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Religiosity and Parents' Willingness to Medicate Children with Psychotropics

A dissertation submitted in partial satisfaction of the
the requirements for the degree Doctor of Philosophy
in Social Welfare

by

Sergio Rizzo-Fontanesi

2015

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ABSTRACT OF THE DISSERTATION

Religiosity and Parents' Willingness to Medicate Children with Psychotropics

by

Sergio Rizzo-Fontanesi

Doctor of Philosophy in Social Welfare

University of California, Los Angeles, 2015

Professor David Cohen, Chair

This study uses secondary data analysis of random digit dialed telephone interviews with 1,080 Black, Latino, and White parents living in two South Florida counties to test the predictive and mediating effects of parents' religiosity in their willingness to medicate children with psychotropics for behavioral and emotional problems. Ordinary least squares multivariate regression was used to test if frequency of religious service attendance and congregational membership were associated with parents' willingness to medicate children, and if these associations were moderated by parents' race/ethnicity. A path analysis was used to test if congregational comfort mediated the association between parents' race/ethnicity and their willingness to medicate children. Perceived benefits of psychotropics, perceived treatment stigma, and child's use of psychotropics were entered as control variables in the analysis. Frequency of religious service attendance was not significantly associated with parents' willingness to medicate children, and congregational comfort did not mediate the association between race/ethnicity and willingness to medicate children. Parents who have a congregation were significantly more likely to medicate their children compared to parents who do not have a

congregation, but the association was not moderated by race/ethnicity. The findings provide some evidence for how congregations may influence parents with respect to mental health treatment willingness for children. Implications for the study of religiosity with respect to mental health, and its associated challenges, are discussed.

The dissertation of Sergio Rizzo-Fontanesi is approved.

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2015

Dedication

I dedicate this dissertation to the beloved memories of my grandfather Sergio and aunt Sandra. Their love of history and literature has inspired my intellectual journey.

And to my mother Virginia and grandmother Maria Antonia: without your unceasing love, support, and presence, neither this dissertation, nor my education, would have been possible.

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Chapter 1: Introduction

Brief History of Research on Religiosity and Mental Health

Research and practice at the crossroads of religiosity – i.e., the multidimensional construct of the relationship between individuals and their notions of the sacred – human behavior, mental health, and social processes have gone in and out of favor at different historical junctures. On the one hand, religiosity is interwoven with eminent psychological and social theories. William James argued that religiosity is an essential component in understanding the whole person, and Emile Durkheim conceptualized religiosity as a critical part of the social and economic upheavals of the late 19th century (Hill et al., 2000). Moreover, religious institutions and clergy have historically acted as primary care providers for those with what is now commonly called mental illness (Koenig, 2005, 2008_a). On the other hand, with the advent of psychiatry as a medical specialty, the modern conceptualization of mental illness was born, to which psychiatrists and clergy responded with dissimilar interpretations and goals (Abbott, 1980). Psychiatrists viewed these problems as medical dysfunctions, and pursued to ‘treat’ them as such through bodily interventions. Religious clergy, at least those from the Protestant tradition, sought the salvation of souls, and interpreted these life experiences as “vehicles to salvation” (Abbott, 1980, p. 167). The rupture between religiosity and mental health crystalized when the French neurologist, Jean-Martin Charcot, and Sigmund Freud, argued that religious belief was associated with hysteria and neurosis (Charcot, 1882; Freud, 1927 as cited in Dein, 2010), a perspective that has also been called the *Freud versus God debate*, and reflects the conflicting vistas of psychoanalytic theory and Christian theology that dominated this narrative throughout the first half of the 20th century (Blazer, 1998). As late as 1980, Albert Ellis, the founder of rational emotive therapy, wrote that “...religiosity, therefore, is in many respects

equivalent to irrational thinking and emotional disturbance...the less religious (people) are, the more emotionally healthy they will tend to be” (Ellis, 1980, p. 637). As a whole, psychiatry has typically dismissed the importance of religious beliefs and practices, has interpreted religious experiences as pathology, and has been unclear as to how to integrate religious beliefs and practices into therapy, all of which have collectively led to a pessimistic view of religiosity, and a dearth of research on its relationship to mental health (Lukoff, Lu, & Turner, 1992; Crossley, 2005; Koenig 2008_a; Dein, 2010).

More recently, however, this impasse has begun to break apart, and a more accepting perspective of religiosity has emerged, with research in social work (e.g., Cnaan, Wineburg, & Boddie, 1999; Tirrito & Cascio, 2003), psychology (e.g., Pargament, 1997), and public health (e.g., Koenig_b, 2008; Koenig, King, & Carson, 2012) exploring the diverse ways that religiosity influences and shapes complex human and social processes. In spite of this resurgence of interest, religiosity has been neglected in the specific field of parents’ willingness to medicate children with psychotropics for behavioral and emotional problems.

Scope of Parents’ Willingness to Medicate Children with Psychotropics

Parents’ willingness to medicate children with psychotropics is complex. Some research suggests that, on average, the U.S. public is skeptical about medicating children with psychotropics for various behavioral or emotional problems (McLeod, Pescosolido, Takeuchi, & White, 2004). Similar findings suggest that U.S. adults perceive medicating children with psychotropics as leading to greater stigma towards the child, and that children are overmedicated with psychotropic drugs that have potentially long-term negative effects on development (Pescosolido, Perry, Martin, McLeod, & Jensen, 2007).¹ Other research suggests that

¹ Latinos were underrepresented in McLeod et al. (2004) and Pescosolido et al. (2007).

racial/ethnic differences exist in parents' willingness to medicate children. Schnittker (2003) found in a probability U.S. sample that Black adults were significantly less willing to medicate children with psychotropics compared to White adults. Conversely, Cohen, Dillon, Gladwin, & De La Rosa (2013) found in a probability sample of South Floridian parents that Latinos were less willing than Whites to medicate children with psychotropics, as were Latino parents who requested the interview in Spanish compared to those who requested it in English. In a smaller, non-probability sample, Pham, Carlson, and Kosciulek (2010) also found that Black and Latino parents (combined) were less willing to medicate children compared to White parents for Attention Deficit-Hyperactivity Disorder (ADHD). Moreover, a handful of qualitative studies show that Latino parents, mothers in particular, have reservations and concerns about medicating children with psychotropics for ADHD (Arcia, Fernández, & Jáquez 2004; Leslie, Plemmons, Monn, & Palinkas, 2007; Perry, Hatton, & Kendall, 2005).

A number of variables have been proposed in the literature as predictors of parents' willingness to medicate children with psychotropics. These include: child's gender (Gardner, Pajer, Kelleher, Scholle, & Wasserman, 2002), parents' race/ethnicity (Schnittker, 2003; Cohen et al., 2013), adults' trust in personal physicians and willingness to medicate themselves (McLeod et al., 2004), attitudes toward psychotropics (Schnittker, 2003; McLeod et al., 2004), stigma of treatment (Pescosolido et al., 2007), and lay causal beliefs about childhood problems (Pham et al., 2010). Some of these predictors have also been conceptualized as possible mediating variables for the observed racial/ethnic differences in parents' willingness to medicate children. Few studies, however, have tested these variables using formal mediation analysis (for an exception, see Cohen et al., 2013). Moreover, the possible influence of religiosity has received negligible attention despite speculation that it may predict willingness to use

psychotropics (and other forms of specialty mental health care/treatment/services, i.e., deliverables or goods provided by licensed professionals, such as clinical social workers, psychologists, and psychiatrists) and may partly explain racial/ethnic differences in such willingness (Kouyoumdjian, Zamboanga, & Hansen, 2003; Schnittker, 2003; McLeod et al., 2004; Cohen et al., 2013).

The potential influence of religiosity in parents' willingness to medicate children with psychotropics is worthy of investigation. Contrary to speculation that modernity and secularization would be met with a decline in religiosity (Graham, 1992), religion remains a common practice in daily American life, and an important factor in the provision of mental health care and psychological coping. For example, most of the U.S. population identifies with a major world religion: 78.4% identify with various Christian denominations, 1.7% identify as Jewish, 0.7% identify as Buddhist, 0.6% identify as Muslim, and 0.4% identify as Hindu (Pew Forum on Religion & Public Life, 2008). Moreover, in a 2009 Gallup poll, 41.6% of Americans said they attended a church, synagogue, or mosque once a week or almost every week (Newport, 2010). While these religious practices are observed across the U.S. population, additional evidence suggests that Blacks report more formal (e.g., attending religious services) and informal (e.g., reading religious books) religious participation and self-identified religiosity (e.g., importance of religion in one's life) compared to Whites (Chatters, Taylor, Bullard, & Jackson, 2009), and that Blacks and Latinos generally self-identify as more religious than Whites (Newport, 2011).

Religious clergy and coping are also important points of contact and resources for individuals experiencing various states of distress. A study based on the National Comorbidity Survey (NCS) found that from 1986 to 1991, nearly a quarter (23.5%) of the U.S. population

with variously classified mental disorders first contacted clergy for treatment (Wang, Berglund, & Kessler, 2003). Kane and Williams (2000) found in a purposive sample of 473 Catholics living in South Florida that Latino Catholics preferred to speak with a priest or a priest with professional training for various hypothetical problems when compared to White Catholics who preferred to speak with a mental health professional. Research also has documented the versatile and unique role of Black ministers and fellow church members in providing care and social support to Black parishioners with serious personal crises (Neighbors, Musick, & Williams, 1998; Taylor, Ellison, Chatters, Levin, & Lincoln, 2000; Chatters, Taylor, Lincoln, & Schroep, 2002; Chatters et al., 2011). Black churches have also been observed to provide a wide array of services to its parishioners. In a random sample of 269 urban and rural churches in the southern United States, Blank, Mahmood, Fox, and Guterbock (2002) found that irrespective of location, Black churches offered more supportive programs for adults, adolescents, and children compared to White churches.

Study Overview and Purpose

Religiosity has been neglected in the specific field of parents' willingness to medicate children with psychotropics. This study bridges this gap by testing religiosity as both predictor and mediating variables in parents' willingness to medicate children with psychotropic drugs for the management or treatment of children's behavioral and emotional problems (hereon referred to as willingness to medicate children with psychotropics). In this study, religiosity is explored in two capacities. The first objective is to understand if, and how, religiosity predicts willingness to medicate children with psychotropics, and if (parents') race/ethnicity moderates this association. The second objective is to test religiosity as a mediating variable between race/ethnicity and willingness to medicate children with psychotropics.

Organization of the Dissertation

Chapter 1 has provided a brief overview of the history of religiosity and mental health research, the scope of parents' willingness to medicate children with psychotropics, and the present study's overview and purpose. Chapter 2 begins with a brief review of how the primary constructs in this study are conceptualized. This is followed by a review of the literature on the studies that have examined the links between religiosity and willingness or actual use of psychotropics², and racial/ethnic differences in use of psychotropics or prescriptions among U.S. youth. Chapter 3 explains the guiding theoretical perspectives, reviews the gaps in the extant literature, and presents the research questions, hypotheses, and conceptual models. Chapter 4 discusses the sample and data collection methods, participants and procedures, and describes the measurement of the variables. Chapter 5 presents the results for each of the research questions. Chapter 6 discusses the findings, social work implications, limitations, and directions for future research.

² The distinctions between willingness to use, actual use of, and prescriptions of psychotropics are explained in the Literature Review.

Chapter 2: Literature Review

Conceptualization of Primary Constructs

A few key terms used throughout this study require initial clarification.

The measurement of these constructs is further explained in the Methods section.

Willingness to Medicate Children with Psychotropics

This study does not measure actual or reported use of psychotropics; it measures willingness to medicate children with psychotropics. The distinction matters because what people say they might do when faced with a future choice may differ from what they actually decide (Chang, Lusk, & Norwood, 2009). Therefore the present study does not seek to predict decision-making but rather to better understand how parents assess their likelihood of using psychotropics should their child experience a behavioral or emotional problem. This study attempts to model what parents might do in such a situation, while of course acknowledging that parents' actual decisions will vary given the complex amalgam of influences on parents in reality. Any statistically significant findings in the present study between religiosity and parents' willingness to use psychotropics are contextualized within the boundaries of hypothetical vignettes.

Religiosity, Religious Behavior, and Congregational Comfort

The resurgence of religiosity and mental health scholarship has not reduced methodological difficulties. One of the most prominent challenges consists in conceptualizing and measuring the construct of religiosity. Research on religiosity inevitably leads to the thorny issue of how to distinguish it from spirituality (Koenig, 2008_b). Hill and colleagues (2000) write, "both spirituality and religion (religiosity) are complex phenomena, multidimensional in nature, and any single definition is likely to reflect a limited perspective or interest" (p. 52). Indeed,

despite much research on operationalizing these constructs, there is no standard conceptualization. The debate among researchers as how to operationalize these constructs is further augmented by everyday parlance where spirituality has increasingly come to replace the state of being religious in Western society (Hill et al., 2000).

Religion, and its derivatives, e.g., religiosity, religious, religiousness, have been the standard terms used by social scientists studying religiosity across a number of domains. In this study, the term religiosity is chosen for convenience, but any of the other aforementioned terms are also suitable. More recently, with the rise of secularism and the growing disillusionment with organized religion, spirituality has emerged as a rival term (Hill et al., 2000). Pargament (1999) argues that religiosity³ and spirituality are at times used interchangeably, and at times purposefully to contrast their purported differences. In contemporary studies, religiosity is sometimes conceptualized “as the organizational, the ritual, and the ideological” whereas spirituality “refers to the personal, the affective, the experiential, and the thoughtful” (Pargament, 1999, p. 6). Yet, Hill et al. (2000) and Pargament argue that the polarization of religiosity and spirituality in research ignores that as much as religiosity may be institutional, it is also explicitly concerned with the individual. Almost every major world religion is concerned with bringing individuals closer to God or some higher power (Carroll, Dudley, & McKinney, 1986 as cited in Pargament, 1999). Furthermore, Hill et al. and Pargament argue that both spirituality and religiosity occur within a social context. Spirituality is no more exclusively an individual experience than religiosity is purely an institutional one. Religiosity is as concerned with rituals, sacred texts, and institutions as it is with the individual’s spiritual journey. Moreover, spirituality is experienced within the social context of an individual’s life, culture, beliefs, and at times with

³ Pargament (2000) uses “religion”.

an affiliation to an organized religion. According to this line of thought, religiosity and spirituality are complementary, not distinct constructs. This line of thought informs the present study, and no conceptual distinction is made between religiosity and spirituality.

In this study, two dimensions of religiosity are explored: religious behavior (i.e., frequency of religious service attendance and congregational membership) and congregational comfort, with respect to their influence in willingness to medicate children with psychotropics. The details of how these constructs are measured are explained in the Methods section. For now, it suffices to describe religious behavior as a dimension of religiosity consisting of public practices that include religious services attendance and congregational membership. These activities are behavioral not attitudinal processes (Idler et al., 2003), institutionally based, and reflect the complex interactions between individuals and their association to a religious institution. Frequency of religious service attendance is one of the most frequently used measures of religiosity, but has generated vigorous debate as to what it actually signifies (Hall et al., 2008). Conversely, congregational comfort reflects the social support that is provided to members of religious congregations via the social support networks established through religious participation. More specifically, congregational comfort is the anticipation that membership in a religious organization “carries with it the implicit promise that members of the religious community will provide help in the future if it is needed” (Idler et al., 2003, p. 343).

