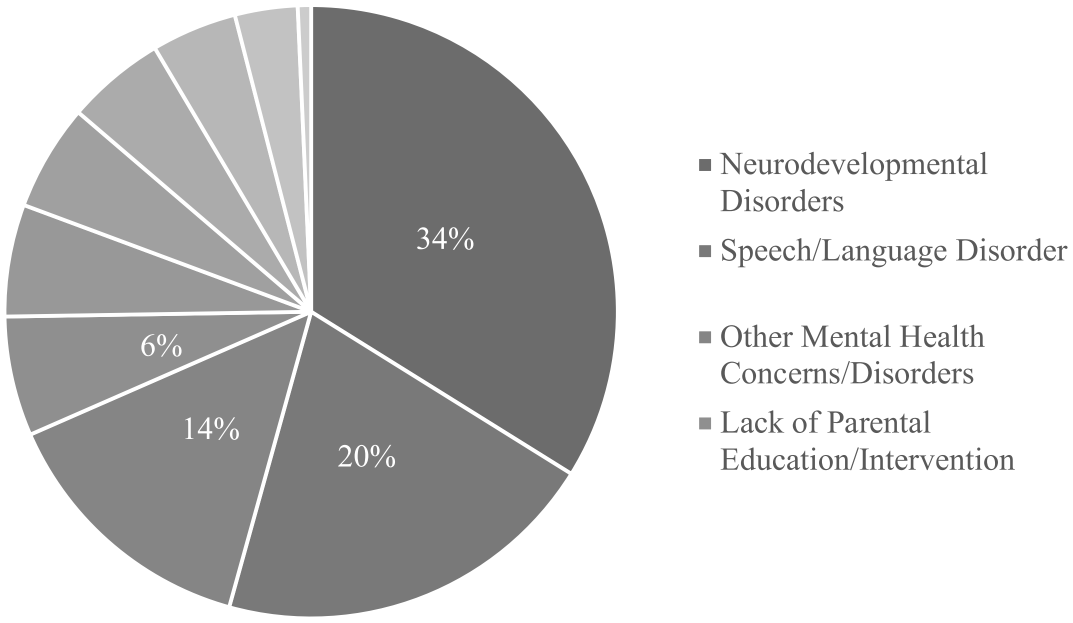


Table 13

Categories for the Causes of Autism with Sample Quotes (N = 269)

Categories	Quote	Frequency (%)
Neurodevelopmental Disorders	"It sounds like he is autistic. This can be caused by a variety of reasons from genetics to an event that triggers the regression."	33.8
Speech/Language Disorder	"language development"	20.4
Other Mental Health Concerns/Disorders	"Mental issues"	14.1
Lack of Parental Education/Intervention	"Maybe it's the doting parents"	6.3
Unclear Meaning	"She is not a normal person"	5.9
Loneliness	"A lack of company"	5.6
Genetic Disorders/Birth Defects/Physical Health Concerns	"Genetic disposition"	5.2
Typical/Normal Childhood Behavior	"This is not a problem. Parents shouldn't see this as a problem. They should continuously spend time with her and train her to do some new things."	4.5
Don't Know/Unsure	"Not sure"	3.3
Vaccinations	"Too many vaccines most likely because of her age and that is when children get the most vaccines."	0.7

Explanatory Model: Why Do You Think It Started When It Did?

Regarding the onset of the symptoms in the vignette, the following 9 themes emerged and are reported with their corresponding kappa values: Specific Age from Vignette (κ = .84), Genetic/Present Since Birth (κ = .72), Lack of Proper Intervention (κ = .89), Developmental Delay/Critical Periods in Development (κ = .88), Childhood Stress/Trauma (κ = 1.00), Vaccinations/Exposure to Harmful Substances (κ = 1.00), Lack of Parental Support/Love (κ =

1.00), Don’t Know/Unsure (κ = 1.00), and Unclear Meaning (κ = .94). Each group strongly endorsed a specific age as being the period of time in the child’s life when symptoms first arose. Specifically, 31% of Educators, 45% of Healthcare Workers, and 49% of the Lay Community reported a specific age (e.g., “It generally becomes identifiable around 18 months” and “12 months; no real trigger”). Additionally, participants in all three groups (29% of Educators, 15% of Healthcare Workers, and 13% of the Lay Community) attributed the onset of symptoms to a critical period of development in the child’s life (e.g., “He was becoming more active and aware” and “It sounds like Jake is autistic. This is normally the age when parents begin to notice new behaviors”). This reflects the idea that autism symptoms are frequently noted when social demands exceed capacities (DSM-5; American Psychiatric Association, 2013). Overall, 11% of the sample stated incorrect assumptions (i.e., “…there could have been a family traumatic event”, “exposure to chemicals, perhaps”, and “this problem wouldn’t have started if he had grown up with good contact with other children or relatives”) regarding the onset of autism-like symptoms. Table 14 details the frequencies of each category among the different groups. Refer to Table 15 for example quotes from each category.

Table 14

Categories for the Onset of Autism by Group

Categories	Educators (N = 83) %	Healthcare Workers (N = 76) %	Other/Lay Community (N = 90) %	Clergy (N = 15) %
Specific Age from Vignette	31.3	44.7	48.9	46.7
Developmental Delay/Critical Periods in Development	28.9	14.5	13.3	46.7
Childhood Stress/Trauma	10.8	5.3	5.6	-
Genetic/Present Since Birth	7.2	13.2	15.6	6.7
Unclear Meaning	7.2	10.5	8.9	-
Don't Know/Unsure	4.8	6.6	4.4	-
Vaccinations/Exposure to Harmful Substances	3.6	-	-	-
Lack of Parental Support/Love	3.6	5.3	2.2	-
Lack of Proper Intervention	2.4	-	1.1	-

Figure 7

Top Four Categories for the Onset of Autism for Overall Sample

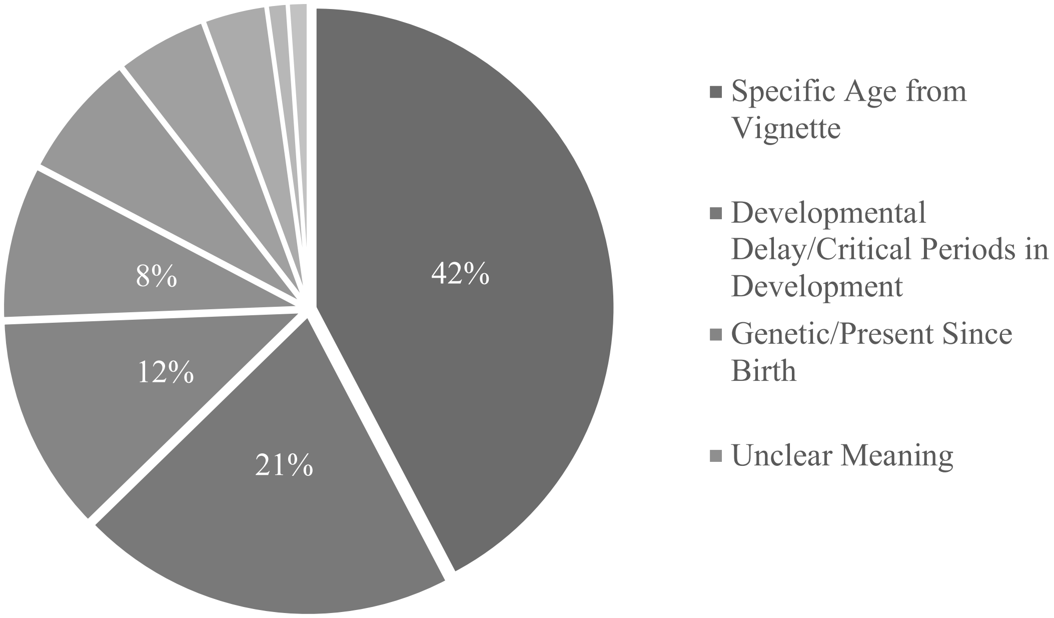


Table 15

Categories for the Onset of Autism with Sample Quotes (N = 265)

Categories	Quote	Frequency (%)
Specific Age from Vignette	"It started when he was 18 months old."	42.3
Developmental Delay/Critical Periods in Development	"It showed up around the time that social skills would start to be learned."	20.4
Genetic/Present Since Birth	"I believe he was born that way. Nature not nurture."	11.7
Unclear Meaning	"Symptoms to liquidate"	8.3
Childhood Stress/Trauma	"Some sort of trauma, perhaps."	6.8
Don't Know/Unsure	"I don't know"	4.9
Lack of Parental Support/Love	"I think she is distanced from her family."	3.4
Lack of Proper Intervention	"He did not have the correct manipulatives to help with his speech."	1.1
Vaccinations/Exposure to Harmful Substances	"The age at which she stopped using her words tells me that she was of the age she was getting all of her required vaccines."	1.1

Explanatory Model: What Do You Think the Problem Does to Him/Her?

In terms of the effects of the problem in the vignette, the following 9 themes emerged which are reported with their corresponding kappa values: Coping/Emotional Regulation Difficulties ($\kappa = .85$), Communication/Social Difficulties ($\kappa = .82$), Other Mental Health Concerns ($\kappa = .86$), Behavior Problems/Spoiled Child ($\kappa = 1.00$), ASD Symptoms/Neurodiversity ($\kappa = .88$), Physical Health Problems ($\kappa = 1.00$), Nothing/No Problems ($\kappa = 1.00$), Don't Know/Unsure ($\kappa = 1.00$), and Unclear Meaning ($\kappa = .83$). Based on the responses of individuals from each group, a large percentage anticipated negative social/mental health effects for the child in the vignette. More specifically, 18% of Educators, 15% of Healthcare Workers, and 20% of the Lay Community predicted that the child would experience difficulties in coping and regulating their emotions (e.g., "makes him aggravated and anxious" and "It causes her frustration"). Each group also frequently reported social/communication difficulties (e.g., "may affect future language functionality" and "causes him not to relate to others easily") for a child experiencing autism-like symptoms (32% of Educators, 28% Healthcare Workers, and 37% of the Lay Community). Furthermore, 22% of the sample accurately reported the effects of the child's symptoms as being attributed to autism or other neurodivergent conditions (e.g., "His brain processes information differently" and "…It makes her almost OCD about her toys"). Conversely, 8% of Educators, 17% of Healthcare Workers, and 13% of the Lay Community anticipated that other mental health issues (e.g., "very disturbed mind" and "…Jake was mentally affected") would be the effect of experiencing the symptoms described the vignette. It is also important to note that 3% of the sample stated that the described symptoms would result in behavior problems and/or a spoiled child. Table 16 details the frequencies of each category among the different groups. Refer to Table 17 for example quotes from each category.

