The Association of Mental Health Literacy in Latino Parents and Mental Health Outcomes in Their Children

by

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Mental health literacy refers to the knowledge and attitudes one possesses regarding mental health and mental illnesses. Given that relations between parental health literacy and their children's health outcomes have been noted in various studies, understanding if parental mental health literacy is a predictor of children's mental health outcomes will help in creating interventions to improve mental health outcomes of children (DeWalt & Hink, 2009; Lee et al., 2020). Furthermore, Latinos are more prone to negative mental health outcomes than their White counterparts. This study is expected to aid in understanding the factors that contribute to this disparity (Vega & Alegría, 2001). This study aims to investigate the mental health literacy of Latino parents and how this may be associated with their children's (ages 11-17) mental health status. Parents were recruited in-person through a Latino resource center. Parental mental health literacy was assessed through administering the Mental Health Literacy Scale (MHLS), a questionnaire consisting of 35 items to assess the levels of knowledge and types of attitudes people possess regarding mental health and mental illness (O'Connor & Casey, 2015). The mental health statuses of children were assessed through parents answering the Strengths and Difficulties Questionnaire, a 25-item questionnaire assessing various behavioral and emotional difficulties (Goodman, 1997). The bivariate correlations of the responses from 27 participants were analyzed to identify significant relationships. The results indicated a statistically significant inverse relationship between parental mental health literacy and their children's total difficulties score (r=-

.579, $p<0.05$). Thus, mental health literacy in Latino parents is associated with their perspective of their children's mental health outcomes.

Table of Contents

List of Tables

Preface

I would like to give a special thanks to my thesis advisor, Dr. Patricia Documet, for her guidance and mentorship throughout this research study, from translating the measures used in this study to providing me feedback on my study proposals. Additionally, I would like to thank my Bachelor of Philosophy thesis defense committee members, Dr. Mira Katz, Dr. Sharon Ross, and Dr. Diana Leyva, for their time and feedback on this thesis. Lastly, I would like to express my gratitude towards Casa San Jose, especially Ms. Jannette Castro and Ms. Monica Ruiz, for their assistance in organizing the participant recruitment process.

1.0 Introduction

1.1 Background & Significance

Having a good mental health status is an important contributor to one's wellbeing. The effects of having a poor mental health status range from poor productivity and trouble forming social relationships to more serious effects, such as mood disorders and suicidal ideation (Mayo Clinic, 2019; Paton, 2009). Additionally, mental illnesses that are left unrecognized and untreated can lead to various negative effects in the areas of employment, interpersonal relationships, and suicidality (McCraw et al., 2014; McLuckie et al., 2014). Thus, being mentally healthy is important for one to function to their fullest potential both in terms of their own life and the larger scheme of society.

Adolescence, the period between 10 and 24 years of age, is a developmental period that is characterized by an increased vulnerability to mental health problems, which can have long-lasting effects. In fact, 50% of adults who reported having a mental health condition during their lifetime experienced the first symptoms of these mental health conditions by the age of 14 (Kessler et al., 2005). An alarming number of adolescents are affected by mood and behavior disorders, with a study finding that 31.9% of adolescents reported having symptoms of anxiety disorders and 49.5% reported being affected by at least one form of mood or behavior disorder (Merikangas et al., 2010). Amid the ongoing COVID-19 pandemic, studies have found that adolescent mental health has further worsened as adolescents report their overall mental health faring worse after the pandemic compared to before it (Amran, 2022; Pons et al., 2020).

Amongst adolescents, Latinos face a higher risk for developing mental health-related problems. Comparatively, Latino youth are more likely to report feelings of sadness and

hopelessness than their White and Black counterparts in the United States (US) (Kann et al., 2018). With Latinos constituting the largest ethnic minority group in the US, the mental health of Latino adolescents poses a major public health concern (Colby & Ortman, 2015). As such, it is imperative to address the mental health-related needs of this group in order to remedy the mental health disparity affecting Latinos.