Race, Ethnicity, Black, Latino, and White

The deconstruction of race has an important place in social science literature (for reviews, see: Jones, LaVeist, & Lillie-Blanton, 1991; Williams, 1994; Yee, Fairchild, Weizmann, & Wyatt, 1993). The overwhelming consensus among social scientists today is that racial categories are socially created and change depending on historical and political contexts – they

are not natural biological classifications – although their continued use can allude to antiquated and misguided beliefs about biogenetic differences among different groups of people (Dressler, Oths, & Gravlee, 2005). While no definition of race meets with universal agreement (Okazaki & Sue, 1995), race is typically defined by respondents' self-identification and skin color (Braun et al., 2007) and reflects lived experience (Goodman, 2000).

Ethnicity, which is often used interchangeably with race, and may refer to groups that share a common language, culture, or nationality (Bentancourt & López, 1993). In the United States, and specifically in the U.S. Census, race, and Hispanic, Latino, or Spanish ethnicity, are differentiated, with the former term referring to five broad racial categories: (1) White, (2) Black or African American, (3) American Indian or Alaska Native, (4) Asian, (5) Native Hawaiian or Other Pacific Islander, (or “some other race”), and the latter terms referring to “a person of Cuban, Mexican, Puerto Rican, South or Central American, or other Spanish culture or origin regardless of race” (Humes, Jones, & Ramirez, 2011, pp. 2-3). The U.S. Census has distinguished race from Hispanic, Latino, or Spanish ethnicity since 1980, although this distinction has been met with confusion by self-identified Hispanics/Latinos who choose not to report a race or overwhelmingly select “some other race” (Cohn, 2010; Krogstad & Cohn, 2014).

In this study, race and ethnicity are treated in the aggregate. Individuals from diverse backgrounds are collapsed under the broad terms non-Latino Black, Latino (any race), and non-Latino White (hereon referred to as Black, Latino, and White). Black is chosen over African American because it is not known whether all parents who identify as Black in this study also identify as African American. Latino is chosen as a term of convenience, although other terms, such as Hispanic, are equally acceptable and reflect the complex history of peoples who identify with these labels based on ethnicity, culture, language, nationality, or history (Garcia, 2000). In

the present study, Latino parents include individuals born in geographic areas comprising, but not limited to, Latin America, the Caribbean, and Europe. White is a catchall term used to describe a heterogeneous group of peoples. This term also fails to account for ethnic and cultural diversity, and in practice is used as a racial category for individuals from European descent, although in the United States individuals from Iran and Morocco have also been classified as White (Bhopal & Donaldson, 1998). While European or European American may be more precise terms, it cannot be verified that parents who self-identify as White in this study are exclusively of European descent. While certainly an imprecise term, White is used to describe those individuals who self-identify as such, many of whom are of European descent, and come to compose the majority group in the United States. While these broad categories make it easier to understand the shared experiences of a large and diverse group of peoples with certain similarities, they also inherently distort the ethno-specific experiences of multiple subgroups.

Lastly, much of the reviewed and referenced literature in this study pertains to research that also explores race/ethnicity. For the purpose of consistency, studies using diverse racial/ethnic categories (e.g., Black Caribbean, African American, Hispanic, Spanish, Caucasian, Euro-American) will be discussed using the racial/ethnic categories chosen for this study: Black, Latino, and White. Additionally, most of the reviewed studies do not distinguish between race and ethnicity, and as such, the term Latino, as used in this study and in the reviewed literature, refers to an extremely assorted group of peoples.

Psychopharmacology, Psychotropics, Psychotropic Drugs, and Psychiatric Medication

Psychopharmacology refers to the study of the effects of centrally active agents on the mind, mood, and behavior of individuals and groups, as well as a field of practice, and method of intervention for the treatment or management of variously classified mental disorders (Cohen,

2010). In this study, psychotropics, psychotropic drugs, and psychiatric medication all interchangeably refer to doctor-prescribed legalized substances, manufactured by pharmaceutical companies, and approved by the U.S. Food and Drug Administration for the treatment or management of people meeting criteria for variously classified psychiatric disorders. While this study does not focus on types of psychotropics, these implicitly include: stimulants, antidepressants, benzodiazepines, mood stabilizers, and antipsychotics.

Mental Disorder, Mental Illness, and Behavioral and Emotional Problems

Mental disorder and mental illness are complex and controversial constructs to define, conceptualize, and measure. Any discussion of these terms will eventually make reference to the *Diagnostic and Statistical Manual of Mental Disorders* (DSM), currently in its fifth edition (DSM-5).⁴ The DSM-5 lists criteria of symptoms reflecting an array of behaviors, cognitions, and moods to be met in order for individuals to receive an official DSM-5 diagnosis indicating the presence of what has been called a mental disorder. The presence of a mental disorder suggests, at least from a DSM perspective, the presence of mental illness, and both terms are used interchangeably and as synonyms in the literature. Conceptualizations of these constructs are also not without vigorous debate. Some have questioned both the reliability and validity of DSM diagnoses, and have argued that mental disorders are poorly conceptualized and misapplied, and are the creations of professional elites and political stakeholders rather than scientifically justified phenomena (Kirk & Kutchins, 1992; Kirk, Gomory, & Cohen, 2013). Still others have argued that mental illness is a “myth” expressing the medicalization of a broad range of “problems in living” and deviance, used primarily for purposes of overt and covert social control (Szasz, 1970, 1974).

⁴The DSM has been officially revised a total of seven times since its inception: DSM-I (1952), DSM-II (1968), DSM-III (1980), DSM-III-R (1987), DSM-IV (1994), DSM-IV-TR (2000), and DSM-5 (2013).

Studies that examine the use of specialty mental health services or treatments (such as psychotropics) typically make interchangeable references to mental disorder and mental illness as these terms reflect states of distress and misbehavior that many professionals and people believe require treatment or for which they seek advice for treatment. When reviewing studies, the original terms used by the authors are referenced. However, in my own analyses and reflections, I use the term behavioral and emotional problems to refer to a set of problematic child behavioral, cognitive, and emotional states that are typically, but not exclusively, considered mental health problems, and described as mental disorders in the DSM. In this study, these behavioral and emotional problems are: inattention, hostility, depression, and suicidal-talk, and they roughly correspond to the following DSM diagnoses: ADHD, Oppositional Defiant Disorder, and Major Depressive Disorder. Suicidal-talk does not in and of itself constitute a DSM mental disorder, although it is a symptom of some DSM disorders, including Major Depressive Disorder (American Psychiatric Association, 2013).

Religiosity and Psychotropics

This section reviews six studies that to some extent have explored the intersections between religiosity and willingness to use or actual use of psychotropics.⁵ To date, only two studies have to some extent examined the association between religiosity and willingness to medicate children with psychotropics: Cohen et al. (2013)⁶ and Schnittker (2003), and only one U.S. study, Harris et al. (2006), has explored if religiosity is associated with retrospective accounts of actual use of psychotropics. These three studies are reviewed first. Three other studies that have examined the association between religiosity and use of psychotropics, i.e., Blumstein, Benyamini, Chetrit, Mizrahi, and Lerner-Geva (2012), Grinshpoon, Marom,

⁵ This review is limited to quantitative studies based on samples collected between 1985-2014.

⁶ The present study reanalyzes the Cohen et al. (2013) data.

Weizman, and Ponizovsky (2007), and King et al. (2013), are based on adult and geriatric samples of individuals not living in the United States. Since all six studies include multiple sociodemographic predictors and examine multiple outcomes – none of the studies exclusively focus on religiosity and psychotropics – only the relevant information pertaining religiosity and willingness to use or use of psychotropics is discussed.

Harris et al. (2006) examined the effect of religious beliefs and involvement in use of outpatient specialty mental health services, including the use of psychotropics. The researchers analyzed U.S. population data from the 2001 to 2003 National Surveys on Drug Use and Health (NSDUH), and examined the extent to which religious involvement and beliefs influenced the use of outpatient mental health care among two subgroups: individuals classified with moderate or serious mental/emotional distress.

The NSDUH is conducted annually by the Substance Abuse and Mental Health Services Administration to estimate the prevalence of drug, alcohol, and tobacco use in the United States. The sample is drawn from a clustered, multistage sampling design representing the U.S. non-institutionalized population. Mental/emotional distress was measured in the NSDUH with the K6, developed for use in the National Health Interview Survey. The K6 consists of six questions on how frequently respondents experienced symptoms associated with what Harris and colleagues (2006) called “highly prevalent mood and anxiety disorders – i.e., nervousness, helplessness, restlessness, depression, feeling worthless, feeling that everything is an effort – during the past year when participants were feeling their worse emotionally on a zero to four scale” (p. 400). Respondents with K6 scores of 13 or higher were classified into the seriously distressed group (n = 14,548), and respondents with scores between 4 and 12 were classified into the moderately distressed group (n = 49,902). Religious beliefs and involvement were measured

in two ways. First, respondents were asked the frequency of attending religious services in the past year other than for funerals and weddings (0 times; 1-2 times; 3-24 times; and 24 or more times). Second, respondents rated their level of agreement on a 4-point scale (“strongly disagree” to “strongly agree”) to the following two statements: (1) “Your religious beliefs are a very important part of your life” and (2) “Your religious beliefs influence how you make decisions in your life.” Use of specialty outpatient mental health services was determined if participants answered affirmatively to using services for “treatment or counseling for problems with emotions, nerves, or mental health” (not including treatment for alcohol and drug use) in the past 12 months in one of the following settings: (1) an outpatient mental health clinic or center, (2) an office of a doctor, private therapist, psychologist, psychiatrist, social worker, or counselor, or (3) a partial day hospital or day treatment program. Respondents were also asked if they took “any prescription medication that was prescribed for you to treat a mental or emotional condition” in the past year. A number of clinical and sociodemographic control variables were included in the analyses. Clinical control variables included whether the respondent experienced symptoms of what the authors’ referred to as “common psychiatric conditions” (p. 402) based on a truncated version of the Composite International Diagnostic Interview-Short Form, as well as substance dependence as measured by reporting more than three of the seven criteria for drug or alcohol dependence as specified by the DSM-IV. Sociodemographic control variables included age, gender, race/ethnicity, education, and reporting fair or poor health status.

Harris et al. (2006) tested three hypotheses. First, based on the idea that individuals with devout religious beliefs may be more likely to see a problem and its solution as innately spiritual and rely on religious coping or services instead of specialty mental health care, the researchers hypothesized that greater importance of religious beliefs and greater influence of religious beliefs

in decision-making (the two religious belief measures) were associated with lower probability of using mental health care regardless of distress level (moderate or serious). The hypothesis was not supported. The results were mixed, and in fact, contradictory, across the two measures and by distress level. Among those classified with serious distress (K6 score of 13 points or higher), those who reported that religious beliefs were an important part of their lives also reported a significant 8.8% increase in use of outpatient mental health services compared to those indicating less importance of religious beliefs. Among those classified with moderate distress (K6 score between 4-12), however, those who reported that religious beliefs were an important part of their lives reported a significant 1.2% decrease in use of outpatient mental health services compared to those indicating less importance of religious beliefs. Finally, among those classified with serious distress, those who reported that religious beliefs influenced their decision-making also reported a significant 5.8% decrease in use of outpatient mental health services compared to those indicating less influence of religious beliefs in decision-making.

The second hypothesis predicted that more frequent religious service attendance was associated with a lower probability of mental health service use for those classified with moderate distress. The third hypothesis predicted that more frequent religious service attendance was associated with a higher probability of service use for those classified with serious distress. These two hypotheses rested on previous research suggesting that those classified with serious mental illness were less likely to rely exclusively on religious providers compared to those who were less impaired (Wang et al., 2003). Harris et al. (2006) hypothesized that it was likely that clergy and congregation members refer those with serious distress to specialty mental health services, while providing clerical and social support to those with moderate distress. The second hypothesis was not supported. For those participants classified with moderate distress, increasing

past year religious service attendance from never to 3-24 times per year was associated with a 1.2% increase in the probability of using outpatient mental health services. The association failed to achieve statistical significance when increasing past year service attendance from never to 25 or more times per year. Conversely, the third hypothesis was supported. For those participants classified with serious distress, increasing past year religious service attendance from never to 3-24 times per year was associated with a 5.7% increase in the probability of using outpatient mental health services, and increasing past year service attendance from never to 25 or more times per year also remained significant with a 5.4% increase in the probability of service use. The influence of religious service attendance on use of specialty mental health services was considerably larger for those with serious distress (up to a 5.7% increase) compared to those with moderate distress (1.2% increase).

With respect to reported use of psychotropics, most of the religiosity measures were associated with a higher probability of use of psychotropics for those classified with serious distress. Increasing past year religious service attendance from never to 3-24 times per year produced a significant 3.7% increase in the probability of using psychotropics, and a 4.6% increase when increasing service attendance from never to 25 or more times per year. Moreover, importance of religious beliefs had a significant 7.0% increase in reported use of psychotropics, but influence of religious beliefs in decision-making was not significantly associated with reported use of psychotropics. Lastly, the researchers combined the two religious beliefs measures (importance of religious beliefs and influence of religious beliefs in decision-making) and found that the combined two-item measure had a significant 4.6% increase on reported use of psychotropics, but not on use of outpatient mental health care generally.

The results from Harris et al. (2006) present mixed and contradictory findings for how the importance of religious beliefs in one's life and in one's decision-making might influence outpatient mental health treatment decisions. For those with more serious problems, the importance of religious beliefs increased the likelihood of using outpatient services, while the influence of religious beliefs in decision-making decreased the likelihood of using outpatient services. That is, two dimensions of religiosity produced two contradictory effects among individuals with similar levels of distress. Conversely, among those classified with moderate distress, the importance of religious beliefs decreased the likelihood of using outpatient services, while the influence of religious beliefs in decision-making failed to produce a statistically significant effect. Lastly, most of the religious measures were associated with an increased likelihood of using psychotropics. The more religious a person was, the more likely they were to have used psychotropics in the past, at least among those classified with more serious problems. To further contribute to these mixed findings, in a brief, one-page article, Harris, Larson, and Edlund (2005) found that using 2003 NSDUH data of participants who reported at least one or more symptoms of mental disorders as measured by the Composite International Diagnostic Interview-Short Form (N = 10,126), that frequency of religious service attendance was not associated with use of psychotropics.

Cohen et al. (2013) recently tested a cultural mediation hypothesis to determine if various cultural variables, i.e., biomedical causes, medication benefits, treatment stigma, familism, fatalism, corporal punishment, religiosity, language of interview, and country of birth, mediate the association between parents' race/ethnicity and willingness to medicate children with psychotropics. The sample data were obtained using stratified random sampling of parents of children 5 to 17 years old living in South Florida in 2009, and the analysis was restricted to

parents who self-identified into one of the following three racial/ethnic groups: non-Latino Black (n = 345), Latino any race (n = 391), and non-Latino White (n = 344). Cohen and colleagues used a composite measure of religiosity tapping five dimensions: having a religious affiliation, frequency of attending religious services, frequency of private prayer, level of comfort provided by members of one's congregation, and strength of self-identified religiosity. Willingness to use psychotropics was measured on a 4-point Likert scale ("very unlikely" to "very likely") that asked parents to rate their willingness to medicate children manifesting different types of problem behaviors or emotions with psychotropics.

Cohen et al. (2013) tested three hypotheses in each of three multivariate models (Latino vs. White, Latino vs. Black, and Black vs. White). First, they tested the direct association between racial/ethnic group (predictors) and the cultural constructs (proposed mediators), predicting that Black and Latino parents would express higher levels of religiosity compared to Whites. Blacks were significantly more religious than Latinos and Whites, but there were no significant differences in religiosity between Latinos and Whites. Second, they tested the direct association between the proposed mediators and parents' willingness to medicate children with psychotropics (outcome), predicting that regardless of race/ethnicity, lower levels of religiosity would be associated with greater parental willingness to medicate children. Religiosity was not associated with parents' willingness to medicate children with psychotropics in any of the three models. Third, they tested the mediating effect of religiosity in accounting for any differences between race/ethnicity and parents' willingness to medicate children with psychotropics, predicting that religiosity would significantly mediate the association between race/ethnicity and parents' willingness to medicate children. Religiosity did not significantly mediate this association.