Table 16

Categories for the Effects of Autism by Group

Categories	Educators (N = 78) %	Healthcare Workers (N = 76) %	Other/Lay Community (N = 85) %	Clergy (N = 15) %
Communication/Social Difficulties	32.1	27.6	36.5	26.7
ASD Symptoms/Neurodiversity	28.2	17.1	16.5	40.0
Coping/Emotional Regulation Difficulties	18.0	14.5	20.0	13.3
Other Mental Health Concerns	7.7	17.1	12.9	6.7
Behavior Problems/Spoiled Child	5.1	2.6	2.4	-
Unclear Meaning	5.1	11.8	7.1	-
Nothing/No Problems	3.9	4.0	1.2	6.7
Physical Health Problems	-	2.6	1.2	-
Don’t Know/Unsure	-	2.6	2.4	6.7

Figure 8

Top Four Categories for the Effects of Autism for Overall Sample

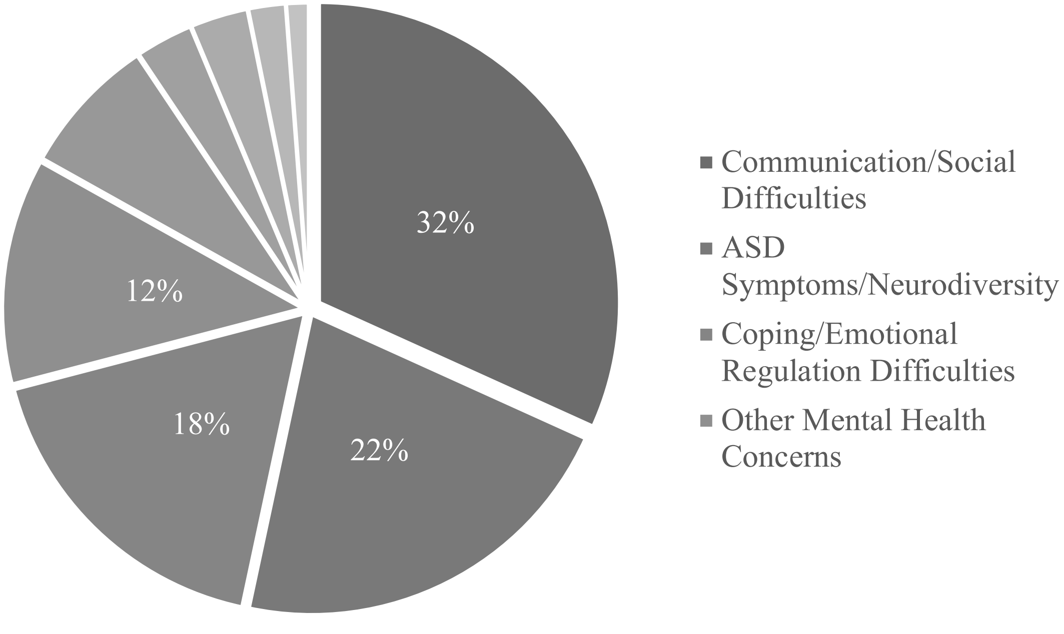


Table 17

Categories for the Effects of Autism with Sample Quotes (N = 255)

Categories	Quote	Frequency (%)
Communication/Social Difficulties	"It causes him to have trouble with understanding and communicating his needs."	31.8
ASD Symptoms/Neurodiversity	"Autistic tendencies"	21.6
Coping/Emotional Regulation Difficulties	"It is interfering with his emotional and behavioral development…"	17.6
Other Mental Health Concerns	"Mental health concerns"	12.2
Unclear Meaning	"Everything"	7.5
Behavior Problems/Spoiled Child	"Spoiled"	3.1
Nothing/No Problems	"I do not think the problem causes significant distress as long as her guardians remain alert, flexible, and caring."	3.1
Don't Know/Unsure	"I am not sure"	2.0
Physical Health Problems	"Health issues"	1.2

Explanatory Model: How Severe is the Problem? Do You Think It Will Last a Long Time, Or Will It Be Better Soon in Your Opinion?

Concerning the severity of the symptoms presented in the vignette, the following 7 themes emerged and are reported with their corresponding kappa values: Long Lasting/Life Long/Severe ($\kappa = .78$), Won't Last Long/Better Soon/Not Too Severe ($\kappa = .86$), Ambivalent/Either Way ($\kappa = 1.00$), Depends on Treatment/Better with Treatment ($\kappa = .91$), Normal/Not a Problem ($\kappa = 1.00$), Don't Know/Unsure ($\kappa = 1.00$), and Unclear Meaning ($\kappa = .87$). Of the responses for this section, participants' opinions tended to differ most on the severity/longevity of the symptoms. For example, while 43% of the participants believed the symptoms would last for life or a significant amount of time ("He will have it the rest of his life"), 48% of the responses veered towards the belief that symptoms would not last long or would get better with treatment (e.g., "will heal soon" and "...Early Intervention can help him communicate better and cope with his anxiety"). On the contrary, 3% of the sample stated there was no problem and/or that the symptoms in the vignette were normal (e.g., "normal"). Table 18 details the frequencies of each category among the different groups. Refer to Table 19 for example quotes from each category.

Table 18

Categories for the Severity of Autism by Group

Categories	Educators (N = 78) %	Healthcare Workers (N = 72) %	Other/Lay Community (N = 87) %	Clergy (N = 15) %
Long Lasting/Life Long/Severe	41.0	47.2	42.5	33.3
Depends on Treatment/Better with Treatment	25.6	15.3	24.1	33.3
Won't Last Long/Better Soon/Not Too Severe	21.8	27.8	25.3	33.3
Normal/Not a Problem	7.7	1.4	1.2	-
Ambivalent/Either Way	3.9	1.4	2.3	-
Don't Know/Unsure	-	1.4	1.2	-
Unclear Meaning	-	5.6	3.5	-

Figure 9

Top Four Categories for the Severity of Autism for Overall Sample

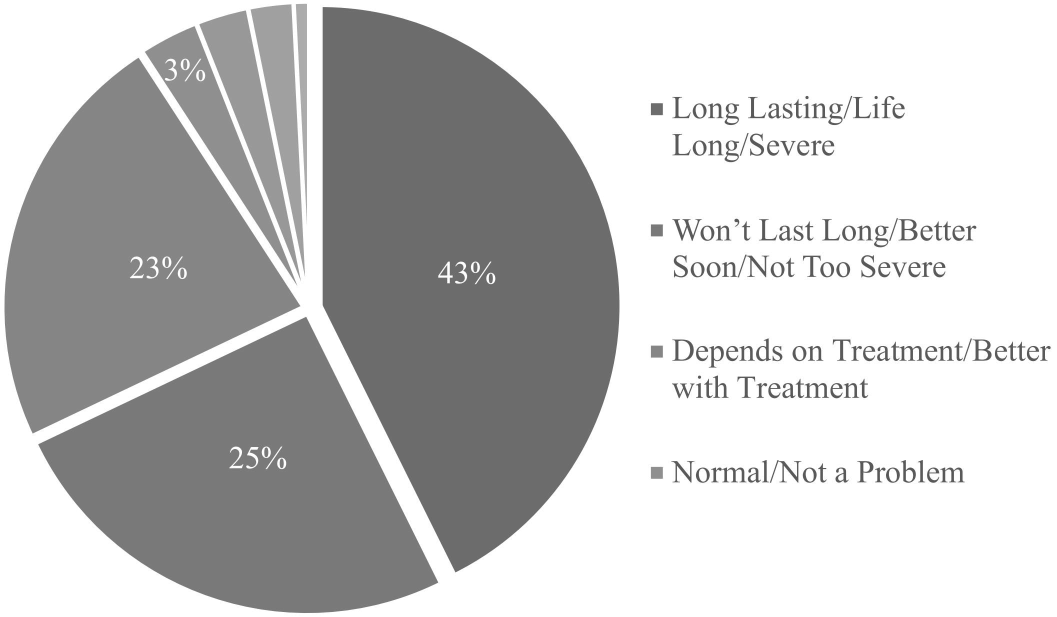


Table 19

Categories for the Severity of Autism with Sample Quotes (N = 253)

Categories	Quote	Frequency (%)
Long Lasting/Life Long/Severe	"I believe the problem is severe and will be life long."	42.7
Won't Last Long/Better Soon/Not Too Severe	"It will only last a short time in his life, I think."	25.3
Depends on Treatment/Better with Treatment	"If addressed, [it] can be become much better to deal with."	22.9
Normal/Not a Problem	"Not very bad, [they] just need confidence."	3.2
Don't Know/Unsure	"I don't know."	2.8
Ambivalent/Either Way	"Could last, but she could grow out of it."	2.4
Unclear Meaning	"Just clear not in long day"	0.8

Explanatory Model: What Do You Think Are the Chief Problems this Issue Has Caused?