1.2 Mental Health Literacy

Adolescence is a critical period during which recognition and appropriate treatment of negative mental health symptoms can influence the trajectory of mental disorders that can potentially extend into the adult life. Related to the ability to recognize mental illnesses is mental health literacy, which refers to the knowledge one possesses about mental health which aids in the recognition of mental illness symptoms and engagement with appropriate help-seeking behaviors (Jorm et al., 1997). Help seeking behaviors refer to behaviors that promote the utilization of resources to find solutions or to cope with a recognized problem (Rickwood & Thomas, 2012). Engaging in help-seeking behaviors and utilizing professional mental health care can reduce long-term impacts of mental illnesses and can reduce the likelihood of developing more serious mental illnesses (Newman et al., 1996). Findings from studies in the scientific literature indicates that improving mental health literacy may assist in promoting help-seeking and self-help behaviors (Donovan et al., 2016; Jorm, 2012). Similarly, less fear of stigma and increased abilities in recognizing symptoms of poor mental health increases the likelihood of engaging in help-seeking behaviors (Skre et al., 2013).

It is possible that improving mental health literacy amongst parents can potentially improve the mental health outcomes of their children. Such a relation could occur through parents promoting help-seeking and self-help behaviors in their children or through early recognition and treatment of poor mental health symptoms. This is supported by evidence that help-seeking behaviors are often mediated through parents and teachers (Rothì & Leavey, 2006). Evidence also indicates that early recognition and treatment of mental illnesses creates positive effects in the trajectory of mental illnesses (Mental Health America, n.d.; Petito et al., 2020).

As a result, mental health literacy is an important social determinant of mental health to study that may aid in addressing the Latino mental health disparity, especially since it could have potential impacts on mental health outcomes in both parents and their children. Studies that have assessed mental health literacy in the Latino population have found that there is an increase in difficulties related to identifying mental health problems as well as increased levels of stigmas against mental illness and treatments in this group (Benuto et al., 2019; De Silva et al., 2020). Studies have reported that lower levels of mental health literacy and higher levels of stigma against mental health care may create barriers to both utilize mental health care as well to engage in help-seeking behaviors to address negative mental health symptoms (Cabassa, 2017; Jimenez et al., 2013). Increasing mental health literacy reduces the likelihood of tendencies towards stigmatizing mental illness (Jorm, 2012). Possessing stigmatizing attitudes against mental illness reduces one's likelihood of correctly identifying mental illnesses (Skre et al., 2013). Other studies on mental health perceptions amongst Latinos have found that attitudes towards mental health and symptoms of poor mental health differ from the perceptions of mental health and mental illness commonly found in Western cultures (Cabassa & Zayas, 2007; Lackey, 2008). Thus, it is important for mental health promotion efforts in the Latino population to be culturally competent and aware. There also

exists a lack of literacy with regards to health care providers and their abilities to recognize mental health problems in Latino patients, which could potentially be due to a lack of cultural competence (Van Voorhees et al., 2007). Latino mental health literacy has also been studied to be positively correlated with higher levels of education and English proficiency (Bauer, Chen, & Alegría, 2010; Cabassa, 2017; Lopez et al., 2018).

Though limited literature does exist that examines the levels of mental health literacy amongst Latinos, such studies do have limitations. For example, some studies use qualitative interviews for data collection, which tend to have lower levels of replicability (De Silva et al., 2020). Other studies only measure mental health literacy as it relates to depression, and thus are not able to assess the overall mental health literacy of participants (Benuto et al., 2019; Lopez et al., 2018). Furthermore, mental health literacy contains various components, such as knowledge of mental disorders, knowledge of treatments for mental disorders, and attitudes towards seeking treatments for mental illnesses. It is important to assess mental health literacy with regards to its various components in order to better inform any interventions on mental health literacy.

Given the evidence that mental health literacy is lower amongst Latino adults, this may have impact on the mental health outcomes of their children by preventing their access to treatments and delaying recognition of mental illness symptoms. Thus, parental mental health literacy presents a potential predictor of their children's mental health outcomes and consequently a potential social determinant to address in interventions aimed at improving Latino children's mental health outcomes.