To date, Cohen et al.'s (2013) study provides the most direct evidence that no association may exist between religiosity and willingness to medicate children with psychotropics. While the Cronbach's alpha scores of Cohen et al.'s religiosity composite measure used with the sample meet acceptable internal consistency standards (reliability)⁷, the measure may not capture the theoretical nuances of the construct of religiosity (validity). As previously mentioned, Cohen et al.'s composite measure consisted of the following five items: having a religious affiliation, frequency of attending religious services, frequency of private prayer, comfort received by others in one's congregation, and strength of self-identified religiosity. However, each of these items, or any combination of these items, may produce different effects on the outcome that are obscured when combining them to form a composite measure. In fact, to date, the research literature suggests that the single-item measure of frequency of religious service attendance is the most commonly used measure and provides the strongest evidence for a link between religiosity and health/mental health outcomes, and that more sophisticated measures of religiosity often yield weaker associations (Hall, Meador, & Koenig, 2008). The reasons for this are not well understood; although it is possible that multiple items that come together to form strong internal consistency might exert conflicting responses on an outcome when measured individually. For example, Cohen et al.'s composite measure included the dimension of both public (i.e., frequency of attending religious services) and private (i.e., frequency of praying privately) religious behaviors. However, congregations can denounce the use of specialty mental health services and treatments (Payne, 2008) or possibly encourage them by providing referrals to specialty mental health agencies (Yamada et al., 2012). Also, private prayer may be associated with self-reliance, a construct that has separately predicted lower use of specialty mental health

⁷ Cohen et al. (2013) used a multidimensional measure of religiosity among self-identifying non-Latino Black (n = 345, $\alpha = 0.69$), Latino any race (n = 391, $\alpha = 0.72$), and non-Latino White (n = 344, $\alpha = 0.79$) parents.

services (Ortega & Alegría, 2002). Moreover, the affiliation dimension (“Do you have a religious affiliation?”) is designed to identify religious affiliation or denomination and is usually intended for measurement as a nominal variable (Idler et al., 2003) to account for denominational differences. In Cohen et al.’s study, however, affiliation was measured as a binary variable (yes/no). These subtle differences are not captured in a composite measure despite the fact that it may meet internal consistency standards.

Cohen et al. (2013) also conducted a stringent statistical test of their mediation hypothesis. In their model, religiosity was only one of several proposed mediators, including: biomedical causes of children’s problems, medication benefits, treatment stigma, familism, fatalism, and corporal punishment, as well as language of interview and country of birth. While each of these variables were conceptualized as mediators, they also acted as statistical controls in the multivariate models, and may have suppressed associations between religiosity and willingness to medicate children with psychotropics. Studies that examine the association between religiosity and an outcome should carefully delineate the differences between confounding and explanatory variables given that statistically controlling for many possible control variables may obscure pathways that actually exert the effect of religiosity on the outcome (Hall et al., 2008). Constructs such as fatalism, beliefs about the cause of child behavioral and emotional problems, attitudes towards psychotropics, and mental health treatment stigma may be associated with religiosity, and indirectly controlling for these variables might impede an understanding of how religiosity exerts its influence in willingness to medicate children with psychotropics.

Schnittker (2003) explored differences, and the reasons underlying observed differences, between Black and White adults in willingness to medicate themselves and children with

psychotropics using the 1998 General Social Survey (GSS). The GSS uses multi-stage area probability sampling, and the data for this study were obtained from the *Pressing Issues in Health and Medical Care* module, which was administered to a sample of 1,387 respondents. Religiosity was treated as a control variable in the model and did not represent a primary focus in the study. Nonetheless, the study is reviewed here because it contains important implications for the present research with respect to potential mediating variables, i.e., attitudes towards psychotropics, between race/ethnicity and willingness to medicate children with psychotropics.

In Schnittker's (2003) study, religiosity was measured by asking respondents how often they attended religious services (0 = "never" to 8 = "several times a week"), and on the strength of their religious affiliation ("Would you call yourself a strong <stated religious preference> or not very strong <stated religious preference>?"). Responses for the first item were recoded into three groups: (1) those who attend "nearly every week" to "several times a week," (2) those who attend "about once or twice a year" to "2 or 3 times a month," and (3) those who "never attend or attend less than once a year." Responses for the second item were recoded as "not very strong," "somewhat strong," (if volunteered), and "strong." In addition to religiosity, several other sociodemographic variables were included in the multivariate models.

Willingness to use psychotropics was measured by asking respondents "How likely ("very unlikely" to "very likely") would you be to take doctor-prescribed psychiatric medications in the following situations: (1) trouble in your personal life, (2) you didn't know how to cope any more with the stress of life, (3) you were feeling depressed, tired, were having trouble sleeping and concentrating, and felt worthless, and (4) for no apparent reasons you were having periods of intense fear in which you were trembling, sweating, feeling dizzy, and feared losing control or going crazy." Respondents were also asked three questions about their willingness ("very

unlikely” to “very likely”) “to give doctor-prescribed medication to children (ages 8 to 15) or a child you were responsible for in the following situations: (1) because s/he is hostile, often loses his/her temper, often argues with adults, actively defies authority and seems spiteful or vindictive, (2) because s/he is not paying attention at school, does not follow through with school work and chores, has difficulty organizing activities, is easily distracted, talks excessively, and seems to run around or fidget constantly, and (3) because s/he was talking about killing him or herself.” Two series of the above questions were administered: one with respect to psychotropics generally and another specifically focused on Prozac.

The results indicated that for both psychotropics generally, and Prozac specifically, Blacks had less favorable views about the efficacy and side effects of psychiatric medication when compared to Whites. Even when controlling for age, sex, income and insurance, religious attendance, strength of religious affiliation, and trust, confidence, and concerns of physicians, Blacks were significantly more skeptical about the efficacy and side effects of psychotropics (both generally and of Prozac) compared to Whites. Furthermore, Blacks were less willing to use psychotropics for themselves and children when compared to Whites even when controlling for the aforementioned control variables. However, when beliefs about efficacy and side effects of psychotropics were introduced into the model as control variables, racial differences in willingness to medicate oneself and children became statistically nonsignificant, suggesting that Black respondents’ unwillingness to use psychotropics for themselves and for children was largely driven by perceptions of the efficacy and side effects of psychotropics. In subsequent analyses, Schnittker (2003) confirmed that both beliefs about efficacy and side effects were equally important in shaping the observed differences in willingness to medicate between Blacks and Whites.

The study by Schnittker (2003) represents the most basic level of analysis for exploring the effect of religiosity in social and behavioral research: controlling for the statistical confound of a possible religious effect (Tarakeshwar, Stanton, & Pargament, 2003). This method, while recognizing that religiosity is an important influence on behavior, especially when examining racial/ethnic or cultural differences, does little to advance the theoretical understanding of the influence of religiosity; it merely controls for its effect and thus enhances internal validity with respect to the predictor(s) and outcome(s) of interest. Interestingly, when Table 2 in Schnittker's study is examined, one finds a significant positive association between attending religious services at least weekly and more unfavorable beliefs about the side effects of Prozac when compared to individuals who attend religious services never or rarely ($b = 0.205, p < .05$, p. 514). This modest finding was not discussed by Schnittker, as it was not an important component of his analysis. Moreover, the study suggests that beliefs about the efficacy and side effects of psychotropics, attitudes, are important explanatory variables for observed differences in willingness to medicate between Blacks and Whites. This finding raises additional questions of the origins of such attitudes, and whether religiosity may play a development in such beliefs, especially in light of the association between religious attendance and unfavorable beliefs about the side effects of these drugs.

Blumstein et al. (2012) examined the prevalence and correlates of psychotropic use among non-institutionalized older adults, ages 75 to 94, living in Israel. Analyses were based on data collected from two Israeli nationally representative samples of two cohorts sampled in 1989 (Cross-Sectional and Longitudinal Aging Study – CALAS, $n = 1,200$) and 1999 (Israeli Multidisciplinary Aging Study – IMAS, $n = 421$). Religious identification was one of the sociodemographic variables in the study, and it was measured by asking participants if they

considered themselves religious, traditional, or secular. Psychotropic medication use was measured by asking participants if they were currently taking any prescribed or self-prescribed drugs for a specified medical condition. Participants were required to display the containers of all medications they were taking, and the name, frequency, and duration of use were recorded. For purposes of the study only two broad groups of drugs were analyzed: anxiolytics, sedatives/hypnotics and antidepressants.

In the multivariate analysis, which contained the following variables: age, gender, place of birth, education, marital status, health and functioning (e.g., number of diseases), mental health and life events (e.g., sleeping problems), Center for Epidemiological Studies – Depression Scale rating, Holocaust survivorship, traumatic life events, and cohort comparison (1999 vs. 1989), elderly individuals who identified as religious had significantly lower odds (O.R. = 0.69) of using anxiolytics, sedatives/hypnotics compared to secular elders, but the difference for use of antidepressants failed to reach statistical significance. There were also no statistically significant differences between traditionalists and secular elders.

Similarly, Grinshpoon et al. (2007) used the Israel National Health Survey (INHS, 2003 to 2004) and examined the 12-month prevalence of psychotropic use in a representative sample of adults ages 21 and older living in Israel (n = 4,859). A number of predictors were included in the multivariate model: gender, age, region of residence, marital status, education, employment status, religious observance, and immigration status. No information was presented on how respondents were classified or self-selected into any of these categories. With respect to religiosity, the authors had a category for the religious observance of Jewish individuals (i.e., orthodox, conservative/reformist, atheist/traditional) and non-Jewish individuals (i.e., orthodox, conservative, traditional, atheist). In a footnote the authors stated that data for Muslims, Druzes,

and Christians (the non-Jewish religious observance categories) were not included in the analysis due to small sample sizes. Psychotropic use was measured by asking respondents to report their use of any psychotropic medication during the 12 months prior to the interview, which was followed by a measure including 191 items assessing the details of use. Grinshpoon et al. restricted psychotropics to the following five classes of drugs: antidepressants, anxiolytics, hypnotics, antipsychotics, and mood stabilizers. The results indicate that individuals who identified with an atheist/traditional religious observance had a 3.5-fold prevalence rate compared to those with an orthodox religious observance.

Taken together, the studies by Blumstein et al. (2012) and Grinshpoon et al. (2007) suggest that among non-institutionalized adults and older adults living in Israel, those who self-identify or are classified as religious or orthodox are less likely to use psychotropics compared to those who identify as secular, traditional, or atheist. The implication being that greater religiosity is associated with less likelihood of using psychotropics, a completely opposite finding to that of Harris et al. (2006) in the United States.

King et al. (2013) tested the association between religion and spirituality, and the prevalence of psychiatric diagnoses and the use of psychotropics, among a probability sample of 7,403 community dwellers ages 16 to 75 and older living in England. Using data from the 2006 to 2007 National Psychiatric Morbidity Study (NPMS), King et al. utilized an adapted version of the Royal Free Interview for religious and spiritual beliefs, which assesses the scope and strength of religious beliefs and practices. Respondents were told “by religion, we mean the actual practice of a faith, e.g., going to a temple, mosque, church or synagogue. Some people do not follow a religion but do have spiritual beliefs or experiences. Some people make sense of their lives without any religious or spiritual beliefs. Would you say you have a religious or spiritual

understanding of your life?” Participants could indicate if their understanding was religious, spiritual, or neither. If they had a specific religion, they were asked to state it. If they had a religious or spiritual understanding of their life, they were asked to indicate on two Likert scales how strongly they held to their religious or spiritual understanding and how important the practice (e.g., prayer, meditation, religious service) of their faith was to them. The respondents were also asked how often they attended services, prayer meetings, or places of worship. Use of psychotropics was assessed with a self-reported binary measure (yes/no).

King et al. (2013) found that individuals who had a spiritual understanding of their lives had significantly greater odds (O.R. = 1.40) of using psychotropics compared to those without a spiritual or religious understanding of their lives. Those who identified as religious were no different statistically from those who identified as neither religious nor spiritual. While King et al. stated they collected data on strength of respondents’ religious understanding and the frequency of attending religious services, no analysis or discussion were presented on these variables. It should be noted that the binary measure of psychotropic use was also potentially problematic, as it may be susceptible to a number of errors, including misinterpretation, false recall, and use in an unspecified time frame. All of the previously reviewed studies that measured actual psychotropic use included some type of triangulation to ensure data authenticity. For example, the cohort studies used by Blumstein et al. (2012) asked participants to show the interviewers the pill bottles, and dosage and frequency were subsequently recorded. To be fair, the study by King et al. was not primarily concerned with psychotropic use, but rather the prevalence of psychiatric diagnoses according to the International Classification of Disease–10. The evidence from their study suggest that those who self-identify with a spiritual understanding

are more likely to use psychotropics compared to those without a spiritual or religious understanding, but the reasons underlying this association are not fully understood.

The above six studies suggest that religiosity can influence willingness or decisions to use psychotropics in important ways, although the research is far from fully explaining the scope and magnitude of this association. Indeed more questions are raised than answers are provided, and much of the evidence is conflicting. At least one U.S. study (Harris et al., 2006) found that for individuals classified with severe distress, religious service attendance, the importance of religious beliefs in one's life, and the combined scale of importance of religious beliefs and influence of religious beliefs in decision-making, all significantly increased the probability of using psychotropics (between 3.7% to 7.0% increase). Schnittker (2003) controlled for frequency of religious service attendance and strength of religious affiliation, and found that these control variables did not diminish the associations between Blacks and greater skepticism of psychotropic efficacy and side effects, and less willingness to medicate oneself and children compared to Whites. Cohen et al. (2013) tested a cultural mediation hypothesis using a multidimensional measure of religiosity on Black, Latino, and White parents' willingness to medicate children with psychotropics, and found that religiosity did not mediate the association between race/ethnicity and willingness to medicate children with psychotropics. In two Israeli population studies, self-identifying as religious was associated with lower odds of using psychotropics compared to identifying as secular (Blumstein et al., 2012), while identifying as atheist/traditional was associated with higher odds of using psychotropics compared to identifying as religious orthodox (Grinshpoon et al., 2007). In a national study of civilians living in England, those who identified with a spiritual understanding of their life had much higher

odds of using psychotropics compared to neither a religious nor spiritual understanding (King et al., 2013). An overview of these six studies is provided in Table 1.