In terms of the perceived issues the child in the vignette has experienced, the following 10 themes emerged which are reported with their corresponding kappa values: Lack of Typical Development (κ = .54), Lack of Relationships (κ = .87), Parental Stress/Worried Parents (κ = .93), ASD and ASD Co-Morbidities (κ = .81), Unspecified Mental Illness/Disability (κ = .82), Health Problems/Illnesses/Genetic Disorders (κ = .84), Sensory Concerns (κ = .90), Nothing/Normal Behavior (κ = 1.00), Don't Know/Unsure (κ = 1.00), and Unclear Meaning (κ = .84). In particular, 44% of the respondents indicated a lack of typical development (e.g., "language development" and "It has caused him some developmental delays") as the main problem caused by the symptoms; similarly, 17% predicted that a lack of relationships (e.g., isolation from peers and family" and "She will have no friends…") would be the result of exhibiting the symptoms described in the vignette. Conversely, only two groups cited concerns of the parents (e.g., "Interpersonal relationship between parents") as a possible outcome of the symptoms (6% of Educators and 1% of the Lay Community). While 10% accurately reported that ASD/ASD Co-morbidities (e.g., "depression" and "selective mutism") would be the result of experiencing the symptoms in the vignette, 13% indicated a nonspecific mental illness or health problem (e.g., "mental distress" and "…neuromuscular disorders") might be the outcome. Table 20 details the frequencies of each group. Refer to Table 21 for example quotes from each category.

Table 20

Categories for the Symptoms of Autism by Group

Categories	Educators (N = 78) %	Healthcare Workers (N = 57) %	Other/Lay Community (N = 80) %	Clergy (N = 15) %
Lack of Typical Development	50.0	35.1	43.8	46.7
Lack of Relationships	11.5	21.1	16.3	33.3
ASD and ASD Co-Morbidities	9.0	10.5	11.3	13.3
Unspecified Mental Illness/Disability	7.7	17.5	7.5	-
Parental Stress/Worried Parents	6.4	-	1.3	-
Don't Know/Unsure	5.1	5.3	3.8	-
Unclear Meaning	3.9	-	3.8	-
Health Problems/Illnesses/Genetic Disorders	2.6	5.3	2.5	-
Nothing/Normal Behavior	2.6	5.3	7.5	-
Sensory Concerns	1.3	-	2.5	6.7

Figure 10

Top Four Categories for the Symptoms of Autism for Overall Sample

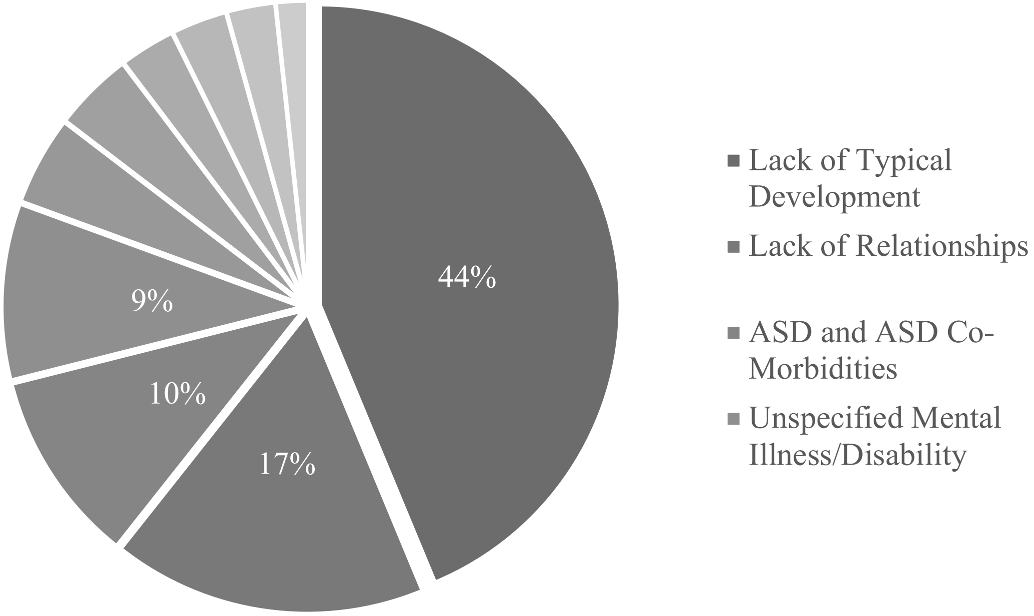


Table 21

Categories for the Symptoms of Autism with Sample Quotes (N = 231)

Categories	Quote	Frequency (%)
Lack of Typical Development	"This issue has caused him to lack the ability to communicate and socialize well with others. It has affected his development."	43.7
Lack of Relationships	"Withdraws from others"	16.9
ASD and ASD Co-Morbidities	"Anxiety, OCD"	10.4
Unspecified Mental Illness/Disability	"Mental Illness"	9.5
Nothing/Normal Behavior	"Nothing. It's good."	4.8
Unclear Meaning	"Childness"	4.3
Parental Stress/Worried Parents	"Worried parents"	3.0
Health Problems/Illnesses/Genetic Disorders	"I believe the most likely causes are his genes."	3.0
Don't Know/Unsure	"Haven't a clue"	2.6
Sensory Concerns	"Sensory issues"	1.7

Explanatory Model: What Would You Fear Most About This Problem?

In response to fears participants might experience on behalf of the child in the vignette, the following 11 themes emerged which are reported with their corresponding kappa values: No Change/Halted Development (κ = .67), Lack of Relationships (κ = .89), Future/Independent Living (κ = .91), Fear of Autism (κ = 1.00), Other Mental Health Concerns (κ = .87), Health Problems/Food Selectivity (κ = .85), Abuse/Neglect of Autistic Individuals (κ = 1.00), Stigma/Public Perception (κ = .91), SPED/School Difficulties (κ = 1.00), Nothing/Normal Behavior (κ = 1.00), and Unclear Meaning (κ = .73). One notable response from participants in all groups was the fear of a lack of development. For example, 27% of Educators, 26% of Healthcare Workers, and 38% of the Lay Community expressed fears surrounding the child's growth and progression in development (e.g., "I would fear it worsening or not improving due to a lack of early intervention"). Similarly, 23% of Educators, 12% Healthcare Workers, and 23% of the Lay Community felt concerned about the child's future independent living skills (e.g., "…he would not be able to be like a normal human being" and "Growing up and struggling"). While 9% of Educators and 8% of the Lay Community voiced fears about other unspecified mental health issues, 26% of Healthcare Workers endorsed worries about other mental health concerns. Further, Table 22 details the frequencies of each category among the different groups. Refer to Table 23 for example quotes from each category.

Table 22

Categories for the Fears Associated with Autism by Group

Categories	Educators (N = 70) %	Healthcare Workers (N = 61) %	Other/Lay Community (N = 79) %	Clergy (N = 12) %
No Change/Halted Development	27.1	26.2	38.0	41.7
Future/Independent Living	22.9	11.5	22.8	41.7
Lack of Relationships	17.1	13.1	8.9	16.7
Other Mental Health Concerns	8.6	26.2	7.6	-
Health Problems/Food Selectivity	8.6	1.6	6.3	-
Stigma/Public Perception	7.1	4.9	5.1	-
Abuse/Neglect of Autistic Individuals	2.9	3.3	1.3	-
SPED/School Difficulties	2.9	1.6	2.5	-
Fear of Autism	1.4	3.3	2.5	-
Nothing/Normal Behavior	1.4	4.9	3.8	-
Unclear Meaning	-	3.3	1.3	-

Figure 11

Top Four Categories for the Fears Associated with Autism for Overall Sample

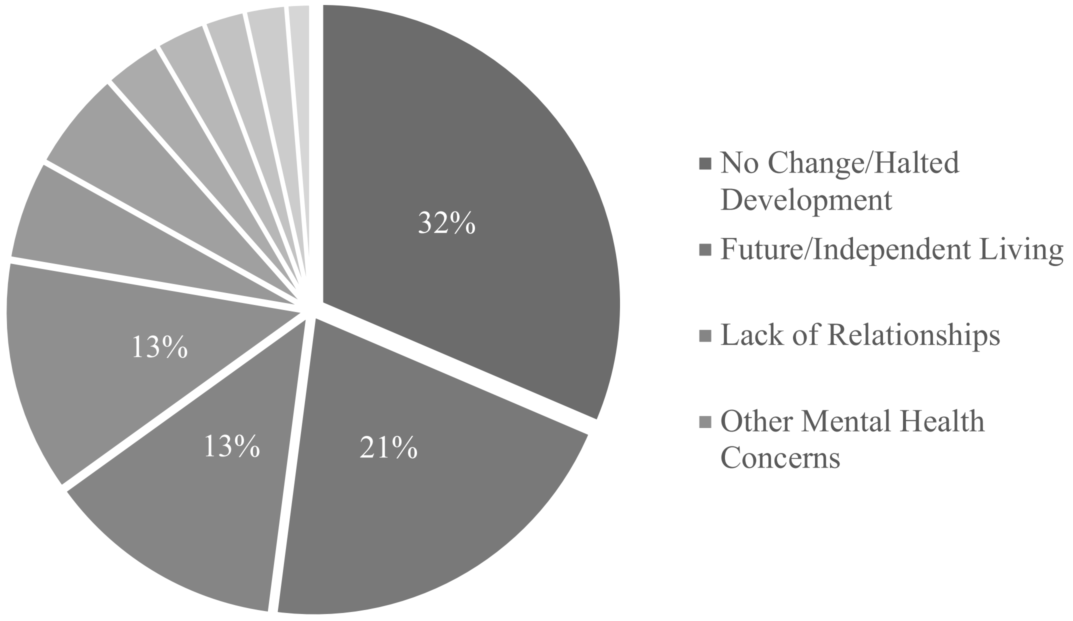


Table 23

Categories for the Fears Associated with Autism with Sample Quotes (N = 223)

Categories	Quote	Frequency (%)
No Change/Halted Development	"I would fear he won't get better as he grows."	31.4
Future/Independent Living	"I fear how he will never adapt to the ever changing world around him."	20.6
Lack of Relationships	"He is not able to develop relationships with other children."	13.0
Other Mental Health Concerns	"Jake is not happy."	12.6
Health Problems/Food Selectivity	"That he is picky with his food."	5.4
Stigma/Public Perception	"I am afraid my child will be in the same situation."	5.4
Nothing/Normal Behavior	"I wouldn't fear anything about Sarah's 'problem.' I would see it as a challenge, not a problem."	3.1
Abuse/Neglect of Autistic Individuals	"That he will be harmed and unable to communicate the facts."	2.7
Fear of Autism	"I fear it may [be] ASD"	2.2
SPED/School Difficulties	"My child being placed in SPED."	2.2
Unclear Meaning	"dangerous problem"	1.3

Explanatory Model: What Kind of Treatment Do You Think They Should Receive?