1.3 Parental Influence on Children's Health & Mental Health

Children and adolescents are reliant on their parents in several aspects related to health and health care. For example, children rely on their parents to seek professional health care, interpret medication labels, and follow health professionals' recommendations from visits to providers. Furthermore, parents and caregivers who have difficulties understanding medication labels may also face difficulties giving the correct dose at the assigned time of the prescribed medications for their children (Weiss & Palmer, 2004). Such aforementioned health and help-seeking behaviors are related to health literacy, and many studies have found that health literacy in parents are associated with children's health outcomes (Bridges et al., 2014; DeWalt & Hink, 2009). Another study found that problem-focused coping, or seeking out resources to alleviate a problem, in parents is correlated with better child health outcomes (Smith, Brinkmann, & Schneiderman, 2015).

Parental health literacy is associated with engagement with preventative health behaviors for children. A study found that health knowledge and beliefs in parents correlated with preventative health behavior, such as the number of preventative care visits and adherence to a dietary regimen for obese children (Maiman et al., 1977). Lower levels of health literacy are correlated with poorer knowledge about preventative care and poorer access to preventative care services (Sanders et al., 2009). Additionally, parents with higher health literacy are more likely to have children with better outcomes from health promotion efforts (Sanders et al., 2009).

Children's health behaviors may also be influenced by their parent's health behaviors. A study reported that health behaviors of parents is correlated with several child health behaviors, including smoking (Dielman et al., 1982). A similar relation has been found regarding mental health, with a study reporting that caregiver's mental health is associated with children's mental

health outcomes (Panter-Brick, Grimon, & Eggerman, 2014). Parental health literacy may have an influence on the relation between parent's and children's health behaviors. Compared to parents with higher levels of health literacy, parents with low health literacy are more likely to have children with more negative health outcomes and are more likely to display behaviors that would disadvantage children's health outcomes (DeWalt & Hink, 2009). Specifically, parents with lower health literacy levels are 1.2 to 4 times more likely to engage in health behaviors that negatively impact children's health outcomes (Sanders et al., 2009).

There is limited literature that examines the relationship between parental health literacy and health behaviors and their children's health behaviors and health outcomes amongst the Latino population. A recent study found that higher levels of health literacy in Latino parents was correlated with more positive health outcomes for their children (Lee et al., 2020). Another study found that Latinos face more difficulties in managing medications compared to other ethnic and racial groups (Diaz et al., 2001). Similarly, Latino immigrant mothers are reported to have more difficulties in interpreting instructions, both in English and Spanish, for prescribed medications for their children (Leyva, Sharif, & Ozuah, 2005).

Though there is limited literature examining health literacy in the Latino population, there is still some evidence that Latino parental health literacy and other health-related behaviors is associated with children's health outcomes. Thus, it is possible that lower levels of mental health literacy amongst parents can pose barriers to accessing mental health care for their children as well as in recognition of symptoms of poor mental health, resulting in the poorer children's mental health outcomes that has been evidenced by previous literature.

1.4 Project Aims

This research study has two aims which attempt to answer the question of how mental health literacy in Latino parents may relate with mental health outcomes of their children. The first aim is to assess the knowledge and attitudes towards mental illness in Latino parents to gain an understanding of mental health literacy in this population. Mental health literacy was assessed in the areas of recognition of disorders, knowledge of how to seek mental health information, knowledge of risk factors and causes, knowledge of self-treatments, knowledge of professional help available, and attitudes promoting recognition and help-seeking. Thus, this study aims to provide more specific data on the mental health literacy of Latino adults. The second aim in this study is to assess the mental health status of children by examining behavioral and emotional difficulties they may possess, as reported by their parents.

The third aim involves assessing the potential relationship between knowledge and attitudes towards mental illness in Latino parents and the mental health outcomes of their children. Here, the relationship between the total scores and attributes of the parental mental health literacy and the children's mental health outcomes measures will be assessed. Specifically, this aim involves examining whether higher parental mental health literacy is associated with lower total difficulties score of children. Because previous studies have reported that higher levels of parental health literacy are associated with better health outcomes in children, it is hypothesized that higher Latino parental mental health literacy is associated with better mental health outcomes in children.

