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Mental Health Service Utilization Among Urban Adolescents: The Roles Of Perceived Mental Health Problems, Attitudes Towards Professional Help, And Stigma

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MENTAL HEALTH SERVICE UTILIZATION AMONG URBAN ADOLESCENTS: THE ROLES OF PERCEIVED MENTAL HEALTH PROBLEMS, ATTITUDES TOWARDS PROFESSIONAL HELP, AND STIGMA

by

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DISSERTATION

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Approved by:

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DEDICATION

This dissertation is dedicated to my parents, Sik Fu Tsang and Siu Yu Luk, who inspired and encouraged me to pursue my dreams, even though it means being half a globe apart from each other for more than a decade. I also dedicate this dissertation to my brother, Thomas Tsang, who is simultaneously the most annoying and supportive figure in my life. Last but not least, I dedicate this dissertation to my husband, Jing Ba, for his love, encouragements, and prayers.

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CHAPTER 1 - INTRODUCTION

Mental Health Service Underutilization

Mental illness among adolescents is widely acknowledged as a significant public health concern. Between the ages of 13 to 17 years, 48.3% of Latinos, 46.8% of Blacks, and 41.9% of non-Latino Whites adolescents surveyed, reported significant mental health problems (Merikangas et al., 2010). Moreover, about one in every five of these adolescents reported suffering from severe impairment associated with their mental health disorders (Merikangas et al., 2010). In 2016, suicide was the second leading cause of death among 10- to 24-year-olds (Heron, 2018).

The good news is that there is a variety of empirically supported treatments that have been established to be moderately efficacious and durable (Weisz et al., 2017). Unfortunately, only about half of adolescents with mental health problems utilize mental health services (Costello et al., 2014), with higher rates of unmet mental health need found among ethnic minority youth, especially those from low-income families (Garland et al., 2005; Michelmore & Hindley, 2012). It is particularly alarming that only approximately 29.5% of individuals who endorsed past-year suicide ideation, plans, and/or attempts used mental health services during that period of time (Hom et al., 2015). A meta-analysis combining data from 17 studies found that less than half of adolescents and young adults who have suicidal ideation and/or engage in self-harm behaviors used mental health services (Michelmore & Hindley, 2012). There is also evidence that adolescents at higher risk for developing long-term mental disorders or with more severe suicidal ideation have lower rates of help-seeking intentions and behaviors (Wilson et al., 2011). The magnitude of mental health service underutilization suggests unsatisfactory outcomes in alleviating emotional suffering among many adolescents and missed opportunities for preventing premature mortality. Identified barriers to treatment utilization includes environmental and logistical barriers (e.g., cost, transportation problems) and internal barriers (e.g., mental health literacy, stigma) (P. W. Corrigan et al., 2017; Czyz et al., 2013; Downs & Eisenberg, 2012; Gulliver et al., 2010; Henderson et al., 2013; Hom et al., 2015; Iskra et al., 2018; Wilson et al., 2011).

Barrier to Help-Seeking

Much research effort has been devoted to identifying factors that facilitate or hinder mental health service utilization. It is well-documented that access to care, financial and logistic barriers, such as lack of health insurance, low availability of mental health services, high fee/co-pay, long wait time, transportation problem, time conflict with school/work impedes service use (Corrigan et al., 2017; Czyz et al., 2013; Downs & Eisenberg, 2012; Iskra et al., 2018). Iskra and colleagues (2018) suggested that some individuals may not know that mental health services, especially in the public sector, could be provided without fees. Some individuals may also be unaware of their eligibility for public health insurance under the Affordable Care Act (ACA: enacted March 2010). However, even in a setting where mental health care was readily available and without charge, only 36.4% of the adolescents who had clinically elevated internalizing or externalizing problems based on caregiver report were enrolled in treatment that was recommended (Tsang et al., 2020). Many of these families could also use medical transportation through insurance to attend mental health appointments. As such, the current study was designed to look beyond environmental and logistic barriers, which were largely reduced with the level of access to mental health services among this sample.

In addition to access to care, financial and logistic barriers to mental health service use, many studies have also identified individual-level and internal barriers as common barriers to service use. Some examples include the lack of perceived mental health problems, poor mental health literacy, a preference for self-reliance and lack of trust for the efficacy of treatment, stigma and embarrassment, fear of hospitalization and lack of trust for the professionals (Gulliver et al., 2010; Henderson et al., 2013; Hom et al., 2015; Wilson et al., 2011). Some researchers also identified difficulty trusting adults or approaching adults for help as a barrier specific to adolescents (Cigularov et al., 2008; Gilchrist & Sullivan, 2006).

The lack of perceived mental health problems and poor mental health literacy has consistently been named as a primary source of service hindrance in qualitative and quantitative studies (Breslau et al., 2017; Mojtabai & Olfson, 2008; Wang et al., 2018; Ward & Besson, 2013). In the case of adolescent service use, parents' perception of youth's mental health problems may be particularly essential. Mojtabai and Olfson (2008) found that parental awareness of adolescent self-harm behaviors increased the likelihood of professional help-seeking. The lack of perceived mental health problems did not seem to affect everyone equally. Instead, this barrier to service use is more common among racial/ethnic minority groups. Breslau et al. (2017) found that ethnic minority groups perceived lower levels of mental health problems, compared to Caucasian/White individuals, even when the severity of mental illness and demographic and socioeconomic factors were accounted for. When compared to Caucasian/White individuals, the prevalence rates of perceived mental health problems were found to be 5.8% to 11.2% lower among ethnic minority groups. The discrepancy of perceived mental health problems between Caucasian/White individuals and ethnic minority groups was estimated to be as high as 32.6% among those with more serious mental illness. A few qualitative studies with ethnic minority groups also revealed a generally limited awareness, knowledge, and openness to discuss mental health topics (Wang et al., 2018; Ward & Besson, 2013).

