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Mental Health Service Utilization Among At-Risk Urban Adolescents: The Relative Contributions Of Perceived Need, Attitude, And Spirituality/ religiosity

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MENTAL HEALTH SERVICE UTILIZATION AMONG AT-RISK URBAN ADOLESCENTS: THE RELATIVE CONTRIBUTIONS OF PERCEIVED NEED, ATTITUDE, AND SPIRITUALITY/RELIGIOSITY

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CHAPTER 1

Introduction

Adolescence has been described as "a time of storm and stress" (Arnett, 1999; Hall, 1904). For instance, a national survey in the United States estimated that adolescents were twice as likely as adults to report at least one major depressive episode in the past 12 months (Center for Behavioral Health Statistics and Quality, 2016). In particular, adolescents who were poor, who belonged to ethnic minority groups, and who lived in urban neighborhoods were more vulnerable to mood and behavioral symptoms than their White/Caucasian counterparts who grew up in relatively affluent suburban and rural areas (Beyers, Bates, Pettit, & Dodge, 2003; McLaughlin, Hilt, & Nolen-Hoeksema, 2007; Slopen, Fitzmaurice, Williams, & Gilman, 2010). In the United States, estimates are that half of all adolescents with mental health problems do not seek or obtain mental health treatment (Costello, He, Sampson, Kessler, & Merikangas, 2014). This discrepancy between mental health need and service utilization appears to be especially prevalent among African American youth, who are half as likely to receive mental health services than non-Hispanic white youth (Garland et al., 2005). To create effective, available, and attractive interventions that bridge the gap between mental health needs and service utilization, it may prove helpful to investigate the factors that are positively and negatively associated with mental health service utilization among youth that are residing in high risk urban communities. Researchers have identified the recognition of mental health problems by youth and parents and the perceived costs and benefits of mental health care to parents as two influential factors in predicting help seeking tendency (Eiraldi, Mazzuca, Clarke, & Power, 2006). Although some preliminary research effort has identified factors influencing help seeking behavior, more research is needed about the collective effects of such factors and their specific ramifications in

predicting mental health service utilization. The goals of the current study were to: (1) describe the mental health needs and service utilization among a sample of inner-city adolescents at high risk for behavior problems; (2) examine the relative relations among perceived mental health needs, attitude towards treatment, and stigma on concurrent service utilization; (3) investigate the relative predictive powers of caregiver and youth factors; (4) describe the spirituality/religiosity of the youth sample and assess its relation with mental health service utilization. To achieve these goals, the current study analyzed archival interview data from 120 adolescents, who were primarily African-American, and their primary caregivers recruited from a large hospital and a local church in Detroit, MI.

Adolescence

Adolescence is a period of tremendous change biologically, psychologically, and socially. Transitioning from childhood, adolescents not only experience positive growth, such as gain in cognitive complexity and autonomy (Cohen, 1980; Steinberg, 2005), they are also increasingly exposed to numerous developmental risks for behavior problems (e.g., affective disorders and impulsivity). These developmental growths and risks in the bio-psycho-social areas are often closely intertwined. For example, many studies found that the timing of puberty, which is a biological change, was associated with adjustment in different psychological and social areas. For instance, early pubertal timing is associated with higher depressive symptoms and anxiety among girls (Angold, Costello, & Worthman, 1998; Negriff & Susman, 2011; Reardon, Leen-Feldner, & Hayward, 2009), higher aggression and delinquency among both boys and girls (Lynne, Graber, Nichols, Brooks-Gunn, & Botvin, 2007; Mendle, Turkheimer, & Emery, 2007), and earlier experience of romantic and sexual relationships among both boys and girls (Mendle & Ferrero, 2012; Moore, Harden, & Mendle, 2014). Moreover, these components appear to have

bidirectional influences, as stress and abusive relationships have also been found to predict earlier pubertal timing (Zabin, Emerson, & Rowland, 2005).

In addition to the potential stress associated with physiological growth (e.g., puberty timing), adolescents also face a wide range of other social and emotional changes. Erikson (1950) and Marcia (1980), for instance, emphasized the importance of identity exploration and formation during adolescence. Researchers have found that adolescents' identity formation is heavily influenced by their social context. For instance, Sartor and Youniss (2002) found that higher level of parental emotional support is linked to higher degree of identity achievement. Interestingly, this association between parental emotional support and identity achievement is stronger among adolescent boys than girls and among younger than older adolescents. In particular, Oman and Thoresen (2003) and King (2003) extended this line of research into adolescent's spiritual/religious identity development. Based on Social Learning Theory (Bandura, 1977), these researchers proposed that spiritual/religious identity can be shaped and learned through simulating respected role models. Subsequent research has provided evidence supporting the association between parental religiosity and adolescent's religiosity, which predicted adolescent's religiosity during adulthood (Spilman, Neppl, Donnellan, Schofield, & Conger, 2013).

Not only do adolescents continue to model after their parents and other admired figures during identity exploration and formation, but they also experiment with and exercise physical and mental separation from their caregivers (Cohen, 1980). Cohen (1980) investigated the growth in independence and autonomy among adolescents. He concluded that adolescents tend to gain behavioral autonomy from parents, build emotional autonomy from peers, and increase adult-like activities. For instance, Ackard and Neumark-Sztainer (2001) found that older

adolescents (grades 10 to 12; 35.2% boys and 46.4% girls) were less likely than younger children (grades five and six; boys 54.4% and 71.7% girls) to seek their mothers as a primary source of health care information. However, there also is evidence on how adolescents' development is influenced by their external environment. In legal terms, adolescents are minors under parent's supervision. They do not have the full set of adult privileges and responsibilities, for example, the right to vote or to make some important health decisions (e.g., parental consent is required by law for most healthcare professionals to provide services to minors). Furthermore, studies have shown that adolescents, compared to younger children and adults, rely heavily on peer evaluation and social acceptance to determine self-worth (Kloep, 1999; O'Brien & Bierman, 1988). Taken together, adolescence is a unique developmental period when teenagers try to find their own niche while remaining under the care of family and keeping a positive connection to their social circle. In many cases, these internal and external conflicts can elicit and exacerbate mental health issues among adolescents (Sameroff, Gutman, & Peck, 2003).

Mental Health Needs and Service Utilization

Within the modern developed world, adolescent's mental health problems put overwhelming stress on caregivers and on the society (Perou et al., 2013; Vaughan, Feinn, Bernard, Brereton, & Kaufman, 2013). In 2010, one in five adolescents (aged 13 to 18 years) in the United States were estimated to have a seriously debilitating mental health disorder (Merikangas et al., 2010). The 2015 National Survey on Drug Use and Health (NSDUH; Center for Behavioral Health Statistics and Quality, 2016) is a survey conducted with more than 50,000 noninstitutionalized adults and almost 17,000 noninstitutionalized adolescents aged 12 to 17 in the Unites States. According to the survey results, an estimated 12.5% of adolescents (aged 12 to 17 years) in the United States had at least one major depressive episode in the past 12 months,

which is almost double the rate estimated for adults (i.e., 6.7%). Among adolescents who experienced major depressive episode in the past year, 70.7% (8.8% in overall youth sample) reported to have "severe impairment", defined as severe problems with their "ability to do chores at home, do well at work or school, get along with their family, or have a social life" (Center for Behavioral Health Statistics and Quality, 2016, p. 38). Moreover, 5% of all adolescents (aged 12 to 17) in the United States met criteria for at least one Substance Use Disorder as specified in the *Diagnostic and Statistical Manual of Mental Disorders*, 4th edition (DSM-IV; American Psychiatric Association, 1994).

Despite the wide-spread mental health needs, an estimated half (55.0%) of adolescents in the United States with mental health concerns has not received any mental health service from any source, and therefore has unmet mental health needs (Costello et al., 2014). According to the 2015 NSDUH, approximately 13.3% of adolescents (aged 12 to 17) in the United States received specialty mental health service in an outpatient or inpatient setting, which has increased slightly from 11.8% in 2002 (Center for Behavioral Health Statistics and Quality, 2016). For those youth interviewed in the 2015 NSDUH survey who had a major depressive episode, only 37.5% "saw or talked to a health professional or used prescription medication."

In particular, minority groups appear to be less likely to receive adequate professional care. Among a sample of 1082 adults who reported having current depressive disorders, 58.8% of African Americans did not access any mental health treatment, compared with 40.2% of non-Latino whites, and 29.0% of African Americans received inadequate care, compared with 26.8% of non-Latino whites (Alegría et al., 2015). Although less extensively researched, minority adolescents are also more likely to have unmet mental health needs than non-Hispanic white adolescents. Garland et al. (2005), for instance, found that the likelihood of receiving mental

health services among African Americans and Asian Americans / Pacific Islander youth was only half of the likelihood of non-Hispanic white youth receiving services. This ethnic disparity remained statistically significant after a few potentially confounding factors such as family income, caregiver strain, and functional impairment were accounted for statistically. African American parents appeared to be less likely than non-Hispanic white youth to seek any types of mental health care for their children. When they do decide to seek help, they are more likely to turn to informal care through family, friends, or spiritual/religious leaders rather than professional care (Cauce et al., 2002) in comparison to Caucasian families. In a sample of Black older adolescent boys who recently left foster care (age 18-20), only 10.9% of the boys reported seeking formal professional help voluntarily, while significantly more participants (30.9%) reported seeking informal help such as from family, friend, or religious leaders. Among those who reported having one or more mental disorders (n = 31, 56.4%), only six (19.4 %) reported seeking formal professional help (Scott, McMillen, & Snowden, 2015).

To date, there is growing scientific evidence supporting the efficacy of mental health interventions targeting various kinds of difficulties among youth (Weisz et al., 2013). In fact, more than half of the youth prevention and early intervention programs under investigation were found to provide more financial benefits than costs (Aos, Lieb, Mayfield, Miller, & Pennucci, 2004). Although many effective mental health services are available, they appear to be under-utilized, especially among minority youth. To create effective policies and interventions that bridge the gap between mental health needs and mental health service utilization, it may prove useful to investigate the factors that facilitate and prohibit mental health service utilization among ethnic minority adolescents that are residing in a high risk urban community.

Attitude towards professional help

Many individual-level factors (e.g., perceived need, severity of symptoms, caregiver strain, and functional impairment) and logistic barriers (e.g., poverty, access to mental health care, lack of transportation) have been identified with extensive research evidence to influence help-seeking decision (Eiraldi et al., 2006). Research findings are relatively discordant on one's personal attitudes and beliefs about professional help and how that may contribute to help-seeking patterns. Several studies have explored the role of various personal attitudes towards mental health care, for instance, perceived helpfulness, trust in professionals, and perceived cultural competence of professionals.

Firstly, the general public tends to underestimate the efficacy of professional mental health care. A study on a large Australian sample compared public rating (n = 6019) and professional's rating (n = 1536) on helpfulness of various types of support. The researchers found that the public rated informal help (e.g., family, friends, spiritual or religious leaders) as more helpful and formal help (e.g., psychiatrist, psychologist) as less helpful (Morgan, Reavley, & Jorm, 2014). This pattern of perceived helpfulness may contribute in part to the under-utilization of professional mental health services. Second, African Americans reported lower general trust in the medical profession and public health system (e.g., "I trust my physician to put my medical needs above all other considerations when treating my medical problems") (Boulware, Cooper, Ratner, LaVeist, & Powe, 2003). Some studies suggested that ethnic minority patients and parents are more likely to experience mistreatments and tend to hold more negative expectations about mental health services (Blanchard & Laurie, 2004; Richardson, 2001).

Findings in a qualitative and quantitative multi-method study provided mixed findings of African American's attitude towards professional help. Murry, Heflinger, Suiter, and Brody

(2011) found that more than 85% of parents endorsed positive attitudes and expectations towards mental health care among a sample of rural African American families of adolescents. Some examples include high general trust for the professionals, high willingness to seek professional help for their adolescent child, and low embarrassment about help-seeking. Nonetheless, they also found moderate level of barriers (e.g., financial stress, negative expectation of care, and stigma) to mental health service use among the same sample of parents. In addition, almost one third of the African American parents expressed cultural mistrust such as concerns about White professionals' cultural competence and potential discrimination towards their children.

Stigma

Not only does parent's attitude towards professional health care affect service utilization, their attitude and beliefs towards mental health in general may also influence their help seeking pattern in a broader sense. In particular, research has shown that stigma towards mental health issues such as needing or receiving treatment is related to lower tendency to seek both formal and informal help (Bathje & Pryor, 2011; Pattyn, Verhaeghe, Sercu & Bracke, 2014). For the purpose of this paper, stigma is defined broadly as negative beliefs that certain social identities or attributes lead to negative consequences (e.g., unfair treatment) and devaluation of the person (Major & O'Brien, 2005). When stigma is examined within the context of mental health service utilization in the literature, there are two main types identified, namely public/social stigma and self-stigma (Corrigan, 2004). According to Corrigan (2004), public stigma pertains to negative views of people with mental health concerns. Public stigma is described as harmful to social opportunities. For example, one may be excluded from a job promotion or feel disconnected from family members or key members in their communities. On the other hand, self-stigma refers to negative opinions that a person holds about his/her own mental health status. Corrigan

(2004) described self-stigma as harmful to self-esteem. For instance, one may feel incompetent and ashamed because of his/her mental health problems. Pattyn et al. (2014) found that around two-thirds of the participants endorsed some level of public stigma, while around half of their participants endorsed some levels of self-stigma. They also concluded that public and self-stigma have different relations with formal and informal help. Their finding reveals that perceived public stigma, but not self-stigma, was associated with lower perceived importance of informal help (from family and friends). In contrast, perceived self-stigma, but not public stigma, was linked to lower perceived importance of professional help. For these reasons, my study accounted for the potentially different relations of self-stigma and public stigma with service utilization.

A meta-analysis identified several population groups as potential moderators between stigma and help-seeking (Clement et al., 2015). The negative association between stigma and help-seeking was stronger among ethnic minority groups, adolescents and young adults, men, military personnel, and health professionals than Caucasian/White participants, adults, women, and individuals that were not in the military nor the health professions. The influence of stigma on seeking professional help was particularly pertinent to members of ethnic minorities (Conner et al., 2010; Cooper et al., 2003). In a study with young women, Nadeem et al. (2007) found that Black immigrant groups were three to six times more likely to endorse stigma concerns than U.S.-born Whites, while U.S.-born blacks were 1.6 times more likely to endorse stigma concerns than U.S.-born Whites. Their findings also supported the notion that stigma-related concerns were negatively associated with expressed interest in treatment. Cauce et al. (2002) posited that African Americans may encourage the use of willpower and emotion suppression to overcome adversity and therefore incidentally reinforce coping with mental health problems one's own or

even concealment of mental health problems. In contrast to ethnic minority groups, the moderating effect of young age on the relation between stigma and help-seeking is relatively understudied. In a thematic analysis, Gulliver, Griffiths, and Christensen (2010) identified 22 qualitative and quantitative studies on perceived barriers or facilitators of help-seeking among young people who were between ages 12 and 25 years. They found that stigma and embarrassment, problems recognizing symptoms, and a preference for self-reliance were the most frequently endorsed barriers to help-seeking among this age group. Given adolescent's developmental need for identity, autonomy, and social approval (LaFontana & Cillessen, 2010; Van Petegem, Beyers, Vansteenkiste, & Soenens, 2012), it is not surprising that adolescents with high levels of public and self-stigma may perceive help-seeking as a threat to their sense of self-efficacy and social reputation. Taken together, African American adolescents may be especially vulnerable to the negative effect of stigma on help-seeking behaviors (e.g., mental health services utilization).

Spirituality/Religiosity

In addition to the use of willpower and suppression, Cauce et al. (2002) also noted that alternative explanations of undesirable behavior are conventional among minority group cultures. For African American families with strong ethnic affiliations, some of the most common alternative explanations are linked to morality, spirituality, and religiosity. Study findings support a preference of informal care over professional service (Cauce et al., 2002; Scott et al., 2015). In fact, a study on the National Survey of American Life sample found that 21% of African Americans with a serious personal problem reported seeking help from a minister (Chatters et al., 2011). When grief was the identified serious personal problem, the proportion of seeking help from a minister was slightly higher (28%).

A meta-analysis has shown that adolescents who reported higher levels of spirituality/religiosity had more positive self-reported mental health status (Wong, Rew, & Slaikeu, 2006). The relation was strongest when spirituality/religiosity is operationalized by institutionally (i.e., social and behavioral aspects) or existentially (i.e., concepts of spirituality that were not explicitly religious in nature), compared to when spirituality/religiosity was operationalized ideologically (i.e., doctrinal beliefs and attitudes) or as personal devotions (i.e., intrinsic religious orientation and religious private practices). Another more recent meta-analysis also found that spirituality/religiosity among adolescents and emerging adults was related to higher levels of wellbeing and self-esteem; lower levels of depression, anxiety, and risky behaviors; and higher levels of positive personality traits (i.e., Agreeableness, Conscientiousness, Openness) (Yonker, Schnabelrauch, & DeHaan, 2012).

Despite ample evidence supporting a protective effect of spirituality/religiosity, research findings are relatively scarce and mixed in regard to the relation of spirituality/religiosity with the use of formal mental health care. The association between spirituality/religiosity and rates of professional mental health service utilization has been found to be positive (Koenig, George, Blazer, Meador, & Dyck, 1994); negative (Lukachko, Myer, & Hankerson, 2015; Pickard, 2006); or moderated by distress level (Harris, Edlund, & Larson, 2006). These studies were conducted with different populations (e.g., "protestant baby boomers", older adults who are primarily Caucasian/White, African American adults) without a focus on young people. Exploring the role of spirituality/religiosity on mental health service utilization among adolescents, especially those with an ethnic minority cultural background may provide greater understanding of youth attitudes and participation in mental health services.

Summary and Study Aims

Many factors were found to contribute to the underuse of services among adolescents with mental health problems. The current study aimed to gain a better understanding of the intra-personal factors associated with mental health utilization among inner-city adolescents who are mostly members of ethnic minorities. Specifically, this study investigated the complex effects of perceived mental health needs, attitude towards treatment, stigma, and spirituality/religiosity on concurrent service utilization. The goals of this study were:

(1) To describe the mental health needs and service utilization among inner-city high risk adolescents.

(2) To examine the relative effects of perceived mental health needs, attitude towards treatment, and stigma on concurrent service utilization.

(3) To investigate the relative importance of caregiver and youth factors for younger and older adolescents.

(4) To describe the spirituality/religiosity of the youth sample and assess its effect on mental health service utilization.