2.0 Methods

2.1 Participants & Procedure

The data for this study was compiled through administering a questionnaire in Spanish to Latino parents of one or more children between ages 11-17. The questionnaire examined demographic characteristics, mental health literacy of parents, and mental health status of children, as reported by their parents. Twenty-seven parents participated in this study (*M* parent age = 41.71 years, SD = 2.72 years; 66.67% female parents). Consequently, 27 children (*M* child age = 13.93 years, SD = 1.18 years; 51.85 % female children) were also assessed from the questionnaire responses of their parents. If the parent had more than one child in the 11-17 age range, the parent was asked to fill the questionnaire for the child with the most recent birthday. Of the parents that participated in the study, 33.33% had earned at least a bachelor's degree. Two additional parents had participated in the study but were excluded for the analyses due to missing data in their responses. Further demographic information for the 27 participants included in this study is presented in Table 1 and Table 2. The target participant number of 100 was not met due to difficulties in participant recruitment from the COVID-19 pandemic.

Responses for the questionnaires were gathered in the paper form, with the parent completing the questionnaire in Spanish. The questionnaire took approximately 15-20 minutes to complete. The researcher of this study administered the in-person surveys at Casa San Jose, a Latino resource organization in Pittsburgh. No identifiers were used to maintain the participants' anonymity. Eligibility for this study consisted of an age over 18, identification as Latino, and having a child between ages 11 and 17. The researcher recruited participants through asking whether they would like to participate in this study as they were waiting in the office for other

appointments. The researcher transferred the data from the in-person, paper questionnaires to a password-protected Qualtrics online database. For the in-person questionnaire, the researcher read a script in Spanish to parents, which included an overview of the activities and purpose of the study for informed consent, followed by asking if they would like to participate in this study. Then, the researcher read the questions to the participants.

Table 1. Sociodemographic Characteristics of Parents in Sample, N=27

Sociodemographic Variable	n	Percent of Total
Gender		
Female	18	66.67
Education		
College Degree	9	33.33
Employment Status		
Paid Employment	15	55.56
Household Income		
Yearly Household Income Below $34,999	14	51.85
Marital Status		
Married/In a Relationship	22	81.48
Country of Origin		
Mexican	15	55.56
South American	10	37.04
Central American	2	7.40

Table 2. Sociodemographic Characteristics of Children in Sample, N=27

Sociodemographic Variable	n	Percent of Total
Gender		
Female	14	51.85
Country of Origin		
United States	19	70.37
South American	5	18.52
Mexican	3	11.11

2.2 Measures

2.2.1 Demographic Characteristics Questions

The demographics questions were based on questions used in previous studies by Dr. Documet and Dr. Ross as well as questions from the Spanish version of the 2018 Behavior Risk Factor Surveillance System questionnaire by the Centers for Disease Control and Prevention (CDC, 2018; Ross et al., 2018). Some questions were also researcher-developed to inquire about the number of children in the household as well as demographic characteristics of children, such as age and gender. There was a mix of open questions and closed questions. Questions inquired about demographics related to the parent, which included age, gender, years of residence in US, birthplace, place of upbringing, race, ethnicity, education, marital status, members in the household, income, employment, and number of children. Some questions also inquired about demographics related to the child for whom the mental health outcomes measure was completed. These questions asked about the child's age, gender, years of residence with the parent, and years of residence in the US.

2.2.2 Mental Health Literacy Scale

To assess mental health literacy, the Mental Health Literacy Scale (MHLS) by O'Connor and Casey (2015) was translated into Spanish and then utilized in this study. Translation of the MHLS was conducted by the researcher and the advisor of this project. The question translations attempted to give the closest possible translation in Spanish to the original English questions. The scale includes 35 items and six attributes to assess for knowledge and attitudes towards mental

health, treatments, and help-seeking behaviors. The six attributes are the ability to recognize disorders (items 1-8), knowledge of where to seek information (items 17-20), knowledge of risk factors and causes (items 9-10), knowledge of self-treatment (items 11-12), knowledge of professional help available (items 13-16), and attitudes that promote recognition or appropriate help-seeking behavior (items 21-35). The questions had 4- or 5-point Likert-type scale response options ranging from very unlikely to very likely, very unhelpful to very helpful, strongly disagree to strongly agree, and definitely unwilling to definitely willing. In the aforementioned response ranges, the former option was assigned one point and the latter option was assigned four or five points, depending on the number of response options in that question. Questions 10, 12, 15, and 20-28 were reverse scored. A change from the original questionnaire that was included was a response option of "I do not know what __ is," which was assigned a score of zero. This response option was included for questions 1-8 and 13. Additionally, in questions 9 and 10 "Australia" was changed to the "United States." The scores of the MHLS were calculated by averaging the numbers assigned from the participant's response, with the total scores ranging from 26 to 160. Higher scores indicate higher levels of mental health literacy. The scores were also found in a similar manner for each attribute in this measure.