Table 1

Summary of Six Studies on Religiosity and Willingness to Use/Use of Psychotropics

Author(s)	Sample	Religiosity Predictors/Control Variables	Mediator	Dependent Variable(s)	Key Findings
Harris et al. (2006)	U.S. National Surveys on Drug Use and Health (2001-2003).	(1) Frequency of religious service attendance. (2) Importance of religious beliefs. (3) Influence of religious beliefs in decision-making.	N/A	(1) Reported use of outpatient mental health services in the past 12 months. (2) Reported use of psychotropics in the past 12 months.	Frequency religious service attendance, importance of religious beliefs, and the combined measure of importance of religious beliefs and influence of religious beliefs in decision-making were positively associated with use of psychotropics for those classified with serious distress
Cohen et al. (2013)	Probability sample of parents living in South Florida (2009)	Self-identified race/ethnicity.	Composite measure of religiosity.	Parents' willingness to medicate children.	Religiosity did not mediate the association between race/ethnicity and parents' willingness to medicate children.
Schnittker (2003)	U.S. General Social Survey (1998)	Self-identified race/ethnicity. Religiosity was conceptualized as control variables: (1) Frequency of religious service attendance. (2) Strength of religious affiliation.	N/A	(1) Parents' willingness to medicate self and children. (2) Beliefs about the side effects of psychotropics. (3) Beliefs about the efficacy of psychotropics.	Attending religious services at least weekly was positively associated with more unfavorable beliefs about the side effects of Prozac.
Blumstein et al. (2012)	Cross-Sectional and Longitudinal Aging Study (1989, Israel) and Israeli Multidisciplinary Aging Study (1999)	Self-identification as: religious, traditional, or secular.	N/A	Reported use of prescribed sedatives, hypnotics/ anxiolytics, and antidepressants.	Religious identification was associated with lower odds of using sedatives, hypnotics/anxiolytics.
Grinshpoon et al. (2007)	Israel National Health Survey (2003-2004).	Self-identified Jewish religious observance: Orthodox, Conservative/ Reformist, or Atheist/ Traditional.	N/A	Reported use of antidepressants, anxiolytics, hypnotics, antipsychotics, and mood stabilizers.	Atheist/traditional identification was positively associated with use of psychotropics.
King et al. (2013)	National Psychiatric Morbidity Survey (2006-2007, England)	Religious or spiritual understanding of life (or neither).	N/A	Reported use of psychotropics.	Spiritual understanding was positively associated with use of psychotropics.

Racial/Ethnic Difference in Use of Psychotropics or Prescriptions among U.S. Youth

In this section differences in use of, or prescriptions of, psychotropics among racial/ethnic subgroups of U.S. children and adolescents are reviewed. In the forthcoming reviewed studies, “youth” refer to children and adolescents ages 0 to 19.⁸

Zito, Safer, DosReis, and Riddle (1998) published the first study examining U.S. population-based estimates of racial differences in psychotropic prescriptions among youth ages 5 to 14. The researchers analyzed Medicaid administrative data for fiscal year 1991 in Maryland, and examined differences in psychotropic prescriptions between Black and White youth. Psychotropic classes examined were stimulants, antidepressants, antipsychotics, benzodiazepines, and lithium. Across all five classes of drugs, the Black:White ratio ranged from 1:2 to 1:2.5. These differences remained significant even when controlling for geographic region, as the interaction between race and region was statistically significant in the model. The authors did not include socioeconomic variables in their analyses, but suggested that the groups were homogenous in these domains given that all were recipients of social security benefits. There was also no discussion on the rate of behavioral or emotional problems across the two groups.

Olfson, Marcus, Weissman, and Jensen (2002) examined patterns of psychotropic use for youth ages 18 and younger in 1987 and 1996. They used data from the 1987 National Medical Expenditure Survey and the 1996 Medical Expenditure Panel Survey. Both surveys used complex sampling strategies to recruit adult informants in thousands of households who were asked about each prescribed medication bought or otherwise obtained for themselves or their child during the previous 12 months. The data were crosschecked with the pharmacies that filled these prescriptions. Trends for antidepressants, stimulants, and “other psychotropic

⁸ With the exception of the study by Zito et al. (2003), which includes participants up to 20 years of age.

medications,” which included anticonvulsants, were examined. The overall rate of psychotropic use increased from 1.4 per 100 children in 1987 to 3.9 per 100 children in 1996. The rate significantly increased for males and females among racial/ethnic groups (Black, Latino, and White), age groups (<6 years, 6 to 14, 15 to 18), insurance groups (private, public, none), and region of residence (Northeast, Midwest, South, West). Furthermore, when the researchers controlled for the confounding effects of these variables, the likelihood of using psychotropics still increased nearly three-fold from 1987 to 1996. Specific classes of drugs were also analyzed in detail.

Antidepressants increased from 0.3 to 1.0 per 100 youth from 1987 to 1996, and after controlling for sociodemographic variables, youth were 3.56 times more likely to use an antidepressant in 1996. No statistically significant changes occurred in antidepressant use between racial/ethnic groups, although White youth (1.16 per 100) were more likely to use antidepressants compared to Black (0.60 per 100) and Latino (0.80 per 100) youth in 1996.

Stimulants increased from 0.6 to 2.4 per 100 youth from 1987 to 1996, and after controlling for sociodemographic control variables, the likelihood of using a stimulant increased almost four-fold. Stimulant use significantly increased across genders, race/ethnicity, region of residence, and privately and publicly insured youth, but not among those without insurance. The White:Black stimulant use ratio fell from 2.9 in 1987 to 1.4 in 1996, although Whites (3.03 per 100) had the highest use of stimulants followed by Blacks (2.02 per 100) and Latinos (.74 per 100).

In sum, the findings by Olfson and colleagues (2002) show a dramatic increase in the use of psychotropics by U.S. youth beginning in the late 1980s regardless of race/ethnicity, gender, geographic region, and insurance. Besides the Black:White ratio in stimulant use, the researchers

did not statistically compare between group racial/ethnic differences. The data, however, suggest higher rates of psychotropic use among Whites compared to Black and Latino youth.

Zito and colleagues (2003) also examined changes in psychotropic prescriptions for youth, ages 20 and younger, in 1987 and 1996. Zito et al. used Medicaid administrative claims and medical records from a midwestern state and a mid-Atlantic state, and computerized healthcare records of a group-model health maintenance organization (HMO) serving a predominantly employed population in the northwestern United States. The major classes of psychotropic medications examined were: antidepressants, anxiolytics, hypnotics, lithium, antipsychotics, and stimulants.

The results showed a three-fold increase in total psychotropic medication prevalence among HMO youth (to 5.9 %) and youth living in the midwestern state (to 6.3%), and a doubling of total psychotropic use among youth living in the mid-Atlantic state (to 6.2%). With respect to differences by race, only data for the two Medicaid sites were available. In the midwestern state, there was no change in the White:Black prevalence ratio for all psychotropics used, 2.2 in 1987 and 1996. Conversely, however, in the mid-Atlantic state, the White:Black prevalence ratio decreased by almost half (from 3.2 to 1.7) for all psychotropics used from 1987 to 1996. Additionally, the White:Black stimulant prevalence ratio decreased by 48.6% (from 3.5 to 1.8), and the antidepressant prevalent ratio decreased by 35.5% (from 3.1 to 2.0). That is to say, the prevalence ratio between these two groups narrowed over the 10-year span, while prevalence of use of psychotropics for each group increased, with White youth having higher rates of psychotropic use compared to Black youth. Taken in tandem, the studies by Olfson et al. (2002) and Zito et al. (2003) suggest that the use of psychotropics among all U.S. youth increased substantially from 1987 to 1996.

While this study does not differentiate between types of psychotropics or differences in willingness to medicate children with psychotropics by behavioral or emotional type of problem, two of the four problems that make up the composite outcome variable are depression and inattentiveness (discussed in detail in the Methods section). A more focused review on prescription and utilization rates of antidepressants and stimulants, two drugs often used to treat or manage these mood and behavioral states in children, is undertaken.

Vitiello, Zuvekas, and Norquist (2006) examined U.S. rates of antidepressant use among youth ages 18 and younger in 1997 and 2002. The researchers used data from the Medical Expenditure Panel Survey. Tricyclic antidepressants (TCAs), selective serotonin reuptake inhibitors (SSRIs), and monoamine oxidase inhibitors were classified as antidepressants in this study.

The estimated prevalence of antidepressant use among U.S. youth increased significantly from 1.3% in 1997 to 1.8% in 2002, corresponding to an estimated 1.4 million children treated with antidepressants in 2002. Use of antidepressants was highest in 2002 among 13 to 18-year-olds (3.9%), followed by 6 to 12-year-olds (1.4%) and lowest among children younger than 6 years (.01%). With respect to racial/ethnic differences, there was a statistically significant increase in the use of antidepressants among White youth from 1.7% in 1997 to 2.4% in 2002, and among Black youth from 0.3% in 1997 to 0.9% in 2002. The rise in use of antidepressants among Latino youth was not statistically significant (0.6% in 1997, 0.8% in 2002). Lastly, there was a statistically significant increase in the use of SSRIs and other new antidepressants from 0.8% in 1997 to 1.6% in 2002, whereas the use of TCAs (an older class of antidepressants) was not significantly different from 0.5% in 1997 to 0.3% in 2002. While the researchers did not compare rates of use between racial/ethnic groups in 2002 or whether the ratio of use between

White and racial/ethnic minority youth significantly changed between 1997 and 2002, the use of antidepressants was highest among White youth in 2002 (2.4%) compared to Black (0.9%) and Latino (0.8%) youth.

Zuvekas, Vitiello, and Norquist (2006) conducted a similar study examining rates of stimulant use among youth ages 18 and younger from 1997 to 2002 by also analyzing data from the Medical Expenditure Panel Survey. Stimulant drugs in this study included: methylphenidate, dextromethylphenidate, pemoline, amphetamine, and dextroamphetamine.

The estimated prevalence of stimulants rose from 2.7% in 1997 to 2.9% in 2002 corresponding to an estimated 2.2 million youth, although the change was not statistically significant. Use was highest among 6 to 12-year-olds (4.8% in 2002), followed by 13 to 18-year-olds (3.2% in 2002), and lowest among children under 6 years (0.3% in 2002). Use of stimulants was higher among White youth (3.6% in 2002) compared to Black (2.2%) and Latino (1.4%) youth, although it is not clear if these differences are statistically significant. There was, however, a statistically significant increase in the number of Black youth using stimulants from 1.2% in 1997 to 2.2% in 2002.

Lastly, Olfson, He, and Merikangas (2013) analyzed 2002 to 2004 data from the National Comorbidity Survey-Adolescent Supplement and examined the 12-month prevalence of psychotropic use among youth ages 13 to 18-year-olds, while also accounting for psychiatric diagnosis as assessed by the DSM-IV-TR. During the course of one year, 7.0% of U.S. adolescents were treated with psychotropic drugs and most (74.1%) met criteria for one or more 12-month DSM-IV-TR disorder. Antidepressants were the most common psychotropic (3.9%), of which 67.8% were SSRIs, followed by stimulants (2.8%). Most adolescents (77%) who used antidepressants within the last year had at least one DSM-IV-TR disorder. Approximately one-

half (48.8%) of antidepressant users had a past-12-month depression or anxiety disorder, and 27.1% met criteria for ADHD. White youth (5%) were significantly more likely to use antidepressants compared to racial/ethnic minority youth (1.9%). Antidepressant use did not significantly differ between Black (1.6%), Latino (1.9%), and the 'other' racial/ethnic group (2.8%). Most youth (82%) who used stimulants within the last year had at least one past 12-month DSM-IV-TR disorder, and nearly one-half (49.1%) had a past 12-month diagnosis of ADHD. Among stimulant users without a 12-month diagnosis of ADHD, 18.6% met criteria for past 12-month sub-threshold ADHD, 13.1% met criteria for a lifetime diagnosis of ADHD, and 3.0% met criteria for a lifetime threshold diagnosis of ADHD. Additionally, 6.9% of stimulant users had a past-12-month diagnosis of Oppositional Defiant Disorder or Conduct Disorder, and 3.1% had a lifetime diagnosis of Oppositional Defiant Disorder or Conduct Disorder. White youth (3.5%) were more likely to use stimulants compared to ethnic minority youth (1.4%), although it is not clear if this difference was significant. Stimulant use did not significantly differ between Black (0.9%), Latino (2.0%), and the 'other' racial/ethnic group (1.1%).

The findings from Olfson et al. (2013) show that the majority of U.S. youth taking psychotropics have at least one DSM-IV-TR diagnosis. Furthermore, the use of specific psychotropics was associated with particular classes of diagnoses. Among antidepressant users, the majority had a past 12-month diagnosis of depression or anxiety. Furthermore, approximately half of stimulant users had a past 12-month diagnosis of ADHD. The association between type of psychotropic and diagnosis was not, however, a one-to-one correspondence. While nearly half of stimulant users had a past 12-month diagnosis of ADHD, the remaining half was composed of those with sub-threshold ADHD, lifetime ADHD, and other DSM disorders such as Oppositional Defiant Disorder and Conduct Disorder. In fact, Olfson and colleagues found that after

controlling for anxiety and depression, ADHD was also significantly associated with antidepressant use, and after controlling for ADHD, eating and depressive disorders were associated with stimulant use. Therefore, while most U.S. youth taking psychotropics do have a DSM-IV-TR diagnosis, there exists great variability between the types of psychotropics used to treat the various types of diagnoses.

The above studies demonstrate that psychotropic drug use among U.S. children and adolescents has increased across most demographics since the late 1980s until at least 2002. The continued difference in rate of psychotropic use between racial/ethnic minority and White youth, despite accounting for multiple control variables, indicates that the underlying reasons for these differences have not been entirely explained.

Chapter 3: Conceptual Framework

Guiding Theoretical Perspectives

Functional Approach to the Social Scientific Study of Religion

Social scientific approaches to the study of religion have typically adopted either a substantive or functional approach (Pargament, 1997). The substantive approach emphasizes the beliefs, behaviors, sentiments, or relations of individuals relative to a higher power or divine being. This approach focuses on the individual's concern with notions of the sacred. Early psychological theorists such as William James (1902) adopted a substantive approach, conceptualizing religiosity as "the feelings, acts and experiences of individual men in their solitude, so far as they apprehend themselves to stand in relation to whatever they may consider the divine" (p. 13). The substantive approach is ultimately concerned with the individual, as she or he experiences some aspect – e.g., emotions, beliefs, practices, and rituals – of the sacred.

The functional approach to religiosity may also focus on emotions, beliefs, practices, and rituals, but the points of reference are not the individual and the sacred, but rather resolving life's most fundamental problems via sacred beliefs or practices (Pargament, 1997). The functional approach aims to understand the function of religiosity in addressing a wide array of problems in living, and moves beyond studying the experience of an individual and their understanding of the sacred. This approach shares some of its intellectual history with Durkheim's (1915) functionalist theory of religion, which argues that religion is part of the macro social system and serves to maintain social order and cohesion, reinforce solidarity and value consensus, and provide a moral order.

At the broadest conceptual level, this study is grounded in a functional approach to the study of religiosity with respect to its influence in willingness to medicate children with

psychotropics. That is, religiosity is conceptualized as serving a social function to parents whose child is experiencing a behavioral or emotional problem by influencing their treatment willingness.

Bronfenbrenner's Ecological Perspective

The functional approach to religion is linked in tandem with an ecological perspective that argues human behavior is influenced by the transactions between five primary systems: microsystem, mesosystem, exosystem, macrosystem, and chronosystem (Bronfenbrenner, 1977, 1986). The microsystem includes a person's immediate surroundings. For parents, these settings might include the home, the workplace, and religious organizations. The mesosystem consists of interrelationships between two or more microsystems, each containing the person, such as the relationship between the temple/synagogue/church/mosque (hereon referred to as place of worship) and the relations between the home and health care setting. The exosystem consists of connections and processes between two or more settings, only one of which contains the person, such as parents' home and social support network. The macrosystem refers to the sociocultural environment, including lifestyles and customs, shared knowledge and cultural beliefs, and socioeconomic factors that partially determine social structures and activities that occur in the more immediate or proximal system levels. Lastly, the chronosystem refers to the chronological passage of time for the individual (typically measured by chronological age) and the person's environment, and the interaction between these two processes.

The theoretical focus of this study is on the mesosystem, and the interconnections between three microsystems: the place of worship, the home environment, and the health care setting. Parents' religious service attendance and membership at their place of worship, and the comfort received from such membership (one microsystem), are studied in relation to their

willingness to medicate children with psychotropics in other hypothetical settings where such decisions are ultimately made – i.e., the home environment (second microsystem) or the health care setting (third microsystem).