When asked what kinds of treatment the child in the vignette should receive, the following 11 themes emerged which are reported with their corresponding kappa values: Psychological/Mental Healthcare ($\kappa = .89$), Speech Therapy ($\kappa = .88$), Medical Treatments ($\kappa = .73$), Unspecified Therapy/Trained Professionals/Educational Supports ($\kappa = .88$), Parental Love/Engagement ($\kappa = 1.00$), Unsupported Treatments ($\kappa = 1.00$), Multiple Specific Supported

Treatments (κ = .81), Interactions with Other Children (κ = 1.00), Nothing/No Treatment Needed (κ = 1.00), Don't Know/Unsure (κ = 1.00), and Unclear Meaning (κ = .85). Based on the responses provided by each group, a significant difference exists between the varying recommendations of treatment, X^2 (20, 213) = 40.521, p<.01. One substantial difference in responses based on group occurred in the recommendation of general Psychological/Mental Healthcare for the reported symptoms. 33% of Healthcare Workers and 27% of the Lay Community recommended Psychological treatment alone (e.g., "child counseling and family therapy" and "I think psychology-related treatments will be enough"), while only 14% of Educators suggested this treatment. Conversely, 30% of Educators advised Multiple Specific Supported Treatments (e.g., "occupational therapy, speech therapy, physical therapy, and behavioral therapy depending on the extent of the condition" and "I think she should receive treatments that help with language, social skills, and basic life skills"), while only 15% of Healthcare Workers and 7% of the Lay Community suggested this treatment. Moreover, 2% of participants suggested unsupported treatments (e.g., "yoga" and "…hypnosis"), 2% of participants recommended parental love/parental education, and 2% indicated there was no need for treatment at all. Table 24 details the frequencies of each category among the different groups. Refer to Table 25 for example quotes from each category.

Table 24

Categories for the Treatments of Autism by Group

Categories	Educators (N = 71) %	Healthcare Workers (N = 61) %	Other/Lay Community (N = 81) %	Clergy (N = 14) %
Multiple Specific Supported Treatments	29.6	14.8	7.4	21.4
Speech Therapy	16.9	11.5	8.6	14.3
Unspecified Therapy/Trained Professionals/Educational Supports	16.9	21.3	18.5	14.3
Psychological/Mental Healthcare	14.1	32.8	27.2	21.4
Medical Treatments	9.9	9.8	9.9	21.4
Parental Love/Engagement	5.6	-	6.2	-
Nothing/No Treatment Needed	4.2	-	1.2	-
Don't Know/Unsure	1.4	3.3	3.7	7.1
Unclear Meaning	1.4	-	7.4	-
Unsupported Treatments	-	3.3	3.7	-
Interactions with Other Children	-	3.3	6.2	-

Figure 12

Top Four Categories for Treatments of Autism for Overall Sample

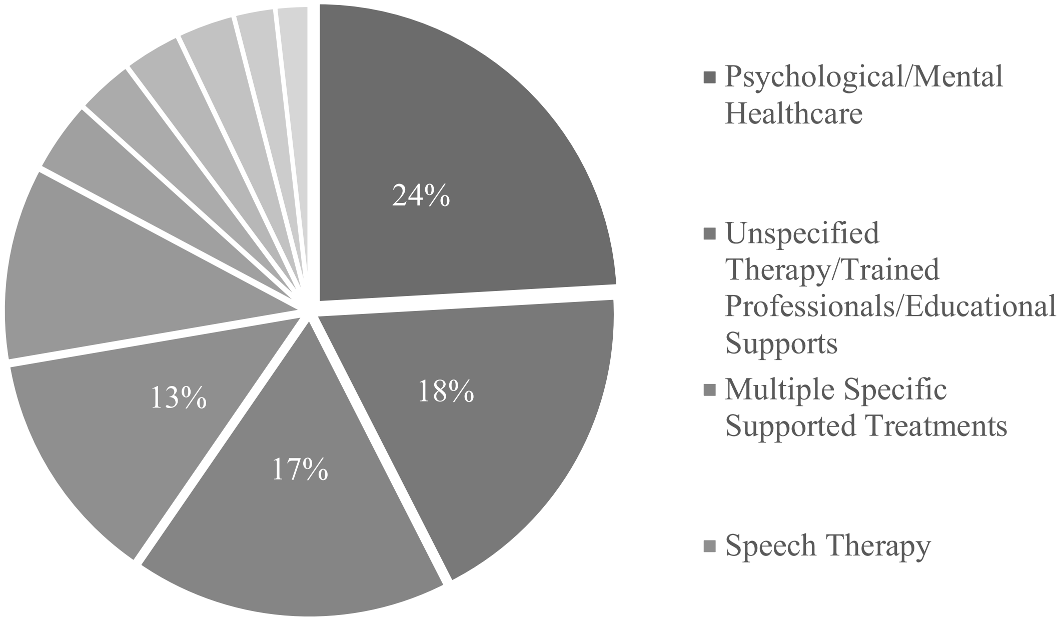


Table 25

Categories for the Treatment of Autism with Sample Quotes (N = 228)

Categories	Quote	Frequency (%)
Psychological/Mental Healthcare	"Therapy given by an early childhood interventionist."	24.1
Unspecified Therapy/Trained Professionals/Educational Supports	"therapy"	18.4
Multiple Specific Supported Treatments	"She might need speech therapy, occupational therapy, and social skills training, at the very least."	17.1
Speech Therapy	"…Some kind of speech therapy would be a good start."	12.7
Medical Treatments	"Seeing a psychiatrist, I think this disease could be cured."	10.5
Parental Love/Engagement	"Spending family time"	3.9
Interactions with Other Children	"Playing with more friends"	3.1
Don't Know/Unsure	"I don't really know."	3.1
Unclear Meaning	"Practice a lot."	3.1
Unsupported Treatments	"I think she should receive hypnosis."	2.2
Nothing/No Treatment Needed	"She is best the way she is."	1.8

Explanatory Model: What Are the Most Important Results They Should Hope to Get From Treatment?

Concerning the participants' predicted outcomes of treatment, the following 9 themes emerged which are reported with their corresponding kappa values: Specific Improvements Related to ASD Symptoms (κ = .81), General Improvements (κ = .69), Full Recovery/Normality (κ = .80), Physically Healthy/Eating Various Foods (κ = 1.00), Depends on Treatment/Possible Results (κ = .87), Familial Understanding/Social Acceptance (κ = .78), Solutions/Answers/Diagnoses (κ = 1.00), Don't Know/Unsure (κ = 1.00), and Unclear Meaning (κ = .78). Regarding possible outcomes from treatment, 43% of respondents predicted improvements related to ASD (e.g., "Increased verbal skills, increased social and self-regulation skills"). Sixteen percent of the sample also reported a general improvement in symptoms (e.g., "peace of mind"). Additionally, 25% of participants reported a full recovery from symptoms after treatment. For instance, some responses included "Cured" and "[information on] how autism can be eradicated." Table 26 details the frequencies of each category among each group. Refer to Table 27 for example quotes from each category.

Table 26

Categories for the Outcomes of Autism by Group

Categories	Educators (N = 69) %	Healthcare Workers (N = 58) %	Other/Lay Community (N = 78) %	Clergy (N = 13) %
Specific Improvements Related to ASD Symptoms	49.3	36.2	42.3	38.5
Full Recovery/Normality	18.8	19.0	32.1	38.5
General Improvements	15.9	24.1	12.8	-
Familial Understanding/Social Acceptance	7.3	3.5	-	7.7
Solutions/Answers/Diagnoses	4.4	1.7	-	-
Depends on Treatment/Possible Results	1.5	12.1	6.4	-
Don't Know/Unsure	1.5	1.7	1.3	-
Unclear Meaning	1.5	1.7	2.6	-
Physically Healthy/Eating Various Foods	-	-	2.6	15.4

Figure 13

Top Four Categories for Outcomes of Autism for Overall Sample

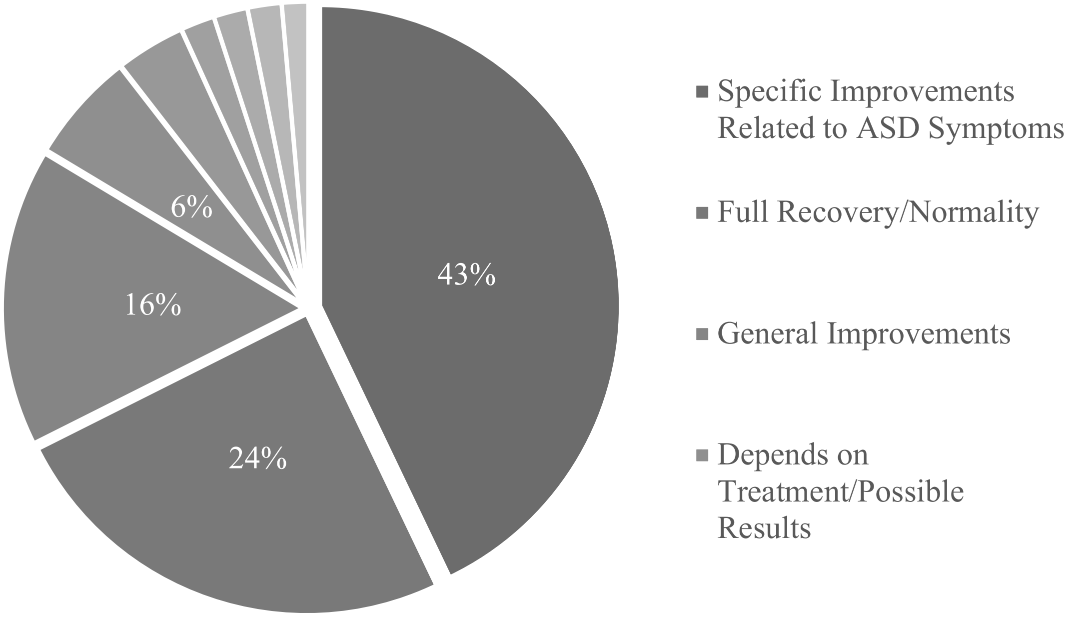


Table 27

Categories for the Outcomes of Autism with Sample Quotes (N = 219)