The MHLS is reported to be psychometrically strong with a high internal consistency (Cronbach's alpha=.873) (O'Connor & Casey, 2015). The measure is also reported to have a good reliability, as indicated by the test-retest results ($r=.797$, $p<.001$). The scale authors reported finding a wide variability in resulting scores of the MHLS, which is indicative of the scale's sensitivity and ability to detect differences between participants of a sample. However, this scale has not been validated for use in Latino families and no pilot testing was conducted. The Cronbach's alpha was .56 for the study sample.

2.2.3 Strengths & Difficulties Measure

To assess the mental health statuses of children, the strengths and difficulties questionnaire (SDQ) was completed by parents for their children. (Goodman, 1997). This measure has been widely utilized to assess positive and negative aspects of a child's behavior with respect to the five attributes of emotional symptoms, conduct problems, hyperactivity/inattention, peer relationship problems, and prosocial behavior. Each attribute included five close ended questions with the response options of Never = 0, Somewhat True = 1, or Certainly True = 2. The total difficulties score is calculated by summing the points assigned to all the items except for those of the prosocial behavior attribute. The minimum total difficulties score is 0 and the maximum score is 40. Total difficulties scores 17 and above are considered abnormal, and scores 13 and below are considered normal. For each of the attributes, scores 5 and above for emotional symptoms, 4 and above for conduct problems, 7 and above for hyperactivity/inattention, 4 and above for peer relationship problems, and 4 and below for prosocial behavior are considered abnormal. This measure has been validated with Latino children.

2.3 Data Analysis

The scores from the MHLS and SDQ of the 27 participants were analyzed by finding the mean, standard deviation, maximum, and minimum. To investigate the relationship between mental health literacy in Latino parents and their children's mental health outcomes, the two-tailed Pearson correlations between MHLS scores and total difficulties scores form the SDQ as well as their attributes were calculated to identify any significant relationships. The data for both the MHLS and SDQ followed an approximately normal distribution. The skewness and kurtosis for

the MHLS were -.76 and -.49, respectively. The skewness and kurtosis for the SDQ were .05 and .11, respectively. A result was considered statistically significant if the results demonstrated a p-value less than .05, .01, or .001 ($p<.05$, $p<.01$, $p<.001$) at a significance level of .05.

3.0 Results

3.1 MHLS and SDQ Raw Scores

Descriptive statistics for the total MHLS and SDQ as well as the attributes in each measure are presented in Table 2. The average score on the MHLS for the participants was 110.18 (SD=16.97), and the average total difficulties score on the SDQ was 4.36 (SD=3.19).

3.2 Association Between Parental Mental Health Literacy and Children's Mental Health Outcomes

Correlations were found for the total scores and attributes of the MHLS and SDQ are presented in Table 2. The results indicated that there is a significant inverse relationship between overall MHLS score and child total difficulties score ($r=-.58$, $p<.05$). There was also significant correlations between overall MHLS score and child hyperactivity/inattention ($r=-.62$, $p<.001$), overall MHLS score and child peer relationship problems ($r=-.40$, $p<.05$), ability to recognize disorders and child total difficulties score ($r=-.55$, $p<.01$), ability to recognize disorders and child hyperactivity/inattention ($r=-.47$, $p<.05$), knowledge of risk factors and causes and child emotional symptoms ($r=-.38$, $p<.05$), knowledge of professional help available and child total difficulties score ($r=-.38$, $p<.05$), knowledge of professional help available and child hyperactivity/inattention ($r=-.52$, $p<.01$), knowledge of where to seek information and child conduct problems ($r=-.51$, $p<.01$), attitudes that promote recognition or appropriate help-seeking behavior and child total difficulties score ($r=-.43$, $p<.05$), attitudes that promote recognition or appropriate help-seeking behavior and child hyperactivity/inattention ($r=-.58$, $p<.01$), attitudes that promote recognition or