Given that participants were mostly recruited in an inner-city healthcare setting, it was expected that the current sample would report a high level of service utilization and mood and behavioral problems. Based on the literature reviewed, studies had identified multiple factors which influence service utilization. Some examples include perceived need for mental health care, attitude towards professionals, stigma, and religiosity. Most studies employed analytical approaches that highlight the linear relationships and additive effects of such factors. Given that many of these identified factors (e.g., stigma and attitude towards professional help) were correlated (Vogel, Wade, & Hackler, 2007), it was reasonable to expect overlapping variances. The use of latent variables and more sophisticated statistical approach were employed to allow

the current study to investigate more complex patterns of factors. As such, the current study attempted to explore the use of structural equation modeling (SEM) as a more unified approach that accounts for many factors and their numerous interrelations within a single model. It was hypothesized that higher levels of internalizing and externalizing problems, functional impairment, and caregiver strain would load onto a latent variable of caregiver's perceived needs for treatment. Higher level of attitude towards seeking professional help, and lower levels of public and self-stigma would load onto a single factor of caregiver's overall attitude, which would predict higher likelihood of youth's mental health care utilization. Caregiver's overall attitude would also positively associate with youth's overall attitude, which would consist of attitude towards seeking professional help, public stigma, and self-stigma reported by the youth. Youth's overall attitude would also predict higher likelihood of youth's mental health care utilization (see Figure 1).

To reach the third goal, the current study explored the relative predictive powers of parental and youth factors. Analyses were conducted to examine a potential moderating effect of age on the relative strength of parental and youth factors. Because older adolescents were found to rely less on their mothers for health care information (Ackard & Neumark-Sztainer, 2001), two hypotheses were formed. Firstly, it was expected that caregiver's and youth's attitudes would be more similar among younger adolescents than among older adolescents. Secondly, it was predicted that caregiver's overall attitude would be more predictive for younger adolescents, while youth's overall attitude would be more predictive for older adolescents.

Lastly, because the link between spirituality/religiosity and mental health service utilization, particularly among adolescents, was unclear per the current research findings, analyses were conducted to describe the level of spirituality/religiosity among the current sample

and to investigate the role of spirituality/religiosity in service utilization. It was hypothesized that youth's spirituality/religiosity would associate negatively with internalizing and externalizing problems, functional impairment, and caregiver strain. Because empirical evidence was lacking on the relationship between spirituality/religiosity and help-seeking, the analyses on the effect of spirituality/religiosity on service utilization among adolescents were exploratory in nature. Given that the protective effect of spirituality/religiosity has been supported consistently in the literature, it was hypothesized that spirituality/religiosity would associate negatively with service utilization, which would be mediated by perceived mental health needs (i.e., externalizing problems, functional impairment, and caregiver strain). Specifically, higher levels of spirituality/religiosity would predict lower levels of perceived mental health needs, which in turn would predict lower levels of service utilization. To further explore the role of spirituality/religiosity on service utilization, spirituality/religiosity were added to the original SEM model to create a new model (see Figure 2). It was hypothesized that higher youth's spirituality/religiosity would associate with lower caregiver's perceived needs for treatment, which would in turn predicts lower likelihood of youth's concurrent service utilization in the model.

CHAPTER 2

Methods

Participants

120 adolescents between the ages of 13 and 18 years old and their primary caregivers were recruited from a large hospital and a nearby church in a Midwestern city. Each member of the adolescent-caregiver pairs completed a two-hour semi-structured interview independently at home or at a research laboratory, depending on their preference. The population is considered high risk because of the prevalence of stress exposure and clinically elevated behavioral and emotional problems. The majority of adolescents in this sample, 62.4% (68) had a participating caregiver who was single. Also, 64.5% (69) of the participating caregivers had an annual family income less than $30,000. Additionally, 20.8% (22) of the participating caregivers did not graduate high school or earn their GED. On average, the adolescents and caregivers in the sample endorsed 11.25 (*SD* = 5.64) demographic stressors (e.g., parental divorce) and environmental stressors (e.g., hearing gunshots) out of a list of 37 stressors.

Procedures

After consent and assent procedures, each member of the adolescent-caregiver pairs completed a two-hour semi-structured interview independently. The interviews were conducted by pairs of graduate and undergraduate researchers; one interviewing the parent the other the child simultaneous in two separate rooms in the laboratory or in two different areas of the participant's home. As partial compensation for their time and travel, the youth and parent participants each received $20.

Measures

Measures administered to both caregivers and adolescents.

Attitude towards seeking formal mental health services. Both caregivers and youths completed the Attitude Towards Seeking Professional Psychological Help – Short Form (ATSPPT; Fischer & Farina, 1995) to report on their opinions about seeking professional mental health care. The caregiver's form was modified to reflect their opinion about seeking professional mental health care for the adolescents. The measure consists of 10 items on a 4-point scale (1 = Disagree, 2 = Partly Disagree, 3 = Partly Agree, 4 = Agree). Higher scores on this scale reflect more positive attitude towards seeking formal mental health services. A sample item for the youth version is "If I believed I was having a mental breakdown, my first inclination would be to seek professional help". This item is restated for the caregivers as "If I believed my child was having a mental breakdown, my first inclination would be to seek professional help for my child." Cronbach's alphas for this sample were 0.70 and 0.79 for youth and caregivers respectively.

Stigma. Both caregivers and youth completed two questionnaires to report on their perceived stigma towards professional mental health care. The Self-Stigma of Seeking Psychological Help Scale (Vogel, Wade, & Haake, 2006) consists of 10 items on a 5-point scale (1 = Strongly Disagree, 2 = Disagree, 3 = Agree & Disagree Equally, 4 = Agree, 5 = Strongly Agree) and the Stigma Scale for Receiving Psychological Help Scale (Komiya, Good, & Sherrod, 2000) consists of 5 items on a 4-point scale (1 = Disagree, 2 = Partly Disagree, 3 = Partly Agree, 4 = Agree). Self-stigma refers to the internal feelings of inferiority related to psychological help seeking (e.g. "You would feel like you weren't as good as other people if you went to a therapist for psychological help."). Cronbach's alphas for this sample were 0.63 and 0.73 for youth and caregivers respectively. On the other hand, social stigma reflects perceived external criticism towards people who seek treatment ("People will see a person in a less positive

way if they find out that they have seen a psychologist."). Higher scores on these measures indicate more negative stigma towards seeking formal psychological help. Cronbach's alphas for this sample were 0.73 and 0.77 for youth and caregivers respectively.

Mental health utilization. Caregivers and adolescents responded separately to a dichotomous interview question on the adolescents' current use of mental health services. For caregivers "Is your child currently receiving any counseling or mental health services?" (yes / no). For adolescents, "Are you currently receiving any counseling or mental health services?" (yes / no). Each adolescent was coded as receiving services if either the caregiver or adolescent responded "yes".

Although the current study focused on concurrent service utilization, descriptive statistics on past use of mental health services was included to provide a fuller view of the sample. The same procedure of combining caregiver and adolescent report was used. For caregivers, "Has your child received counseling or mental health services for behavioral or emotional problems in the past?" (yes / no). For adolescents, "Have you received counseling or mental health services for behavioral or emotional problems in the past?" (yes / no).

In terms of mental health service utilization, 23.9% (26) of adolescents in this sample were receiving concurrent counseling or mental health services at the time of this study and 49.2% (59) of adolescents in this sample had received counseling or mental health services in the past. When combined, 56.0% (65) of the sample reported concurrent service utilization, past utilization, or both.

Caregiver measures.

Internalizing and externalizing problems. Caregivers completed 118 items on the Achenbach Child Behavior Checklist parent report form (CBCL; Achenbach, 1991) to report how true each psychological symptom was for their youth in the last 6-months using a 3-point scale (1 = not true to 3 = often/very true). This questionnaire reflects specific emotional and behavioral problems including internalizing and externalizing symptoms. Internalizing syndrome scale measures problems within the self, such as anxiety, depression, somatization (manifestation of psychological distress in physical symptoms), and withdrawal from social contact. The Externalizing syndrome scale measures conflicts with others and with their expectations from the child to behave appropriately while avoiding "rule breaking" or aggressive behaviors. The CBCL has excellent psychometric properties.

Functional impairments. Caregivers completed the Columbia Impairment Scale (CFI; Bird et al., 1996) to report on the caregiver's perceived functional impairment of the adolescents. The measure consists of 13 items on a 4-point scale (0 = no problem, 2 = some problem, 4 = very bad problem) with an extra option of "Not applicable/Don't know". Higher scores on this scale represent more functional impairments. Sample items include: "Getting along with his/her father/father figure", "With feeling nervous or afraid", and "With school work". Cronbach's alpha for this sample was 0.84.

Caregiver strain. Caregivers completed the Caregiver Strain Questionnaire (CSQ; Brannan, Heflinger, & Bickman, 1997) to report on the caregiver's perception of the extent to which the adolescents' problems have negatively influenced their own psychological and social functioning. The measure consists of 21 items on a 5-point scale (1 = not at all a problem to 5 = very much a problem). Higher scores on this scale represent higher levels of experienced strain among caregivers. Sample items include: "Interruption of personal time", "Feeling resentful

towards child", and "Feeling worried about child's future". Cronbach's alpha for this sample was 0.93.

Youth Measures.

Spirituality/Religiosity. Adolescents completed three measures of religiosity/spirituality. The first measure is the Spiritual Well-Being Scale (SWBS; Paloutzian & Ellison, 1982), which consists of 20 items on a 6-point scale (1 = strongly agree, 2 = mostly agree, 3 = sometimes agree, 4 = sometimes disagree, 5 = mostly disagree, 6 = strongly disagree). This measure provides an overall existential and spiritual well-being score, with higher scores representing higher perceived spiritual quality of life. There are also two subscale scores on Existential Well-Being (EWB) and Religious Well-Being (REB). Higher scores on Existential Well-Being represent a higher perceived well-being in the purpose and direction of life. Sample items for Existential Well-Being includes "I don't know who I am, where I came from, or where I'm going" and "I believe there is some real purpose for my life" (reverse coded). Higher scores on the Religious Well-Being scale represent a higher perceived well-being in relation with God or any other divine being. Sample items for Religious Well-Being include "My relation with God contributes to my sense of well-being" (reverse coded) and "I have a personally meaningful relationship with God." (reverse coded). Cronbach's alphas for this sample were 0.79, 0.91, and 0.89 for the Existential Well-Being subscale, the Religious Well-Being subscale, and the overall Spiritual Well-Being scale respectively.

The second measure is the Religious Practices and Attitudes Questionnaire (RPAQ; adapted from Fetzer Institute/National Institute on Aging Working Group, 1999). This measure provides an overall measure of attitudes towards organized religious practices. The first subscale measures the importance of religion and adherence to practices. It consists of two items on a 4-

point scale (1 = not at all, 2 = somewhat, 3 = quite a bit, 4 = a great deal), such as “How important is religion in your life?”. The second subscale measures the frequency of religious practices with six items on a 6-point scale (0 = never, 1 = less than yearly, 2 = 1-2 times/year, 3 = several times/year or monthly, 4 = weekly, 5 = several times/week). Sample items include How often do you watch or listen to religious programs on TV or radio? And “How often do you read the Bible or other religious/spiritual literature?”. Cronbach’s alphas for this sample were 0.75 and 0.79 for the Importance subscale and the Frequency of Practices subscale respectively.

The third measure is an adapted version of the Religious Coping Scale (RCOPE; Pargament et al., 1998). The original 105-item measure is designed to measure religious coping with major life stressors. For practicality reasons, 10 items were selected from the positive and negative religious coping subscales. The first adapted subscale measures positive religious coping with five items on a 4-point scale (1 = not at all, 2 = somewhat, 3 = quite a bit, 4 = a great deal). Sample items include “I look to God for strength, support, and guidance in crises” and “I try to find the lesson from God in crises”. The second adapted subscale measures negative religious coping with five items on a 4-point scale (1 = not at all, 2 = somewhat, 3 = quite a bit, 4 = a great deal). Sample items include “I wonder whether God has abandoned me” and “I feel that stressful situations are God’s way of punishing me for my sins or lack of spirituality”. Cronbach’s alphas for this sample were 0.89 and 0.56 for the Positive Religious Coping subscale and the Negative Religious Coping subscale respectively.

CHAPTER 3

Results

Preliminary Analyses

Missing Data.

A total of 120 adolescent-caregiver dyads were included for use in this thesis. However, due to changes in protocol (i.e., adding measures after data collection had begun and dropping measures to shorten visit duration toward the end of data collection), some variables were not available for the total sample. In particular, current service utilization was missing for the first 11 participants (9.2%), religious importance and frequency of practice (measured via RPAQ) were missing for 21 participants (17.5%), and spiritual well-being (measured via SWB) was missing for 23 participants (19.2%). The decisions to add and drop measures were based upon evolving study priorities and available resources. For unknown reasons, adolescent data were missing for self-stigma (one participant 0.83%) and religious coping (four participants 3.3%). The missing data were viewed as random. Missing data were not imputed and pairwise deletion of missing values was utilized in the relevant analyses.

Outlier Analysis.

All variables, except for the dichotomous service utilization variable, were analyzed for univariate outliers. Standardized *z* scores and normal probability-probability (P-P) plots were generated and examined for each variable. *Z* score values exceeding +/-3.29 were considered to be univariate outliers (Tabachnick & Fidell, 2013). Outlier analysis revealed three outliers in caregiver strain (zs = 3.86, 3.78 and 3.08), one outlier in parent-reported internalizing symptoms (z = 3.79), one outlier in adolescent-reported attitude towards professional help (z = -3.36), one outlier in caregiver-reported self-stigma (z = 3.60), one outlier in adolescent-reported self-stigma

(z = 3.36), and one outlier in adolescent-reported negative religious coping (z = 3.37). All outliers were replaced with the next largest or next lowest value in the dataset for the specific variable.

Normality Analysis.

After these univariate outliers were transformed, all variables were analyzed for normality, except for the dichotomous service utilization variable. Skewness statistics, kurtosis statistics and histograms were generated and examined for each variable. Functional impairment, caregiver strain, adolescent-reported social stigma, caregiver-reported self-stigma, and negative religious coping were significantly positively skewed. A square root transformation successfully reduced skewness to non-significant levels to these variables, except for caregiver strain and negative religious coping. Because the square root transformation was insufficient, logarithm (base 10) transformations were conducted for caregiver strain and negative religious coping. The logarithm (base 10) transformation successfully reduced skewness to a non-significant level for caregiver strain and negative religious coping.

Caregiver-reported attitude towards professional help, adolescent-reported attitude towards professional help, religious importance, frequency of religious practice, positive religious coping, existential well-being, and religious well-being were significantly negatively skewed. After reflecting these variables, square root transformation successfully reduced skewness to non-significant levels to these variables. To reflect these variables back to the original direction, they were multiplied by -1.

These transformed variables were used in all correlation and regression analyses. However, the original variables were used for descriptive statistics presented in Table 1. For

SEM models, the original variables with outliers cropped were used and the MLM and wlsmV estimation approach in Mplus software was used to adjust for variable non-normality.

Power.

Power analyses were conducted using G*power software. Assuming a medium effect size of .15, a two-tailed alpha at .05, a predictive power of .80, and six predictors in the model, it was estimated that a sample of $N = 98$ was required. As such, the current sample size was determined to have adequate power for any linear regression analyses in the current study.

A separate power analysis for logistic regression was conducted. According to Merikangas et al. (2011), an estimate of 36.2% of adolescents with any mental disorder received treatment. For the purpose of this power analysis, the probability of service utilization when predictor is at the mean is assumed to be 0.362. Assuming a medium effect size odds ratio of 2.48 (corresponds to Cohen's $d = 0.5$; Borenstein, Hedges, Higgins & Rothstein, 2009), a two-tailed alpha at .05, a predictive power of .80, and no covariate in the model, it was estimated that a sample of $N = 57$ was required. As such, the current sample size was determined to have adequate power for any logistic regression analyses in the current study.

Aim (1): Sample Description

To describe the mental health needs and service utilization among inner-city high risk adolescents, descriptive and frequency statistics were performed on relevant variables (see Table 1).

Behavioral problems.

In terms of caregiver-reported problem behaviors, 43.3% (52) of adolescents were rated by their caregivers as experiencing behavioral and emotional problems at or above the clinical threshold (T-score of 64 or higher in the Achenbach Child Behavior Checklist Internalizing

and/or Externalizing and/or Total Problem scales). Specifically, 31 (25.8%) adolescents were in the clinically significant range (≥ 64) for caregiver-reported internalizing problems, 33 (27.5%) were in the clinically significant range for caregiver-reported externalizing problems, and 39 (32.5%) were in the clinically significant range for caregiver-reported total problems. The average scores were 57.90 (*SD* = 10.05), 54.72 (*SD* = 11.52), and 57.57 (*SD* = 11.32) for internalizing, externalizing, and total problems respectively.

Service Utilization.

Consistent with past research, not all adolescents whose caregivers perceived them as having mental health concerns were receiving interventions. Among the 52 adolescents who were rated by their caregivers as experiencing behavioral and emotional problems at or above the clinical threshold (T-score of 64 or higher in the Achenbach Child Behavior Checklist Internalizing and/or Externalizing and/or Total Problem scales), only 36.4% (16) reported current mental health service utilization.

Correlation.

Pearson correlations and point biserial correlations were run to examine the bivariate correlations between the key study variables and selected demographic variables (see Table 2). Effect sizes of correlations were determined as "small" (r = .10), "medium" (r = .30), or "large" (r =.50) respectively (Cohen, 1992).

Regarding demographic variables, youth age significantly positively correlated with adolescent-reported social stigma (r = .23, p = .01). Youth gender significantly correlated with adolescent-reported self-stigma such that adolescent girls were more likely to have higher self-stigma (r = .25, p < .01). Furthermore, family income was significantly negatively associated with adolescent-reported attitude towards professional psychological help and significantly

positively associated with adolescent-reported social stigma (r = -.20, p = .04 and r = .19, p = .05, respectively). There were no significant relations found between youth age, youth gender, and family income with other study variables (absolute value rs = .01-.17, ps > .05).

Aim (2): SEM Model Predicting Service Utilization

Measurement model.

Correlation.