Categories	Quote	Frequency (%)
Specific Improvements Related to ASD Symptoms	"How to communicate and understand social cues."	42.9
Full Recovery/Normality	"She will make progress and be normal."	24.7
General Improvements	"Happiness."	16.0
Depends on Treatment/Possible Results	"That depends on Sarah and the professionals her parents choose to trust with their daughter."	5.9
Familial Understanding/Social Acceptance	"Social acceptance"	3.7
Physically Healthy/Eating Various Foods	"Eating new foods"	1.8
Solutions/Answers/Diagnoses	"Answers for if this is something that will be with him for the rest of his life or if there is something that can be done about it."	1.8
Don't Know/Unsure	"Don't know"	1.8
Unclear Meaning	"Keep doing some exercises and practice."	1.4

Isolated Review of the Explanatory Models of Religious Leaders

Regarding the etiology of autism, religious leaders most frequently (40%) endorsed Speech/Language Disorders as the cause. Furthermore, in relation to the onset of symptoms, religious leaders evenly split on between a specific age described in the vignette (47%) and a developmental delay at a critical period in a child's development (47%). Concerning the effects of symptoms described in the vignette, 40% indicated that the symptoms began as a result of ASD or other neurodiverse conditions. The reported severity of the symptoms in the vignette amongst clergy was also evenly split, with 33% reporting long lasting/severe, 33% reporting won’t last long/not too severe, and 33% reporting better with treatment. Regarding the symptoms experienced based on the description in the vignette, 47% of religious leaders stated this would cause a lack of typical development while 33% said it would cause a lack of relationships. Moreover, 42% of religious leaders stated fears related to no change/halted development followed by 42% feared for the child’s future/independent living skills. In terms of treatment recommendations, religious leaders were fairly split, with 21% stating psychological treatment alone while 21% suggesting medical treatment alone, and 21% recommending multiple specific treatments. 39% of religious leaders in this sample predicted the child in the vignette would experience specific improvements in ASD-like symptoms and another 39% indicated a full recovery was possible.

Chi-Square Cross Tabulation of Explanatory Models by Occupation

A Chi-square cross tabulation was performed to assess for group differences on Kleinman’s eight questions between the groups of interest (i.e., educators, healthcare professionals, and the lay community). In order to obtain the necessary expected values for each cell to reach sufficient power for the cross tabulation, some of the categories were collapsed. This typically only involved the smallest categories of each chi-square, but there were times that a subset of responses fit better in one of the larger categories.

For the first question (i.e., What do you think caused the problem?), Vaccinations, Loneliness, and a Lack of Parental Education/Intervention were merged to create a category that encapsulated *incorrect causes*. Additionally, Other Mental Health Concerns and Health Concerns/Genetic Disorders/Birth Defects were collapsed to capture *Other Health/Mental Health Concerns*. Lastly, Don’t Know, Unclear Meaning, and Typical/Normal Childhood

Behavior were collapsed to garner a category of *No Identifiable Causes*. There was a significant difference between what they believe caused the symptoms of autism in the vignette, X^2 (8, 253) = 20.350, p = .009. Educators and healthcare professionals were more likely than the lay community to indicate neurodevelopmental disorders as the cause of these problems. Specifically, 44% of educators, 37% of healthcare workers, and 23% of the lay community endorsed neurodevelopmental disabilities as the cause of the ASD-like symptoms. Additionally, members of the lay community were more likely to attribute the cause of these symptoms to a another health/mental health concern than educators or healthcare professionals. Specifically, 7% of educators, 8% of healthcare workers, and 23% of the lay community attributed these symptoms to other health/mental health concerns.

For the second question (i.e., Why do you think it started when it did?), Childhood Stress/Trauma, Lack of Parental Love/Support, Lack of Proper Intervention, and Vaccinations/Exposure to Harmful Substances were merged to create a category that summarized *Incorrect Attributions.* Additionally, Unclear Meaning and Don't Know/Unsure were combined. There were statistically significant differences between reasons for the onset of symptoms described in the vignette, X^2 (8,249) = 18.461, p = .018. Educators were more likely to endorse developmental delays as the reason for the onset of symptoms compared to the lay community. Specifically, 29% of educators and 13% of the lay community endorsed developmental delays/critical periods in development as the reason for symptom onset.

For the third question (i.e., What do you think the problem does to him/her?), Behavior Problems/Spoiled Child, Physical Health Problems, and Other Mental Health Concerns were combined to create a category of *Other Physical/Mental/Behavioral Health Concerns.* Additionally, Unclear Meaning, Nothing/No Problem, and Don't Know/Unsure were merged to obtain a category that captured *No Identifiable Effects.* There were no statistically significant differences in the perceived effects of the problem, X^2 (8, 239) = 10.263, $p = .247$.

For the fourth question (i.e., How severe is the problem? Do you think it will last a long time, or will be better soon in your opinion?), Unclear Meaning, Ambivalent/Either Way, Don't Know/Unsure, and Normal/Not a Problem were collapsed to obtain a category that summarizes *No Identifiable Problem/Unsure.* There were no statistically significant differences in the perceived severity of the problem, X^2 (6, 317) = 3.161, $p = .788$.

For the fifth question (i.e., What do you think are the chief problems this issue has caused him/her?), Sensory Concerns and ASD and ASD Co-Morbidities and Sensory Concerns were combined to obtain a category of *ASD Symptoms and ASD Co-Morbidities.* Additionally, Unspecified Mental Illness/Disability and Health Problems/Illnesses/Genetic Disorders were collapsed to form a category that captures *Other Health/Mental Health Concerns.* There were no statistically significant differences in the perceived symptoms of the problem, X^2 (8, 215) = 10.316, $p = .244$.

For the sixth question (i.e., What would you fear most about this problem?), Lack of Relationships and Abuse/Neglect of Autistic Individuals were merged to form *Lack of Healthy Relationships.* Additionally, SPED/School Difficulties, Fear of Autism, and Stigma/Public Perception were combined to create a category that summarizes *Stigmatized Attitudes.* Lastly, Unclear Meaning, Nothing/Normal Behavior, Health Problems/Food Selectivity, and Other Mental Health Concerns were collapsed to obtain a category for *Other/No Concerns.* There were no statistically significant differences in the perceived fears of the problem, X^2 (8, 210) = 12.849, $p = .117$.

For the seventh question (i.e., What kind of treatment do you think he/she should receive?), Nothing/No Treatment Needed, Unsupported Treatments, Unclear Meaning, Don't Know/Unsure, Interactions with Other Children, and Parental Love/Engagement were all combined to create a category of *Unsupported Treatments/No Treatment.* There was a significant difference between the recommended treatments between the different groups, X^2 (10, 213) = 27.148, $p = .002$. Educators (30%) were more likely to recommend multiple specific treatments compared to healthcare workers (15%) and the lay community (7%). Healthcare workers and the lay community were more likely to recommend psychological/behavioral/mental health treatments alone. Specifically, 14% of Educators endorsed psychological/mental health treatments alone, while 33% and 27% of healthcare workers and the lay community respectively reported this treatment option. Additionally, the lay community was more likely to recommend Unsupported Treatments/No Treatment for children experiencing ASD-like symptoms. Notably, 28% of the lay community recommended unsupported/no treatment, while 13% of educators and 10% of healthcare workers endorsed these treatment options.

For the eighth question (i.e., What are the most important results he/she should hope to get from treatment?), General Improvements, Depends on Treatment/Possible Results, and Physically Healthy/Eating Various Foods were merged to create *General Improvements.* Additionally, Familial Understand/Social Acceptance, Solutions/Answers/Diagnoses, Don't Know/Unsure, and Unclear Meaning were all combined to create a category that summarizes *No Improvement in the Child's Symptoms.* There were statistically significant differences in the perceived outcomes for an individual with autism-like symptoms, X^2 (6, 205) = 13.611, p = .034. The lay community was more likely than educators to expect a full recovery of symptoms. Specifically, 41% of the lay community and 20% of educators endorsed a full recovery/return to normality. Moreover, educators were more likely to report no improvement in symptoms compared to the lay community. Notably, 14% of educators and 4% of the lay community indicated this outcome.

IV. DISCUSSION

If scientists and clinicians are able to understand the barriers to accessing vital services at critical points in time (i.e., critical periods in a child's development), they will likely be able to reduce stigma and foster help-seeking in their communities. This study investigated how certain variables (i.e., demographic variables, familiarity with ASD, and knowledge) are able to predict stigma and how those variables predict help-seeking intentions on behalf of children experiencing symptoms consistent with ASD. The study also aimed to look at differences in explanatory models of ASD across helping professions (i.e., educators and healthcare workers) and the lay community (i.e., any occupation other than the previously mentioned helping professionals). Overall, the hypotheses were partially supported, affirming the importance of knowledge of ASD. The results of each hypothesis are discussed below.

How Do Demographics, Familiarity, and Knowledge Predict Stigma?