appropriate help-seeking behavior and child peer relationship problems ($r=-.46$, $p<.05$). Of these relationships, the relation between total MHLS score and child hyperactivity/inattention was the most significant with a p value less than .001 ($r=-.62$, $p<.001$). The MHLS attribute that had the most number of significant relationships with attributes of the SDQ was attitudes that promote recognition or help-seeking behavior, which was significantly correlated with hyperactivity/inattention and peer relationship problems.

Table 3. Descriptive Statistics and Bivariate Correlations for All Study Variables, N=27

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13
1 Overall Parent Mental Health Literacy	1												
2 Ability to Recognize Disorders	***0.83	1											
3 Knowledge of Risk Factors and Causes	0.10	0.16	1										
4 Knowledge of Self-Treatment	**-0.53	**-0.57	-0.21	1									
5 Knowledge of Professional Help Available	*0.45	0.16	*0.38	0.16	1								
6 Knowledge of Where to Seek Information	*0.43	*0.46	*0.47	*-0.46	0.17	1							
7 Attitudes That Promote Recognition or Appropriate Help-Seeking Behavior	***0.91	**0.58	-0.11	**-0.48	*0.39	0.17	1						
8 Total Difficulties Score	*-0.58	**-0.55	-0.17	0.18	*-0.38	-0.36	*-0.43	1					
9 Child Emotional Symptoms	-0.28	-0.31	*-0.38	0.00	-0.34	-0.36	-0.10	***0.80	1				
10 Child Conduct Problems	-0.05	-0.34	-0.19	0.06	0.21	**-0.51	0.22	*0.46	*0.38	1			
11 Child Hyperactivity/Inattention	***-0.62	*-0.47	-0.06	0.20	**-0.52	-0.17	**-0.58	***0.81	**0.48	0.20	1		
12 Child Peer Relationship Problems	*-0.40	-0.24	0.18	0.11	-0.21	0.01	*-0.46	***0.66	0.29	0.00	**0.51	1	
13 Child Prosocial Behavior	0.22	0.19	0.01	-0.15	0.02	0.12	0.20	***-0.69	**-0.57	-0.32	-0.37	***-0.72	1
Mean	110.18	14.89	5.11	5.25	9.71	15.86	59.36	4.36	1.71	0.71	1.04	0.75	8.89
SD	16.97	7.04	0.50	1.35	1.36	2.29	11.17	3.19	1.21	0.85	1.35	1.14	2.02
Min	77	3	4	3	8	13	40	1	0	0	0	0	1
Max	125	22	6	8	12	20	71	17	5	2	5	5	13

4.0 Discussion

This study aimed to assess the knowledge and attitudes regarding mental health and help-seeking behaviors in Latino parents and their children's mental health outcomes. Additionally, the study aimed to investigate the relationships between all the attributes of the measures in the study, which included ability to recognize disorders, knowledge of risk factors and causes, knowledge of self-treatment, knowledge of professional help, knowledge of where to seek information, and attitudes that promote recognition or appropriate help seeking behavior in parents, along with emotional symptoms, conduct problems, hyperactivity/inattention, peer relationship problems, and prosocial behavior in children. Although studies have identified relationships between health literacy and children's health outcomes, there is limited literature on the relation between mental health literacy and children's mental health outcomes. Furthermore, studies examining this relationship in the Latino population are limited. The hypothesis of this study was that higher scores on the MHLS would be associated with better mental health outcomes for children, as indicated by lower total difficulties scores on the SDQ. The results of this study found a significant inverse relationship between MHLS scores and total difficulties scores on the SDQ ($r=-.579$, $p<.05$) and support the hypothesis.