Furthermore, the preference of self-reliance is also a common barrier to mental health service use (Gulliver et al., 2010; Koydemir et al., 2010). For instance, many suicidal individuals believe that they are able to self-manage their problems without the use of mental health services (Hom et al., 2015). The use of self-reliance and self-silence is also observed among ethnic minority groups (Wang et al., 2018; Watson & Hunter, 2015). Even when young individuals and their families decide to seek help, research indicates a general preference of informal help from friends, family, school, and to a lesser extent, religious leaders (Cauce & Domenech-Rodrıguez, 2002; Koydemir et al., 2010; Murry et al., 2011; Scott et al., 2015). Michelmore and Hindley (2012) estimated that the rate of informal help-seeking among young individuals ranges between 40% and 68%. They also found that peers are the most preferred source of informal support. Interestingly, findings from a few studies suggest that the use of informal help may not be a barrier to seeking formal services, but rather a bridge that connects young individuals with professional resources (De Luca et al., 2015; Downs & Eisenberg, 2012; Gulliver et al., 2010; Martin et al., 2012). Beside these commonly identified barriers, Stead, Shanahan and Neufeld (2010) found that general trait procrastination, as defined as the predisposition to postpone some tasks necessary to reach certain goals, may also contribute to the lack of help-seeking.

Attitudes towards Mental Health Services and Stigma

The lack of positive attitudes towards mental health services (e.g., mistrust) and presence of negative opinions about mental health problems (i.e., stigma) are two frequently mentioned barriers to help-seeking and they are often discussed together (Henderson et al., 2013; Hom et al., 2015). First, belief that treatment may not be helpful or effective has been shown to deter mental health service use (Bruffaerts et al., 2011; Czyz et al., 2013; Moskos et al., 2007). Although the prevalence of this belief is low in the general population (8-9%), an estimated 73% of parents of adolescents who had died by suicide reported that the adolescent's belief that "nothing could help" (including treatment) was a barrier to help seeking (Moskos et al., 2007). Perceived helpfulness of treatment may be particularly relevant for African Americans. Beliefs in treatment efficacy has been shown to predict mental health service use by African Americans, but not Latinos and non-Latino White (Gonzalez et al., 2011). Furthermore, some studies with African American and suicidal individuals found that a fear of hospitalization and mistrust of providers (e.g., concerns about misdiagnosis) has deterred treatment seeking behaviors (Cigularov et al., 2008; Ward & Besson, 2013). In a study with rural African American parents, Murry, Heflinger, Suiter, and Brody (2011) found that almost one third of the parents in the sample expressed cultural mistrust towards Caucasian/White mental health professionals. For example, some parents were concerned about potential discrimination towards their children.

Meanwhile, the presence of positive attitudes toward mental health treatment does not preclude the existence of stigma about having mental health concerns and/or seeking mental health treatment. Gonzalez and colleagues (2011) found that even though the majority of their sample reported willingness to seek professional treatment, 33.3% of the sample still endorsed embarrassment about disclosing treatment seeking behaviors to their friends. A similar pattern has been found with a sample of rural African American families of adolescents who generally expressed confidence in professional mental health services, yet reported that public stigma towards children with mental health problems reduced their motivation to seek help. A recent meta-analysis, which included 144 studies, reported a small to medium estimated median association between stigma and help-seeking of d = -.27 (Clement et al., 2015). The same meta-analysis also revealed that the inhibiting effect of stigma was stronger among adolescents, ethnic minorities, men, military personnel, and health-related professionals. Not only did stigma appear to suppress the tendency to actively seek help, it may discourage individuals from accepting help when others recommend it. A qualitative study with marginalized adolescents in New Zealand found that most of these students held negative views about being referred to mental health services partly because of stigma. The resistance was so strong that some adolescents stated that mental health service referral could lead to self-harm behaviors (Fleming et al., 2012). Multiple factors have been shown to moderate the help-seeking inhibitory effect of stigma. One frequently studied moderator is ethnicity. Research suggested that strength of ethnic identity is inversely associated with self-stigma of mental health service use among African Americans, but not among Asian Americans and Latino Americans (Cheng et al., 2013). On the other hand, greater endorsement of the Strong Black Woman (SBW) race–gender schema is associated with higher levels of concern about stigma and lower tendency to seek professional help (Watson & Hunter, 2015). Other moderators include gender beliefs (i.e., endorsement of dominant masculine ideals among men) and nationality (i.e., Flanders vs. Netherlands) (Reynders et al., 2014; Vogel et al., 2011).

Despite ample evidence supporting that stigma is a barrier to mental health services, some recent research findings suggested that the prevalence rate and strength of the inhibiting effect may not be as high as previously found (Hom et al., 2015). In a cross-sectional published thesis research (Tsang et al., 2020), results indicated that stigma of seeking psychological help was not associated significantly with mental health treatment involvement when considered in collaboration with perceived mental health problems and attitudes. In other words, many families appeared to be willing to ignore or otherwise cope with the negative self-image and social evaluation in regard to mental health services if they also saw those symptoms as having a negative impact on their child’s adaptation and were experiencing distress themselves. This may be consistent with literature suggesting the negative effects of stigma are decreasing and perhaps wearing off in American culture (Hom et al., 2015; Mojtabai, 2007).