Congruent with other research, younger age was associated with higher levels of stigma as measured by as measured by the Stigma subscale of the ASK-Q (Anglin et al., 2006). Contrary to previous research, however, higher levels of education and lower income levels were also associated with higher levels of stigma (Anglin et al. 2006; Mukolo & Heflinger, 2011; Parcesepe & Cabassa, 2013). It could be possible that individuals who are more educated may understand the lifelong impact of disabilities, but they may not have greater levels of knowledge specific to ASD. Likewise, individuals of lower income may fear the financial impact and time commitment required of having a child with a disability. Additionally, higher self-reported religious importance was also associated with higher levels of stigma. These results are consistent with previous research that traditional religious doctrine is linked to ideas that individuals with disabilities (e.g., intellectual disabilities) are viewed as needing to be fixed as a result of some deficiency, such as demon possession. Because traditional Christian doctrine posits that god is omnipotent, some religious individuals might believe god could heal a person entirely of any ailment or disorder including invisible disabilities (Patka & McDonald, 2015; Waldock & Forrester-Jones, 2020). While the sample obtained in the current study did not contain any reference to religious treatments, nearly 39% of the clergy sample endorsed the belief that a child experiencing autism-like symptoms could be completely cured. This supports the idea that a disability is a form of a deficiency and that "normality" is obtainable. Results also indicated that lower levels of autism knowledge were linked to higher levels of stigma. This particular measure of stigma revolves around common misconceptions or myths of the causes, symptoms, and treatment of ASD (e.g., autism is caused by cold, rejecting parents). Therefore, it is not surprising that results would find that autism knowledge has predictive value for this form of stigma. Individuals who have higher levels of knowledge regarding ASD are less likely to believe the common myths surrounding autistic individuals and their families.

How Do Demographics, Familiarity, and Knowledge Predict Social Distancing?

Inconsistent with previous research, demographic variables and familiarity were not significantly predictive of social distancing (i.e., preference for lower levels of intimacy with autistic individuals). Higher levels of overall autism knowledge were associated with less preference for social distance (i.e., discriminatory behavior). The more a person knows about autism's causes, symptoms, and treatment, the less likely they are to endorse greater preference for social distance. Recent research suggests that exposure to representation of autism in the media (e.g., *Love on the Spectrum, Peanut Butter Falcon, Atypical, The Good Doctor, Sesame*

Street) leads to more accurate knowledge and fewer negative attitudes towards autistic individuals than educational lectures on the same topic (Stern & Barnes, 2019). There was a weak positive relationship between income level and overall levels of knowledge. It is possible that individuals with higher income levels have access to more resources (e.g., internet access, relationships with individuals who have higher levels of knowledge, time) that could lead to higher levels of autism knowledge.

How Do Demographics, Familiarity, Knowledge, Stigma, and Social Distancing Predict Help-Seeking?

Age and income were not associated with help-seeking intentions. Individuals who have higher levels of education endorsed greater help-seeking intentions across all the areas assessed by the GHSQ-V (e.g., professionals, friends, religious leaders, parents). Likewise, individuals who reported greater religious importance also endorsed more help-seeking behavior among all the areas of the GHSQ-V. Additionally, greater preference for social distancing from autistic individuals was associated with reduced help-seeking behavior. Interesting results were observed between the relationship of knowledge and help-seeking. In the current study, higher levels of overall autism knowledge were linked to decreased help-seeking intentions among all sources of help on the GHSQ-V; however, previous research suggests a positive relationship between overall knowledge and help-seeking (Fekih-Romdhane, 2021).

These results did not seem to match the current research and correlations between knowledge and help-seeking; therefore, post hoc analyses revealed different results when help-seeking was specific to professional help (i.e., pediatricians, doctors, psychologists, and other mental health professionals). Higher levels of education were associated with greater help-seeking from these healthcare professionals. Contrary to the results above, more autism knowledge was associated with greater help-seeking intentions among these healthcare professionals. Concordant with the results above, higher levels of social distancing were still associated with reduced help-seeking behavior from these healthcare professionals. It is possible that individuals who have higher levels of autism knowledge will not seek help from individuals that they know will not benefit the child when they know that the child needs professional help from healthcare professionals (e.g., psychologists and pediatricians).

Based on the results of the current study, data suggests that individuals with higher levels of knowledge were more likely to endorse positive attitudes towards seeking professional psychological help. Additionally, individuals who endorsed higher levels of stigma (i.e., commonly-held misconceptions about ASD) were more likely to endorse more negative attitudes regarding seeking help from professional psychological services. These results may suggest that individuals with higher levels of ASD knowledge might have knowledge of other comorbidities associated with ASD (e.g., anxiety, OCD, depression). This could lead those individuals to seek out psychological services since they understand more aspects of the problems associated with these conditions and realize they are not likely to be resolved without additional support.

Group Differences Between Groups on Knowledge, Stigma, and Help-Seeking

When compared against each other across the variables of interest, the groups significantly differed on some of the variables. Namely, the groups had differing levels of knowledge, stigma, and help-seeking. Regarding knowledge of ASD, educators had higher levels of knowledge than the other groups. This could be due to many educators being taught about the different neurodevelopmental disorders they may encounter in their classrooms. Interestingly, educators were less likely to seek help from all sources (i.e., spouse/partner, friend, parent, other relative, mental health professionals, telephone helpline, doctor, religious leader) on the GHSQ-

V than both healthcare professionals and the lay community. Conversely, educators had higher levels of help-seeking attitudes towards seeking professional psychological help. These conflicting data could be caused by educators knowing which services a child needs based on symptomatology and an avoidance of services that may not be beneficial (e.g., seeking help from a friend).

Explanatory Models

Overall, the explanatory models were multifaceted and reflective of a biopsychosocial conceptualization of ASD. Regarding etiology, the largest percentage of participants (34%), accounting for nearly 1/3 of responses, was neurodevelopmental disorders, followed by speech/language disorders (20%). Interestingly, 13% of individuals reported loneliness, vaccinations, or lack of parental education/intervention as the cause of autism. Significant differences exist between the groups when analyzing the reported causes of ASD-like symptoms. Specifically, Educators and Healthcare Workers were more likely to endorse a neurodevelopmental disorder as the cause compared to the Lay Community. Additionally, the Lay Community was more likely to endorse Other Health/Mental Health Concerns as the cause of these ASD-like symptoms than Healthcare Workers and Educators. This could be due to a lack of neurodevelopmental disorders and developmental milestones.

In terms of the onset of symptoms, 42% endorsed the specific age listed within the provided vignette, followed by 20% who stated that symptoms began at a critical period in the child's development. This corresponds to diagnostic criteria indicating autism symptoms may not become apparent until demands exceed capacity (DSM-5; American Psychiatric Association, 2013). Conversely, 11% of individuals indicated that symptoms likely began after experiencing childhood stress/trauma, vaccinations/exposure to harmful substances, or lack of parental support/love. Despite the high number of individuals who reported a specific age as the onset, only 12% reported the symptoms being present since birth. Educators were more likely than the Lay Community to endorse developmental delays as the reason for the onset of symptoms. Roughly 4% of educators, however, stated that symptoms occurred as the result of exposure to vaccinations or harmful substances. While this number is somewhat low, general education teachers are typically required to take courses related to disabilities, their causes, and disability-inclusionary practices in pre-teacher stages of their career (CAEP, 2019). These results support the need for continued coursework regarding developmental disabilities in teacher education programs.

Concerning the effects related to the symptoms described in the vignette, 32% of participants believed that communication and social difficulties would affect the child's life. 22% of individuals reported ASD symptoms or other neurodivergent conditions; however, around 3% of respondents believed the child's symptoms would result in being "spoiled" or having bad behavior. These beliefs could potentially contribute to the stigma associated with behavior issues and children with ASD since it is considered an invisible disability (Gray, 1993).

In terms of severity, 43% of respondents believed that the symptoms described in vignette would be long-lasting or severe for the child described; furthermore, a substantial amount of the sample (23%) predicted that treatment would improve the symptoms. However, 3% of participants indicated no problems with the child, which poses serious implications for early intervention access. Because prompt treatment is the most beneficial predictor of long-term outcomes, the belief that a child is suffering from a temporary "small problem" might inhibit a parent/caregiver's motivation to seek treatment at a critical point in development (Estes et al., 2015).

The predicted problems associated with the symptoms described in the vignette were largely related to lack of typical development, with 44% of respondents endorsing this belief. While this number does provide hopeful insight into public perceptions of ASD, it should also be noted that a small percentage of Educators (6%) expressed concern for the parents' stress levels/worry. While parental stress is definitely an important factor to consider, in terms of primary problems, this response could signify a barrier to help-seeking since parents who feel stigmatized are less likely to receive support outside of their family (Link & Phelan, 2006).

Along the same lines as stress and worry, many responses related to fear for the child described in the vignette tended to center around a lack of improvement. 31% of respondents reported a fear of no change/halted development. Furthermore, 21% of participants feared for the child's future independent living skills. Based on current research surrounding independent-living skills among individuals with disabilities, autistic young adults are less likely to live independently (Anderson et al., 2014). This could suggest a relationship between the idea of parental worry associated with being a "life-long caregiver" to an individual with ASD.

In regards to treatment options, significant differences were observed between the groups. 30% of educators advocated for multiple specific supported treatments, while 15% of healthcare workers and 7% of the lay community endorsed these varied interventions. Educators may suggest multiple specific treatments more often due to an increased exposure to services children receive in the school setting (i.e., students being pulled from the general education classrooms for services such as occupational therapy, applied behavior analysis, physical therapy, and speech therapy). Based on the results above, the healthcare community seems to lack knowledge related to adjunctive therapies (e.g., speech therapy, occupational therapy). Conversely, 33% of healthcare professionals recommended psychological treatment alone. This could be due to the need to clarify diagnoses as only 8% of pediatricians routinely screen for ASD due to not being familiar with appropriate screeners (Dosreis et al., 2006). Lastly, the lay community was more likely to endorse unsupported treatments/no treatment as the primary recommendation. Specially, 28% of the lay community, 13% of educators, and 10% of healthcare workers recommended these treatments. This could be due to the lay community being less familiar with treatment options for children with ASD.