Such a relationship could potentially be explained by an increased likelihood of parents with higher mental health literacy levels to seek professional mental health care or to promote engagement in help-seeking behaviors for their children. Previous studies with non-Latinos found that a similar relationship exists between parental health literacy levels and increased engagement in preventative health care services and preventative health behaviors (Maiman et al., 1977; Sanders et al., 2009). This hypothesis is supported by the fact that other than the total MHLS score,

the attitudes promoting recognition or appropriate help seeking behavior attribute of the MHLS had the highest number of significant relationships to SDQ attributes. This suggests that attitudes towards help-seeking behaviors in Latino parents may be a significant predictor of children's mental health outcomes. Possessing more positive attitudes towards help-seeking behaviors may increase the likelihood that parents access appropriate treatments and services for instances of poorer mental health in children. However, more research into this potential mediating factor must be conducted in order to understand whether access and engagement with mental health-related treatments and services plays a role in the identified relationship between parental mental health literacy and children's mental health outcomes.

Additionally, a significant inverse relationship was found between ability to recognize disorders attribute of the MHLS and total difficulties score of the SDQ. This relationship could be potentially explained by an increased ability to recognize symptoms of poor mental health outcomes leading to an early recognition of potential mental health problems. Studies have indicated that early recognition of mental health problems leads to better long-term outcomes of the condition (Mental Health America, n.d.).

The study findings demonstrate that mental health literacy in Latino parents (M=110.18, SD=16.97) is lower compared to scores on the MHLS in a majority Caucasian sample (M=127.28, SD=12.63) (O'Connor & Casey, 2015). Such findings are consistent with previous studies that have found lower mental health literacy in Latino groups compared to other racial and ethnic groups (Kutner et al., 2006; Lee et al., 2020). The total difficulties score in this study was lower (M=4.36, SD=3.19) than that of a nationally representative American adult sample (M=7.1), indicating that Latino children in this sample have better mental health outcomes than the national average. Such findings are inconsistent with previous literature which has found that Latino

children tend to present with poorer mental health outcomes than their White counterparts. This could potentially be explained by response bias where participants may not have responded honestly about their children's behaviors. Furthermore, Latinos have been reported to deemphasize or avoid mentioning symptoms related to poorer mental health due to fear of discrimination related to possessing a mental condition (Leung et al., 2014).

The strengths of this study include utilizing a true community group for the sample, since many studies recruit participants through clinical settings (Benuto et al., 2019; Lopez et al., 2018). Thus, having this community-based sample was a strength of this study. Additionally, the participants were not necessarily parents of children with diagnosed mental illnesses. Thus, mental health literacy assessed in this study is less likely to be influenced by knowledge about mental health obtained through having a child diagnosed with a mental illness. Lastly, through using the MHLS to assess mental health literacy, various components of literacy were able to be analyzed as it applies to mental health generally.

4.1 Limitations

One limitation in this study was the limited sample size consisting of 27 participants. The statistical significance of the results from the study could be improved if a larger sample size was utilized. This would then allow for greater reliability of the results in terms of assessing the relationship of knowledge and attitudes of Latino parents and their children's mental health outcomes in this population. The sample participants were recruited through Casa San Jose, which could potentially represent a biased group, and only a third of parents received a college education. Thus, the sample in this study was not representative of the Latino population as a majority of

participants were recruited from a resource organization. The MHLS has been validated for use in samples of white individuals. However, it has not been validated for use in Latino samples or translated to Spanish before, which poses as another limitation. Thus, it is possible that the language of the Spanish-translated MHLS may be complex for Latino populations which can have lower literacy rates. The SDQ has been validated to measure socioemotional behavior in children. However, the validity of this measure in assessing children's mental health outcomes can be called into question even though this measure as been widely utilized as a measurement of mental health outcomes of children. For example, item 3 in the SDQ inquires about the frequency of symptoms, such as headaches, which are more directly related to physical illnesses. Some questions also inquire about behaviors that are already expected in adolescents, such as losing temper (item 5). Some questions also inquire about antisocial behavior, such as stealing (item 22). Due to time constraints in obtaining institutional review board (IRB) approval, the study design solely utilized questionnaire responses from parents and refrained from including the vulnerable population of children. There is a possibility that parents are not able to accurately assess their children's mental health outcomes, which could possibly be tied to inability in recognizing poor mental health symptoms. Furthermore, it is possible that response bias could have interfered with the results of the study, where parents potentially answered dishonestly due to perceptions of them.