Correlation patterns were analyzed separately for the variables that were expected to form the three latent variables, which were caregiver's perceived needs for treatment, caregiver's overall attitude, and youth's overall attitude (see Table 3). In terms of caregiver's perceived needs for treatment, results showed that caregiver-reported internalizing problems, externalizing problems, total problems, functional impairment, and caregiver strain were all significantly positively correlated with each other (ps < .01). These correlations (r > .50) were all in the "large" effect size rage. In addition, caregiver-reported attitude towards professional psychological help was significantly positively associated with caregiver-reported internalizing problems, externalizing problems, total problems, functional impairment, and caregiver strain (ps < .05). These correlations (rs = .23-.31) were approximately "medium" in effect size. Furthermore, social stigma was also found to be associated with some of the predicted variables for caregiver's perceived needs for treatment. Caregiver-reported social stigma was significantly positively related to internalizing problems, total problems, functional impairment, and caregiver strain (ps < .05). These correlations (rs = .18-.23) were approximately "small" to "medium" in effect sizes. Because the relations among internalizing problems, externalizing problems, functional impairment, and caregiver strain were strong, while their relations with caregiver-

rated attitude towards professional psychological help and social stigma were moderate, this pattern of correlations supported the latent variable of caregiver's perceived needs for treatment.

As expected for caregiver's overall attitude, results showed that caregiver-reported self-stigma was significantly negatively correlated with caregiver-reported attitude towards professional psychological help (r = .41, p < .01) and significantly positively correlated with caregiver-reported social stigma (r = .33, p < .01). These correlations were approximately "medium" in effect size. However, caregiver-reported attitude towards professional psychological help and caregiver-reported social stigma were not significantly associated (r = -.02, p = .84).

Regarding youth's overall attitude, as expected results showed that adolescent-reported self-stigma was significantly negatively correlated with adolescent-reported attitude towards professional psychological help (r = .38, p < .01) and significantly positively correlated with adolescent-reported social stigma (r = .24, p < .01). These correlations were approximately "medium" in effect size. However, adolescent-reported attitude towards professional psychological help were not significantly associated with adolescent-reported social stigma (r = -.14, p =.13).

Confirmatory Factor Analysis.

The proposed measurement model of three latent variables was examined with confirmatory factor analysis (CFA). In this CFA model, it was expected that internalizing problems, externalizing problems, functional impairment, and caregiver strain would load onto a latent variable of caregiver's perceived needs for treatment. Caregiver's ratings on positive attitude towards seeking professional help, social stigma, and self-stigma would load onto a single factor of caregiver's overall attitude. Similarly, adolescent's ratings on positive attitude

towards seeking professional help, social stigma, and self-stigma would load onto a single factor of youth's overall attitude. To make sure the residual variances were comparable, all variables were divided by a factor of 10. Results showed that both caregiver-reported self-stigma and adolescent-reported self-stigma had negative residual variances (-0.83 and -0.59 respectively). Therefore, the model was re-run with caregiver-reported self-stigma's residual set to zero. In the second model, none of the residual variances were negative. However, the model did not converge with 1000 iterations.

To provide an additional degree of freedom to the CFA model, the path between adolescent-reported self-stigma and the latent variable of youth's overall attitude was set at -1.646, which was the estimate from the previous unconverged model. In this model, χ^2 (34) = 52.71, comparative fit index (CFI) = .95, Tucker-Lewis fit index (TLI) = .93, and Root Mean Square Error of Approximation (RMSEA) = .07 (90% CI = .03-.10) indicated that the model adequately fit the observed data. Standardized parameter estimates were provided in Figure 3; unstandardized estimates were shown in Table 4. All variables loaded significantly onto the proposed latent variables in the hypothesized directions (absolute values of βs = .28-.00, *p*s < .05). The three latent variables did not correlate significantly with each other (*r*s = .00-.06, *p*s > .05).

Full model.

Correlation.

Correlation patterns were analyzed for service utilization. Although the current study focused on current service use, correlations with past use and any use (past, current, or both) were included to provide a fuller picture of the data (see Table 5). Results showed that all variables that were anticipated to load on to caregiver's perceive needs (i.e., caregiver reported

internalizing problems, externalizing problems, total problems, functional impairment, and caregiver strain) had significant positive correlations with all three types of service use (*r*s = .31-.45, *p*s < .01). Among the other measured variables, only caregiver-reported attitude towards professional help had significant positive correlations with all three types of service use (*r*s = .29-.36, *p*s < .01). Furthermore, caregiver-reported self-stigma had a significant negative correlation with past use (r = -.18, p < .05) and a significant negative trend with any use (r = -.18, p = .05). All correlations among other observed variables and service use were not significant (absolute values of r = .04-.15, *p*s > .10).

Structural Equation Model – Full Model 1.

The hypothesized full model of three latent variables was examined. To make sure the residual variances were comparable, all variables were divided by a factor of 10. Results showed that both caregiver-reported attitude towards professional help had negative residual variances (-0.26). Therefore, the model was re-run with caregiver-reported self-stigma's residual set to zero. In the second model, none of the residual variances were negative.

In this model, χ^2 (41) = 85.89, comparative fit index (CFI) = .73, Tucker-Lewis fit index (TLI) = .64, and Root Mean Square Error of Approximation (RMSEA) = .10 (90% CI = .07-.12) indicated that the model did not adequately fit the observed data. Standardized parameter estimates were provided in Figure 4; unstandardized estimates were shown in Table 6.

In terms of the measurement model, all variables loaded significantly onto the proposed latent variable of caregiver's perceived needs in the hypothesized directions (βs = .71-.89, *p*s < .01). For the caregiver's overall attitude latent variable, caregiver-reported attitude towards professional help loaded significantly (β = 1.00, p < .01)., but not self-stigma nor social stigma (βs = -.17 and .02 respectively, *p*s > .05). For the youth's overall attitude latent variable,

adolescent-reported attitude towards professional help and self-stigma loaded significantly (βs = .39 and -.53 respectively, *p*s < .01), but not social stigma (β = .11, *p* > .05). Caregiver's perceived needs and caregiver's overall attitude were significantly correlated with each other (*r* = .27, *p* < .01).

In terms of the structural model, caregiver's perceived needs was a significant predictor of current service utilization (β = .54, *p* < .01). Furthermore, caregiver's overall attitude was a significant predictor of youth's overall attitude (β = .66, *p* < .01). However, neither caregiver's overall attitude nor youth's overall attitude were significant predictor of current service utilization (βs = .28 and .07 respectively, *p*s > .05).

Structural Equation Model – Simplified Model 1.

Because social stigma and self-stigma did not seem to contribute meaningfully to the model, these two variables were excluded from the model to decrease model complexity. To make sure the residual variances were comparable, all variables were divided by a factor of 10. Results showed that none of the residual variances were negative.

In this model, χ^2 (12) = 9.35, comparative fit index (CFI) = 1.00, Tucker-Lewis fit index (TLI) = 1.04, and Root Mean Square Error of Approximation (RMSEA) = .00 (90% CI = .00-.08) indicated that the model adequately fit the observed data. Standardized parameter estimates were provided in Figure 5; unstandardized estimates were shown in Table 7.

In terms of the measurement model, all variables loaded significantly onto the proposed latent variable of caregiver's perceived needs in the hypothesized directions (βs = .71-.90, *p*s < .01). In terms of the structural model, caregiver's perceived needs and caregiver's attitude towards professional help were significant predictors of current service utilization (βs = .54, *p* < .01 and βs = .33, *p* < .01 respectively). Furthermore, caregiver's attitude towards professional

help was a significant predictor of youth's attitude towards professional help (β = .22, $p < .01$). However, youth's attitude towards professional help was not a significant predictor of current service utilization (β = -.02, $p > .05$). There was a unmodeled significant correlation between caregiver's perceived needs and caregiver's attitude towards professional help ($r = .29$, $p < .01$).

Aim (3): Relative Predictive Power of Caregiver and Youth Factors

Correlation.

Correlation patterns between caregiver report and adolescent report were analyzed separately for attitude towards professional psychological help, social stigma, and self-stigma (see Table 3). There was a significant correlation between caregiver-reported and adolescent-reported attitude towards professional psychological help ($r = .28$, $p < .01$). The correlation between caregiver-reported and adolescent-reported social stigma and the correlation between caregiver-reported and adolescent-reported self-stigma were not significant ($r = -.04$, $p = .70$ and $r = -.05$, $p = .63$ respectively).

Regression.

Regression models of caregiver reports predicting adolescent reports were analyzed separately for attitude towards professional psychological help, social stigma, and self-stigma (see Table 8). Youth age was entered as a covariate. For attitude towards professional psychological help, caregiver report, but not age, was a significant predictor of adolescent report (β = .29, $p < .01$). For social stigma, only age, but not caregiver report, was a significant predictor of adolescent report (β = .23, $p = .01$). For self-stigma, neither caregiver report nor age was a significant predictor. To examine the predicted moderation effect, interaction terms were added to the models. There were no significant interaction effects in all three regression models (ΔR^2s = .00-.02, ps > .05).

Logistic Regression.

Logistic regression models of caregiver report and adolescent report predicting service utilization were analyzed separately for attitude towards professional psychological help, social stigma, and self-stigma (see Table 9).

For attitude towards professional psychological help, a test of the full model against a constant only model was statistically significant, indicating that caregiver report and adolescent report together reliably distinguished between adolescents who were using mental health services and those who were not (χ^2 = 14.40, *df* = 2, $p < .01$, *Nagelkerke's* R^2 = .19). Overall prediction success rate was 77.1% (92.8% for service non-user and 26.9% for service user). Only caregiver-reported attitude made a significant contribution to prediction ($p < .01$). Adolescent-reported attitude was not a significant predictor. Exp(B) value indicates that when caregiver-reported attitude was raised by one unit (square-root transformed) the odds was 2.54 times as large and therefore adolescents were 2.54 times more likely to use mental health services.

For social stigma and self-stigma, separate tests of the full model against a constant only model was not statistically significant, indicating that caregiver report and adolescent report together did not distinguish between adolescents who were using mental health services and those who were not (χ^2 = 3.82, *df* = 2, $p = .15$, *Nagelkerke's* R^2 = .05; χ^2 = 1.20, *df* = 2, $p = .55$, *Nagelkerke's* R^2 = .02; respectively). The addition of youth age and interaction effects did not significantly improve any of the three logistic regression models (*p*s > .05).

Aim (4): Spirituality/Religiosity

Sample Description.

To describe the spirituality/religiosity among inner-city high risk adolescents in the current sample, descriptive and frequency statistics were performed on relevant variables (see Table 1).

Almost half of adolescents in this sample, 49.5% (49) reported that religion is "a great deal" in their lives (Rating of "4" on a 4-point Likert scale in response to "How important is religion in your life?"). In contrast, 12.1% (12) adolescents reported that religion is "not at all" important in their lives (Rating of "1" on a 4-point Likert scale in response to "How important is religion in your life?"). In terms of religious practice, 47.5% (47) adolescents reported attending religious services at least weekly, while 13.1% (13) adolescents reported that they had never attended religious services.

Correlations.

Pearson correlations and point biserial correlations were run to examine the bivariate correlations between the spirituality/religiosity variables, selected demographic variables, and the other key study variables (see Tables 10 and 11). Effect sizes of correlations were determined as "small" (r = .10), "medium" (r = .30), or "large" (r =.50) respectively (Cohen, 1992).

Regarding demographic variables, youth gender is significantly negatively correlated to existential well-being stigma such that adolescent boys were more likely to have higher existential well-being (r = -.25, p < .05). There were no other significant correlations among youth gender, youth age, family income, and spirituality/religiosity variables (absolute value rs = .01-.16, ps > .10).

The correlation pattern among spirituality/religiosity variables were analyzed (see Table 10). All spirituality/religiosity variables were significantly correlated with each other (absolute value rs = .26-.75, ps < .05). The only exception was the correlation between frequency of

religious practices and existential well-being, which indicate a significant trend (r = .18, p = .08). Results showed that negative religious coping was negatively associated with the rest of the spirituality/religiosity variables. The effect sizes were medium (absolute value rs = .26-.40, ps < .05). Furthermore, existential well-being also had medium positive correlations with importance of religion and positive religious coping (r = .28, p < .01 and r = .36, p < .01 respectively). All other correlations were large and positive (rs = .50-.75, ps < .01).

To examine the relations among spirituality/religiosity, mental health needs, attitudes, and service utilization, the correlation pattern among spirituality/religiosity variables and the other primary study variables were analyzed (see Table 11). Importance of religion and frequency of religious practices were not significantly associated with any of the primary study variables (absolute value rs = .00-.16, ps > .10). Positive religious coping was significantly correlated with adolescent-reported attitude towards professional help (r = .32, p < .01). Negative religious coping was significantly positively associated with mental health needs (functional impairment, caregiver strain, internalizing, externalizing, and total problems), caregiver-reported attitude towards professional help, and adolescent-reported social stigma (rs = .22-.32, ps < .05). Existential well-being was significantly negatively correlated with mental health needs (functional impairment, caregiver strain, internalizing, externalizing, and total problems) and adolescent-reported social stigma (absolute value rs = .21-.34, ps < .05). Religious well-being was significantly negatively correlated with internalizing problems and positively correlated with adolescent-reported attitude towards professional help (r = -.24, p < .05 and r = .22, p < .05 respectively). These correlations were in the small to medium range.

In terms of service utilization, negative religious coping was significantly positively correlated with past and any utilization (r = .29, p < .01 and r = .27, p < .01 respectively).

Existential well-being was significantly negatively correlated with current utilization ((*r* = -.30, *p* < .01).

Mediation.

Based on the criteria outlined by Baron and Kenny (1986), it is necessary to have significant relations between dependent variable and independent variable, between independent variable and mediator, and between mediator and dependent variable. The only spirituality/religiosity measure that fulfil these criteria was existential well-being. Therefore, existential well-being was selected as the mediator to be analyzed.

The mediation effect was analyzed in a SEM model. To make sure the residual variances were comparable, all variables were divided by a factor of 10. In this model, χ^2 (8) = 11.69, comparative fit index (CFI) = .96, Tucker-Lewis fit index (TLI) = .93, and Root Mean Square Error of Approximation (RMSEA) = .07 (90% CI = .00-.15) indicated an adequate fit between the model and the observed data. Standardized parameter estimates were provided in Figure 6; unstandardized estimates were shown in Table 12.

As hypothesized, the four observed variables loaded significantly onto the predicted latent variable of caregiver's perceived needs in the hypothesized directions (βs = .16-.92, *p*s < .01). Adolescent-reported existential well-being was a significant predictor of caregiver's perceived needs (β = -.42, *p* < .01), which in turn significantly predicted current service utilization (β = .59, *p* < .01). Adolescent-reported existential well-being was not a significant direct predictor of current service utilization (β = -.27, *p* = .20). A full mediation model was yielded, with a significant indirect effect of youth's existential well-being on current service utilization (estimate = -0.25, *p* = .01) and a not significant direct effect (estimate = -0.27, *p* = .20).

Structural Equation Model – Full Model 2.

Because a significant mediation effect of existential well-being was found, it was entered into the full SEM model to form a new model as proposed. To make sure the residual variances were comparable, all variables were divided by a factor of 10. The latent variable, youth's overall attitude had a negative residual variances.

In this model, χ^2 (51) = 101.48, $p < .01$, comparative fit index (CFI) = .69, Tucker-Lewis fit index (TLI) = .60, and Root Mean Square Error of Approximation (RMSEA) = .10 (90% CI = .07-.13) indicated that the model did not adequately fit the observed data. Standardized parameter estimates were provided in Figure 7; unstandardized estimates were shown in Table 13.

In terms of the measurement model, all variables loaded significantly onto the proposed latent variable of caregiver's perceived needs in the hypothesized directions (βs = .16-.91, *p*s < .01). For the caregiver's overall attitude latent variable, caregiver-reported attitude towards professional help and self-stigma loaded significantly (βs = .24 and -.15 respectively, *p*s < .01), but not social stigma (β = -.02, $p > .05$). For the youth's overall attitude latent variable, adolescent-reported attitude towards professional help and self-stigma loaded significantly (βs = .28 and -.22 respectively, *p*s < .01), but not social stigma (β = -.03, $p > .05$).

In terms of the structural model, youth's existential well-being was a significant predictor of caregiver's perceived needs (β = -.44, $p < .01$). Caregiver's perceived needs was a significant predictor of current service utilization (β = .62, $p < .01$). However, caregiver's overall attitude did not significantly predict youth's overall attitude (β = 1.43, $p > .05$). Additionally, neither caregiver's overall attitude nor youth's overall attitude were significant predictor of current service utilization (βs = -.44 and 1.14 respectively, *p*s > .05).

Structural Equation Model – Simplified Model 2.

Because social stigma and self-stigma did not seem to contribute meaningfully to the model, these two variables were excluded from the model to decrease model complexity. To make sure the residual variances were comparable, all variables were divided by a factor of 10. Results showed that none of the residual variances were negative.

In this model, χ^2 (18) = 20.36, comparative fit index (CFI) = .98, Tucker-Lewis fit index (TLI) = .97, and Root Mean Square Error of Approximation (RMSEA) = .04 (90% CI = .00-.10) indicated that the model adequately fit the observed data. Standardized parameter estimates were provided in Figure 8; unstandardized estimates were shown in Table 14.

In terms of the measurement model, all variables loaded significantly onto the proposed latent variable of caregiver's perceived needs in the hypothesized directions (βs = .16-.91, *p*s < .01). In terms of the structural model, youth's existential well-being was a significant predictor of caregiver's perceived needs. Caregiver's perceived needs and caregiver's attitude towards professional help were significant predictors of current service utilization (βs = .48 and .76 respectively, *p*s < .01). Furthermore, caregiver's attitude towards professional help was a significant predictor of youth's attitude towards professional help (β = .24 *p* < .01). However, youth's attitude towards professional help was not a significant predictor of current service utilization (β = .05, *p* > .05). There was a unmodeled significant correlation between caregiver's perceived needs and caregiver's attitude towards professional help (*r* = .18, *p* < .01).

CHAPTER 4

Discussion

By recruiting and examining a sample at high risk for behavior problems with access to behavioral health services, the current study aimed to gain a better understanding of the intra-personal factors associated with mental health utilization among at-risk inner-city adolescents when access to care is not a barrier. About 43.3% of the adolescents in this sample were rated by their caregivers as experiencing clinically significant behavioral or emotional problems. Consistent with previous research (Merikangas et al., 2011), only 36.4% of these adolescents with clinically significant levels of mental health problems reported current mental health service utilization. Despite the availability of efficacious interventions (Weisz et al., 2013), many adolescents in this sample did not seek or receive services that could likely alleviate their emotional and behavioral issues, as well as foster successes at school and at home. To enhance mental well-being among adolescents, it may be helpful to bridge the gap between those with clinically significant problems and those who receive mental health services through investigating factors that promote or hinder mental health care utilization.