Concerning perceived outcomes of the symptoms described in the vignette, 43% of the sample endorsed specific improvements of ASD symptomatology, followed by 16% reporting general improvements. In contrast, one quarter of the participants indicated that the child in the vignette could potentially make a full recovery or "become as normal as other children." Specifically, the lay community was more likely than educators to expect a full recovery. This data suggests a largely-held belief that ASD is an "illness to be cured," similar to the theological beliefs of priests previously discussed. Considering this sample's self-reported high religious importance, these different groups could view ASD through the lens of a disease-model to avoid undermining the omnipotence of god (Patka & McDonald, 2015). Additionally, educators were more likely than the lay community to assert that the child in the vignette would experience no improvement in symptoms. This could be due to educator's long-term interactions with children who experience ASD-like symptoms and may have prior learning histories of symptoms being relatively stable across time throughout the school year.

Because of the inclusion of mixed methodology data collection, the study was able to determine far more insight into the perceptions of each of the groups included in the sample. Using quantitative data alone, results would have simply indicated that the sample of participants lacked adequate knowledge. With the use of mixed methodology, it was possible to determine particular areas of inadequate knowledge. For instance, the explanatory model for expected outcomes provided insight into the 25% of individuals who believed the child from the vignette could be cured completely. Similarly, in the explanatory model for onset, 5% of the sample reported they did not know why the symptoms in the vignette began when they did. If this survey had been given using only quantitative data, participants may have responded to a multiple-choice measure by choosing common terminology without fully understanding or knowing the significance of the response.

Implications

Gray (2002) made the connection between individual stigma and the shared stigma of caregivers or parents. The present study sought to determine help-seeking based on variables that have historically been associated with increased stigma for children who are experiencing symptoms of ASD. In concordance with prior research, the results of this study suggest that more knowledge is associated with decreased stigma and social distancing (i.e., discriminatory behavior). Likewise, more knowledge is also associated with increased help-seeking intentions specifically from professionals (i.e., doctors, pediatricians, psychologists, and other mental health professionals). The results of this study uphold research emphasizing the importance of knowledge as a protective factor against endorsing stigma and engaging in discrimination against autistic individuals (Milin et al., 2016). The data also supports research that knowledge is associated with greater help-seeking from individuals in the medical and psychological community (Han et al., 2006). The qualitative data of the present study suggests healthcare professionals tended to defer treatment specifically to the psychological community, educators tended to lack knowledge of onset, and the lay community held strong misconceptions about a child’s recovery from the symptoms described in the vignette. These findings have implications for individuals in the medical field, educational settings, and autism advocacy networks.

Despite high contact with individuals on the autism spectrum, responses from the healthcare community tended to vary in terms of treatment options. Because the lack of knowledge associated with the range of effective treatment options for a child exhibiting the symptoms from the vignette among healthcare, it is apparent there is a significant gap in knowledge of treatment options. This supports prior research indicating few numbers (8%) of pediatricians who perform screenings for ASD-like symptoms. Furthermore, 62% of pediatricians reported they did not know appropriate measures for screening (Dosreis et al., 2006). Due to this gap in understanding, significant strides must be made in the pediatric community to familiarize professionals with trusted measures for screening. Additionally, based on the sample collected for this study, it is evident that religious beliefs play a role in the perceived origins of ASD. Specifically, 57% of the surveyed individuals endorsed the belief that ASD was caused by God. Because the study was conducted in the southern United States, 79% of individuals endorsed being Christian or Catholic. Based on these findings, clinicians should also be mindful of the beliefs held by the patients and their families that might inhibit help-seeking.

The present study also suggests the continued impact educators play in early childhood development. Responses gathered from the present sample suggest that a substantial number of educators are aware of effective treatments across a wide range of medical disciplines (e.g., psychology, occupational therapy, speech therapy). This upholds research regarding educators acting as gateways to accessing developmental specialists in the help-seeking pathway (Shanley et al., 2008). Despite promising data to suggest educators’ recommendations for treatment, some responses indicated a lack of understanding of the onset of ASD-like symptoms. Notably, some educators (18%) predicted that symptoms began as a result of a lack of parental love/support, exposure to vaccinations/harmful substances, or childhood stress/trauma which could create a barrier in the above mentioned relationship between parents and educators. As research regarding ASD and other neurodiverse populations continues to be released, educators and support staff should specifically focus on training faculty regarding the etiology and onset of ASD to help reduce stigma experienced by autistic children and their families to avoid hurdles in the teacher-initiated pathways (Boulter & Rickwood, 2013).

Data from the present study also suggests larger implications for policy change on multiple systemic levels. While recent efforts have made strides away from awareness and towards acceptance, knowledge still remains a significant predictor of discriminatory behavior and a barrier for help-seeking. Across all groups surveyed, a substantial lack of knowledge exists within different categories related to ASD. Despite current recommendations for the use of ASD screeners at 16 months of age, a relatively small percentage of providers are utilizing these tools (Siu et al., 2016). Current research indicates only 30% of children receive ASD screeners in the United States. Furthermore, in Mississippi, only 17% of children received screeners for ASD between the ages of 9 to 35 months (Hirai et al., 2018). All of this information combined suggests a public health crisis related to ASD in the United States. Since healthcare professionals are essentially on the front lines of this issue due to their increased interactions with young children and their knowledge of supports, it seems policies should be enacted to require pediatricians to use screeners at early stages of development for all children, especially in rural areas where data supports the largest deficit in detection. Because some of the largest gaps in early identification occur in rural communities, state or national relief for healthcare providers should exist in the form of student loan-forgiveness programs and other incentive programs to retain highly-qualified professionals in these areas.

Limitations and Future Directions

The current study was not able to collect sufficient responses of religious leaders in order to include them among helping professionals. Despite contacting three seminaries and 308 individual clergy members from churches and organizations across five states, only 28 individuals completed the survey. This could be due to a lack of social connection within each congregation that was contacted. Some researchers suggest that psychologist-clergy collaboration is best achieved when a channel of trust is built through shared religious beliefs; therefore, the small sample size could be attributed to a lack of personal knowledge of each church or its respective community (Chaddock & McMinn, 1999; Benes et al., 2000). Future research that includes psychologist-clergy collaboration should be mindful of the "outsider" mentality and the reservations clergy members might have. Additionally, the use of mixed methodology allowed for varied responses and themes to emerge, which likely provided a better representation of beliefs held by members of each group than quantitative analysis alone.

There are multiple limitations to the present study. First, the ASK-Q contains both the knowledge and stigma subscales used for hypothesis 1. This is potentially problematic due to the use of two subscales of the same measure being used as a predictor and outcome variable in the same analysis (i.e., multicollinearity concerns). A larger, more diverse sample size would also prove useful – specifically, more individuals with less education, professionals in the mental healthcare community, people of differing religious beliefs, and individuals of diverse racial/ethnic identities.

Despite this, the results of the present study still provide a rich understanding of beliefs across the analyzed groups ASD. Future research efforts should continue to focus on mixed methodology to gather more detailed examples of beliefs held by the lay community and other professional groups outside of the field of psychology. As autism awareness continues to spread through popular culture and the media, the general public will likely become more aware of terminology and stereotypes associated with ASD. Continuing research with mixed methodology in larger samples will allow future researchers to develop a greater sense of where educational gaps lie.

Future research should also consider taking samples from other areas of the United States and other countries who have been historically neglected by researchers. Current research suggests only around 11% of the world's population are represented in research published in leading psychological journals (Thalmayer et al., 2021). For instance, the large minority population of the rural South should continue to be researched since belief systems and cultures vary distinctly. Individuals from different religious groups should also be surveyed to determine any connections across themes related to group membership (e.g., Islam, Hindu). Because ASD prevalence rates are about 1 in 100 worldwide, it is increasingly important to expand research into cultures outside of W.E.I.R.D. (western, educated, industrialized, rich, and democratic) regions (World Health Organization, 2019). For instance, while the sample from the southern United States endorsed an explanatory model consistent with a biopsychosocial model, many other countries may hold other explanations. For example, in Ghana, ASD is sometimes associated with the mother's behavior during pregnancy (e.g., eating something harmful or committing some spiritual offense). Additionally, many people in West African cultures attribute ASD symptoms to a spiritual battle that a family must face together (Kpobi & Swartz, 2019;

Robertson, 2021). This would help us understand the whole of ASD and not just the heavily studied 80% of the population. Researchers should continue to explore the efficacy of knowledge and awareness campaigns on the actual knowledge of ASD and how that impacts stigma, discrimination, and help-seeking. Because of the large portion of individuals who endorsed Christianity and Catholicism as their religion, it is also recommended to survey religious leaders to gain an understanding of their conceptualizations of ASD and how they influence individuals in their community as an additional group of helping professionals.

Conclusion

This study examined how a variety of factors, such as familiarity and knowledge, predict stigma and discriminatory behaviors such as social distancing regarding a person with ASD. The study also explored how all those factors impact a person's willingness to seek help on behalf of a child experiencing symptoms consistent with ASD. The study's tertiary goal was to investigate the conceptualizations of ASD among different helping professionals (i.e., educators and healthcare workers) and the lay community (i.e., individuals from other occupations). These results indicate higher help-seeking intentions among individuals with higher levels of education and higher levels of autism knowledge. Similarly, the data suggests that individuals with higher levels of ASD knowledge were more likely to endorse positive attitudes towards help-seeking from professionals. Conversely, the data states that individuals who endorse higher rates of discriminatory behavior (i.e., social distancing) are less likely to seek help from professional sources on behalf of children. Qualitative data also showed that educators and healthcare workers were more likely to endorse the cause of ASD-like symptoms to neurodevelopmental disorders than the lay community. Educators also recommended multiple specific treatments more frequently than healthcare workers or the lay community who more often recommended psychological/behavioral/mental health treatments alone. The healthcare community provides recommendations for support, while educators coordinate these services (i.e., interactions with service providers) and provide a bridge between experts and the lay community. Despite the differences in knowledge related to ASD, the data suggests that each of these groups overlap in some form throughout society; therefore, cohesion amongst the groups remains a significant challenge to researchers and mental health professionals. Knowledge remains to be the foundation on which the stepping stones of the help-seeking pathway are situated. Despite the varied responses from each group, it is clear that all groups are interwoven together as the fabric from which autistic and neurodiverse individuals cut out their individual patterns of support.