It is important to note that the literature on stigma and help-seeking has been complicated by the different definitions and types of stigma studied. Most researchers who did not view stigma as a single construct focused on two types of stigma, namely social/public/community stigma and self-stigma (Corrigan, 2004). Social stigma pertains to perceived negative views of people with mental health concerns in a person's social environment, which includes negative judgement and harm to social opportunities. On the other hand, self-stigma refers to negative opinions that a person holds about his/her own mental health status. Different types of stigma have been shown to differentially predict help-seeking. For instance, Downs and Eisenberg (2012) concluded that self-stigma, but not social stigma, significantly predicted mental health service use. Similarly, another study found that self-stigma, but not social stigma, was linked to lower perceived importance of professional help. Meanwhile, social stigma, but not self-stigma, was associated with lower perceived importance of informal help (from family and friends). The interpretation of stigma's effect on service use becomes further complicated when more aspects of stigma were examined. Schnyder, Panczak, Groth and Schultze-Lutter (2017) investigated five types of stigma, including general stigma, social stigma, self-stigma, personal stigma, and attitudes towards help-seeking. Personal stigma is defined as "personal attitudes towards members of a stigmatized group." Interestingly, this group of researchers included attitudes towards help-seeking, including perceived need, openness to self-disclosure, and perceived helpfulness of treatment, as a type of stigma. For the purpose of the current study, I focused on the two most frequently used conceptualizations of stigma, self-stigma and social stigma, to investigate potentially different relations of self-stigma and public stigma with service utilization. In addition to stigma, I also examined perceived mental health problems and positive attitudes towards professional help as separate variables in the current study.

A common limitation of the literature in this area is the cross-sectional designs, which overlook the dynamic nature of the variables, as well as confine the ability to interpret causality (Bonabi et al., 2016; Hom et al., 2015). Findings on change in mental health related attitudes are mixed. On one hand, research has found a downward trend in positive attitudes towards professional help among college students (r = -.53) during a 40-year period from 1968 to 2008 (Mackenzie et al., 2014); on the other hand, two studies that suggested an increase in help seeking likelihood, higher comfort level of talking about mental health problems, and lower embarrassment if friends found out that they were using mental health services (ORs = 1.24 - 3.30) when comparing data from 1990-1993 with data from 2001-2003 (Dey et al., 2016; Mojtabai, 2007). I was unable to locate any non-intervention studies that focused specifically on the stability and/or change in stigma over time. Bonabi and colleagues (2016) made an important contribution by using multivariate logistic regression to predict mental health service use during a six-month period. Results showed that baseline attitudes toward help seeking, literacy, and perceived mental health problems significantly predicted psychotherapy use. However, by adapting multivariate logistic regression analyses, the researchers failed to adjust for the intercorrelations of predictor variables. As such, the current study addressed the gap in the literature by investigating change of perceived mental health problems, attitudes toward professional help, and stigma over a six-month period with structural equation modeling (SEM) analyses, which allowed for the study of more complex patterns and interrelations of factors within a single model.

Another common limitation in the literature is the emphasis on service enrollment status and help seeking behaviors and less focus on ongoing treatment process. Premature termination (dropout), like many constructs, has been operationalized differently across studies. A meta-analysis found two main definitions of premature termination: 1) terminating before the completion of the treatment regimen based on the judgement of the therapist and 2) terminating before a predetermined number of sessions (de Haan et al., 2013). It has been estimated that, even when children and adolescents initiated outpatient mental health services, premature termination rate was approximately 28.4% - 50.0% (de Haan et al., 2013). To address some questions about ongoing treatment engagement, the current study also examined the facilitators and barriers of treatment continuation and termination. Specifically, the current study qualitatively explored the reasons why adolescents and their caregivers choose to continue or terminate therapy services. This dissertation paper provides unique information because the clients' perspective of treatment status was examined, rather than relying on therapists' or researchers' judgments to define premature termination.

Adolescent Mental Health Care Decision – Caregiver-Youth (Dis)agreement

Another common pitfall of the current literature regarding mental health service utilization is the reliance on single informant. It is well established that the agreement between caregivers and children reports of mental health symptoms correlate in the small to moderately high range (*r*s = .17 - .58; Rescorla et al., 2013). Rescorla and colleagues (2013) compared data from 25 societies across continents and found a general tendency of adolescents endorsing more concerns and higher problem severities than their parents. Nonetheless, about 71% to 85% of all dyads agreed on whether the adolescents fell within the "deviant" range (i.e., equal to or greater than one standard deviation above the mean).

Modest caregiver-child agreement estimates (*r*s = .30 - .41) were also found in other studies using different instruments (e.g., Child and Adolescent Symptom Inventory, Multidimensional Anxiety Scale for Children, and Strengths and Difficulties Questionnaire) (Van Roy et al., 2010; Villabø et al., 2012; Weems et al., 2010). Furthermore, caregiver-child agreements on exposure to potentially traumatic events and these events' impact on the children appeared to be particularly low (Stover et al., 2010). Caregivers and adolescents also disagreed on the adolescents' need for professional mental health, with adolescents more likely to report a need to seek formal help (74.0% vs. 57.7%) (Williams, Lindsey, & Joe, 2011). When caregiver-adolescent dyads agreed on the adolescents' mental health need, Williams et al. (2011) found that they attended more mental health service appointments than the dyads who disagreed.