The functional approach to religion and the ecological perspective provide a broad theoretical basis for the study of religiosity with respect to willingness to medicate children with psychotropics. They set the stage for a theorized association that suggests religiosity serves a function for parents whose child's problems have brought them into contact with a mental health system that increasingly requires parents to choose whether or not to use psychotropic medication to treat or manage their child's troubling or troubled behavior.

Gaps in the Extant Literature

Based on the above review, this study investigates the potential associations between religiosity and willingness to medicate children with psychotropics by contributing to the extant literature in several ways:

1. Test if religiosity, i.e., frequency of religious service attendance and congregational membership, predicts willingness to medicate children with psychotropics. To date, none of the reviewed studies conceptualizes religiosity as a focal predictor of willingness to medicate children. While Schnittker (2003) tested religiosity as a control variable and Cohen et al. (2013) tested religiosity as a mediating variable, no studies have tested religiosity as the focal predictor of willingness to medicate children with psychotropics. Moreover, congregational membership has not been tested in previous studies on willingness to use or actual use of psychotropics.
2. Test if a particular dimension of religiosity, i.e., congregational comfort, mediates the association between race/ethnicity and willingness to medicate children with

psychotropics. Religiosity has been proposed in the literature as a potential explanation for racial/ethnic differences in specialty mental health service use, including psychotropics (Kouyoumdjian et al., 2003; Cohen et al., 2013). To date, only Cohen et al. (2013) have tested this hypothesis using a mediation model. Based on the above discussion of Cohen and colleagues' composite measure of religiosity, this study unpacks their religiosity measure to test the mediating effects of congregational comfort. Congregational comfort is selected as a potential mediator based on the theoretical proposition that it is a promised good that accompanies membership to a religious institution (Idler et al., 2003) and based on literature suggesting that congregations, clergy, and fellow parishioners are sources of comfort and social support during times of distress (Neighbors et al., 1998; Kane & Williams, 2000; Taylor et al., 2000; Chatters et al., 2002; Wang et al., 2003)

3. Test if race/ethnicity moderates religiosity in willingness to medicate children with psychotropics. To date, no studies have tested if the association between religiosity and willingness to medicate children with psychotropics is conditional, i.e., does the effect of the predictor (religiosity) on the outcome (willingness to medicate) differ based on race/ethnicity?

Research Questions

1. Is religiosity – defined as frequency of religious service attendance and congregational membership – associated with willingness to medicate children with psychotropics net of control variables?
2. If so, what is the direction and strength of the association between religiosity and willingness to medicate children with psychotropics?

3. Given a statistically significant association for questions 1 and 2, are there moderating effects for race/ethnicity on the association between religiosity and willingness to medicate children with psychotropics net of control variables?
4. If so, what is the direction and strength of the moderating effects for race/ethnicity on the association between religiosity and willingness to medicate children with psychotropics?
5. Are there mediating effects of religiosity – defined as congregational comfort – on the association between race/ethnicity and willingness to medicate children with psychotropics net of control variables?

Hypotheses

1. Frequency of religious service attendance is significantly associated with willingness to medicate children with psychotropics net of control variables (see conceptual model 1, p. 44).
2. Given a statistically significant association between frequency of religious service attendance and willingness to medicate children with psychotropics, race/ethnicity moderates the association between the predictor and outcome, such that the association is stronger for Black and Latino parents compared to White parents (see conceptual model 1, p. 44).
3. Congregational membership is significantly associated with willingness to medicate children with psychotropics net of control variables (see conceptual model 1, p. 44).
4. Given the statistically significant association between congregational membership and willingness to medicate children with psychotropics, race/ethnicity moderates the association between the predictor and outcome, such that the association is stronger for Black and Latino parents compared to White parents (see conceptual model 1, p. 44).

5. Congregational comfort significantly mediates the association between Black and Latino parents and willingness to medicate children compared to White parents (see conceptual model 2, p. 45).

The above hypotheses are non-directional because it remains unclear exactly how religiosity may affect willingness to use psychotropics. As Cohen et al. (2013) aptly note, religiosity “might discourage or encourage...management of distress. On the one hand, it fosters a view of personal problems as moral failings, with improvement resulting from personal resolve and discipline rather than technical remedies. On the other hand, religiosity fosters optimism and the use of multiple available resources to cope actively with a problem” (p. 1875). Indeed the evidence suggests that religious congregations may foster a range of beliefs and attitudes towards specialty mental health services, including discouraging parishioners from using psychotropics (Payne, 2008), or referring parishioners to specialty providers (Yamada et al., 2012). Research has also found denominational differences among ministers on the perceived causes (e.g., biological, moral, spiritual) of depressed states (Payne, 2009). Given these mixed findings, and given that the present study does not control for denominational differences,⁹ directional hypotheses are not proposed. However, both the moderation and mediation hypotheses do predict differential levels of significance for Black and Latino parents compared to Whites, because research does suggest that racial/ethnic minorities tend to identify themselves as more religious, and rely on clergy and congregations during times of distress when compared to Whites (Kane & Williams, 2000; Taylor et al., 2000; Blank et al., 2002; Chatters et al., 2002; Chatters et al., 2009; Chatters et al., 2011; Newport, 2011).

⁹ This limitation is addressed in the discussion section.

Figure 1: Conceptual Model 1

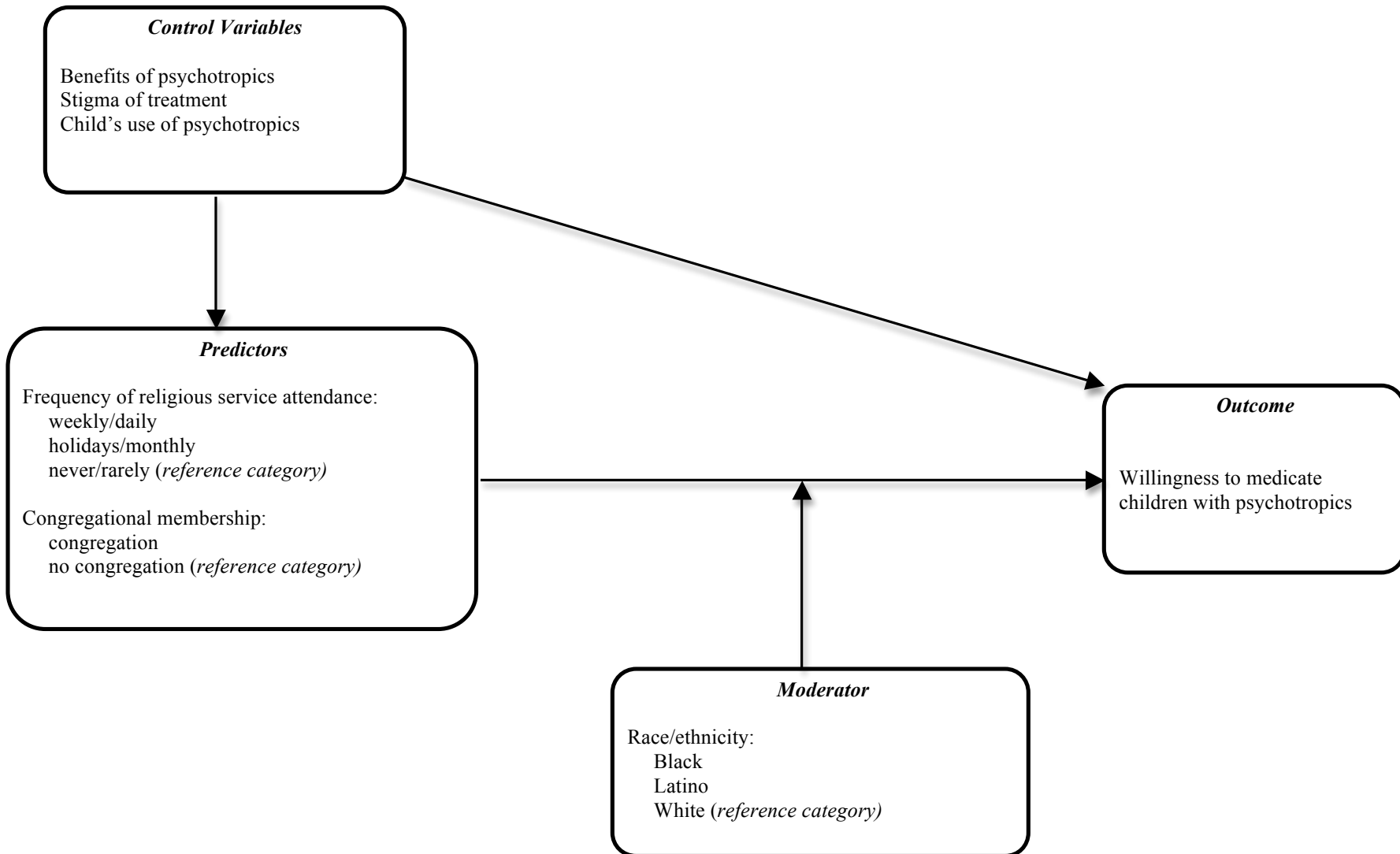
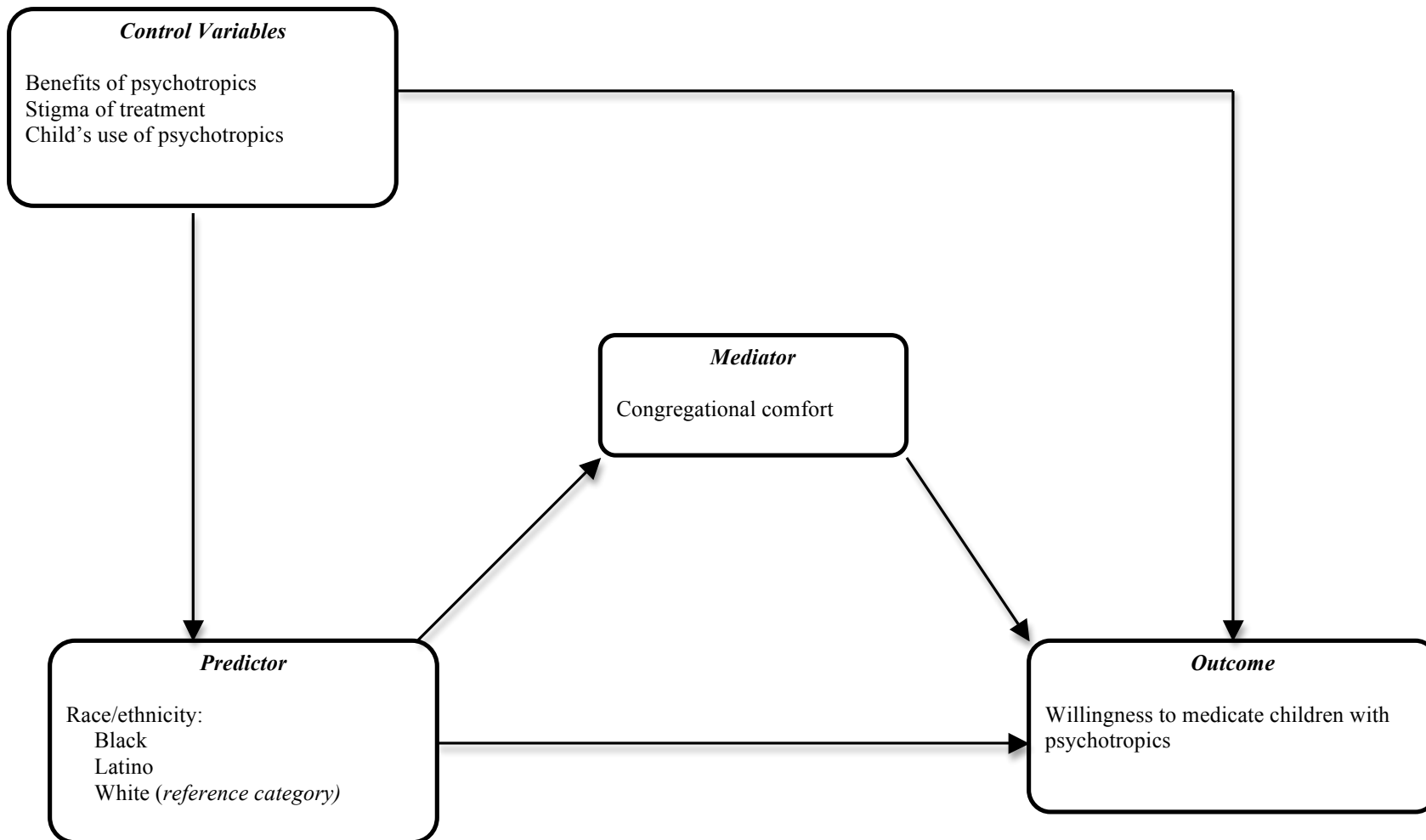


Figure 2: Conceptual Model 2



Chapter 4: Methods

This study analyzes secondary data of randomly digit dialed telephone interviews with parents or caregivers of children ages 5 to 17 living in South Florida in 2009.¹⁰ Institutional review board approval was granted by Florida International University for the original study, and the University of California, Los Angeles gave approval for the secondary data analysis.

Sample and Data Collection

Data were collected between May and October 2009 by trained bilingual (English and Spanish) interviewers. Possible landline and cellular telephone numbers in Miami-Dade and Broward counties were computer dialed during the late afternoon and early evening hours on weekdays and during daytime hours on Saturdays. In 2009, 3.8% of households in Miami-Dade and Broward counties were estimated not to have a landline (U.S. Census Bureau, 2010, as cited in Cohen et al., 2013).

A total of 35,311 telephone numbers were dialed. Of these, 5,985 calls were out-of-scope due to automatic disconnect, fax/modem/beep numbers, place of business, or not a household resident; 17,165 calls were potentially eligible and were called back up to ten times, but screening was not possible due to no answer, busy signal, immediate hang up, immediate refusal, or no English or Spanish spoken; 10,858 calls were screened but respondents did not care for a child between the ages of 5 to 17 in the household; and lastly, 1,303 calls were qualifying households, resulting in a total of 1,145 fully complete interviews. Interview cooperation rate (number of completed interviews – 1,145 – divided by number of qualifying households–1,303) was 87.9%. Response rate (number of completed interviews – 1,145 –

¹⁰ The original study was supported by the U.S. National Institute of Mental Health grant no. R21MH084832.

divided by total number of calls made – 35,311) was 3.2%, or 3.9% if out-of-scope calls are excluded.

Participants

Of the 1,145 completed interviews, only those parents who self-identified as Black (n = 345), Latino/Hispanic of any race (n = 391, including 83.12% White, 5.12% Black, and 11.76% Asian, American Indian, mixed race, and other), or White (n = 344) were included in the analysis, reducing the total sample of participants to 1,080. The sample consists primarily of married women living with one to three children in the home. The sample is evenly divided with respect to race/ethnicity and nativity (U.S born or born abroad), but fathers are underrepresented (approximately 25%). The sample is also exceptionally well educated, with nearly 60% of parents having a college or graduate degree. Moreover, the overwhelming majority of parents report having health insurance for their child and more than 50% report having family incomes over \$50,000 per year. The sample does not resemble a clinical one in the sense that a minority of parents (about 20%) report having children with behavioral or emotional problems. Table 2 displays the total sample's demographic characteristics.