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Co-Leader of Diversity Support Groups (LGBTQIA and International Students)

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Supervisor: Laura Johnson, Ph.D.

- Facilitated clinical support group discussion and stress reduction strategies.
- Helped connect group members with various resources and service providers.
- Facilitated pre-departure and re-entry workshops for students studying abroad to prepare them for difficulties with psychological adjustment.

Psychology Intern, The Baddour Center; Senatobia, MS

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Supervisor: Shannon Hill, Ph.D., BCBA-D

- Implemented behavioral interventions to help increase appropriate and adaptive behavior to adults with developmental disabilities.
- Provided neuropsychological screenings for tardive dyskinesia and dementia.
- Provided psychotherapy to individuals who met criteria for various diagnoses.
- Worked on an interdisciplinary team, which included medical, administrative, and direct support staff, to ensure behavioral interventions were implemented in a multitude of environments.

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Psychological Examiner, Psychological Assessment Clinic; Oxford, MS
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Supervisors: Scott Gustafson, Ph.D., ABPP; Shannon Sharp, Ph.D.

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Graduate Clinical Therapist, Psychological Services Center; Oxford, MS
2017-2021
Supervisors: Laura Johnson, Ph.D.; Kelly Wilson, Ph.D.; John Young, Ph.D.; Sarah Bilsky, Ph.D.; Scott Gustafson, Ph.D., ABPP

- Provided evidence-based psychotherapy to children, adolescents, and adults with various presenting problems.
- Provided parent training for parents of children with autism and other behavioral disorders.
- Attended Individualized Education Program (IEP) meetings of clients and advocated for needed services and accommodations.

Behavior Analysis Trainee, Level Up Consulting; Nesbit, MS
2018-2020
Supervisor: Shannon Hill, Ph.D., BCBA-D

- Collected and compiled data in order to create functional behavioral assessments and behavioral intervention plans for cases referred by contracted school districts.
- Provided behavioral therapy to children between the ages of 3 and 17.
- Worked closely with teachers and parents to ensure continuity of care across various contexts using behavioral skills training.
- Accrued supervision hours to seek licensure as a behavior analyst through the BACB.

Clinical Intern, Cardinal Clinical Consulting; Tupelo, MS
2019-2020
Supervisor: Joshua Fulwiler, Ph.D.

- Administered psychological assessments, scored/interpreted assessment data, and wrote integrated reports for each assessment (e.g., WISC, SB-5, VMI, PPVT, EVT, ADOS, WIAT, and WRAT).
- Provided parent training for parents of children with autism and other behavioral disorders.

- Delivered assessment feedback to patients, parents, and other caregivers.

Pre-Doctoral Psychology Intern, integrated Center for Autism Spectrum Disorders (iCASD), Early Intervention Program; Omaha, NE
2021-Present
Supervisors: Patricia Zemantic, Ph.D., BCBA-D, LP; Sara Jeglum, Ph.D., BCBA, LP; Todd Owen, MA, BCBA

- Collaborated with supervisors to create and test skill acquisition and behavior reduction programs.
- Implemented skill acquisition and behavior reduction interventions with children with autism spectrum disorder.
- Collected and graphed data to assess ongoing program effectiveness and made adjustments to the programming based on the student's performance and data.

Pre-Doctoral Psychology Intern, integrated Center for Autism Spectrum Disorders (iCASD), Autism Diagnostic Clinic; Omaha, NE
2021-Present
Supervisors: Patricia Zemantic, Ph.D., BCBA-D, LP; Sara Jeglum, Ph.D., BCBA, LP; Trenesha Hill, Ph.D.

- Conducted record reviews and performed clinical interviews to identify the presence of various diagnoses.
- Scored and interpreted the following measures:
  - The Behavior Assessment System, Third Edition (BASC-III)
  - Social Responsiveness Scale, Second Edition (SRS-2)
  - Autism Diagnostic Observation Schedule, Second Edition (ADOS-2)
  - Differential Ability Scales, Second Edition (DAS-II)
  - Childhood Autism Rating Scale, Second Edition (CARS-2)
- Collaborated with speech language pathologists, geneticists, and other psychologists to provide diagnoses to clients with and without medically complex conditions.
- Scored, interpreted, and compiled assessment measures to write integrated psychological reports.

Certifications and Relevant Trainings

2016	Collaborative Institutional Training Initiative (CITI)
2017	Evidence-Based Services Seminar
2018	Registered Behavior Technician Course by ObiGobi (40-hour certificate)
2018	Integrated Behavioral Couples Therapy (IBCT) Seminar
2018	Multicultural Psychology Seminar

2018 PEAK Relational Training System Level 1 Certification
2019 Acceptance and Commitment Therapy (ACT) Seminar with Kelly Wilson
2020 Examination for the Professional Practice of Psychology
Passed at the Doctoral Level
- Clinical evaluation and care, technology, legal/regulatory/ethical considerations, and reimbursement.

2020 CPT*Web*: Learning Course for Cognitive Processing Therapy Certification
2020 American Psychological Association’s Telepsychology Best Practice 101
2020 LGBTQIA+ Allies Training
2020 TF-CBT*Web2.0*: A Course for Trauma-Focused Cognitive Behavioral Therapy Certification of Completion
2021 LEND Trainee
2021 Global Autism Interactive Network (GAIN) Workshops
2021 Autism Diagnostic Observation Schedule – Second Edition Training
2022 Differential Diagnosis of ASD: Early Childhood Workshop
2022 Differential Diagnosis of ASD: School Age and Adolescence Workshop

Research Experience

Research Team and Lab Member, University of Mississippi; Oxford, MS
2014-2015

- Entered data and provided analyses of tests performed on environmental conservation attitudes of college students before and after an environmental psychology course.
- Designed research materials for Participatory Research in Tanzania on environmental conservation.

Research Assistant, University of Mississippi; Oxford, MS
2015-2016

- Managed and restructured databases for use in other research ventures, such as work for the Search Institute.

Graduate Research Assistant, University of Mississippi; Oxford, MS
2016-2021

- Consulted with team members in need of help with data collection and statistical analyses.
- Organized team members and tasks to efficiently finalize projects that were near completion.
- Assisted in research design and development.
- Organized team members and tasks to efficiently finalize projects that were near completion.
- Assisted in research design and development.

Teaching Experience

Spring 2017	**Teaching Assistant** PSY 201: Introduction to Psychology (2 sections) PSY 320: Cognitive Psychology University of Mississippi Professor: Jennifer Caldwell, Ph.D.
Fall 2020	**Instructor of Record** PSY 201: Introduction to Psychology University of Mississippi
Spring 2021	**Instructor of Record** PSY 311: Abnormal Psychology University of Mississippi

Research Presentations

Ho, L.Y., Johnson, L.R., Assenga, S., **Courson, C.S.**, Schulenberg, S.E., & Karim, Z.N. (2016, May) Measuring Perceived Meaning in Life among Tanzanian Youth and Emerging Adults. Poster Presentation at the Association for Psychological Sciences (APS) Conference. Chicago, IL.

Courson, C.S. & Johnson, L. (2018, March). *Nature Experience and Spirituality: The Role of Connectedness*. Poster session presented at the Annual Convention of the Southeast Psychological Association (SEPA). Charleston, South Carolina.

Johnson, L.R., Drescher, C., Hankton, U., Kihilo, R., Pal, S., **Courson, C.S.**, & Scales, Peter. (2018, November). *From Dar Es Salam to the Delta: Adolescent Developmental Assets.* Poster presented at the fourth convention of the Caribbean Regional Conference of Psychology. Kingston, Jamaica.

Courson, C.S., Zemantic, P., & Johnson, L. (April, 2022). *Social Distance, Stigma, and Help-Seeking: An Exploration of Autism Beliefs.* Poster presented at the Munroe-Meyer Institute Virtual Poster Session at the University of Nebraska Medical Center. Omaha, Nebraska.

Invited Presentations

Courson, C.S. (2017, March). *Types of Differential Reinforcement.* Guest lecturer in Learning and Behavior at the University of Mississippi.

Courson, C.S. (2018, October). *Needs-Hierarchy Theory.* Guest lecturer in Personality Psychology at the University of Mississippi.

Courson, C.S. (2018, October). *Substance Use Disorders.* Guest lecturer in Abnormal Psychology at the University of Mississippi.

Courson, C.S. (2019, October). *Operant Learning.* Guest lecturer in Learning and Behavior at the University of Mississippi.

Courson, C.S. & Fulwiler, J (2019, November). *Dimensions and Diagnosis of Autism Spectrum Disorder and the Case of Angela.* Guest lecturer for the clinical psychology department at the University of Mississippi.

Editorial and Service Experience

Assistant Reviewer; Routledge Publisher
February 2017

- Multiple manuscript reviews for the book project *Understanding Student Experience in Higher Education: New Tensions, Issues, and Perspectives.*

Assistant Reviewer; Journal of International Students
April 2017

Assistant Reviewer; Journal of Environmental Psychology
February 2018

Poster Session Judge; University of Mississippi Research Conference
April 2018

Committee Member; Diversity, Equity, and Inclusion (DEI) Committee
Nebraska Internship Consortium in Professional Psychology
2021 – 2022

Professional Affiliations

- Division 25: Behavior Analysis – Student Member
- Division 33: Intellectual and Developmental Disabilities/Autism Spectrum Disorder – Student Member
- Division 35(4): Section for Lesbian, Bisexual, and Transgender Concerns – Student Member

- Division 36: Society for the Psychology of Religion and Spirituality – Student Member
- Division 37(1): Section on Child Maltreatment – Student Member
- Division 40: Society for Clinical Neuropsychology – Student Member
- Division 45: Society for the Psychological Study of Culture, Ethnicity, and Race – Student Member
- Division 54: Society of Pediatric Psychology – Student Member