Research has identified many factors associated with caregiver-children disagreement on child mental health status, emotional and behavioral symptoms, and their impact, including ethnic minority and immigrants' acculturation status (Fung & Lau, 2010; Weems et al., 2010). Interestingly, when children report having higher levels of symptoms and impact than their parents report their children having, disagreement was found to be linked with relational factors (e.g., less parent-child communication and poor parental engagement). In contrast, when parents report higher levels of symptoms and impact than their children, disagreement was associated with demographic factors (e.g., low parental education, low family income, child being a male) (Fung & Lau, 2010; Van Roy et al., 2010). The use of both informants' ratings has been shown to increase statistical power over either child or caregiver report only on predicting concurrent psychotic risk and future delinquent behaviors (De Los Reyes et al., 2010; Thompson et al., 2014). As such, it is important to consider both caregivers and youth perspectives in research.

Beyond enhancing predictive power, another advantage of using a bi-informant study design involves the differential predictive patterns of caregiver and youth factors. For instance, when considered in the context of mental health service engagement, Hawley and Weisz (2005) found that caregiver and youth alliance with mental health professionals were associated with different aspects of the treatment process. Parent alliance was found to be associated with engagement factors (i.e., participation, attendance, therapist concurrence with termination decision), while youth alliance was linked to actual symptom improvement (both parent and adolescent reports). Based on these findings, it is logical to expect the mental health service utilization would be influenced more heavily by caregiver factors than youth factors or therapy progress. In fact, the structural equation models from my recent article (Tsang et al., 2020) provided evidence that caregivers' perceptions of adolescent mental health problems (a composite of youth symptoms, youth impairment, and caregiver strain) and caregiver positive attitudes towards professional help (e.g., perceived helpfulness), but not youth-reported variables, were associated with higher likelihood of service utilization among adolescents (Tsang et al., 2020), however, youth report of perceived mental health problems were not included in my prior study, suggesting that caregivers of disadvantaged youth appeared to function as the "gatekeepers" to mental health services. However, since adolescent-reports on perceived symptoms and impairment were not collected in the previous study, the current study included these variables to examine further whether adolescent perceived mental health problems contribute significantly to attending treatment.

Confidential Care

Another leading barrier to services seeking identified by adolescents is their concerns for confidentiality and trust in the source of help (Gulliver et al., 2010; Martin et al., 2012; Wang et al., 2018), however, confidentiality has received relatively limited research attention than perceived needs, attitudes towards treatment, and stigma. Ford and colleagues (1997) randomly assigned more than 500 adolescents to watching one of three videos depicting physicians who offered different levels of confidentiality (unconditional confidentiality, conditional confidentiality, or no confidentiality information). They found that active assurances of confidentiality increased the adolescents' willingness to seek further health care, as well as their willingness to disclose sensitive information about mental health, sexuality, and substance use. Recent studies on the topic of confidentiality within health care settings are mostly correlational or qualitative in nature. Researchers found that the adolescents who forgo mental health services because of confidentiality were also the ones that are likely to need help (i.e., more emotional symptoms, suicidal risk, parent-child conflicts, and risky behaviors) (Lehrer et al., 2007). Confidentiality concerns have also been found to be stronger among sexual minority youths, compared to their heterosexual peers (Williams & Chapman, 2011). By addressing confidentiality issues, health care providers are likely to attract a special group of adolescents who has been underserved in the system.

Despite laws in some states that allow minors to consent to certain aspects of health care without parental consent under specific conditions, the actual rate of confidential care is low. Denny and colleagues (2012) surveyed over 7000 high school students in New Zealand and found that only 27% of adolescents who had accessed health care in the past year considered the service as private and confidential. The rest of these adolescents either did not receive confidentiality assurance or did not have a chance to talk with a health care provider without parents or other people in the room. The low rate of confidential care has been attributed to deficits in knowledge about minor consent laws among providers and staff, concerns about relationships with the caregivers, resistance due to personal ethics discomfort, work flow issues, insurance issues when parents are the policy holders, and issues with the electronic medical record (Riley et al., 2015, 2017; Slive & Cramer, 2012).

The body of research in confidential care has largely focused on physical health, especially in the areas of sexual health care, substance use treatment, and termination of pregnancy. Less is known about the knowledge and actual usage of confidential care in the mental health sector, although the right for minors to receive confidential mental health care is explicitly supported by the law in many states (Kerwin et al., 2015). According to Mental Health Code (Excerpt) Act 258 of 1974 330.1707 (Michigan Legislature, 2018), minors (age 14 or older) "may request and receive up to 12 outpatient sessions or four months of outpatient counseling" without parental knowledge or consent. I speculated that confidential mental health care also faces similar problems of lack of knowledge among providers and the public, billing and other administrative problems, as well as the preference to maintain a good working alliance with caregivers. The current study aimed to extend the findings in barriers to confidential health care to mental health outpatient care, specifically through exploring caregivers' and adolescents' knowledge and attitude towards confidential mental health care.

Summary and Aims

Many facilitators and barriers to mental health service utilization among adolescents with emotional and/or behavioral problems have been identified in the literature. The current study aimed to extend this line of research through a longitudinal and bi-informant design. Specifically, the study focused on the complex effects of perceived mental health problems, attitude towards treatment, and stigma on service utilization during a six-month period, comparing the relative predictive power of caregiver and adolescent factors.