Table 2

Sample Demographic Characteristics (N = 1,080)

Characteristic	n	% / Mean(SD)
Gender		
Female	817	75.65%
Male	263	24.35%
Age (in years)	1080	44.74(10.80)
Race/Ethnicity		
Black (non-Latino)	345	31.94%
Latino (any race)	391	36.20%
White (non-Latino)	344	31.85%
Nativity		
U.S.-born	528	48.89%
Foreign-born	552	51.11%
Education		
Grade School	20	1.86%
Some High School	31	2.89%
High School Graduate	198	18.45%
Some College	188	17.52%
College Graduate	395	36.81%
Graduate Degree	241	22.46%
Family Income		
Under \$10,000	63	7.22%
\$10,000 to \$20,000	77	8.83%
\$20,000 to \$30,000	112	12.84%
\$30,000 to \$50,000	127	14.56%
\$50,000 to \$80,000	154	17.66%
Over \$80,000	339	38.88%
Child Health Insurance		
Yes	972	90.25%
No	105	9.75%
Marital Status		
Single	133	12.45%
Married	788	73.78%
Cohabitation	16	1.50%
Separated	35	3.28%
Divorced	72	6.74%
Widowed	24	2.25%
Number of Children Younger than 18 Living at Home		
None	27	2.50%
One	379	35.09%
Two	410	37.96%
Three	191	17.69%
Four or more	73	6.76%
Child with Behavioral or Emotional Problem		
Yes	211	19.61%
No	865	80.39%

Total n for every characteristic is not 1,080 because of missing data. Totals of percentages are not 100 for every characteristic because of rounding.

Procedures

The interviewer informed respondents that they were calling from Florida International University, College of Public Health and Social Work, and that their phone number was randomly selected to participate in a research study about parents' views on child mental health. Respondents were assured that answers would be confidential and that there would be no way for anyone to identify them in the data or subsequent published reports. Furthermore, respondents were told that the survey would take approximately 15 minutes to complete and could be done at the present moment or scheduled for some time in the future. In order to participate, respondents, or someone else in the household, had to be the parent or guardian of child between the ages 5 to 17. Informed consent was obtained for all respondents who agreed to participate in the interview, and all relevant information on risks and benefits were explained.

Respondents were asked a total of sixty questions bearing on the following topics: perception of the quality of health care for children in South Florida (introductory warm-up question); beliefs about the causes of childhood inattention, hostility, depression, and suicidal-talk; beliefs about the effectiveness of psychiatric medication; willingness to medicate one's child for the aforementioned four behavioral and emotional problems; beliefs about the consequences for a child who receives mental health care; and beliefs and attitudes about corporal punishment, familism, traditionalism, cultural customs, religiosity, and fatalism. The following demographic data were also collected: race/ethnicity, gender, age, zip code, country of birth, length of time living in the United States, education level, employment status, work satisfaction, daily number of hours spent with child, health insurance, type of health insurance, family income, marital status, number of children younger than 18 living at home, having a child with a behavioral or emotional problem, number of children with a behavioral or

emotional problem, whether the child was taking doctor-prescribed medication for the behavioral or emotional problem, whether the child was taking non-doctor-prescribed medication for the behavioral or emotional problem, and whether the parent was taking doctor-prescribed medication for a behavioral or emotional problem. Lastly, parents were asked an open-ended question about the most difficult challenge in child rearing, and they had the opportunity to provide any further comments on the interview. A Spanish language version of the survey was produced with translation and back translation techniques that was also reviewed by two native Spanish-speaking researchers to ensure fit with South Floridian Spanish-speaking populations. Participants who preferred the interview in Spanish numbered 224 (20.7%).

Measures

The measures described below are based on the conceptual models (pp. 44-45). As indicated below, some of the measures were adapted from the 1998 and 2002 General Social Survey (GSS), and the 2002 National Stigma Study (Pescosolido et al., 2007).

Outcome for Models 1 and 2

Willingness to medicate children with psychotropics was adapted from the 1998 GSS (also used by Schnittker, 2003). Parents were asked to indicate on a 4-point Likert scale (1 = *very unlikely*, 2 = *somewhat unlikely*, 3 = *somewhat likely*, 4 = *very likely*) how likely “they would be willing to give doctor-prescribed medication to your child or a child you were responsible for in each of the following situations”:

1. Inattention: a child who is “not paying attention in school, does not finish school work or chores, has difficulty organizing activities, is easily distracted, and seems to run around constantly.”

2. Hostility: a child who is “hostile, often loses his or her temper, often argues with adults, actively defies authority and seems spiteful and vindictive.”
3. Depression: a child who is “depressed or irritable, withdraws from family, friends, and activities, and is not sleeping or eating properly.”
4. Suicidal-talk: a child who is “talking about killing himself/herself.”

A composite ordinal scale for willingness to medicate children with psychotropics was created by summing the responses to the four problems and dividing the total by the four items, creating a scale that ranged from 4 to 16.¹¹ Less than 2% of the responses were missing for each of the four items.

Predictors for Model 1

1. *Frequency of religious service attendance* was adapted from the 2002 GSS (see: Idler et al., 2003): “How often do you attend religious services?” Parents reported their answer on a 7-point Likert scale (1 = *never*, 2 = *rarely*, 3 = *a few times a year (holidays)*, 4 = *once a month*, 5 = *once a week*, 6 = *twice a week*, 7 = *every day*). For the analysis, responses were collapsed into the following categories: *weekly/daily* (responses 5, 6, and 7), *holidays/monthly* (responses 3 and 4), and *never/rarely* (responses 1 and 2). *Never/rarely* was selected as the reference category. Thirteen responses (1.20%) were missing for this item.
2. *Congregational membership* was measured by an item originally designed to assess congregational comfort (Idler et al., 2003), and is tested in its original measurement form as a mediator in Model 2. This item asked: “If you had a problem or were faced with a difficult situation, how much comfort would the people in your congregation, if

¹¹ This outcome measure was also used by Cohen et al. (2013).

you have one, be willing to give you?” Parents reported their answer on a 5-point Likert scale (1 = *no congregation*, 2 = *no comfort at all*, 3 = *very little comfort*, 4 = *some comfort*, 5 = *all the comfort I need*). Responses were collapsed into dichotomous categories: *no congregation* (response 1) and *congregation* (responses 2, 3, 4, and 5). This is an indirect measurement of whether parents have a congregation. Parents who reported no congregation (response 1) were grouped as not having a congregation, while parents who reported various levels of comfort, including none at all, (responses 2, 3, 4, and 5) were implicitly indicating they had a congregation. Responses were dummy coded such that 0 = no congregation and 1 = congregation. Not having a congregation was selected as the reference category. Forty-two responses (3.89%) were missing for this item.

Moderator for Model 1 and Predictor for Model 2

Race/ethnicity was measured by asking parents the following two questions:

1. “With which of the following racial groups do you identify yourself: White, Black, Asian, American Indian, or something else?” (If participants said Hispanic or Latino, interviewers responded “I’ll be asking that on the next question. For this specific question, could you please tell me which racial group you identify yourself with?”)
2. “Are you of Hispanic or Latino descent?”

Only parents that self-identified as Black, Latino/Hispanic (any race), or White were included.

White was selected as the reference category.

Mediator for Model 2

Congregational comfort was adapted from the 2002 GSS (see: Idler et al., 2003): “If you had a problem or were faced with a difficult situation, how much comfort would the people in your

congregation, if you have one, be willing to give you?” Parents reported their answer on a 5-point Likert scale (1 = *no congregation*, 2 = *no comfort at all*, 3 = *very little comfort*, 4 = *some comfort*, 5 = *all the comfort I need*). Response 1 (*no congregation*) was dropped. The other four categories were renumbered as follows: 1 = *no comfort at all*, 2 = *very little comfort*, 3 = *some comfort*, 4 = *all the comfort I need*. Forty-two responses (3.89%) were missing for this item.

Control Variables for Models 1 and 2

1. *Perceived benefits of psychotropics*: was adapted from the 2002 GSS (also used by Schnittker, 2003). Parents were asked to indicate on a 4-point Likert scale (1 = *strongly disagree*, 2 = *somewhat disagree*, 3 = *somewhat agree*, 4 = *strongly agree*) how much they agreed with the following four statements: (1) “psychiatric medications help people deal with day-to-day stresses,” (2) “these medications help people get along with family and friends,” (3) “these medications help people control their symptoms,” and (4) “when people take these medications they feel better about themselves.” A composite ordinal scale for benefits of psychotropics was created by summing the responses to the four responses, and dividing the total by the four items, creating a scale that ranged from 4 to 16.¹² Between 2.13% and 5.19% of the responses were missing for each item. This variable was selected as a control variable based on Schnittker’s (2003) study that found benefits of psychotropics was positively associated with willingness to use psychotropics and accounted for racial differences in such willingness between Blacks and Whites.
2. *Perceived stigma of treatment*: was adapted from the 2002 National Stigma Study (Pescosolido et al., 2007). Parents were asked to indicate on a 4-point Likert scale (1 =

¹² This outcome measure was also used by Cohen et al. (2013).

strongly disagree, 2 = somewhat disagree, 3 = somewhat agree, 4 = strongly agree)

how much they agreed with whether a child receiving mental health treatment: “would become an outsider at school,” “would suffer as an adult if others learned of the past treatment,” whether the “community would manage to identify such a child” and whether “the parent would feel like a failure.” A composite ordinal scale for stigma of treatment was created by summing the responses to the four responses, and dividing the total by the four items, creating a scale that ranged from 4 to 16. Between 1.30% and 2.69% of the responses were missing for each item.

3. *Child’s use of psychotropics*: Parents were asked: “Are any of your children taking doctor-prescribed medication for a psychological, emotional, or behavioral problem?” Responses were dummy coded such that 0 = does not use psychotropics (“no”) and 1 = use of psychotropics (“yes”). Child not taking psychotropics was selected as the reference category. Seventy-two responses (6.67%) were missing for this item. This variable was selected because parents who already have children using psychotropics may be more willing to use medication as a method of intervention for child behavioral or emotional problems.

Descriptive statistics for the key variables are presented in Table 3 for the total sample and for the three racial/ethnic groups. The intercorrelational table for the total sample and for the three racial/ethnic groups is presented in Table 4.

Table 3

Variable Descriptives for Total Sample, Black Parents, Latino Parents, and White Parents

Variable	Total Sample (N = 1,080)			Black Parents (n = 345)			Latino Parents (n = 391)			White Parents (n = 344)		
	n	α	M(SD) / %	n	α	M(SD) / %	n	α	M(SD) / %	n	α	M(SD) / %
Willingness to medicate children	1045	0.80	9.93(3.56)	333	0.79	9.88(3.60)	381	0.81	9.66(3.66)	331	0.80	10.30(3.39)
Frequency of religious service attendance												
weekly/daily	559		52.39%	247		72.86%	187		48.20%	125		36.76%
holidays/monthly	276		25.87%	44		12.98%	104		26.80%	128		37.65%
never/rarely	232		21.74%	48		14.16%	97		25.00%	87		25.59%
Congregational membership												
Congregation	849		81.79%	305		91.59%	278		73.94%	266		80.85%
No congregation	189		18.21%	28		8.41%	98		26.06%	63		19.15%
Congregational comfort	849		3.30 (0.82)	305		3.39 (0.73)	278		3.05 (0.88)	266		3.14 (0.83)
Benefits of psychotropics	982	0.73	11.94(2.58)	309	0.70	11.66(2.59)	360	0.73	11.76(2.69)	313	0.73	12.42(0.14)
Stigma of treatment	1005	0.61	8.48(2.81)	323	0.61	9.25(2.92)	356	0.59	8.23(2.72)	326	0.61	8.01(2.64)
Child's use of psychotropics												
Yes	101		10.02%	26		7.88%	25		7.14%	50		15.24%
No	907		89.98%	304		92.12%	325		92.86%	278		84.76%

Total n for every variable may vary due to missing data.

Table 4

Intercorrelations for Variables in Total Sample and by Racial/Ethnic Group

Variable	1	2	3	4	5	6	7
Total Sample (N = 1,080)							
1. Willingness to medicate children	1.00						
2. Frequency of religious service	-0.03	1.00					
3. Congregation	0.10***	0.51***	1.00				
4. Congregational comfort	0.04	0.27***	.	1.00			
5. Stigma of treatment	-0.11**	0.11**	0.07*	0.0003	1.00		
6. Benefits of psychotropics	0.48***	-0.02	0.03	0.0002	-0.09**	1.00	
7. Child's use of psychotropics	0.24***	-0.01	0.15	0.03	-0.02	0.13***	1.00
Black Parents (n = 345)							
1. Willingness to medicate children	1.00						
2. Frequency of religious service	-0.01	1.00					
3. Congregation	0.09	0.43***	1.00				
4. Congregational comfort	0.01	0.18**	.	1.00			
5. Stigma of treatment	-0.06	0.04	0.04	-0.01	1.00		
6. Benefits of psychotropics	0.42***	0.05	0.05	-0.05	0.002	1.00	
7. Child's use of psychotropics	0.16**	0.09	+	0.04	-0.08	0.07	1.00
Latino Parents (n = 391)							
1. Willingness to medicate children	1.00						
2. Frequency of religious service	-0.01	1.00					
3. Congregation	0.10*	0.48***	1.00				
4. Congregational comfort	0.14*	0.25***	.	1.00			
5. Stigma of treatment	-0.13**	0.10	0.04	0.01	1.00		
6. Benefits of psychotropics	0.45***	0.02	0.06	0.02	-0.10*	1.00	
7. Child's use of psychotropics	0.22***	0.001	-0.23	0.07	0.03	0.13*	1.00
White Parents (n = 344)							
1. Willingness to medicate children	1.00						
2. Frequency of religious service	-0.05	1.00					
3. Congregation	0.11*	0.56***	1.00				
4. Congregational comfort	-0.02	0.29***	.	1.00			
5. Stigma of treatment	-0.13**	0.04	0.04	-0.09	1.00		
6. Benefits of psychotropics	0.57***	-0.04	0.02	0.07	-0.14**	1.00	
7. Child's use of psychotropics	0.30***	-0.03	0.06	-0.01	0.01	-0.02	1.00

* $p \leq 0.05$, ** $p \leq 0.01$, *** $p \leq 0.001$, two-tailed tests

+ Statistic cannot be calculated. There are no Black parents of children who took psychotropics and did not have a congregation.

Chapter 5: Results

All analyses were conducted in STATA version 12 (StataCorp., 2011).

Preliminary Analyses

For the total sample, and for each racial/ethnic subgroup, descriptive statistics and bivariate correlations were calculated for the predictor, mediator, outcome, and control variables (see Table 3). Cronbach's alpha tests were conducted to evaluate internal consistency for willingness to medicate children with psychotropics, benefits of psychotropics, and stigma of treatment for the whole sample and for each racial/ethnic group (see Table 3). Pearson product-moment and tetrachoric correlation coefficients were examined between all continuous, ordinal, and dichotomous variables (see Table 4).

Ordinary least squares (OLS) multiple regression was used to test Model 1, and a path analysis was used to test the mediation hypothesis in Model 2. OLS multiple regression was used to test the predictive effect of religiosity in willingness to medicate children with psychotropics because it allows for the simultaneous testing of various independent variables on the dependent variable (Mertler & Vannatta, 2005; Aneshensel, 2013). Path analysis partly uses multiple regression as a way of providing explanations for potential causal relationships among variables (Mertler & Vanatta, 2005), and is one method for testing mediation (UCLA Statistical Consulting Group, n.d._a).

All models used listwise deletion and the path analysis used maximum likelihood for missing values. All primary assumptions (i.e., independence of observations, homogeneity of variance of the residuals, normality of distribution residuals, non-multicollinearity) for the models were met. While it is often believed that OLS regression requires normally distributed variables, it is the normality of the residuals that is required for hypothesis testing (UCLA

Statistical Consulting Group, n.d.b). The distributions for willingness to medicate children with psychotropics, benefits of psychotropics, and stigma of treatment were visually inspected with histograms. The outcome variable, willingness to medicate children with psychotropics, approximates a normal distribution, although it is slightly off normal at the boundaries (scores of 4 and 16).