The current study used a SEM approach, which has several advantages over more traditional alternatives such as multiple logistic regressions (MacCallum & Austin, 2000; Tomarken & Waller, 2005). First, SEM provides a summary evaluation of the global fit of more complex models (i.e., sets of variables). Because numerous factors have been identified to associate with service utilization, SEM allows the investigation of the simultaneous whole picture view instead of in an equation-by-equation basis. Second, SEM has the flexibility to provide separate estimates for each hypothesized relation among variables (both manifest and latent). Therefore, relative contributions and interrelations of each variable could be estimated

and interpreted. Furthermore, through the construction of latent variables, some researchers argue that these estimates may even be able to correct for construct-irrelevant variance and reduce measurement error. Despite these strengths of SEM, it is worth noting that this approach identifies a "parsimonious, substantively meaningful model that fits observed data adequately well" (MacCallum & Austin, 2000, p. 218). Because of the constrains of SEM approach and research method at a broader sense (e.g., the inability for a single study to include all possible variables), a best model cannot be achieved theoretically. Instead, the identified model will be a well-fitted model given the set of variables of interest.

Perceived Mental Health Needs, Attitude Towards Professional Help and Stigma

As expected, internalizing problems, externalizing problems, functional impairment, and caregiver strain were highly related and emerged as a single latent variable. This suggests that mental health symptoms, disruption to daily activities, and parenting stress appear to work together, contributing to the degree to which caregivers perceive mental health needs in their children. The use of a latent variable, as opposed to investigating these four manifest variables separately, took into consideration the high correlations among these variables and reduced measurement errors among them. As such, the current study consistently investigated these four manifest variables together in the form of a latent variable. The results suggested that it is not youth symptoms per se that may signal to parents that help is needed. Instead, it appears to be a convergence of youth symptoms along with their impact on child and parent adaptability that together lead parents to believe professional help is required.

In this study's relatively homogeneous sample and standardized measure of behavior problems, family income, youth age, and youth gender were not associated significantly with how caregivers rated their adolescent children's mental health problems. Although demographic

variables included in the current study did not relate significantly with caregiver's attitude towards mental health services, they were associated significantly to adolescent's attitude towards mental health services. Because the three attitude-related measures were modified and rewritten to fit the reading level and viewpoint of the current sample of adolescents and their parents, the finding about these variables requires cautious interpretation. A recent meta-analysis on the general population found that internalized stigma, defined as the combination of self-stigma and social stigma, has inconsistent correlations with sociodemographic variables (e.g., gender, age, education, and income) (Livingston & Boyd, 2010). However, the correlations among stigma, treatment seeking attitude, and sociodemographic variables focusing on the underrepresented urban at-risk adolescent population have not been well-studied. Consistent with past research on adolescents, youth age was associated with endorsing lower levels of social stigma (Moses, 2009). However, adolescent girls in this sample were more likely than boys to report higher self-stigma, despite some evidence suggesting that boys and men may tend to experience more stigma in part due to gender-role socialization (Vogel, Heimerdinger-Edwards, Hammer, & Hubbard, 2011). Family income was associated with less positive attitude towards professional help and more social stigma perhaps because higher income youth have less exposure (or are shielded more) from learning about family members who seek help.

Caregivers who reported higher levels of mental health needs among their children were more likely to endorse higher positive attitude towards professional help and social stigma. In other words, caregivers with troubled adolescent children tended to see professionals as helpful, but at the same time expect more negative treatment and devaluation from their social environment if they seek professional help for their children. It is possible that caregivers of adolescents with mental health needs have more actual contact with mental health professionals

and first-handed experience with the being evaluated and treated negatively due to mental health problems. As such, they may experience mental health services as more relevant and therefore formed stronger and more positive opinions towards the helpfulness of professionals and more negative expectations on the attitudes of their social environment (Liberman & Chaiken, 1996). Prospective, longitudinal research is recommended to untangle this process of beginning and remaining in or dropping out of services.

To gain a better understanding of youth and their caregiver's perspectives and opinions on mental health issues, the relations among youth and parent attitude-related variables were examined. Interestingly, perceived youth mental health need was not linked significantly with caregiver's self-stigma (i.e., caregiver's self-confidence as a good person and as a good parent). Self-stigma were negatively related to attitude towards professional help and positively related to social stigma. However, attitude towards professional help and social stigma were not related. This pattern held true for both caregiver and adolescents and is consistent with Vogel et al.'s (2007) sequential mediation model. In this model, researchers found that social stigma was related to self-stigma, which in turn associated with attitudes toward seeking help, and then attitudes toward seeking help was linked with willingness to seek counseling services. It is possible that these variables interact in a sequential fashion instead of simultaneously combine as a single construct. Longitudinal research may prove enlightening as to unpacking this process.

Predicting Current Service Utilization

The overall model fit of the primary model was poor. As such, the details of the model need to be interpreted with caution. When examined as a whole, internalizing problems, externalizing problems, functional impairment, and caregiver strain was positively associated with current service utilization. It is not surprising that the recognition of mental health problems

would lead to a higher likelihood of actually seeking and using services needed. However, contrary to the hypothesis and past findings (Bathje & Pryor, 2011; Pattyn et al., 2014), the latent variable of overall attitude (i.e., combination of attitude towards professional help, social stigma, and self-stigma) were not linked to service utilization when perceived needs were taken into account. Because social stigma and self-stigma had relatively small factor loadings in the models and no statistically significant correlations with service use, it suggests that service utilization was independent of stigma in the current sample. It is speculated that the mental health problem for a high-risk adolescent population may be at a severity that negate the influence of stigma. In other words, families may be willing to ignore or otherwise cope with the negative self-image and social evaluation in regard to mental health services if they also see those symptoms as having a negative impact on their child's adaptation and are experiencing distress themselves. Under these conditions, caregiver's desire for improved child mental health and sufficient trust that professional help will be effective appear to be enough to overcome stigma.

The inclusion of low-impact and possibly irrelevant variables in the primary model likely increased model complexity and error. As such, a simplified model was tested after dropping social stigma and self-stigma. With adequate model fit, results showed that caregiver's perceived need for mental health care and caregiver's attitude towards professional help was related to higher likelihood of adolescent's service utilization, while adolescent's attitude did not appear to matter in the prediction of attending therapy at the time data were gathered.

Relative Predictive Power of Caregiver's Attitude and Youth's Attitude

Higher levels of caregiver's positive attitude towards professional help was associated with higher levels of adolescent's positive attitude towards professional help. However, only caregiver's attitude, but not adolescent's attitude, were associated with current service utilization.

Interestingly, caregiver's perceived stigma was not linked to adolescent's perceived stigma. It is possible that adolescents rely more heavily on their caregivers than their non-parental social circles (e.g., peers, teachers) to form their impressions about the effectiveness of professional mental health care. On the other hand, they may depend mostly on themselves or their non-parental social circles (e.g., peers, teachers) on their beliefs about stigma.

Contrary to hypothesis, youth age was not a significant moderator of the relative strength of parental and youth factors. Similarity between caregiver's and youth's attitudes did not change based on the adolescent's age. Also, the association between caregiver's attitude and current service utilization was similar to the association between adolescent's attitude and current service utilization, regardless of age. Although past research has found that parental authority decreased with adolescent's age in terms of prudential issues (e.g., safety, comfort, health) (Smetana, 2000), the current findings suggest that mental health care decisions may be an exception where caregivers maintain exclusive authority.

Spirituality/Religiosity

Half of all adolescents in this sample reported high importance of religion and regular attendance of religious services. Past research has shown that adolescent girls and women reported a higher level of spirituality/religiosity than adolescent boys and men (Good & Willoughby, 2006; Hammermeister, Flint, El-Alayli, Ridnour & Peterson, 2005). Surprisingly, the gender difference was not found in the current sample. Miller and Hoffmann (1995) found that gender differences in risk preferences (or risk aversion) may attenuate the gender differences in religiosity. Given that the current sample exhibited high behavioral risk regardless of gender, it is could be inferred that the spirituality/religiosity among at-risk urban primarily African American adolescents may be more equal across gender. One exception being that adolescent

boys reported higher levels of existential well-being (i.e., understanding the purpose and direction of life) than did girls, but similar levels of religious well-being (i.e., perceived well-being in relation with God or any other divine being), compared with adolescent girls. This supports the notion that existentially defined spirituality/religiosity (i.e., concepts of spirituality that were not explicitly religious in nature) may be qualitatively different from ideologically defined spirituality/religiosity (i.e., doctrinal beliefs and attitudes) (Wong, Rew, & Slaikeu, 2006).

Almost all of the spirituality/religiosity measures examined associate with each other significantly, except for frequency of religious practices and existential well-being, which showed a trend toward being a statistically significant correlation. Despite the links among these measures, only higher existential well-being and lower negative religious coping showed consistent relations with less caregiver-reported mental health problems among adolescents, which partially support past findings that spirituality/religiosity is related to better mental health status (Yonker, Schnabelrauch, & DeHaan, 2012). Because different types of spirituality/religiosity measures in the current study were found to relate differently with youth mental health status, it suggests that the protective power of spirituality/religiosity may depend on how it is operationalized or which dimension is of theoretical interest. In particular, existentially defined spirituality/religiosity appeared to be associated most consistently with better mental health outcomes and higher likelihood of service utilization, compared to the other spirituality/religiosity measures.

The relations between spirituality/religiosity measures and attitudes towards mental health services were less uniform and more perplexing. In terms of adolescent self-report, the general pattern showed that higher levels of positive spirituality/religiosity (i.e., positive

religious coping, existential well-being, and religiosity well-being) and lower level of negative spirituality/religiosity (i.e., negative religious coping) were associated with higher positive attitudes towards professional help and less stigma. However, adolescent reported importance of religion and frequency of religious practice were not linked to their attitudes and stigma. These findings suggest that adolescents with more positive views about any higher-beings or their own purpose of life may be more open to mental health care. It is possible that a general sense of hope for healing and trust for external help may underlie this link. To investigate this possibility, future study could look into the association of personality traits (e.g., agreeableness) and attachment with regards to the relation between spirituality/religiosity and opinions towards mental health care. There was almost no relation between adolescent-reported spirituality/religiosity and caregiver-reported attitude and stigma. This suggests that adolescent-reported and caregiver-reported opinions may have separate and unique relations. Given that caregiver's perception and opinion were found to be a stronger determinant of youth mental health utilization than youth reports, investigating caregiver's own spirituality/religiosity and how it may come into play with their attitude toward seeking mental health care could potentially further our understanding of factors that facilitate or hinder service use.

Because only existential well-being showed a significant correlation with current service use, it was selected as the spirituality/religiosity measure to be included in the mediation model. The relation between spirituality/religiosity and service utilization was fully accounted for by caregiver's perceptions of youth mental health needs. Although some may argue that the use of alternative explanations (e.g., morality, spirituality/religiosity) and preference of informal care over professional service among African American may be impeding the decision to seek professional care, the current results suggest that spirituality/religiosity did not directly have an

impact on service use. Instead, the protective power of spirituality/religiosity may reduce caregiver's perceptions of youth need for care and therefore indirectly decrease the use of services.

Study Limitations and Future Directions

Several methodological limitations of this study need to be considered. First, the current sample may not be representative of all urban at-risk minority adolescents and their caregivers. Given that most of these families were coming to a health clinic and these families were willing to voluntarily participate in a psychological study, they may be a special group that holds more positive perceptions about psychologists and lower levels of stigma. Second, despite the lack of a well-accepted standard for sample size in SEM models, the sample size of the current study is relatively low for the complexity of the originally proposed models. Replicated and further examination of these and related variables are needed, hopefully with larger sample sizes. Third, the adequate model fit only suggest that the proposed relations were plausible among the included variables, however, the model does not preclude the possibility that other relevant variables may be omitted. Future studies may benefit from investigating more complex models involving more variables such as logistic barriers. In additional, the current study's measure of past service utilization was not detailed enough to be included in the primary analyses. During administration, there were confusions about whether on-going therapy would count as just current use or both past and current use. Without detailed information on durations of past service use and reasons for termination, it was difficult to account for the effect of past mental health care experience on current attitudes and symptoms. Future studies are recommended to investigate the longitudinal change of attitudes and symptoms as adolescents and their caregivers receives mental health services and how this change in attitudes and symptoms may affect the

length of staying in services, degree of benefiting from services, and future utilizing of services. Furthermore, the current study did not include any measures on logistic and financial difficulties, which has been identified to be a barrier to accessing mental health services (Gulliver, Griffiths, & Christensen, 2010). The fact that free therapy services were provided in the hospital from where the majority of the current sample was recruited may be a potential strength of the study and also a confounding factor to be addressed in future research. The availability of free mental health care may explain why family income did not associate with service utilization in this study. It is possible that more specific logistic and financial barriers (e.g., transportation and insurance) may have an impact on mental health care decisions in other low-income at-risk families. Lastly, future studies could look beyond service enrollment status and investigate factors associated with attrition, attendance, type of service, and outcomes of service.

Implications

The current study has potential implication for the dissemination and implementation of mental health service among urban at-risk adolescents. First of all, caregiver's perceived needs were found to be the largest determinant of mental health care involvement. In other words, it supports the notion that improvement of mental health literacy, particularly attention to identifying mental health problems and their impact on youth and parent functioning, is likely to encourage service use. This is consistent with a previous finding that young people who were able to correctly label mental disorders in vignettes were more likely to recommend appropriate help and treatment (Wright et al., 2007). Many psychoeducation, screening, and other assessment/feedback models have been shown to help adolescents and their parents to identify and recognize mental health problems (Jorm, 2012). It may be beneficial to explore the role of these mental health literacy programs on facilitating appropriate mental health service utilization.

Furthermore, caregiver's attitude towards professional care was also an indirect contributing factor towards service utilization. More effort on promoting idea of the helpfulness of mental health care providers and facilitating trust in them is warranted.

Not surprisingly, caregivers appeared to have the significant share of influence in adolescents' mental health service utilization. This indicates that interventions and polices designed to promote mental health service use may best target caregivers primarily. On the other hand, past research indicated that shared decision making among providers, adolescents, and parents was predictive of better clinical outcomes (Edbrooke-Childs, Jacob, Argent, Patalay, Deighton, & Wolpert, 2016). Future efforts also may benefit from proactively involving adolescents in the decision- making process, especially where and how their functioning has been compromised, before and after a family has enrolled in services.

In addition, the current findings supported the protective power of high levels of spirituality/religiosity, especially existential well-being. Inner-city at-risk adolescents may benefit from enhancement in orientation towards future and a sense of purpose in life, whether it is achieved through religious practice or otherwise. Programs designed for fostering wellness among youth may benefit from involving the installment of hope, recognition of growth, and supported search for meaning in life. These foci on adolescent futures may further contribute to helping youth prevent or reduce emotional and behavioral difficulties, impairments in functioning, and parenting stress perceived by caregivers.

Table 1
Descriptive Statistics of Demographic Information and Study Variables

Variables (n)	Mean (*SD*)	Percentage (*n*)	Range
Youth Age (119)	14.92 (1.52)		13-18
Youth Gender (120)			
Girls		70.0% (84)	
Boys		30.0% (36)	
Youth Race/Ethnicity (111)			
African-American/Black		82.0% (91)	
Caucasian/White		2.7% (3)	
Latino-American		1.8% (2)	
Others		13.5% (15)	
Caregiver Participant (119)			
Biological Mother		80.7% (96)	
Biological Father		5.0% (6)	
Grandmother		1.7% (2)	
Aunt		3.4% (4)	
Uncle		0.8% (1)	
Foster Mother		0.8% (1)	
Other Family Members		7.6% (9)	
Yearly Income (107)			
$0 - 29,999		64.5% (69)	
$30,000 - 59,999		23.4% (25)	
$60,000 - 79,999		4.7% (5)	
$80,000 +		7.5% (8)	
Caregiver Relationship Status (109)			
Single		62.4% (68)	
Partnered		37.6% (41)	
Caregiver Education Level (106)			
No HS Diploma/GED		20.8% (22)	
HS Diploma/GED		79.2% (84)	
Environmental Stress Exposure (114)	11.25 (5.64)		1-31
Caregiver-Rated Youth Behavioral Problem			
Internalizing Problems (120)	57.90 (10.05)		33-96
Externalizing Problems (120)	54.72 (11.52)		34-80
Total Problems (120)	57.57 (11.32)		24-88
Caregiver-Rated Youth Functional Impairment (120)	12.68 (8.93)		0-34
Caregiver Strain (120)	5.46 (2.29)		3.00-14.31
Attitude towards Professional Psychological Help			
Caregiver-Rated (120)	33.25 (5.30)		17-40
Youth-Rated (120)	29.42 (4.89)		13-40
Social Stigma			

Caregiver-Rated (120)	10.54 (4.00)		5-20
Youth-Rated (120)	10.47 (3.60)		5-20
Self-Stigma			
Caregiver-Rated (120)	18.93 (5.29)		10-38
Youth-Rated (119)	22.50 (5.51)		11-41
Youth Mental Health Service Use			
Current (109)			
Yes		23.9% (26)	
No		76.1% (83)	
Past (120)			
Yes		49.2% (59)	
No		50.8% (61)	
Any (116)			
Yes		56.0% (65)	
No		44.0% (51)	
Importance of Religion (99)	5.78 (1.81)		2-8
How important is religion in your life?			
Not at all		12.1% (12)	
Somewhat		15.2% (15)	
Quite a bit		23.2% (23)	
A great deal		49.5% (49)	
Frequency of Religious Practices (99)	16.61 (7.08)		0-27
How often do you attend religious services?			
Never		13.1% (13)	
Less than yearly		7.1% (7)	
1-2 times per year		9.1% (9)	
Several times per year; Monthly		23.2% (23)	
Weekly		39.4% (39)	
Several times per week		8.1% (8)	
Positive Religious Coping (116)	14.51 (4.15)		5-20
Negative Religious Coping (116)	8.43 (2.84)		5-18
Existential Well-Being (97)	48.10 (8.05)		23-60
Religious Well-Being (97)	47.18 (11.69)		10-60

Table 2
Correlation Matrix of Demographic Variables and Primary Study Variables

Variables (n)	Youth Age (119)	Youth Gender (120)	Family Income (107)
Internalizing Problems (120)	-0.01	0.08	-0.09
Externalizing Problems (120)	-0.02	0.08	-0.17†
Total Problems (120)	-0.06	0.05	-0.15
Functional Impairment (120)	0.06	0.05	-0.02
Caregiver Strain (120)	0.02	-0.00	-0.16†
Attitude towards Professional Psychological Help - Caregiver (120)	0.06	-0.09	-0.10
Attitude towards Professional Psychological Help - Youth (120)	-0.01	-0.13	-0.20*
Social Stigma - Caregiver (120)	-0.01	0.12	-0.04
Social Stigma - Youth (120)	0.23*	0.16†	0.19*
Self-Stigma - Caregiver (120)	-0.06	0.14	0.03
Self-Stigma - Youth (119)	-0.02	0.25**	0.17†