Study aims and hypotheses:

(1) Describe changes in mental health symptoms, impairment, and mental health service use among a sample of inner-city adolescents over a 6-month period;

  a. *Mental health symptoms, impairment, and mental health service use were hypothesized to be relatively stable over the 6-month period. The stabilities* *were expected to be commensurate with previous findings, for example, the 12-month stability (Pearson correlation) of the CBCL was found to be about .81, and the 7-month stability (Pearson correlation) of the YSR was found to be about .56* (Achenbach & Rescorla, 2001).

b. *Mental health underutilization (i.e., clinically elevated mental health symptoms without concurrent mental health service) would be observed at both baseline and follow-up. The rate of service use among adolescents to who have clinically elevated caregiver-rated symptoms was hypothesized to be similar (36.4%) to what was found in a similar sample* (Tsang et al., 2020).

(2) Examine changes in perceived mental health problems, positive attitudes towards professional help, and stigma with mental health services use as a moderator;

   a. *It was hypothesized that mental health services use will act as a moderator, such that adolescents who received mental health services between T1 and T2 will have different patterns of changes over the 6 month period, when compared to those who did not received services.*

   b. *It was hypothesized that adolescents who received mental health services between T1 and T2 will have greater reduction in symptoms and impairment, greater increase in positive attitude, and greater reduction in stigma six months later.*

(3) Investigate the agreement between caregivers and adolescents on perceived symptoms and impairment, as well as the relative predictive powers of caregiver and youth factors regarding mental health service use six months later;

   a. *It was hypothesized that there would be small to moderate positive associations between caregiver report and youth report on perceived symptoms and impairment. The agreement between parent ratings (Child Behavior Checklist) and adolescent ratings (Youth Self-Report) were expected to be similar to past findings (rs = .17 - .58)* (Rescorla et al., 2013).
   b. *Caregiver factors were hypothesized to have higher predictive powers regarding mental health service use six month later than youth factors.*

(4) Explore and describe the reasons for continuing services and premature termination among this unique sample.

(5) Explore and describe caregiver's acceptability of mental health services by recipient characteristics, as well as awareness about time-limited confidential mental health care for minors, among this unique sample.

   a. *Mental health services for children and adolescents were expected to be rated as more acceptable than mental health services for parents and adults.*
   b. *The majority of the sample was expected to be unaware of the Michigan laws related to the right of a minor to obtain outpatient mental health care without parental consent or knowledge.*

The ultimate goal was to gain a better understanding of the factors associated with mental health treatment among disadvantaged adolescents, in the hope that it can guide policies and programs in reducing the disparity in utilization rates and indirectly promote psychological well-being of vulnerable youth. It is essential to encourage adolescents to participate in the effective mental health services built specifically for them.

CHAPTER 2 - METHODS

Participants

Eighty-four adolescents between the ages of 13 and 17 years old (*M* = 15.13, *SD* = 1.45) and their primary caregivers were recruited from a large pediatric integrated primary care clinic in a Midwestern city. Adolescents and caregivers where approached in the waiting room by trained undergraduate and graduate research assistants who provided a brief introduction of the study. If both of the adolescents and caregivers expressed interest and met criteria based on screening questions (see inclusion criteria below), they could choose to either participate in the study on the spot at the clinic or schedule a separate research appointment either at the clinic or at a nearby research lab. Flyers were also posted in the clinic waiting room. Interested families who saw the flyer can call/email/text the trained undergraduate and graduate research assistants to enroll in the study. Health care staff at the clinic were also encouraged to introduce the study to their patients and refer any interested families to the research team by completing a referral form. Only one of the participating families were referred directly by a health care staff. Inclusion criteria were that the adolescent had to be between 13- and 17-years-old at T1 and that these adolescents and their identified primary caregivers agreed to participated in both T1 and T2 visits of the study. The only exclusion criteria was English proficiency (i.e., participating teenagers and caregivers are required to understand the study measures when read out loud by the researchers). Fifteen caregiver-adolescent dyads (17.9%) did not participate in the follow-up interview. As such, a total of 69 caregiver-adolescent dyads were included for use in this dissertation and are the only participants whose data are reported on below.

The majority of the participating adolescents were from ethnic minority backgrounds (81.2% African American/Black, 13.0% Caucasian/White, 1.4% Latino-American, and 4.4%

others). Sixty one percent identified as girls and 39% identified as boys. The majority of the participating caregivers were also from ethnic minority backgrounds (78.3% African American/Black, 11.6% Caucasian/White, 2.9% Latino-American, and 7.2% others). Ninety three percent of the caregivers were the biological mother of the participating adolescent. Also, 63.2% of the participating caregivers were single/unpartnered. Additionally, 11.6% of the participating caregivers did not graduate high school or earn their GED.

This sample consisted of inner-city, mostly low-income families. Fifty three percent of the participating caregivers had an annual family income less than $30,000. The median household size is four individual per household (two children and two adults). About 44.1% to 64.7% of the families were under the 2019 U.S. federal poverty thresholds based on size of family and number of related minors. The estimated number of participating families who are under poverty thresholds varies because income range, rather than exact income, were collected. This population is also considered high risk for mental health problems because of the prevalence of stress exposure (e.g., hearing gunshots) and clinically elevated behavioral and emotional problems. At T1, 50.7% of the adolescents included in this study were rated by their caregivers and/or themselves to have clinically elevated behavioral and emotional problems. For more detailed information on demographics, please refer to table 1.

Procedures

All procedures were approved by the Wayne State University Internal Review Board (IRB). After consent and assent were obtained in person, each member of the adolescent-caregiver pairs completed a 90-minutes semi-structured interview (Time 1 or T1) independently at the clinic or at a research laboratory, depending on their preference. Adolescents and caregivers were interviewed in separate rooms to ensure privacy. Around six months after the initial interview, the same adolescent-caregiver pairs completed a 45-minutes follow-up interview (Time 2 or T2). As partial compensation for their time and travel, the youth and parent participants each received $20 for the first visit and $30 for the second visit.