Multivariate Regression Results for Model 1

A multivariate regression model was fitted to the data to test the association between frequency of religious service attendance and willingness to medicate children with psychotropics net of control variables. Two models were tested. The first, the simultaneous model, consisted of all variables entered simultaneously. The omnibus multiple regression model was statistically significant $F(6, 883) = 60.59, p \leq 0.0001$, with the model explaining approximately 30% of the variance ($R^2 = 0.303, Adj. R^2 = 0.298$). The effect of religious service attendance, however, was not statistically significant. There was no statistically significant association between parents who attend weekly or daily and willingness to medicate children with psychotropics compared to parents who attend never or rarely net of control variables, $b = -0.54, p = 0.07$. Moreover, there was no statistically significant association between parents who attend religious services on holidays or monthly and willingness to medicate children with psychotropics compared to parents who attend religious services never or rarely net of control variables, $b = -0.02, p = 0.93$.

Congregational membership was significantly associated with willingness to medicate children with psychotropics. Parents who have a congregation were significantly more likely to medicate children with psychotropics when compared to parents who do not have a congregation, $b = 1.13, p \leq 0.001$. On average, parents who have a congregation have a

willingness to medicate children with psychotropics score that is 1.13 point higher than those parents who do not have a congregation (on a scale from 4 to 16).

The second model, the moderation model, tested for interaction effects. Given that the two categories for frequency of religious service attendance (weekly/daily and holidays/monthly) were not significantly associated with willingness to medicate children with psychotropics, these two variables were not tested in the moderation model. However, given the significant effect for congregational membership, interaction terms were entered into the moderation model to test for moderation. The following interaction terms were added to the model: Black x Congregation and Latino x Congregation. The multi-degree of freedom test was not statistically significant, $F(2, 829) = 0.87, p = 0.41$; there was no significant interaction between having a congregation and Black parents, $b = 0.28, p = 0.73$ nor Latino parents, $b = -0.62, p = 0.31$.

Hypotheses 1 and 2 respectively predicted that frequency of religious service attendance is significantly associated with willingness to medicate children with psychotropics, and that the association is moderated by race/ethnicity. These hypotheses were not supported by the data. Hypotheses 2 and 3 respectively predicted that having a congregation is significantly associated with willingness to medicate children with psychotropics, and that the association is moderated by race/ethnicity. These hypotheses were partially supported. Parents who have a congregation were significantly more likely to medicate their child for behavioral or emotional problems compared to those parents who do not have a congregation, but the association was not conditional on parents' race/ethnicity.

Table 5

Regression Summary of Model 1: Predicting Parents' Willingness to Medicate Children with Psychotropics

Variable	Simultaneous Model	Moderation Model
Weekly/Daily Attendance ^a	-0.54 (-1.78)	-0.59 (-1.93)
Holidays/Monthly Attendance ^b	-0.02 (-0.09)	-0.02 (-0.08)
Having a Congregation ^c	1.13*** (3.56)	1.35** (2.74)
Stigma of Treatment	-0.08** (-2.40)	-0.09* (-2.53)
Benefits of Psychotropics	0.63*** (15.54)	0.63*** (15.50)
Child's use of Psychotropics ^d	1.83*** (5.49)	1.84*** (5.48)
Black ^e	--	-0.10 (-0.13)
Latino ^f	--	0.43 (0.79)
Black x Congregation ^g	--	0.28 (0.34)
Latino x Congregation ^h	--	-0.62 (-1.02)
R ²	0.303	0.306
Adjusted R ²	0.298	0.297

t statistics in parentheses.

$p \leq 0.05$, ** $p \leq 0.01$, *** $p \leq 0.001$

^a Reference category is never/rarely attendance.

^b Reference category is never/rarely attendance.

^c Dummy coding: 0 = no congregation (reference category), 1 = congregation.

^d Dummy coding: 0 = does not take psychotropics (reference category), 1 = takes psychotropics.

^{e-h} White is the reference category.

Path Analysis Results for Model 2

Path analysis was used to test if congregational comfort mediates the association between race/ethnicity and willingness to medicate children with psychotropics in two multivariate models: Black parents vs. White parents and Latino parent vs. White parents. All variables – i.e., predictors, mediator, outcome, and control variables were simultaneously entered into the models. A series of equations simultaneously tested the direct effects for race/ethnicity and willingness to medicate children with psychotropics, race/ethnicity and congregational comfort, and congregational comfort and willingness to medicate children with psychotropics, as well as the indirect or mediational effect of race/ethnicity that passes through congregational comfort in willingness to medicate children.

Black vs. White Model

The direct effects show that Black parents did not significantly differ in willingness to medicate children with psychotropics compared to White parents, $b = 0.21, p = 0.39$, but that Black parents reported significantly more congregational comfort compared to White parents, $b = 0.26, p \leq 0.001$ net of control variables. The direct effect between congregational comfort and willingness to medicate children with psychotropics was nonsignificant, $b = 0.19, p = 0.15$ (this is the same for both models). The indirect effect of race/ethnicity that passes through congregational comfort did not achieve statistical significance, $b = 0.05, p = 0.18$.

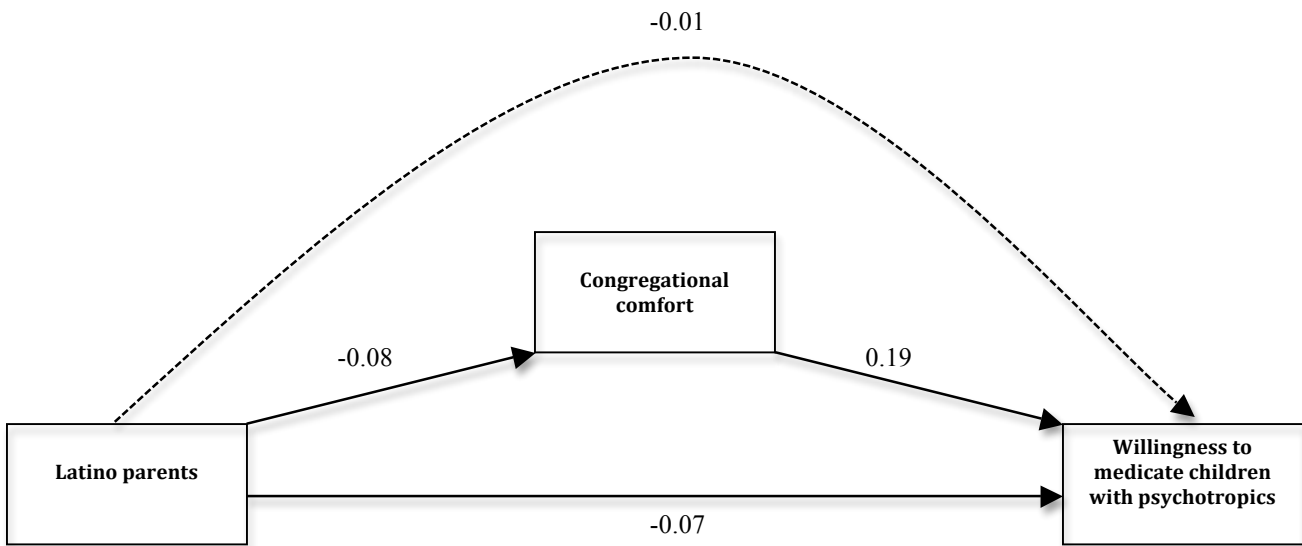
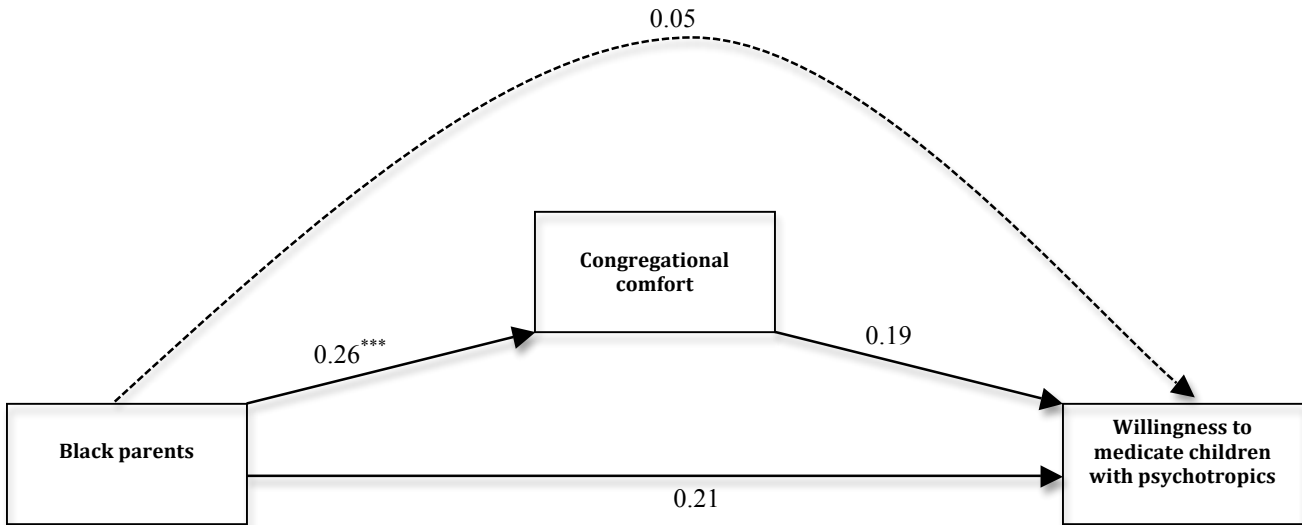
Latino vs. White Model

The direct effects show that Latino parents did not significantly differ in willingness to medicate children with psychotropics compared to White parents, $b = -0.07, p = 0.76$, nor did they differ in their reported level of congregational comfort compared to White parents, $b =$

-0.08, $p = 0.24$ net of control variables. Moreover, the indirect effect of race/ethnicity that passes through congregational comfort did not achieve statistical significance, $b = -0.01$, $p = 0.37$.

Figure 1 graphically depicts the direct and indirect effects in both models.

Figure 3: Path Diagram



Notes:
 $p \leq 0.05$, ** $p \leq 0.01$, *** $p \leq 0.001$
Control variables are not depicted
Path coefficients are net of the effect of control variables
White parents are the reference category
Solid lines indicate direct effects
Dashed lines indicate indirect effects

Post Hoc Analysis

To further explore and disentangle the effects of race and ethnicity, the above analyses were tested with parents who self-identified as Black ($n = 365$) or White ($n = 669$) regardless of Latino ethnicity. No significant changes in the results emerged. Parents who have a congregation remained more likely to medicate their children with psychotropics than parents who do not have a congregation, but there was no significant interaction between Black parents and congregation. Moreover, congregational comfort did not significantly mediate the association between Black parents and willingness to medicate children with psychotropics, although Black parents were significantly more likely to report congregational comfort compared to White parents. Given the small number ($n = 20$) of parents who identified as Black and Latino compared to the substantially larger number ($n = 325$) of parents who identified as White and Latino, the above analyses were not tested among these two subgroups.

Chapter 5: Discussion

Major Findings

This study explored the effect of religiosity in parents' willingness to medicate children with psychotropics as both predictor and mediating variables in a racially/ethnically diverse sample of parents living in South Florida. This is the first study to conceptualize religiosity as a focal predictor of willingness to medicate children with psychotropics, and the second to test a mediation hypothesis with religiosity as a mediating variable between race/ethnicity and willingness to medicate children. Multivariate regression and path analysis were used to test the predictive and mediating effects of religiosity in willingness to medicate children with psychotropics while simultaneously controlling for benefits of psychotropics, stigma of treatment, and child's use of psychotropics. The major findings of the study are:

1. No significant association exists between frequency of religious service attendance, as measured by the categories weekly/daily attendance and holidays/monthly attendance compared to never/rarely attendance, and willingness to medicate children with psychotropics net of control variables.
2. Parents who have a congregation were significantly more willing to medicate their children with psychotropics compared to parents who do not have a congregation net of control variables.
3. The significant positive association between having a congregation and willingness to medicate children with psychotropics was not moderated by race/ethnicity net of control variables.

4. There were no significant differences in the associations between Black and Latino parents in willingness to medicate children when compared to White parents net of control variables.
5. There was a significant positive association between Black parents and greater congregational comfort compared to White parents net of control variables.
6. Congregational comfort did not significantly mediate the association between race/ethnicity and willingness to medicate children in the two path models (Black vs. White and Latino vs. White) net of control variables.
7. The three control variables – i.e., benefits of psychotropics, stigma of treatment, and child’s use of psychotropics, were statistically significant in the multivariate regression model. Parents who perceive more favorable benefits of psychotropics, and parents who report that their child was currently taking doctor-prescribed medications for behavioral or emotional problems were significantly more willing to medicate their children with psychotropics. Conversely, parents who perceived greater treatment stigma were significantly less willing to medicate their children with psychotropics.
8. The above findings hold when testing the models among Black and White parents regardless of Latino ethnicity.

Research Questions 1 and 2: Predictive Effect of Religiosity in Willingness to Medicate Children with Psychotropics

Research questions 1 and 2 asked:

1. Is religiosity associated with willingness to medicate children with psychotropics net of control variables?
2. If so, what is the direction and strength of the association between religiosity and willingness to medicate children with psychotropics?

This study began from the premise that religiosity is relevant to human behavior and decision-making. Using the functional approach to the study of religion and an ecological perspective, the present study framed religiosity as part of parents' microsystem that come to influence their willingness to medicate children with psychotropics. From this vantage point, two behavioral measures of religiosity were tested as predictors of parents' willingness to medicate children, and a religious social support variable was tested as a mediator between race/ethnicity and willingness to medicate children. The underlining hypotheses were that participation in religious institutions or congregations, or the comfort received via participation, as measured by frequency of religious service attendance, congregational membership, and congregational comfort (one microsystem), may influence parents' treatment willingness in other hypothetical microsystems, e.g., the home environment or the health care setting where the decision to medicate children with psychotropics is often made. The results of the study present mixed findings, and some evidence that congregations affect parents' treatment willingness.

Frequency of religious service attendance is one of the strongest predictors in religiosity and health/mental health research (Hall, Meador, & Koenig, 2008). As discussed in the literature review, Harris et al. (2006) found a significant positive association between frequency of religious service attendance and reported use of psychotropics among seriously distressed individuals. In the present study, however, frequency of religious service attendance failed to achieve statistical significance with the outcome. It is not clear why such a purportedly strong predictor failed to be significantly associated with willingness to medicate children with psychotropics. Perhaps the severity of the problem, as accounted for by Harris et al. (2006), interacts with frequency of service attendance in important ways. This study did not examine the severity of children's problems, and this may explain why religious service attendance was not

significantly associated with the outcome. Alternately, frequency of religious service attendance may not be a robust predictor of parents' willingness to medicate children with psychotropics. This, however, appears counterintuitive given the significant association between having a congregation and greater willingness to medicate children with psychotropics. After all, it is logical that parents who have a congregation are likely to attend their congregation frequently, and indeed, as shown in the intercorrelations table (see p. 56), frequency of religious service attendance and having a congregation are positively correlated. The results show that parents who have a congregation have a willingness to medicate children score that is 1.13 points higher (on a scale of 4 to 16) than parents who do not have to a congregation. This finding is not easily explained, and interpretations are more speculative than conclusive. Certainly one important consideration is that congregational membership was not explicitly measured in this study, but rather implicitly constructed based on an item that asked parents to report their perceived level of comfort from their congregation should they have one. Parents who stated that they did not have a congregation were grouped separately and used as the reference category, while parents who reported differential levels of comfort (including none at all) were categorized as having a congregation. Consequently, the significant association between having a congregation and willingness to medicate children cannot be entirely reduced to perceived congregational comfort, given that the variable was partly composed of parents who reported no perceived comfort from their congregation.¹³ Nonetheless, because of the indirect way that congregational membership was measured in this study, measurement error remains one possibility, and future research in this area should directly measure if participants belong to a congregation, as well as explore the meaning of congregational membership. A fundamental question that accompanies the single-

¹³ Congregation: n = 849, including 59 participants who reported no comfort from their congregation. No congregation: n = 189.

item religiosity measures used in this study is the meaning behind them. What does frequency of religious service mean? What does belonging to a congregation mean? Are these behaviors a mere reflection of attendance patterns and membership, or do they reflect other latent processes? These questions are especially important when incorporating the functional approach to the study of religion and the ecological perspective with the findings. It appears that belonging to a congregation is indeed important in parents' willingness to medicate children with psychotropics, but why congregations influence parents – and what are the benefits or drawbacks of this influence – that is, what exactly is the function of a congregation beyond merely encouraging willingness – remains unanswered.