Note: Gender was coded as a dichotomous variable with 1 = boy and 2 = girl. Family Income was coded as ordinal variable with 1 = less than $9,999; 2 = $10,000-$19,999; 3 = $20,000-$29,999; 4 = $30,000-$39,999; 5 = $40,000-$49,999; 6 = $50,000-$59,999; 7 = $60,000-$69,999; 8 = $70,000-$79,999; 9 = $80,000-$89,999; 10 = $90,000-$99,999; and 11 = more than $100,000.
†$p < .10$, *$p < .05$, ** $p < .01$

Table 3
Correlation Matrix of Primary Study Variables

Variables (*n*)	2	3	4	5	6	7	8	9	10	11
1. Internalizing Problems (120)	0.61**	0.84**	0.62**	0.54**	0.23*	0.01	0.18*	0.14	-0.01	-0.04
2. Externalizing Problems (120)	—	0.88**	0.73*	0.72**	0.27**	0.02	0.15	0.15†	0.00	-0.11
3. Total Problems (120)	—	—	0.76**	0.71**	0.31**	0.00	0.20*	0.12	0.01	-0.08
4. Functional Impairment (120)	—	—	—	0.72**	0.27**	0.08	0.23*	0.16†	0.06	-0.07
5. Caregiver Strain (120)	—	—	—	—	0.31**	0.04	0.21*	0.13	-0.02	-0.11
6. Attitude towards Professional Psychological Help - Caregiver (120)	—	—	—	—	—	0.28**	-0.02	0.06	-0.41**	-0.12
7. Attitude towards Professional Psychological Help - Youth (120)	—	—	—	—	—	—	-0.02	-0.14	-0.26**	-0.38**
8. Social Stigma - Caregiver (120)	—	—	—	—	—	—	—	-0.04	0.33**	-0.03
9. Social Stigma - Youth (120)	—	—	—	—	—	—	—	—	-0.10	0.24**
10. Self-Stigma - Caregiver (120)	—	—	—	—	—	—	—	—	—	-0.05
11. Self-Stigma - Youth (119)	—	—	—	—	—	—	—	—	—	—

†$p < .10$, *$p < .05$, ** $p < .01$

Table 4
Standardized and Unstandardized Coefficients for CFA Model

Observed variable	Latent construct	*B*	*SE B*	β
Internalizing Problems	Caregiver's Perceived Need	1.00		0.68**
Externalizing Problems	Caregiver's Perceived Need	1.52	0.18	0.86**
Functional Impairment	Caregiver's Perceived Need	1.24	0.14	0.91**
Caregiver Strain	Caregiver's Perceived Need	0.26	0.03	0.82**
Caregiver's Attitude towards Professional Psychological Help	Caregiver's Overall Attitude	1.00		0.42**
Caregiver's Self-Stigma	Caregiver's Overall Attitude	-0.62	0.20	-1.00**
Caregiver's Social Stigma	Caregiver's Overall Attitude	-2.32	0.46	-0.34**
Youth's Attitude towards Professional Psychological Help	Youth's Overall Attitude	1.00		0.52**
Youth's Self-Stigma	Youth's Overall Attitude	-0.40	0.17	-0.76**
Youth's Social Stigma	Youth's Overall Attitude	-1.65	0.00	-0.28*

Note: STDYX Standardization
$^{\dagger}p < .10$, $*p < .05$, $** p < .01$

Table 5

Correlation Matrix of Service Use with Primary Study Variables and Demographic Variables

Variables (*n*)	Current Use (109)	Past Use (120)	Any Use (116)
Internalizing Problems (120)	0.41**	0.31**	0.36**
Externalizing Problems (120)	0.37**	0.33**	0.38**
Total Problems (120)	0.45**	0.37**	0.42**
Functional Impairment (120)	0.37**	0.44**	0.43**
Caregiver Strain (120)	0.41**	0.37**	0.41**
Attitude towards Professional Psychological Help - Caregiver (120)	0.36**	0.29**	0.36**
Attitude towards Professional Psychological Help - Youth (120)	0.07	0.02	0.05
Social Stigma - Caregiver (120)	0.08	0.04	0.09
Social Stigma - Youth (120)	0.07	-0.05	-0.11
Self-Stigma - Caregiver (120)	-0.15	-0.18*	-0.18†
Self-Stigma - Youth (119)	-0.07	-0.06	-0.14
Youth Age (119)	-0.14	0.01	-0.01
Youth Gender (120)	-0.04	-0.01	-0.05
Family Income (107)	-0.22*	-0.09	-0.15

Note: Gender was coded as a dichotomous variable with boy = 1 and girl = 2. Family Income was coded as ordinal variable with 1 = less than $9,999; 2 = $10,000-$19,999; 3 = $20,000-$29,999; 4 = $30,000-$39,999; 5 = $40,000-$49,999; 6 = $50,000-$59,999; 7 = $60,000-$69,999; 8 = $70,000-$79,999; 9 = $80,000-$89,999; 10 = $90,000-$99,999; and 11 = more than $100,000.

$^{\dagger}p < .10$, $*p < .05$, $** p < .01$

Table 6
Standardized and Unstandardized Coefficients for SEM Model 1

Measurement Model				
Observed variable	Latent construct	*B*	*SE B*	β
Internalizing Problems	Caregiver's Perceived Need	4.15	0.72	0.71**
Externalizing Problems	Caregiver's Perceived Need	5.91	0.85	0.85**
Functional Impairment	Caregiver's Perceived Need	4.84	0.62	0.89**
Caregiver Strain	Caregiver's Perceived Need	1.00		0.80**
Caregiver's Attitude towards Professional Psychological Help	Caregiver's Overall Attitude	1.00		1.00**
Caregiver's Self-Stigma	Caregiver's Overall Attitude	-0.17	0.10	-0.17†
Caregiver's Social Stigma	Caregiver's Overall Attitude	0.01	0.08	0.02
Youth's Attitude towards Professional Psychological Help	Youth's Overall Attitude	1.00		0.39**
Youth's Self-Stigma	Youth's Overall Attitude	-1.48	0.57	-0.53**
Youth's Social Stigma	Youth's Overall Attitude	0.20	0.25	0.11
Structural Model				
Predictor variable	Outcome variable	*B*	*SE B*	β
Caregiver's Perceived Need	Current Service Utilization	3.31	0.67	0.54**
Caregiver's Overall Attitude	Current Service Utilization	0.53	0.47	0.28
Youth's Overall Attitude	Current Service Utilization	0.40	1.73	0.07
Caregiver's Overall Attitude	Youth's Overall Attitude	0.23	0.07	0.66**
Correlation				*r*
Caregiver's Perceived Need	Caregiver's Overall Attitude			0.27**

Note: STDY Standardization
†$p < .10$, *$p < .05$, ** $p < .01$

Table 7
Standardized and Unstandardized Coefficients for SEM Simplified Model 1

Measurement Model				
Observed variable	Latent construct	*B*	*SE B*	β
Internalizing Problems	Caregiver's Perceived Need	4.15	0.72	0.71**
Externalizing Problems	Caregiver's Perceived Need	5.89	0.84	0.84**
Functional Impairment	Caregiver's Perceived Need	4.85	0.62	0.90**
Caregiver Strain	Caregiver's Perceived Need	1.00		0.80**
Structural Model				
Predictor variable	Outcome variable	*B*	*SE B*	β
Caregiver's Perceived Need	Current Service Utilization	3.29	0.68	0.54**
Caregiver's Attitude towards Professional Psychological Help	Current Service Utilization	0.61	0.19	0.33**
Youth's Attitude towards Professional Psychological Help	Current Service Utilization	-0.04	0.25	-0.02
Caregiver's Attitude towards Professional Psychological Help	Youth's Attitude towards Professional Psychological Help	0.20	0.07	0.22**
Correlation				*r*
Caregiver's Perceived Need	Caregiver's Attitude towards Professional Psychological Help			0.27**

Note: STDY Standardization
$^{\dagger}p < .10$, $*p < .05$, $** p < .01$

Table 8

Summary of Linear Regression Analysis of Caregiver's Attitude Predicting Youth's Attitude

	Youth's Attitude				Youth's Social Stigma				Youth's Self-Stigma			
Predictors	*B*	*SE B*	β	ΔR^2	*B*	*SE B*	β	ΔR^2	*B*	*SE B*	β	ΔR^2
Attitude towards Professional Psychological Help												
Step 1				0.08**								
Caregiver's Attitude	0.21	0.07	0.29**									
Youth Age	-0.02	0.04	-0.03									
Step 2				0.02								
Caregiver's Attitude	-0.86	0.71	-1.17									
Youth Age	0.16	0.13	0.34									
Attitude X Age	-0.07	0.05	-1.49									
Social Stigma												
Step 1								0.05*				
Caregiver's Social Stigma					-0.01	0.01	-0.03					
Youth Age					0.08	0.03	0.23*					
Step 2								0.00				
Caregiver's Social Stigma					0.04	0.13	0.29					
Youth Age					0.12	0.10	0.31					
Social Stigma X Age					-0.00	0.01	-0.33					
Self-Stigma												
Step 1												0.00
Caregiver's Self-Stigma									-0.48	0.87	-0.05	
Youth Age									-0.09	0.34	-0.02	

Step 2				0.01
Caregiver's Self-Stigma	5.61	8.21	0.60	
Youth Age	1.65	2.36	0.46	
Self-Stigma X Age	-0.41	0.54	-0.79	

Note: All variables were entered simultaneously within step. For attitude towards professional psychological help, $N = 118$; for social stigma, $N = 118$; for self-stigma, $N = 117$.
$^{\dagger}p < .10$, $*p < .05$, $** p < .01$

Table 9

Summary of Logistic Regression Analysis of Caregiver's Attitude and Youth's Attitude Predicting Current Service Utilization

	Current Service Use					
Predictors	*B*	*SE B*	e^B	$\Delta\chi^2$	*Nagelkerke* R^2	% Correct
Attitude towards Professional Psychological Help						
Step 1				17.09**	0.22	77.8%
Caregiver	0.93	0.27	2.54**			
Youth	-0.05	0.32	0.95			
Step 2				2.36	0.25	78.7%
Caregiver	1.07	0.29	2.90**			
Youth	-0.09	0.32	0.91			
Youth Age	-0.26	0.17	0.77			
Step 3						
Caregiver	-4.35	3.47	0.01	3.46	0.29	79.6%
Youth	3.36	3.80	28.87			
Youth Age	-0.09	0.74	0.92			
Caregiver X Age	0.49	0.28	1.63†			
Youth X Age	-0.18	0.24	0.84			
Caregiver X Youth X Age	0.03	0.03	1.03			
Social Stigma						
Step 1				1.52	0.02	76.9%
Caregiver	0.06	0.06	1.06			
Youth	0.31	0.41	1.36			
Step 2						
Caregiver	0.06	0.06	1.06	2.82†	0.06	76.9%
Youth	0.51	0.45	1.67			
Youth Age	-0.28	0.17	0.76			
Step 3				5.69	0.13	78.7%
Caregiver	0.22	0.70	1.25			
Youth	-9.04	4.99	0.00†			
Youth Age	-1.92	1.28	0.15			
Caregiver X Age	-0.05	0.06	0.95			
Youth X Age	0.53	0.33	1.70†			
Caregiver X Youth X Age	0.01	0.01	1.01			
Self-Stigma						
Step 1				4.81†	0.07	77.6%

Caregiver	-0.86	0.45	0.42†			
Youth	-0.04	0.05	0.96			
Step 2				1.94	0.09	76.6%
Caregiver	-0.92	0.46	0.40*			
Youth	-0.04	0.05	0.96			
Youth Age	-0.23	0.17	0.79			
Step 3				1.16	0.11	76.6%
Caregiver	-5.15	4.43	0.01			
Youth	-0.24	0.50	0.79			
Youth Age	-1.98	1.67	0.14			
Caregiver X Age	0.35	0.35	1.42			
Youth X Age	0.03	0.04	1.03			
Caregiver X Youth X Age	-0.00	0.01	1.00			

Note: e^B = exponentiated B / odds ratio. All variables were entered simultaneously within step.
†$p < .10$, *$p < .05$, ** $p < .01$

Table 10
Correlation Matrix of Spirituality/Religiosity Variables and Demographic Variables

Variables (n)	Importance of Religion (99)	Frequency of Religious Practices (99)	Positive Religious Coping (116)	Negative Religious Coping (116)	Existential Well-Being (97)	Religious Well-Being (97)
Youth Age (119)	-0.16	-0.04	-0.09	0.07	-0.16	-0.03
Youth Gender (120)	-0.09	-0.14	-0.08	-0.03	-0.25*	-0.14
Family Income (107)	-0.08	0.03	-0.01	-0.06	-0.16	-0.03
Importance of Religion (99)	—	0.64**	0.63**	-0.27**	0.28**	0.64**
Frequency of Religious Practices (99)	—	—	0.57**	-0.26*	0.18†	0.50**
Positive Religious Coping (116)	—	—	—	-0.33**	0.36**	0.75**
Negative Religious Coping (116)	—	—	—	—	-0.35**	-0.40**
Existential Well-Being (97)	—	—	—	—	—	0.52**
Religious Well-Being (97)	—	—	—	—	—	—

Note: Gender was coded as a dichotomous variable with 1 = boy and 2 = girl. Family Income was coded as ordinal variable with 1 = less than $9,999; 2 = $10,000-$19,999; 3 = $20,000-$29,999; 4 = $30,000-$39,999; 5 = $40,000-$49,999; 6 = $50,000-$59,999; 7 = $60,000-$69,999; 8 = $70,000-$79,999; 9 = $80,000-$89,999; 10 = $90,000-$99,999; and 11 = more than $100,000.
†$p < .10$, *$p < .05$, ** $p < .01$

Table 11
Correlation Matrix of Spirituality/Religiosity Variables and Primary Study Variables

Variables (n)	Importance of Religion (99)	Frequency of Religious Practices (99)	Positive Religious Coping (116)	Negative Religious Coping (116)	Existential Well-Being (97)	Religious Well-Being (97)
Internalizing Problems (120)	-0.15	-0.11	-0.08	0.30**	-0.32**	-0.24*
Externalizing Problems (120)	-0.01	0.11	0.01	0.30**	-0.21*	-0.12
Total Problems (120)	-0.06	0.01	-0.04	0.32**	-0.29**	-0.18†
Functional Impairment (120)	-0.02	-0.05	-0.12	0.33**	-0.34**	-0.17†
Caregiver Strain (120)	0.06	0.08	0.05	0.20*	-0.26**	-0.04
Attitude towards Professional Psychological Help - Caregiver (120)	0.02	-0.01	0.01	0.24**	-0.11	-0.07
Attitude towards Professional Psychological Help - Youth (120)	0.14	0.11	0.32**	-0.08	0.18†	0.22*
Social Stigma - Caregiver (120)	0.08	0.06	-0.05	-0.07	-0.07	-0.01
Social Stigma - Youth (120)	-0.04	-0.07	-0.16†	0.22*	-0.32**	-0.17†
Self-Stigma - Caregiver (120)	-0.08	0.06	-0.02	-0.11	-0.09	0.10
Self-Stigma - Youth (119)	-0.10	-0.16	-0.14	0.15	-.019†	-0.17†
Current Use (109)	0.09	0.01	-0.06	0.13	-0.30**	-0.20†
Past Use (120)	-0.00	-0.14	-0.08	0.29**	-0.06	-0.06
Any Use (116)	0.06	-0.10	-0.04	0.27**	-0.12	-0.12

†$p < .10$, *$p < .05$, ** $p < .01$

Table 12
Standardized and Unstandardized Coefficients for Mediation Model

Measurement Model				
Observed variable	Latent construct	*B*	*SE B*	β
Internalizing Problems	Caregiver's Perceived Need	4.40	0.80	0.72**
Externalizing Problems	Caregiver's Perceived Need	5.64	0.83	0.92**
Functional Impairment	Caregiver's Perceived Need	4.78	0.65	0.78**
Caregiver Strain	Caregiver's Perceived Need	1.00		0.16**
Structural Model				
Predictor variable	Outcome variable	*B*	*SE B*	β
Youth's Existential Well-Bring	Caregiver's Perceived Need	-0.07	0.02	-0.42**
Caregiver's Perceived Need	Current Service Utilization	3.63	0.89	0.59**
Youth's Existential Well-Bring	Current Service Utilization	-0.27	0.21	-0.27

Note: STD Standardization
$^{\dagger}p < .10$, $*p < .05$, $** p < .01$

Table 13
Standardized and Unstandardized Coefficients for SEM Model 2

Measurement Model				
Observed variable	Latent construct	*B*	*SE B*	β
Internalizing Problems	Caregiver's Perceived Need	4.45	0.81	0.72**
Externalizing Problems	Caregiver's Perceived Need	5.64	0.83	0.91**
Functional Impairment	Caregiver's Perceived Need	4.77	0.65	0.77**
Caregiver Strain	Caregiver's Perceived Need	1.00		0.16**
Caregiver's Attitude towards Professional Psychological Help	Caregiver's Overall Attitude	1.00		0.24**
Caregiver's Self-Stigma	Caregiver's Overall Attitude	-0.64	0.23	-0.15**
Caregiver's Social Stigma	Caregiver's Overall Attitude	-0.08	0.15	-0.02
Youth's Attitude towards Professional Psychological Help	Youth's Overall Attitude	1.00		0.28
Youth's Self-Stigma	Youth's Overall Attitude	-0.79	0.27	-0.22**
Youth's Social Stigma	Youth's Overall Attitude	-0.11	0.13	-0.03
Structural Model				
Predictor variable	Outcome variable	*B*	*SE B*	β
Caregiver's Perceived Need	Current Service Utilization	3.82	0.89	0.62**
Caregiver's Overall Attitude	Current Service Utilization	-1.83	2.43	-0.44
Youth's Overall Attitude	Current Service Utilization	4.03	2.09	1.14†
Caregiver's Overall Attitude	Youth's Overall Attitude	1.67	1.06	1.43
Youth's Existential Well-Bring	Caregiver's Perceived Need	-0.07	0.02	-0.44**