Measures Administered to Both Caregivers and Adolescents

Internalizing and externalizing problems. Caregivers completed 118 items on the Achenbach Child Behavior Checklist parent report form (CBCL; Achenbach, 1991a) 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). Adolescents completed the Youth Self Report (YSR; Achenbach, 1991b), which is the complementary version of the CBCL. These questionnaires reflect specific emotional and behavioral problems including internalizing and externalizing symptoms. The 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 for the child to behave appropriately while avoiding "rule breaking" or aggressive behaviors.

Functional impairment. Both caregivers and youth completed the Columbia Impairment Scale (Bird et al., 1996) to report on their perceived extent of functional impairment among the participating 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 impairment. Sample items include: "how much of a problem do you think you have/your child has with getting along with his/her father/father figure" and "how much of a problem would you say you have/your child has with school work". Cronbach's alphas for this sample were .85 (Caregiver T1), .79 (Youth T1), .84 (Caregiver T2) and .76 (Youth T2).

Positive attitudes towards seeking formal mental health services. Both caregivers and youths completed the Attitudes Towards Seeking Professional Psychological Help – Short Form (Fischer & Farina, 1995) to report on their opinions about seeking professional mental health care. 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 attitudes towards seeking formal mental health services. A sample item for the youth version is "if you were having a serious emotional crisis at this point in your life, you would be sure that psychotherapy would help you get relief." This item is restated for the caregivers as "if your child were having a serious emotional crisis at this point in his/her life, you would be sure that psychotherapy would help him/her get relief." The caregiver's form was modified to reflect their opinion about seeking professional mental health care for the adolescents instead of their opinion about seeking professional mental health care for themselves. Cronbach's alphas for this sample were .63 (Caregiver T1), .69 (Youth T1), .43 (Caregiver T2) and .69 (Youth T2).

Stigma. Both youth and their caregivers completed two questionnaires to report on their perceived self and social stigma towards professional mental health care for adolescents. The Self-Stigma of Seeking Psychological Help Scale (Vogel et al., 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 Social Stigma Scale for Receiving Psychological Help Scale (Komiya et al., 2000) consists of 5 items on a 4-point scale (1 = Disagree, 2 = Partly Disagree, 3 = Partly Agree, 4 = Agree). The items were modified slightly to increase similarity between the adolescent and caregiver items and thereby facilitate a more straightforward comparison between adolescent-report and parent-report. Self-stigma refers to the internal feelings of inferiority related to psychological help seeking (e.g., youth version: “you would feel like you weren’t as good as other people if you went to a therapist for psychological help” and caregiver version: “you would feel like you weren’t as good as other parents if your child went to a therapist for psychological help”). Cronbach’s alphas for this sample were .75 (Caregiver T1), .74 (Youth T1), .79 (Caregiver T2) and .78 (Youth T2).

Social stigma reflects perceived external criticism towards people who seek treatment (e.g., youth version: “people will see a person in a less positive way if they find out that they have seen a psychologist.” and caregiver version: “people will see a parent in a less positive way if they find out that their child has seen a psychologist.”). Higher scores on these measures indicate more negative stigma towards seeking formal psychological help for adolescent and parent. Cronbach’s alphas for this sample were .85 (Caregiver T1), .73 (Youth T1), .82 (Caregiver T2) and .75 (Youth T2).

Mental health service utilization. At both T1 and T2, 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).

Additionally, during the T2 follow-up visit, caregivers and adolescents were asked if the adolescent received mental health services in between T1 and T2. For caregiver, “has your child received mental health services (e.g., counseling, therapy) since the last time we met?” (yes/no). For adolescents, “have you talked to a mental health professional, such as therapist, counselor, or social worker, for your feelings or behaviors since the last time we met?” (yes/no).

Caregivers and adolescents were also asked to describe the reasons for continuing services, discontinuing services, or choosing not to use services, depends on which situations fit them. The three possible questions were, "if you are/ your child is currently receiving mental health services, what are the reasons to continue?", "if you have/your child has received mental health services but stopped, what were the reasons to stop?" and "if you have/your child has never received mental health services, what are the reasons?"

Awareness about confidential care. Caregiver and adolescents responded separately to a dichotomous interview question on their awareness of the Michigan laws related to the right of a minor to obtain outpatient mental health care without parental consent or knowledge. The questions were worded as the following, "In Michigan, teenagers age 14 and up can get some mental health counseling/therapy without getting permission from parent/guardian. Did you know that?" (yes/no). For those who replied "yes," they were asked a follow-up question, "If you did, how did you know?"

Caregivers were then interviewed about their opinions regarding the aforementioned statement about confidential mental health care with the question of "How does that make you feel?" Instead of this open-ended question, adolescents were asked an additional dichotomous question, "If you or a friend wants to see a mental health therapist or counselor without getting permission from parent/guardian, do you know where you or your friend can find it?" (yes/no). For those who replied "yes," they were asked a follow-up question, "If you do, how?"

Caregiver Measures

Caregiver strain. Caregivers completed the Caregiver Strain Questionnaire (Brannan et al., 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 "as a result of your child's problems." Sample items include: "interruption of personal time", "feeling resentful towards child", and "feeling worried about child's future". This measure was not be administered to the adolescents to minimize the risk of inducing unnecessary guilt among them. Cronbach's alphas for this sample were .91 (Caregiver T1) and .93 (Caregiver T2).