4.2 Conclusions & Implications

Although a significant relationship was identified between Latino parental mental health literacy and children's mental health outcomes, further studies are needed to increase the validity of the data. Additionally, further studies are needed to determine if there is causality between these

two variables. However, despite the limitations, this study supports that improving parental mental health literacy amongst Latinos through interventions may help improve children's mental health outcomes

Appendix A Permission Letters

From: MAL319@pitt.edu (Madhura Leninkannan)
To: m.oconnor@stpeters.qld.edu.au (Matt O'Connor)
Subject: Permission for MHLS

Dear Dr. O'Connor:

I am completing a thesis at the University of Pittsburgh entitled "The Association of Mental Health Literacy in Latino Parents and Mental Health Outcomes in Their Children."

I would like your permission to use material from your work and translate it to Spanish, specifically the Mental Health Literacy Scale (https://www.sciencedirect.com/science/article/pii/S0165178115003698?via%3Dihub#!). I believe you are the copyright owner and can grant this permission, but if that is not correct, please let me know who owns copyright so that I can pursue this question with the right person.

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Sincerely,

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Interdisciplinary Studies | Class of 2022
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From: m.oconnor@stpeters.qld.edu.au (Matt O'Connor)
To: MAL319@pitt.edu (Madhura Leninkannan)
Re: Subject: Permission for MHLS

Thank you very much for your interest in the MHLS, it is always a pleasure to hear from a researcher with a similar interest in this area. You are welcome to use the MHLS for your research

For the questions relating to Australia, we have been suggesting that researchers look at population level data for their country and modify the answer accordingly. In addition, given the changes in the DSM 5, we are suggesting that you modify:

Q5 to: To what extent do you think it is likely that **Persistent Depressive Disorder** (Dysthymia) is a disorder
Q8 to: To what extent do you think it is likely that the diagnosis of **Substance Abuse Disorder** can include physical and psychological tolerance of the drug (i.e., require more of the drug to get the same effect)

Please keep me updated on your research as we would be interested to hear how it progresses

From: MAL319@pitt.edu (Madhura Leninkannan)
To: support@youthinmind.com
Subject: SDQ Permission

Hello,

I am an undergraduate student at the University of Pittsburgh and I am conducting a study on the association between mental health literacy in parents and their children's mental health outcomes. Would I be able to have permission to use the Spanish version of the SDQ for this study? The study will not be charging any participants.

Thanks,

Madhura Leninkannan
University of Pittsburgh
Dietrich School of Arts & Sciences
Interdisciplinary Studies | Class of 2022
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From: support@youthinmind.com
To: MAL319@pitt.edu (Madhura Leninkannan)
Re: Subject: SDQ Permission

Dear Madhura,

Thank you for your interest in the SDQ.

If you want to collect data using the paper questionnaires (pen and paper method), you are welcome to download them from our website, exactly as found on our website:https://sdqinfo.org/py/sdqinfo/b0.py

we recommend that you register for scoring paper versions of the SDQ directly via this email: sdqplus@youthinmind.com

Our online scoring is not free (US$ 0.25 per SDQ scored) but tried and tested, with a track record of accurately scoring well over half a million SDQs per year. We don't recommend hand scoring: it is prone to human error and generates an inferior report.
For more information see: https://admin.sdqscore.org

If you want to administer the SDQ electronically, then I need to let you know that all computer processed use or conversion of the SDQ is subject to a license or fee. Our online systems do support online SDQ completion and scoring for a fee of US$ 0.25 each. These electronic systems permit export of data and we are responsible for security and operations. If you want to register for our online system for administering and scoring of the SDQ please email directly: sdqplus@youthinmind.com

Developing the SDQ yourself electronically/online is also an option but it is more expensive, you would need to buy a license from us and we would need to review your electronic/online version of the SDQ before you are authorized to use it.

We think it would be better if you use our online system which is more reliable and costing less.

Please let us know if you need further clarification but if you wish to use our standard online system, recommended by us,
please email directly: sdq.scoring@gmail.com

Best wishes,
Helena Hamilton
Youthinmind

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