Note: STD Standardization
†$p < .10$, *$p < .05$, ** $p < .01$

Table 14
Standardized and Unstandardized Coefficients for SEM Simplified Model 2

Measurement Model				
Observed variable	Latent construct	*B*	*SE B*	β
Internalizing Problems	Caregiver's Perceived Need	4.33	0.79	0.71**
Externalizing Problems	Caregiver's Perceived Need	5.52	0.85	0.91**
Functional Impairment	Caregiver's Perceived Need	4.71	0.64	0.78**
Caregiver Strain	Caregiver's Perceived Need	1.00		0.16**
Structural Model				
Predictor variable	Outcome variable	*B*	*SE B*	β
Caregiver's Perceived Need	Current Service Utilization	2.93	0.84	0.48**
Caregiver's Attitude towards Professional Psychological Help	Current Service Utilization	0.76	0.20	0.76**
Youth's Attitude towards Professional Psychological Help	Current Service Utilization	0.05	0.31	0.05
Caregiver's Attitude towards Professional Psychological Help	Youth's Attitude towards Professional Psychological Help	0.24	0.08	0.24**
Youth's Existential Well-Bring	Caregiver's Perceived Need	-0.07	0.02	-0.44**
Correlation				*r*
Caregiver's Perceived Need	Caregiver's Attitude towards Professional Psychological Help			0.18**

Note: STD Standardization
$^{\dagger}p < .10$, $*p < .05$, $** p < .01$

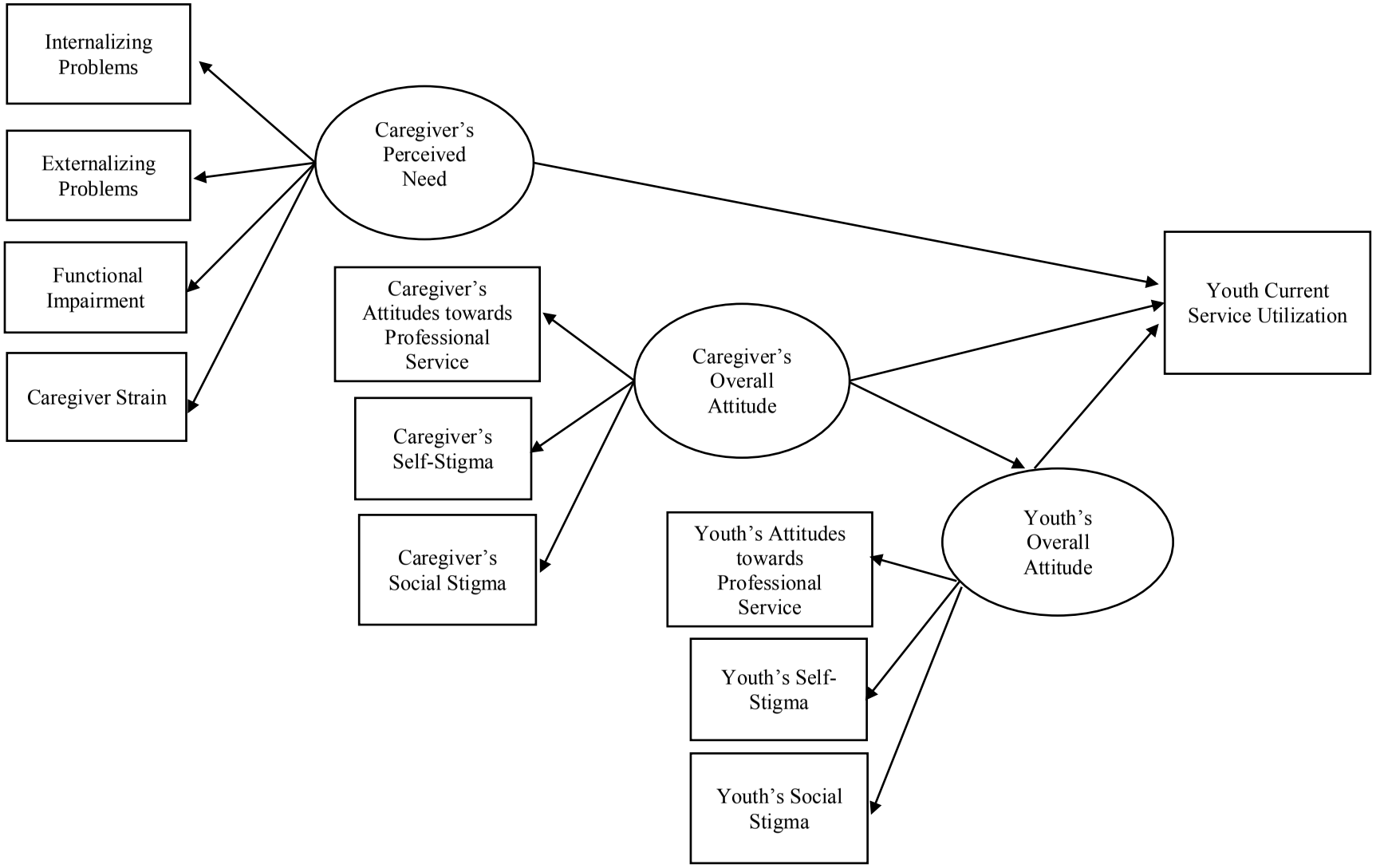

Figure 1. Proposed Model: Structural Equation Model of Mental Health Service Utilization among High Risk Adolescents.

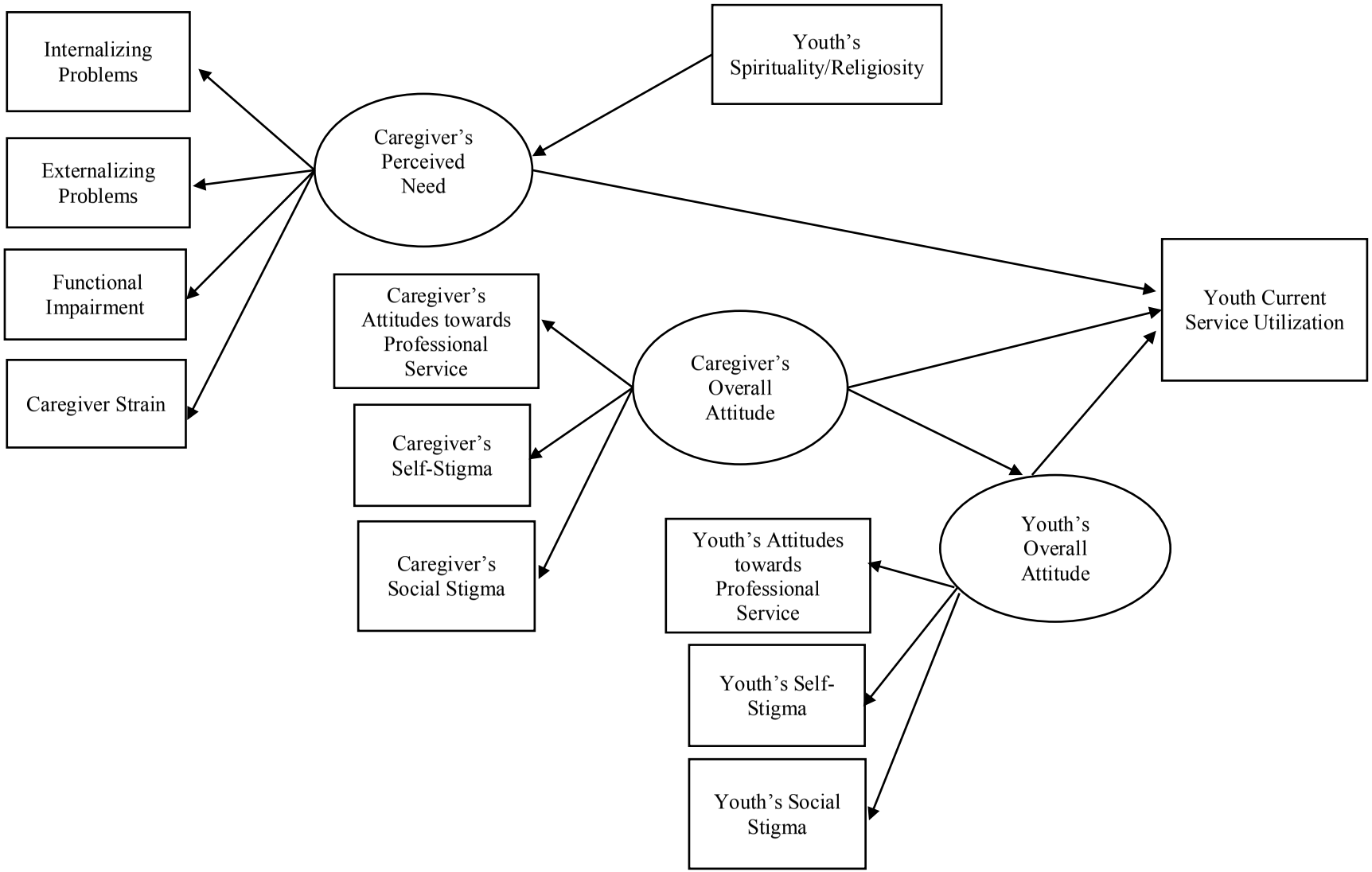

Figure 2. Proposed Model 2: Structural Equation Model of Mental Health Service Utilization among High Risk Adolescents (with Youth's Spirituality/Religiosity).

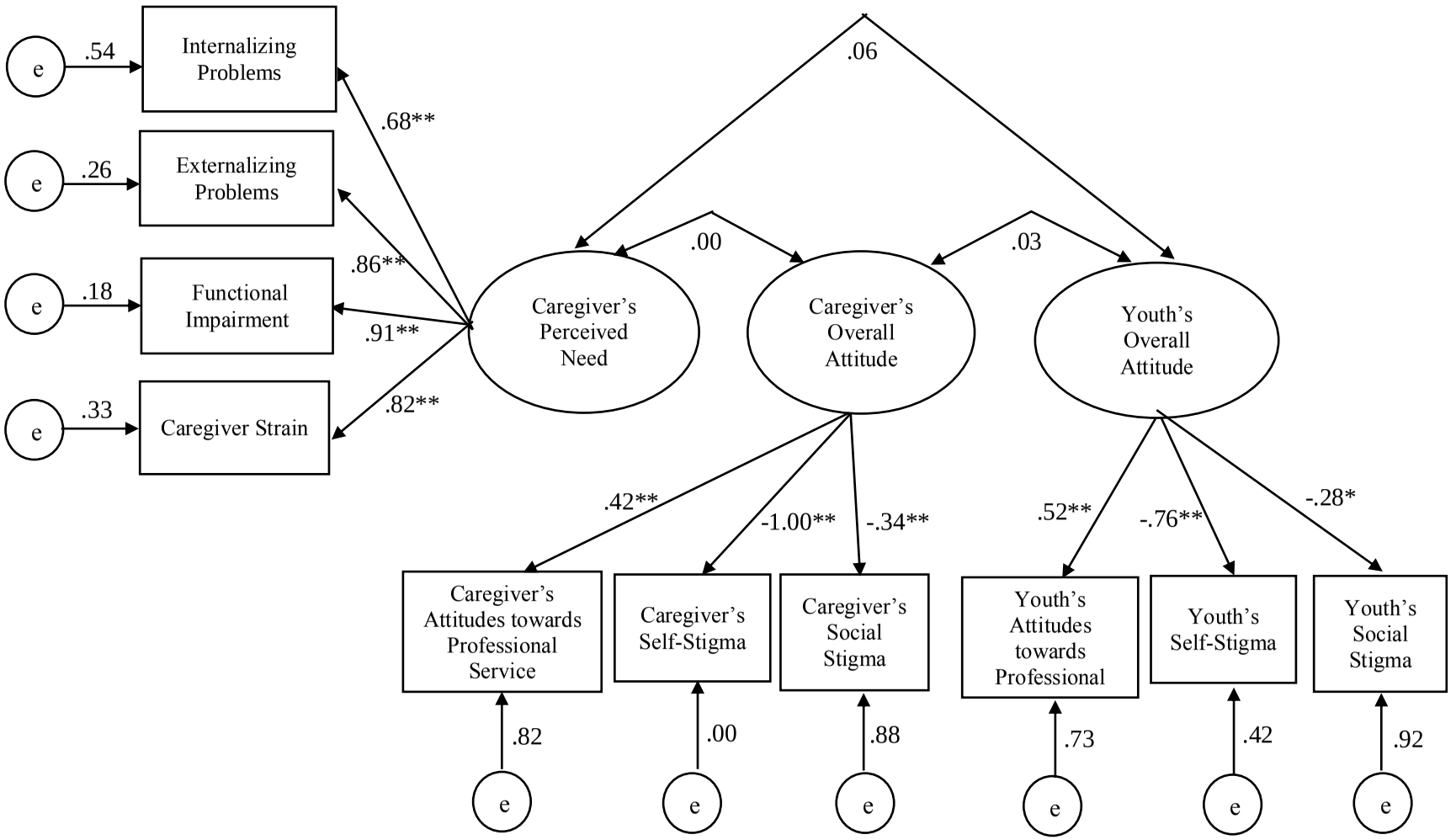

Figure 3. Results for the CFA Model with STDYX Standardization. N =119, *df* = 34, χ^2 = 52.71, $p < .05$, CFI = .95, TLI = .93, RMSEA = .07 (90% CI = .03-.10), e = error.

$^{\dagger}p < .10$, *p < .05, ** p < .01

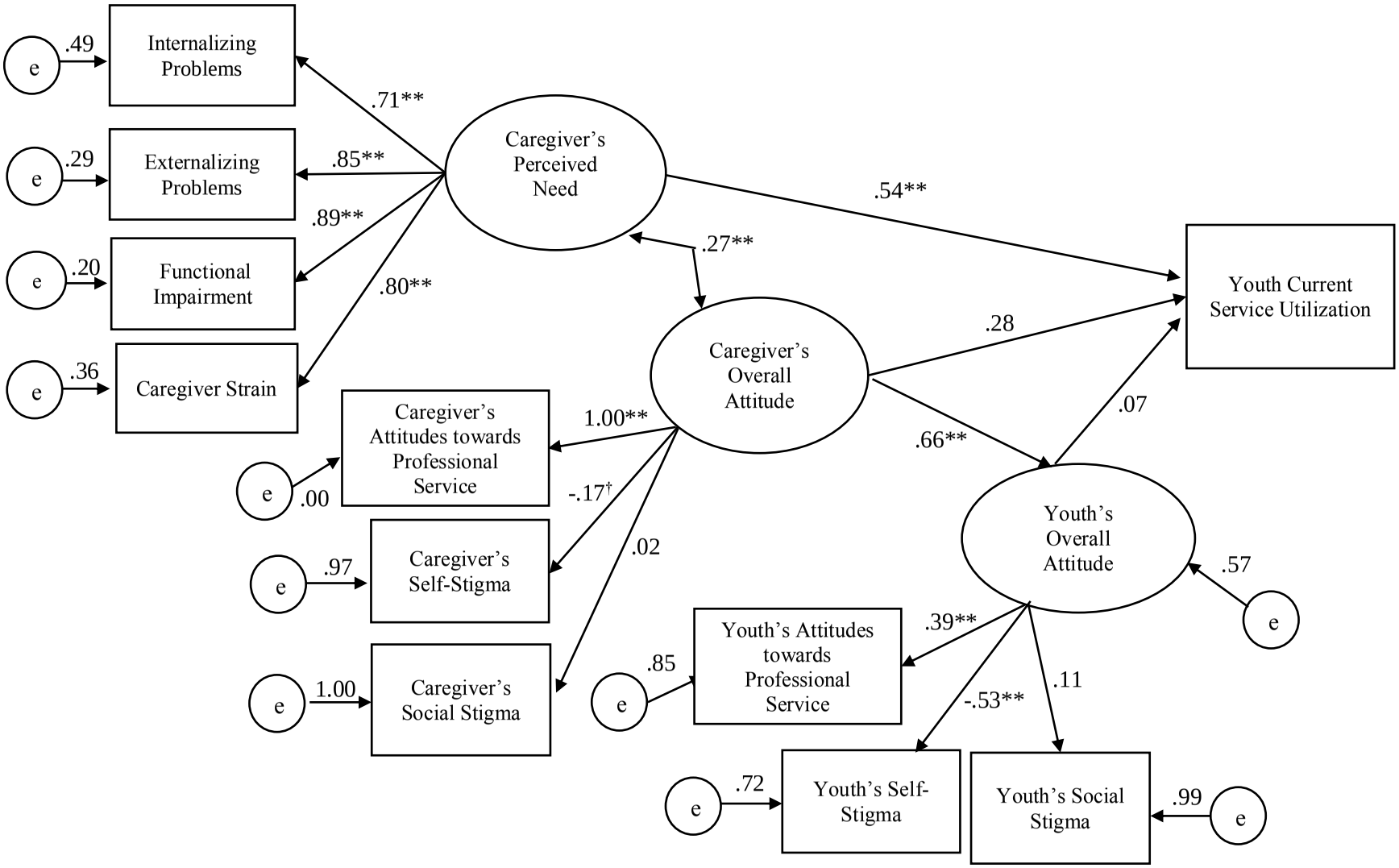

Figure 4. Results for SEM Model 1 with STDY Standardization. N = 119, *df* = 41, χ^2 = 85.89, *p* < .01, CFI = .73, TLI = .64, RMSEA = .10 (90% CI = .07-.12), e = error. †p < .10, *p < .05, ** p < .01

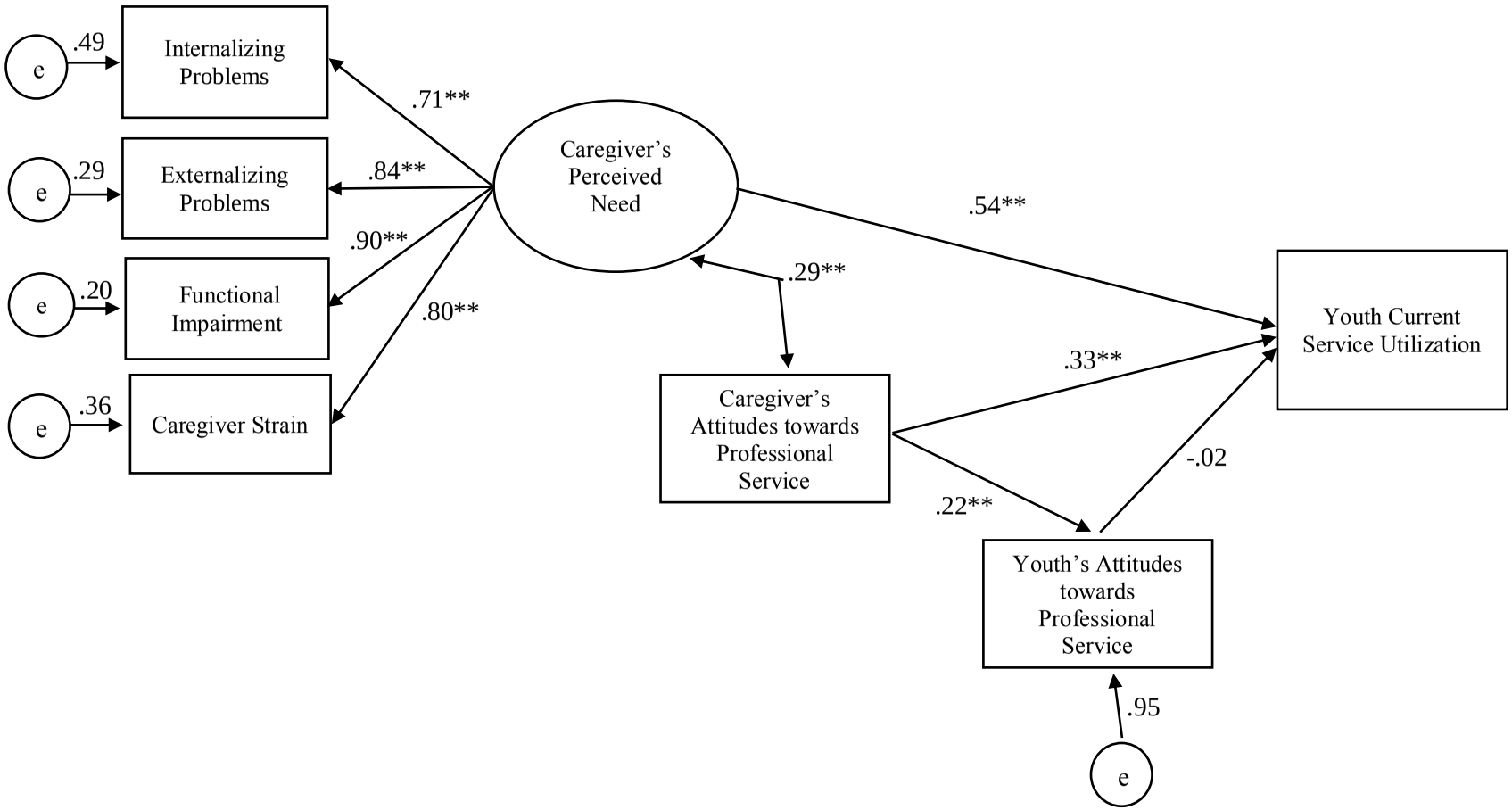

Figure 5. Results for SEM Simplified Model 1 with STDY Standardization. N = 120, *df* = 12, χ^2 = 9.35, *p* = .67, CFI = 1.00, TLI = 1.04, RMSEA = .00 (90% CI = .00-.08), e = error.