Mental health service acceptability. Caregivers rated the acceptability of therapy for young children (12 or under), therapy for teenagers (13 or older), therapy for adults, and parents attending therapy for their children's problems. A 5-point scale (1 = very not acceptable to 5 = very acceptable) was used.

Data Analysis Plan

Preliminary analyses were conducted to examine whether the assumptions of normality, linearity, and homoscedasticity were met appropriately for variables. Data were also screened for potential outliers. Any variables that exhibited distributions that violate applicable statistic assumptions was statistically transformed. This series of preliminary analyses and transformation was not applicable to theoretically dichotomous variables (e.g., mental health service enrollment status). The following data analyses were conducted for each of the following aims:

Aim (1): Correlation analyses and paired-samples *t* tests with bootstrapping were used to describe changes in mental health symptoms, impairment, and caregiver strain among a sample of inner-city adolescents over a 6-month period. McNemar's test was conducted to examine the change in mental health service use over a 6-month period.

Aim (2): Moderated regression analyses were conducted using the PROCESS Macro statistical software packages (Hayes, 2013) to examine changes in mental health symptoms, impairment, caregiver strain, positive attitudes towards professional help, and stigma. A dichotomous variable of mental health services use between T1 and T2 was included as the moderator.

Aim (3): Correlation analyses and paired-samples *t* tests with bootstrapping were used to investigate the agreement between caregivers and adolescents on perceived symptoms, impairment, and positive attitudes towards professional help. Correlation analyses and confirmatory factor analysis (CFA) were used to examine the two hypothesized latent variables (i.e., caregiver's perception of youth mental health problem and youth's perception of mental health problem). Structural equation modeling (SEM) was used to investigate the relative powers of caregiver and youth factors in predicting youth mental health service use 6 months later.

Aim (4): Descriptive and frequency statistics were used to qualitatively describe the reasons for mental health services non-use, continuation, and termination.

Aim (5): Friedman's test with Bonferroni-adjusted post-hoc tests of pairwise Wilcoxon signed-rank tests was used to compare the caregiver's opinions on mental health services for children, adolescents, adults, and parents. Descriptive and frequency statistics were used to quantitatively describe the awareness of Michigan laws related to the right of a minor to obtain outpatient mental health care without parental consent or knowledge among this sample.

Effect sizes of correlations were determined as "small" ($r = .10$), "medium" ($r = .30$), or "large" ($r = .50$) respectively (Cohen, 1992). For paired samples t-tests, Cohen's *d* effect sizes were calculated using the method described by Cohen (1988). Effect sizes were determined as "small" ($d = .20$), "medium" ($d = .50$), or "large" ($d = .80$) respectively (Cohen, 1988).

CHAPTER 3 - RESULTS

Preliminary Analyses

Attrition and Missing Data. A total of 84 caregiver-adolescent dyads completed T1 visit. Fifteen caregiver-adolescent dyads (17.9%) did not participate in T2 visit. When dyads who did and did not complete T2 visit were compared, caregivers who completed T2 visit were significantly older (M = 44.58, SD = 7.92) than caregivers who did not complete T2 visit (M = 40.47, SD = 6.37), based on a bootstrap sample of 1000, $t(82) = -2.17$, $p = .03$. There were no significant differences across dyads who did and did not complete T2 visit. Youth did not differ in terms of age, gender, or ethnicity. Caregivers did not differ by ethnicity, income, marital status, or education. Neither caregivers nor youth differed on reported youth internalizing and externalizing problems, youth exposure to stressor reported, and youth mental health service utilization status. Because the current study adopted a longitudinal design, the families who did not complete T2 visit were removed from the study.

A total of 69 caregiver-adolescent dyads were included in the final sample. However, 24 of the adolescents had at least one sibling who also participated in the current study, as such, a sub-sample was created by only retaining one randomly selected sibling from each family. The sub-sample included a total of 56 caregiver-adolescent dyads. To reach a balance between maximizing power by including the siblings and addressing data interdependency by excluding the siblings, all relevant analyses were conducted with both samples and reported in the forms of tables and figures. Only the results from the full sample with siblings included were reported in writing, unless notable discrepancies were found between samples. Descriptive and frequency statistics were performed on demographic variables (see Tables 1 and 2).

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 analyses revealed one outlier in T1 caregiver strain ($z = 3.46$), one outlier in T2 caregiver strain ($z = 3.52$), one outlier in T1 caregiver-reported self-stigma ($z = 3.84$), and one outlier in T2 caregiver-reported self-stigma ($z = 3.46$). 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. Caregiver-reported functional impairment (T1 and T2), caregiver strain (T1 and T2), caregiver-reported social stigma (T1 and T2), caregiver-reported self-stigma (T1 and T2), adolescent-reported social stigma (T1), adolescent-reported self-stigma (T1 and T2) were significantly positively skewed. A square root transformation successfully reduced skewness to non-significant levels to these variables, except for caregiver strain (T1 and T2), caregiver-reported social stigma (T2), caregiver-reported self-stigma (T2). Because the square root transformation was insufficient, logarithm (base 10) transformations were conducted for caregiver strain (T1 and T2), caregiver-reported social stigma (T2), caregiver-reported self-stigma (T2). The logarithm (base 10) transformation successfully reduced skewness to a non-significant level, except for caregiver strain (T1). An inverse transformation successfully reduced skewness to a non-significant level for caregiver strain (T1).

Caregiver-reported attitude towards professional help (T1) was significantly negatively skewed. After reflecting this variable, square root transformation successfully reduced skewness to a non-significant level. To reflect the transformed variable back to the original direction, it was multiplied by -1.