Moreover, the potential effect of denominational differences in parents' willingness to medicate children is unexplored in the present study. This is one important limitation of the findings because, as previously discussed, there appears to be a variety of ways in which congregations may foster attitudes and beliefs about psychotropics and specialty mental health services generally (Payne, 2008; Yamada et al., 2012). On the other hand, however, if different congregations do in fact nurture different attitudes towards psychotropics, then one might expect from a random sample to find no significant association between congregational membership and willingness to medicate children, given the diverse ways congregations influence beliefs about psychotropics. According to the Pew Research Center Religion & Public Life Project (2013), nearly three-quarters of Florida's population is affiliated with Christian traditions (26% Catholic, 25% Evangelical Protestant, 15% Mainline Protestant, 8% Historically Black Protestant). The likely diversity within these traditions makes the present findings particularly striking given evidence that different denominations have different perspectives on mental health problems (for example, see Payne, 2009). Despite the fact that the parents in this study probably belong to

different congregations from different denominations, the significance of the congregational effect on willingness to medicate children withstood such diversity. One possible explanation for this is that congregational membership has little to do with religiosity per se, but rather reflects the need to control child misbehavior during religious ceremonies. Inattentive, misbehaved, and noncompliant children may disturb parishioners, embarrass parents, and ostracize families from social support networks. From this perspective, the association between congregational membership and willingness to medicate reflects the use of psychotropics for the purpose of social control within hierarchical and structured religious institutions. Indeed scholars have argued that medicalization, the process by which nonmedical problems become treated as medical illnesses, is intimately linked with social control (Conrad, 1992). The desires to maintain order, conform to social expectations, and control problematic child behavior to secure peer acceptance and foster social support networks may override divergent denominational teachings on the acceptability of psychotropics. Such an explanation is reflective of the functional approach to the study of religion because it supports the perspective that religion helps to maintain social order (Durkheim, 1915). Furthermore, qualitative evidence suggests that mothers' social support networks influence their decisions to seek professional help for their child's disruptive behaviors (Arcia, Fernández, & Jáquez, Castillo, & Ruiz, 2004). Congregations provide a range of social networks that tie together individuals, families, and communities. Problematic child behaviors or emotions that threaten such networks may require quick resolve. Medicating children with psychotropics is one possible solution.

Research Question 3 and 4: Moderating Effect of Race/Ethnicity

Research questions 3 and 4 asked:

3. Given a statistically significant association for questions 1 and 2, are there moderating effects for race/ethnicity on the association between religiosity and willingness to medicate children with psychotropics net of control variables?
4. If so, what is the direction and strength of the moderating effects for race/ethnicity on the association between religiosity and willingness to medicate children with psychotropics?

Several studies have shown that clergy and congregations are important providers of care for racial/ethnic minorities during times of distress, and that racial/ethnic minorities prefer to rely on these resources as first points of contact when confronting a personal problem (Blank et al., 2002; Chatters et al., 2002; Chatters et al., 2011; Kane & Williams, 2000; Neighbors et al., 1998; Taylor et al., 2000;). Research also shows that Blacks and Latinos attend religious service more frequently and identify as more religious when compared to Whites (Chatters et al., 2009; Newport, 2011). However, researchers of religion and mental health have suggested that turning towards faith during times of crisis is a human experience that transcends race/ethnicity (Koenig, 2005; Pargament, 1997), and indeed there is no evidence in the present study that the association between congregational membership and greater willingness to medicate children is conditional on race/ethnicity. However, given the above considerations on the multiple dimensions of the construct of religiosity, it remains unknown whether race/ethnicity may moderate other dimensions of religiosity with respect to willingness to medicate children with psychotropics. The practice and expression of religious faith is expected to intersect with culture, and the relationship between these two constructs is likely bidirectional. The influence of race/ethnicity on religiosity and its influence on treatment willingness for children cannot be entirely

discredited, but no evidence in the present study suggests that the influence of congregational membership in willingness to medicate children with psychotropics depends on race/ethnicity.

Research Question 5: Mediating Effect of Religiosity

Research question 5 asked:

5. Are there mediating effects of religiosity – defined as congregational comfort – for race/ethnicity and willingness to medicate children with psychotropics net of control variables?

A large and conclusive body of work shows that, on average, Black and Latino children and adolescents are less likely to use or be prescribed psychotropics compared to their White counterparts (Olfson et al., 2002; Olfson et al., 2013; Vitiello et al., 2006; Zito et al., 1998; Zito et al., 2003; Zuvekas et al. 2006;). A mediation hypothesis was tested to determine if religiosity explains racial/ethnic differences in willingness to medicate children. Following the mediation test conducted by Cohen et al. (2013) which found that their composite measure of religiosity did not mediate the association between race/ethnicity and willingness to medicate, the present study unpacked their measure to test whether congregational comfort alone mediates the aforementioned association. The present mediation test did not achieve statistical significance and the result, along with the results from Cohen et al., suggest that religiosity is not a statistically significant mediator between race/ethnicity and willingness to medicate children with psychotropics. Moreover, two important findings arose from this analysis.

First, no differences in the association between Black and Latino parents compared to White parents in willingness to medicate children with psychotropics emerged net of control variables. This is surprising given the extensive literature that has documented racial/ethnic differences in use of psychotropics and prescriptions for children and adolescents since the

1980s. It is possible that as the racial/ethnic gap in psychotropic prescriptions has narrowed, so to have racial/ethnic differences in parents' attitudes towards psychiatric medication (see Pescosolido et al., 2007). However, few studies using national probability samples have examined racial/ethnic differences between Latinos and Whites. A unique facet of the present study is that it included a probability sample of South Floridian Latinos. A post hoc Analysis of Variance (ANOVA) was conducted to test if mean willingness to medicate children with psychotropics scores differed among Black, Latino, and White parents. No significant differences emerged between Blacks and Whites, but Latinos were significantly less likely to medicate children with psychotropics compared to Whites (results not shown, control variables not included). More research is needed to determine whether the Black-White gap in psychotropic use has narrowed on a national scale, and whether differences between Latinos and White continue to exist.

Second, additional mediation analyses were conducted to determine if the two variables identified by Schnittker (2003) – i.e., perceived benefits of psychotropics and perceived negative side effects of psychotropics¹⁴ – mediated the association between race/ethnicity and willingness to medicate children with psychotropics. In follow-up analyses (results not shown), Black and Latino parents reported significantly less benefits of psychotropics compared to Whites, benefits of psychotropics was positively associated with willingness to medicate children with psychotropics, and benefits of psychotropics mediated the association between Black parents compared to White parents, and Latino parents compared to White parents, in willingness to medicate children with psychotropics. The results were net of the effect of stigma of treatment and child's use of psychotropics. Conversely, Black and Latino parents reported significantly

¹⁴ Perceived negative side effects of psychotropics was not included in the present study's analyses because it was reasoned that it was the conceptual opposite of perceived benefits of psychotropics. There were no differences in the results when perceived negative side effects was added to the statistical models in this study.

more negative side effects of psychotropics compared to Whites, negative side effects was inversely associated with willingness to medicate children with psychotropics, and negative side effects mediated the association between Black parents compared to White parents, and Latino parents compared to White parents, in willingness to medicate children with psychotropics. The results were net of the effect of stigma of treatment and child's use of psychotropics. These findings, along with Schnittker's, strongly demonstrate that racial/ethnic differences in attitudes are the primary reasons underlying racial/ethnic differences in willingness to medicate children.

Such attitudes, however, are not innate beliefs – they are socially and culturally learned, and they may have religious origins, although determining causality is likely difficult without longitudinal data. Schnittker (2003) found a significant inverse association between religious service attendance and unfavorable perceptions about the side effects of Prozac, and Pescosolido et al. (2007) found that individuals with liberal religions (e.g., Episcopalian) were significantly less likely to hold stigmatizing attitudes towards specialty mental health treatment for children compared to individuals with moderate or conservative religions (e.g., Southern Baptist).¹⁵ In additional follow-up analyses (results not shown), some evidence was found for the influence of religiosity on attitudes in the present study. Self-identified religiosity¹⁶ was positively associated with negative side effects of psychotropics (but not benefit of psychotropics), even after controlling for child's use of psychotropics (but not stigma of treatment). Taken together, these findings demonstrate that attitudes towards specialty mental health treatments are associated with religiosity, and while religiosity per se is not a direct mediator between race/ethnicity and willingness to medicate children, it is linked with at least one verified mediator – attitudes.

¹⁵ Pescosolido et al. (2007) did not explain by what measure the different denominations were categorized as “liberal” or “moderate/conservative.”

¹⁶ Self-identified religiosity was measured by asking participants: “To what extent do you consider yourself a religious person?” Respondents answered: 1 = nonreligious, 2 = a little religious, 3 = somewhat religious, 4 = very religious.

The diverse ways in which religiosity influences human behavior is striking. The present study found a significant positive association between having a congregation and willingness to medicate children with psychotropics, but also a positive association between self-identified religiosity and perceived negative side effects of psychotropics. These findings suggest that as much as religiosity may encourage parents to medicate children, religiosity may also discourage this decision by fostering greater negative perceptions about the side effects of psychotropic drugs. Indeed the results from this study appear to paint at least two competing pictures of how religiosity affects willingness to medicate children. The conditions under which one effect dominates the other, or how these influences are resolved, remains unanswered.

Implications for Social Work

The direct implications of this study for practice and policy are limited given the partially statistically significant and preliminary nature of the present findings. Instead, in this section, a general guiding perspective is offered as to how the evidence from studies that examine the influence of religiosity in willingness to use specialty mental health services should be applied to practice.

Social workers operate within various systems of their clients' lives, including the religious. As a profession and discipline that strives to understand the whole person within their sociocultural environment, social work must also recognize the role of a client's faith in their experience and resolution of life's problems. Such an understanding not only acknowledges that religion is important to many, but also expands our professional perspective of the services and actors that can provide care during times of distress. As Vega and Lopez (2001) eloquently write, "the provision of care and the promotion of mental health must not be conceived as solely within the purview of health and mental health professionals...the study of natural support systems and

the consideration of how to enhance family and community based caregiving is critical to the development of optimal care” (p. 195). In this study, preliminary evidence is found for the role that congregations have in influencing parents’ treatment willingness for child behavioral and emotional problems. The findings suggest that parents who have a congregation are more likely to medicate children with psychotropics, although it remains unclear as to how and why congregations are influential. It is the author’s position that knowledge of how religiosity influences treatment willingness should not be used to narrow observed racial/ethnic differences in psychotropic use for children and youth – an observation that has sometimes been framed as a “health disparity” – nor to influence clients that are perceived and labeled as “resistant” to treatment, without first critically evaluating the literature on the efficacy of psychotropics. Cohen et al. (2013) argue that calling the observed differences in psychotropic use among racial/ethnic minority children and adolescents compared to Whites a health disparity is both premature and problematic because: (1) the rates of prescriptions outnumber studies on the efficacy and safety of psychotropics with this population, (2) normal childhood conflicts, misbehavior, and variations in temperaments become medicalized, (3) conflicts of interest in research, especially caused by industry funding, mislead providers and consumers about drug effects, and (4) the study of the potential harm of these drugs on the child’s brain and emotions has been neglected. Given these concerns, Cohen et al. (2013) argue that the observed racial/ethnic differences in use of psychotropics and prescriptions do not constitute a traditional health disparity as the jury remains out on the full effects of these drugs. Furthermore, if differences in prescriptions and reported use of psychotropics are conceptualized as health disparities, and social workers seek to increase a certain racial/ethnic group’s use of psychotropics to lessen the presumed disparity, then the practice may develop into coercion despite well-intentioned efforts. Knowledge of

clients' religious beliefs and practices must not be manipulated in to order uniformly impose treatments, but rather should be interpreted through the lens of social work's professional ethical standards: to promote the wellbeing and self determination of clients and to avoid conflicts of interests (National Association of Social Workers, 1996).

Limitations

This study contains several limitations. First, data are cross-sectional, limiting causal conclusions. Second, the religiosity variables used in this study are single-item measures that may increase measurement error and fail to fully operationalize the constructs investigated. While an argument is offered that the multiple dimensions of religiosity are best analyzed separately, single item measures may not represent the ideal measurement of these dimensions. In the forthcoming section, suggestions are offered for future research with respect to the development of more nuanced measures. Third, and closely related, this study used secondary data analysis of a study originally designed to assess the influence of multiple variables in parents' willingness to medicate children with psychotropics, not the role of religiosity specifically. As such, this study was limited to the variables in the original study. Fourth, religious denomination was not accounted for in this study. While on the one hand this may suggest a unique effect for congregational membership regardless of denomination in willingness to medicate children with psychotropics, it may also paint a partial picture that would shift if denomination were taken into account.

Directions for Future Research

The research on religiosity and willingness to use psychotropics and other specialty mental health services is largely underdeveloped. The present study raises several intriguing questions to be explored in future studies. More research is needed to fully disentangle the

various dimensions of religiosity to better understand which dimensions influence treatment willingness and why. Additionally, the primary statistically significant finding in the present study – the strong positive association between having a congregation and willingness to medicate children – requires replication and additional research to understand why congregational membership encourages willingness to medicate children with psychotropics, as well as how denominational differences may alter this association. Moreover, measures that capture the nuances of what it means to have or belong to a congregation are needed. Single-item measures such as “do you belong to a congregation?” where participants respond by indicating yes or no is not sufficient. The history and meaning associated with membership should also be explored. While race/ethnicity did not emerge as a significant moderator in the models, additional work is needed to identify how race/ethnicity and other cultural characteristics may intersect with religiosity and its various dimensions, and if race/ethnicity intersects with certain religious dimensions but not others. The great paradox of the present study, as is implicit in much of the reviewed literature, is that on the one hand there is a positive association between congregational membership and parents’ willingness to medicate children with psychotropics, but on the other hand, a positive association between self-identified religiosity and perceived negative side effects of psychotropics. Within the same sample of parents, religiosity is associated with both greater willingness to medicate children and harboring negative attitudes towards psychotropics. How these two phenomena can co-exist is perplexing, and the conditions under which they are resolved or not, or which influence dominates in actual decision-making and why, are the critical questions to be explored in future research. It is clear that the influence of religiosity on human behavior and decision-making is not consistent, and as such the

development of theoretical paradigms that capture these nuances are needed to both make sense of these contradictory findings and nurture the development and growth of this field of inquiry.

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