†p < .10, *p < .05, ** p < .01

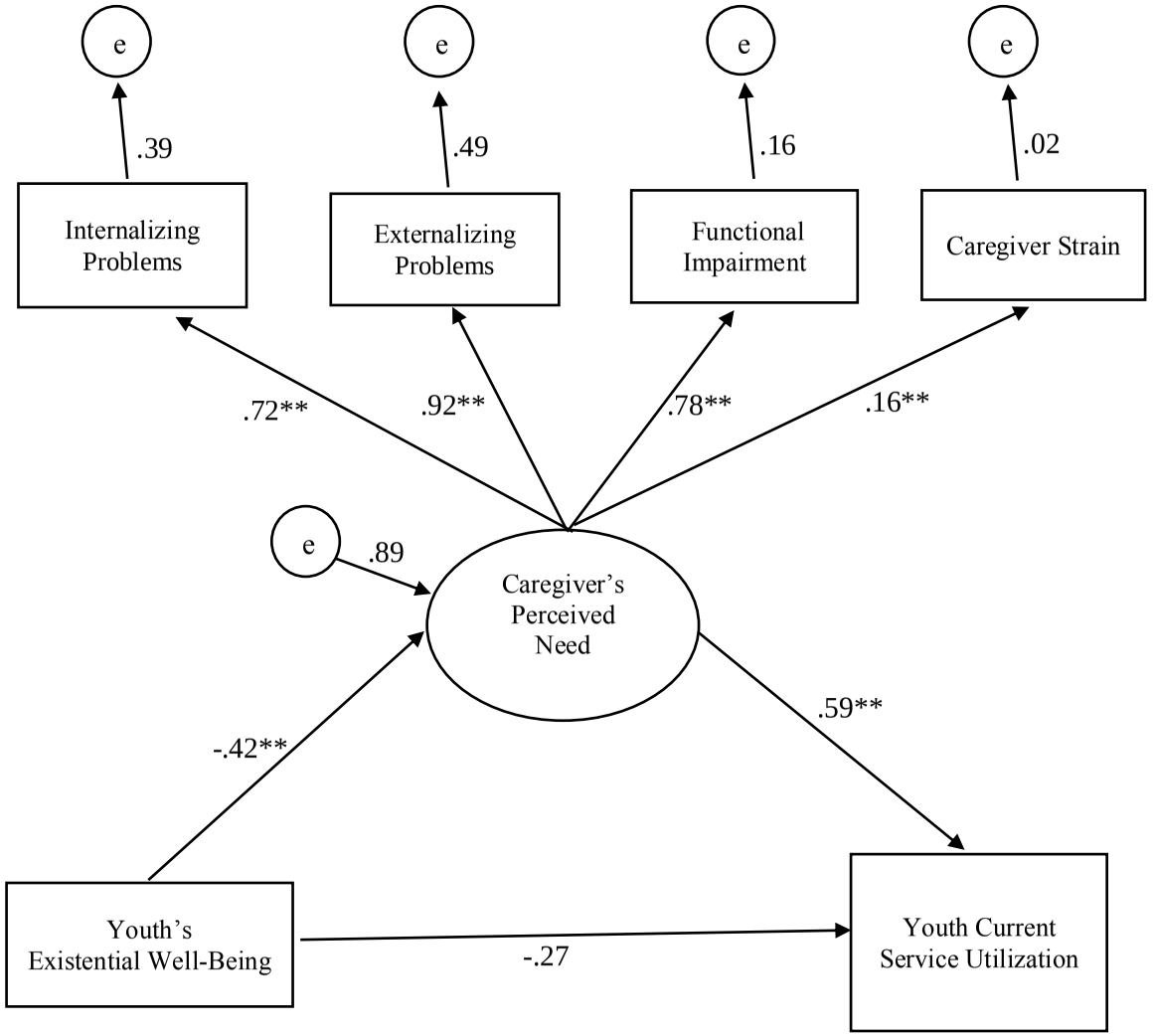

Figure 6. Results for Mediation Effect of Existential Well-being with STD Standardization. N = 97, *df* = 8, χ^2 = 11.69, *p* = .17, CFI = .96, TLI = .93, RMSEA = .07 (90% CI = .00-.15), direct effect = -0.27, *p* = .20, indirect effect = -0.25, *p* = .01, e = error.

†p < .10, *p < .05, ** p < .01

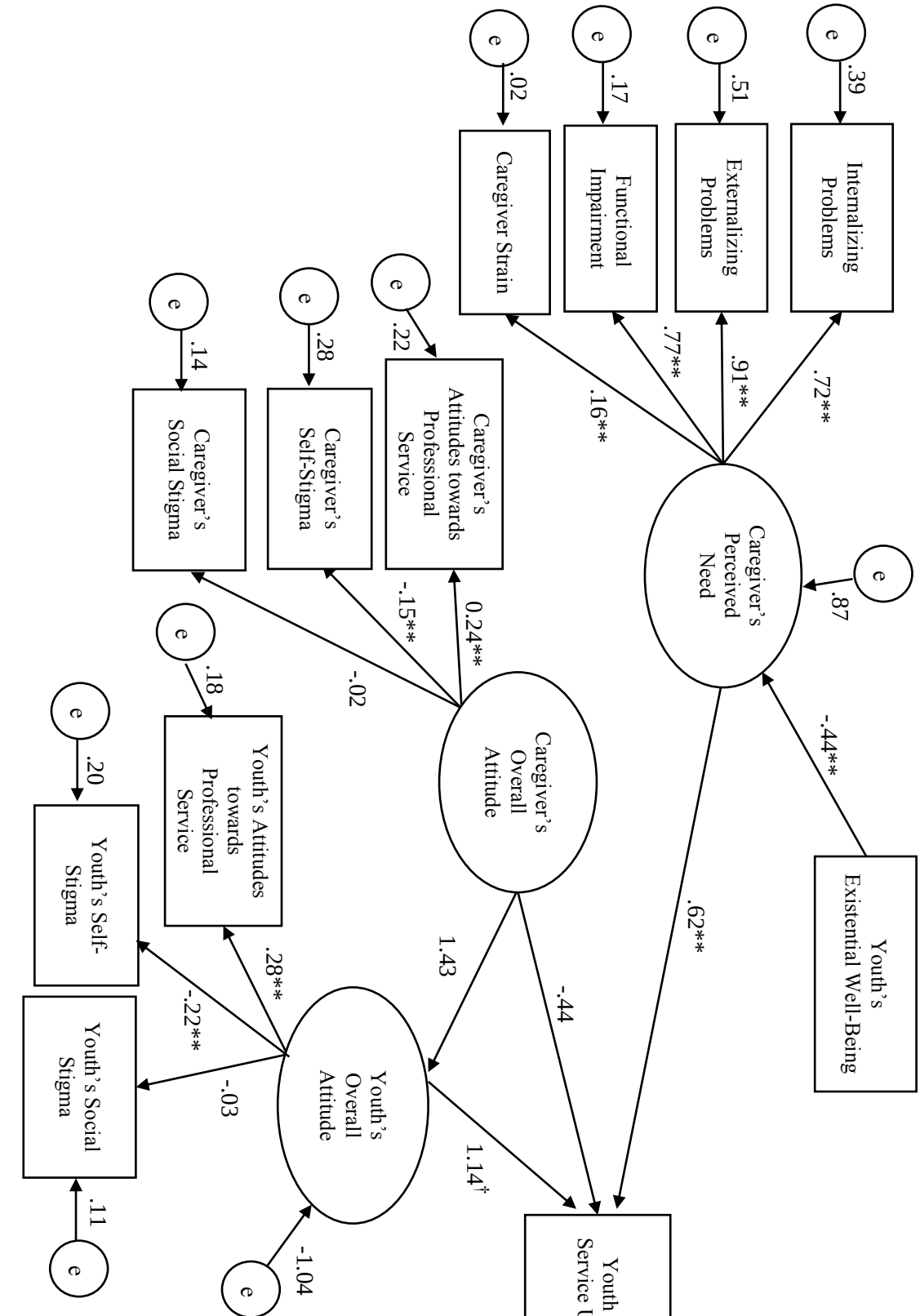

Figure 7. Results for SEM Model 2 (with Youth's Spirituality/Religiosity) with STD Standardization. N = 97, $df = 51$, $\chi^2 = 101.48$, $p < .01$, CFI = .69, TLI = .60, RMSEA = .10 (90% CI = .07-.13), e = error. †p < .10, *p < .05, ** p < .01

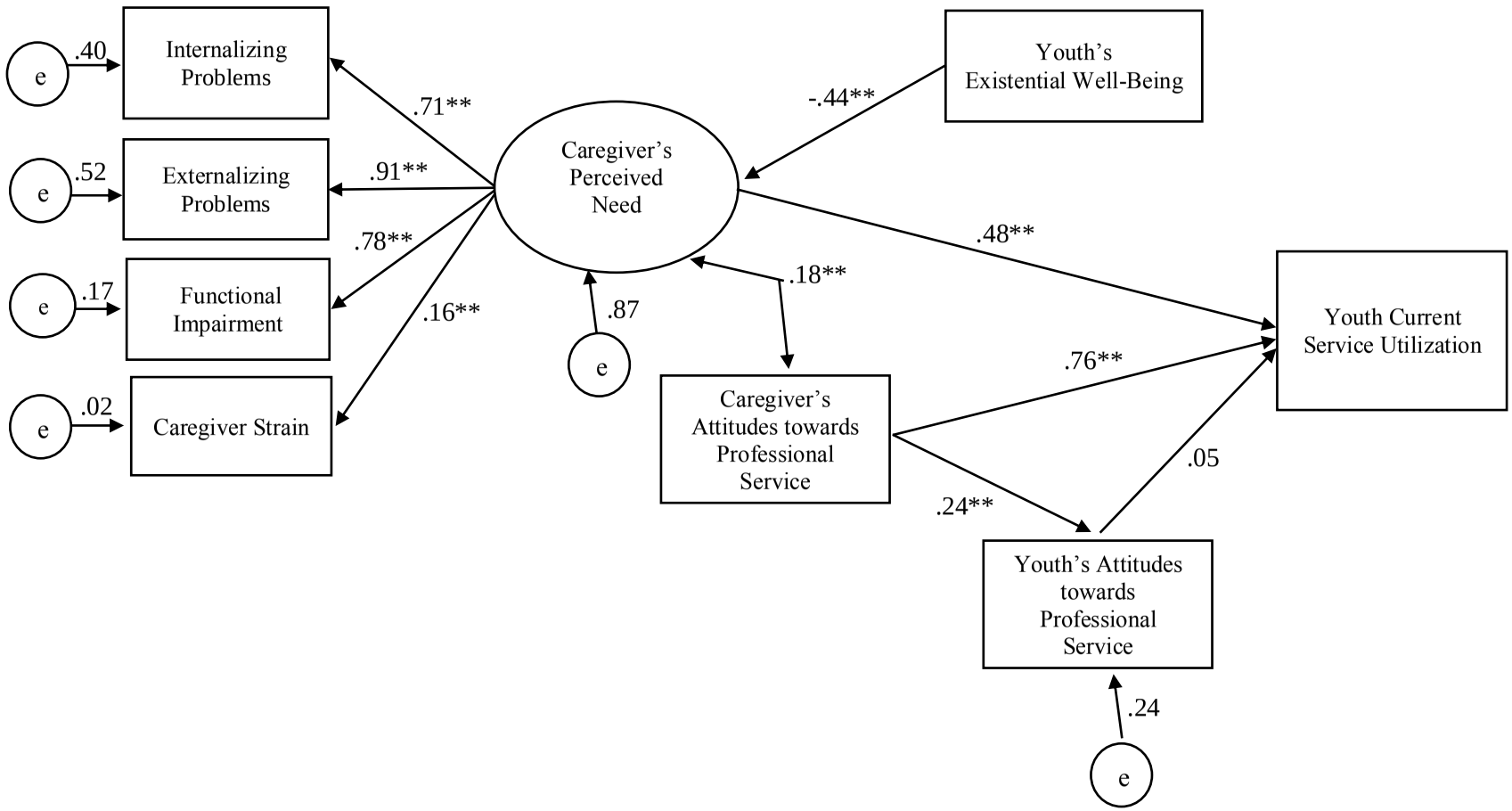

Figure 8. Results for SEM Simplified Model 2 with STD Standardization. N = 97, *df* = 18, χ^2 = 20.36, *p* = .31, CFI = .98, TLI = .97, RMSEA = .04 (90% CI = .00-.10), e = error.

†p < .10, *p < .05, ** p < .01

Appendix A - Measures Administered to Both Caregivers and Adolescents

Attitudes Towards Seeking Professional Psychological Help Scale- Short Form

These items will focus on how you feel about seeking professional psychological help. This rating scale goes from 1 to 4. The 1 means that you disagree with the statement I read, while 2 means you partly disagree, 3 means you partly agree, and 4 means you agree.

1	**2**	**3**	**4**
Disagree	Partly Disagree	Partly Agree	Agree

1. If I believed I was having a mental breakdown, my first inclination would be to get professional attention.

Adapted Items

Parent: If I believed my child was having a mental breakdown, my first step would be to get professional help for him/her.

Child: If I thought I was having a mental breakdown, my first step would be to get professional help.

2. The idea of talking about problems with a psychologist strikes me as a poor way to get rid of emotional conflicts.

Adapted Items

Parent: Having my child talk about problems with a psychologist is a bad way to get rid of his/her emotional troubles.

Child: Talking about my problems with a psychologist is a bad way to get rid of my emotional troubles.

3. If I were experiencing a serious emotional crisis at this point in my life, I would be confident that I could find relief in psychotherapy.

Adapted Items

Parent: If my child were having a serious emotional crisis at this point in his/her life, I would be sure that psychotherapy would help him/her get relief.

Child: If I were having a serious emotional crisis, I would be sure that psychotherapy would help me feel better.

4. There is something admirable in the attitude of a person who is willing to cope with his or her conflicts and fears *without* resorting to professional help.

Adapted Item

Parent and Child: A person who is willing to cope with his or her problems and fears without getting professional help is admirable.

5. I would want to get psychological help if I were worried or upset for a long period of time.

6. I might want to have psychological counseling in the future.

7. A person with an emotional problem is not likely to solve it alone; he or she *is* likely to solve it with professional help.

8. Considering the time and expense involved in psychotherapy, it would have doubtful value for a person like me.

Adapted Items

Parent: Psychotherapy takes more time and expense than it's worth for a person like my child.

Child: Psychotherapy takes more time and expense than it's worth for a person like me.

9. A person should work out his or her own problems; getting psychological counseling would be a last resort.

10. Personal and emotional troubles, like many things, tend to work out by themselves.

Social Stigma for Receiving Psychological Help Scale

Next, I want you to rate the degree to which each item describes how others might react if you/your child needed psychological help. We are going to use the following rating scale.

1	**2**	**3**	**4**
Disagree	Partly Disagree	Partly Agree	Agree

1. Seeing a psychologist for emotional or interpersonal problems carries social stigma.

Adapted Items

Parent: Having your child see a psychologist for emotional or interpersonal problems is looked down on in my community.

Child: Seeing a psychologist for emotional or interpersonal problems is considered to be a bad thing in my community.

2. It is a sign of personal weakness or inadequacy to see a psychologist for emotional or interpersonal problems.

Adapted Items

Parent: A parent whose child sees a psychologist for emotional or interpersonal problems is seen as weak or not as good as other parents.

Child: A person who sees a psychologist for emotional or interpersonal problems is seen as weak or not as good as other people.

3. People will see a person in a less favorable way if they come to know that he/she has seen a psychologist.

Adapted Items

Parent: People will see a parent in a less positive way if they find out that their child has seen a psychologist.

Child: People will see a person in a less positive way if they find out that he/she has seen a psychologist.

4. It is advisable for a person to hide from people that he/she has seen a psychologist.

Adapted Items

Parent: A parent should not tell people that their child has seen a psychologist.

Child: A person should not tell people that he/she has seen a psychologist.

5. People tend to like less those who are receiving professional psychological help.

Adapted Items

Parent: Parents who have children that see psychologists are not as well liked as other parents.

Child: People that see psychologists are not as well liked as other people.

Self-stigma of Seeking Psychological Help Scale

Now I want you to rate the degree to which each item describes how you might react if you/your child needed psychological help. This scale starts at 1, which means you strongly disagree, and goes to 5, which means you strongly agree.

1	**2**	**3**	**4**	**5**
Strongly Disagree	Disagree	Agree & Disagree Equally	Agree	Strongly Agree

1. I would feel inadequate if I went to a therapist for psychological help.

Adapted Items

Parent: I would feel like I wasn't as good as other parents if my child went to a therapist for psychological help.

Child: I would feel like I wasn't as good as other kids if I went to a therapist for psychological help.

2. My self-confidence would NOT be threatened if I sought professional help.

Adapted Items

Parent: My self-confidence would NOT be threatened if I sought professional help for my child.

Child: My self-confidence would NOT be threatened if I went to a therapist for psychological help.

3. Seeking psychological help would make me feel less intelligent.

Adapted Items

Parent: Seeking psychological help for my child would make me feel less intelligent.

Child: Seeing a therapist would make me feel less smart.

4. My self-esteem would increase if I talked to a therapist.

Adapted Items

Parent: My self-esteem would increase (go up?) if my child talked to a therapist.

Child: My self-esteem would increase (go up?) if I talked to a therapist.

5. My view of myself would not change just because I made the choice to see a therapist.

Adapted Items

Parent: My view of myself would not change just because I made the choice for my child to see a therapist.

6. It would make me feel inferior to ask a therapist for help.

Adapted Items

Parent: It would make me feel inferior to ask a therapist for help for my child.

7. I would feel okay about myself if I made the choice to seek professional help

Adapted Items

Parent: I would feel okay about myself if I made the choice to seek professional help for my child.

Child: I would feel okay about myself if I went to see a therapist.

8. If I went to a therapist, I would be less satisfied with myself.

Adapted Items

Parent: If my child went to a therapist, I would be less satisfied with myself as a parent.

Child: If I went to a therapist, I would be less happy with myself.

9. My self-confidence would remain the same if I sought professional help for a problem I could not solve.

Adapted Items

Parent: My self-confidence would remain the same if my child went to a therapist for a problem I could not solve.

Child: My self-confidence would stay the same if I went to a therapist for a problem I could not fix.

10. I would feel worse about myself if I could not solve my own problems.

Adapted Items

Parent: I would feel worse about myself I could not solve my child's problems.

Child: I would feel worse about myself if I could not solve my own problems.

Appendix B – Caregiver Measures

Child Behavior Checklist

Below is a list of items that describe children and youths. For each item that describes your child now or within the past 6 months, please circle the 2 if the item is very true or often true of your child. Circle the 1 if the item is somewhat or sometimes true of your child. If the item is not true of your child, circle the 0. Please answer all items as well as you can, even if some do not seem to apply to your child

0	**1**	**2**
Not True	Somewhat/ Sometimes true	Very/Often True

1	Acts too young for his/her age.
2	Drinks alcohol without parents' approval.
3	Argues a lot.
4	Fails to finish things he/she starts.
5	There is very little he/she enjoys.
6	Bowel movements outside toilet.
7	Bragging, boasting.
8	Can't concentrate, can't pay attention for long.
9	Can't get his/her mind off certain thoughts; obsessions.
10	Can't sit still, restless, or hyperactive.
11	Clings to adults or too dependent.
12	Complains of loneliness.
13	Confused or seems to be in fog.
14	Cries a lot.
15	Cruel to animals.
16	Cruelty, bullying, or meanness to others.
17	Daydreams or gets lost in his/her thoughts,
18	Deliberately harms self or attempts suicide.
19	Demands a lot of attention.
20	Destroys his/her own things.
21	Destroys things belonging to his/her family or others.
22	Disobedient at home.
23	Disobedient at school.
24	Doesn't eat well.
25	Doesn't get along with other kids.
26	Doesn't seem to feel guilty after misbehaving.
27	Easily jealous.
28	Breaks rules at home, school, or elsewhere.

29	Fears certain animals, situations, or places, other than school.
30	Fears going to school.
31	Fears he/she might think or do something bad.
32	Feels he/she wants to be perfect.
33	Feels or complains that no one loves him/her.
34	Feels others are out to get him/her.
35	Feels worthless or inferior.
36	Gets hurt a lot, accident-prone.
37	Gets in many fights.
38	Gets teased a lot.
39	Hangs around others who get in trouble.
40	Hears sounds or voices that aren't there.
41	Impulsive or acts without thinking.
42	Would rather be alone than with others.
43	Lying or cheating.
44	Bites fingernails.
45	Nervous, high-strung, or tense.
46	Nervous movements or twitching.
47	Nightmares.
48	Not liked by other kids,
49	Constipated, doesn't move bowels.
50	Too fearful or anxious.
51	Feels dizzy or lightheaded.
52	Feels too guilty.
53	Overeating.
54	Overtired without good reason.
55	Overweight.
56	Physical problems (without known medical cause):
	a. aches or pains
	b. headaches
	c. Nausea, feels sick
	d. Problems with eyes (Not if corrected by glasses)
	e. rashes or other skin problems
	f. Stomachaches
	g. Vomiting, throwing up
	h. Other
57	Physically attacks people.
58	Picks nose, skin, or other parts of body.
59	Plays with own sex parts in public.
60	Plays with own sex parts too much.
61	Poor school work.

62	Poorly coordinated or clumsy.
63	Prefers being with older kids.
64	Prefers being with younger kids.
65	Refuses to talk.
66	Repeats certain acts over and over.
67	Runs away from home.
68	Screams a lot.
69	Secretive, keeps things to self.
70	Sees things that aren't there.
71	Self-conscious or easily embarrassed.
72	Sets fires.
73	Sexual problems.
74	Showing off or clowning.
75	Too shy or timid.
76	Sleeps less than most kids.
77	Sleeps more than most kids during day and/or night.
78	Inattentive or easily distracted.
79	Speech problem.
80	Stares blankly.
81	Steals at home.
82	Steals outside the home.
83	Stores up too many things he/she doesn't need.
84	Strange behavior.
85	Strange ideas.
86	Stubborn, sullen, or irritable.
87	Sudden changes in mood or feelings.
88	Sulks a lot.
89	Suspicious.
90	Swearing or obscene language.
91	Talks about killing self.
92	Talks or walks in sleep.
93	Talks too much.
94	Teases a lot.
95	Temper tantrums or hot temper.
96	Thinks about sex too much.
97	Threatens people.
98	Thumb-sucking.
99	Smokes, chews, or sniffs tobacco.
100	Trouble sleeping.
101	Truancy, skips school.
102	Underactive, slow moving, or lacks energy.

103	Unhappy, sad, or depressed.
104	Unusually loud.
105	Uses drugs for nonmedical purposes (don't include alcohol or tobacco)
106	Vandalism.
107	Wets self during day.
108	Wets the bed.
109	Whining.
110	Wishes to be opposite sex.
111	Withdrawn, doesn't get involved with others.
112	Worries.
113	Other problems.

Columbia Functional Impairment Scale- Parent Version

I will be asking you about different behaviors that may or may not be a problem for your child. Please tell me the number that you think best describes your child's situation. This rating scale is from 0 to 4. 0 means that you do not think the behavior described is a problem for your child. 2 means that you think that the behavior described is some problem for your child. 4 means that you think the behavior described is a very bad problem for your child. Please indicate if the question is not applicable or you don't know.

0	**1**	**2**	**3**	**4**	**N/A**
No problem		Some problem		Very bad problem	Not applicable/Don't know

In general, how much of a problem do you think your child has with:	
1. …getting into trouble?	0 1 2 3 4 N/A
2. …getting along with his/her mother/mother figure?	0 1 2 3 4 N/A
3. …getting along with his/her father/father figure?	0 1 2 3 4 N/A
4. …feeling unhappy or sad?	0 1 2 3 4 N/A

How much of a problem would you say your child has:	
5. …with his/her behavior at school? (or job)	0 1 2 3 4 N/A
6. …with having fun?	0 1 2 3 4 N/A
7. …getting along with adults other than (their mother and/or father)?	0 1 2 3 4 N/A

How much of a problem does your child have:	
8. …with feeling nervous or afraid?	0 1 2 3 4 N/A
9. …getting along with sister(s) and/or brother(s)?	0 1 2 3 4 N/A
10. …getting along with other kids his/her age?	0 1 2 3 4 N/A

How much of a problem would you say your child has:	
11)…getting involved in activities like sports or hobbies	0 1 2 3 4 N/A
12)…with school work (doing his/her job)?	0 1 2 3 4 N/A
13)…with his/her behavior at home?	0 1 2 3 4 N/A

The Caregiver Strain Questionnaire

Sometimes children's problems lead to stress for their caregivers. As a result of your child's problems, how much of a problem was each of the following items in the past 6 months? This rating scale goes from 1, which means that you do not think this has been a problem for you at all, to 5, which means that you think this has been very much a problem for you.

1 **2** **3** **4** **5**

Not at all a problem Very much a problem

1. Interruption of personal time	1 2 3 4 5
2. Missing work or neglecting other duties	1 2 3 4 5
3. Disruption of family routines	1 2 3 4 5
4. Family member having to do without things	1 2 3 4 5
5. Family member suffering mental/physical health effects	1 2 3 4 5
6. Child having trouble with neighbors or law	1 2 3 4 5
7. Financial strain	1 2 3 4 5
8. Less attention paid to any family member	1 2 3 4 5
9. Disruption of family relationships	1 2 3 4 5
10. Disruption of family's social activities	1 2 3 4 5
11. Feeling socially isolated	1 2 3 4 5
12. Feeling sad or unhappy	1 2 3 4 5
13. Feeling embarrassed	1 2 3 4 5
14. Relating well to child (reversed score)	1 2 3 4 5
15. Feeling angry toward child	1 2 3 4 5
16. Feeling worried about child's future	1 2 3 4 5
17. Feeling worried about family's future	1 2 3 4 5
18. Feeling guilty about child's illness	1 2 3 4 5
19. Feeling resentful toward child	1 2 3 4 5
20. Feeling tired or strained	1 2 3 4 5
21. Toll taken on family	1 2 3 4 5

Appendix C – Youth Measures

Religious Practices and Attitudes Questionnaire

The following items concern your religious and spiritual beliefs and experiences. Some of the following statements refer to God. If this word is not a comfortable one, please substitute another idea that calls to mind the divine or holy for you. This top rating scale (**PINK)** goes from 1, which means the answer to the question is not at all, to 4, which means the answer to the question is a great deal.

1	**2**	**3**	**4**
Not at all	Somewhat	Quite a bit	A great deal

1. How important is religion in your life?	1 2 3 4
2. How much do you adhere to the teachings and practices of your religion?	1 2 3 4

Now we are going to use the bottom rating scale to indicate how often you engage in the following behaviors.

0	**1**	**2**	**3**	**4**	**5**
Never	Less than yearly	1-2 times/year	Several times/year; Monthly	Weekly	Several times/week

3. How often do you attend religious services?	0 1 2 3 4 5
4. Besides religious services, how often do you take part in other activities at a place of worship?	0 1 2 3 4 5
5. How often do you pray or meditate privately in places other than at church or synagogue?	0 1 2 3 4 5
6. How often do you watch or listen to religious programs on TV or radio?	0 1 2 3 4 5
7. How often do you read the Bible or other religious/spiritual literature?	0 1 2 3 4 5
8. How often are prayers or grace said before or after meals in your home?	0 1 2 3 4 5

9. With which of the following statements (**PINK)** do you most agree?

☐ Pantheistic: I believe that God is all around us. I look to nature to see God. I see God in every person I meet. I believe God is involved in everything we do and touches every person.

☐ Theistic: I believe God is a personal being who reigns over all creation, who looks after us and listens to our prayers and praise. He responds to our needs and protects us from evil.

☐ Deistic: I believe God created the world and everything in it and then left us to fend for ourselves. God is no longer involved in the happenings of this world and looks down on us from above without ever intervening in our lives.

☐ Agnostic: I am not sure what or who God is but I do think that it is beyond our understanding to comprehend such ultimate things. I often wonder if there is a God but I do not think that I will ever know for sure.

☐ Atheistic: I do not believe there is a God. I do not believe that God created the world or controls our affairs. There is no higher power that can intervene in our lives.

Religious/Spiritual Coping Scale

The items again focus on your religious and/or spiritual beliefs. The rating scale (**PURPLE)** starts at 1, which means you do not agree with the item at all, and goes to 4, which means you agree with the item a great deal.

1	**2**	**3**	**4**
Not at all	Somewhat	Quite a bit	A great deal

1. I think about how my life is part of a larger spiritual force.	1 2 3 4
2. I work together with God as partners to get through hard times.	1 2 3 4
3. I look to God for strength, support, and guidance in crises.	1 2 3 4
4. I try to find the lesson from God in crises.	1 2 3 4
5. I confess my sins and ask for God's forgiveness.	1 2 3 4
6. I feel that stressful situations are God's way of punishing me for my sins or lack of spirituality.	1 2 3 4
7. I wonder whether God has abandoned me.	1 2 3 4
8. I try to make sense of the situation and decide what to do without relying on God.	1 2 3 4
9. I question whether God really exists.	1 2 3 4
10. I express anger at God for letting terrible things happen.	1 2 3 4

Spiritual Well-Being Scale

Some of the following statements refer to God. If this word is not a comfortable one, please substitute another idea that calls to mind the divine or holy for you. For each of the following statements, please indicate the degree to which you agree or disagree. This rating scale

(**ORANGE)** goes from 1, which means you strongly agree, to 6 which means you strongly disagree.

1	**2**	**3**	**4**	**5**	**6**
Strongly agree	Mostly agree	Sometimes agree	Sometimes disagree	Mostly disagree	Strongly disagree

1. I don't find much satisfaction in private prayer with God.	1 2 3 4 5 6
2. I don't know who I am, where I came from, or where I'm going.	1 2 3 4 5 6
3. I believe that God loves me and cares about me.*	1 2 3 4 5 6
4. I feel that life is a positive experience.*	1 2 3 4 5 6
5. I believe that God is impersonal and not interested in my daily situations.	1 2 3 4 5 6
6. I feel unsettled about my future.	1 2 3 4 5 6
7. I have a personally meaningful relationship with God.*	1 2 3 4 5 6
8. I feel very fulfilled and satisfied with life.*	1 2 3 4 5 6
9. I don't get much personal strength and support from my God.	1 2 3 4 5 6
10. I feel a sense of well-being about the direction my life is headed in.*	1 2 3 4 5 6
11. I believe that God is concerned about my problems.*	1 2 3 4 5 6
12. I don't enjoy much about life.	1 2 3 4 5 6
13. I don't have a personally satisfying relationship with God.	1 2 3 4 5 6
14. I feel good about my future.*	1 2 3 4 5 6
15. My relationship with God helps me not to feel lonely.*	1 2 3 4 5 6
16. I feel that life is full of conflict and unhappiness.	1 2 3 4 5 6
17. I feel most fulfilled where I am in close communication with God.*	1 2 3 4 5 6
18. Life doesn't have much meaning.	1 2 3 4 5 6
19. My relation with God contributes to my sense of well-being.	1 2 3 4 5 6
20. I believe there is some real purpose for my life.*	1 2 3 4 5 6

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ABSTRACT

MENTAL HEALTH SERVICE UTILIZATION AMONG AT-RISK URBAN ADOLESCENTS: THE RELATIVE CONTRIBUTIONS OF PERCEIVED NEED, ATTITUDE, AND SPIRITUALITY/RELIGIOSITY

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Major: Psychology (Clinical)

Degree: Master of Arts

Adolescence has been described as "a time of storm and stress" (Arnett, 1999; Hall, 1904). In fact, a national survey in the United States estimated that adolescents were twice as likely than adults to report at least one major depressive episode in the past 12 months (Center for Behavioral Health Statistics and Quality, 2016). In particular, adolescents who are poor, who belong to ethnic minority groups, and who live in urban neighborhoods are more vulnerable to mood and behavioral symptoms than their White/Caucasian counterparts who grow up in relatively affluent suburban and rural areas (Beyers, Bates, Pettit, & Dodge, 2003; McLaughlin, Hilt, & Nolen-Hoeksema, 2007; Slopen, Fitzmaurice, Williams, & Gilman, 2010). In the United States, estimates are that half of all adolescents with mental health problems do not seek or obtain mental health treatment (Costello, He, Sampson, Kessler, & Merikangas, 2014). This discrepancy between mental health need and service utilization appears to be especially prevalent among African American youth, who are half as likely to receive mental health services than non-Hispanic white youth (Garland et al., 2005). To create effective, available, and attractive interventions that bridge the gap between mental health needs and service utilization, it may prove helpful to investigate the factors that are positively and negatively associated with mental

health service utilization among youth that are residing in high risk urban communities. Researchers have identified the recognition of mental health problems by youth and parents and the perceived costs and benefits of mental health care to parents as two influential factors in predicting help seeking tendency (Eiraldi, Mazzuca, Clarke, & Power, 2006). Although some preliminary research effort has identified factors influencing help seeking behavior, little is known about the collective effects of such factors and their specific ramifications in predicting mental health service utilization. The current study utilized Structural Equation Modeling (SEM) to examine the complex effects of multiple variables simultaneously. Results showed that the majority of adolescents (63.6%) with clinically significant behavioral problems did not reported current mental health service utilization. There is evidence that caregiver's perceived needs for mental health care and their attitudes towards professional help are associated with higher likelihood of service utilization among adolescents. Youth's attitudes did not matter in regard to actual service enrollment. Furthermore, social stigma and self-stigma did not contribute meaningfully to the models. In other words, caregivers of urban at-risk adolescents may have the ultimate determining power in mental health care involvement and their decisions may not be influenced directly by stigma. Additional, caregiver's perceived mental health need fully mediated the relation between spirituality/religiosity (i.e., existential well-being) and service utilization. Youth's spirituality/religiosity, specifically existential well-being, appears to protect them from mental health problems and in turn associate with lower likelihood of service utilization. Implications about adolescent's mental health care decision were discussed.

AUTOBIOGRAPHICAL STATEMENT

Yi Tak (Daisy) Tsang received her B.A. with Highest Distinction in Psychology from the University of Virginia in 2013. She will graduate with a Master of Arts in Clinical Psychology from Wayne State University in Detroit, MI in August 2017. She is currently working towards a Doctor of Philosophy in Clinical Psychology with a focus in Developmental Psychology at Wayne State University. Her research interests involve working with children and their families to explore the role of social interaction in anxiety disorders and resilience in face of interpersonal trauma. In particular, she wishes to develop a deeper understanding of (mal)adaptive perceptual and social-cognitive elements with regard to the trajectories of psychopathologies. Previously, she has studied cognitive performance under stress and exposure therapy for individuals with high levels of spider fear. In her free time, Daisy enjoys water sports, Zumba dance, and spending time with family and friends.