These transformed variables were used in all correlation analyses. However, the original variables were used for descriptive statistics presented in Tables 1 and 2. For paired-sample t-tests, 1000 bootstrap samples were used to account for variable non-normality.

Power. To establish the appropriate sample sizes for the proposed analyses, power analyses were conducted using G*power software. For all of the paired samples *t*-tests using the full sample ($N = 69$), the observed effect sizes (Cohen's *d*) ranged from .01 to .75. Assuming a mid-point effect size of .38, a two-tailed alpha at .05, the power value was estimated to be .88. For the sub-sample without siblings ($N = 56$), the observed effect sizes (Cohen's *d*) ranged from .06 to .68. Assuming a mid-point effect size of .37, a two-tailed alpha at .05, the power value was estimated to be .78.

Separate power analyses were conducted for the moderated regression models. In the full sample ($N = 69$), the R^2 change for the interaction term ranged from .00 to .09. Assuming a mid-point R^2 change of .045, a two-tailed alpha at .05, and three total predictors in the model, the power value was estimated to be .36. In the sub-sample without siblings ($N = 56$), the R^2 change for the interaction term ranged from .00 to .03. Assuming a mid-point R^2 change of .015, a two-tailed alpha at .05, and three total predictors in the model, the power value was estimated to be .15. It appeared the low power estimates of the moderated regression models were driven by small effect sizes as well as the small sample size.

Despite the lack of a well-accepted standard for power analyses for SEM models, one approximation of statistical power in a model is based on the probability of achieving a specific

RMSEA (Preacher & Coffman, 2006). Using this method, the specified model in the full sample (*N* = 69) and 28 degrees of freedom yielded a power estimate of .43 for an RMSEA of .05 and a rejection RMSEA of .10. As such, the findings from the SEM model should be interpreted with caution.

Overall, the power estimates for the paired samples *t*-tests appeared to be adequate. However, the moderated regression models and SEM models appeared to be under-powered.

Sample Description

To describe the mental health problems and service utilization among inner-city high risk adolescents, descriptive and frequency statistics were performed on relevant variables (see Tables 1, 2, 3, 4, 5, and 6).

Behavioral problems. At T1, 33.3% (23) 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 Behavior Checklist Internalizing and/or Externalizing and/or Total Problem scales). 31.9% (22) of adolescents were rated by themselves as experiencing behavioral and emotional problems at or above the clinical threshold (T-score of 64 or higher in the Youth Self Report Internalizing and/or Externalizing and/or Total Problem scales). Together, 50.7% (35) of adolescents were rated by their caregivers and/or themselves as experiencing behavioral and emotional problems at or above the clinical threshold. Specifically, 28 (40.5%) adolescents were in the clinically elevated range (≥ 64) for internalizing problems, 16 (23.2%) were in the clinically elevated range for externalizing problems, and 27 (39.1%) were in the clinically elevated range for total problems.

At T2, 29.0% (20) of adolescents were rated by their caregivers as experiencing behavioral and emotional problems at or above the clinical threshold. 30.4% (21) of adolescents were rated by themselves as experiencing behavioral and emotional problems at or above the clinical threshold. Together, 44.9% (31) of adolescents were rated by their caregivers and/or themselves as experiencing behavioral and emotional problems at or above the clinical threshold. Specifically, 20 (29.0%) adolescents were in the clinically elevated range (≥ 64) for internalizing problems, 19 (27.5%) were in the clinically elevated range for externalizing problems, and 25 (36.2%) were in the clinically elevated range for total problems.

Service Utilization. Consistent with past research, not all adolescents with self-reported and/or caregiver-reported mental health concerns were receiving interventions. At T1, among the 35 adolescents who were rated as experiencing behavioral and emotional problems at or above the clinical threshold (T-score of 64 or higher in the Achenbach scales Internalizing and/or Externalizing and/or Total Problem scales), only 54.3% (19) reported current mental health service utilization. At T2, among the 31 adolescents who were rated as experiencing behavioral and emotional problems at or above the clinical threshold (T-score of 64 or higher in the Achenbach scales Internalizing and/or Externalizing and/or Total Problem scales), only 45.2% (14) reported current mental health service utilization.

Bivariate Associations (Key Continuous Study Variables). Pearson correlations and Point-Biserial correlations were run to examine the bivariate correlations between the key continuous study variables and selected demographic variables (see Tables 7 and 8) and among study variables (see Tables 9, 10, 11, and 12).

Regarding demographic variables, youth age significantly negatively correlated with caregiver-reported externalizing problems ($r = -.37$, $p < .01$) and functional impairment ($r = -.27$, $p = .02$). Youth age also significantly positively correlated with adolescent-reported self-stigma ($r = -.36$, $p < .01$). Youth gender significantly correlated with adolescent-reported attitude towards professional psychological help such that adolescent girls were more likely to have more positive attitude towards mental health services ($r = .25$, $p < .01$).

Furthermore, family income was significantly negatively associated with caregiver-reported internalizing problems ($r = -.36$, $p < .01$), externalizing problems ($r = -.33$ $p < .01$), functional impairment ($r = -.26$, $p = .03$) and caregiver strain ($r = -.28$, $p = .02$). Caregiver age significantly negatively correlated with caregiver-reported social stigma ($r = -.25$, $p = .04$). Caregiver education was significantly negatively associated with caregiver-reported internalizing problems ($r = -.28$, $p = .02$), externalizing problems ($r = -.26$ $p = .03$), and functional impairment ($r = -.25$, $p = .04$). Lastly, caregiver relationship status significantly correlated with caregiver-reported internalizing problems ($r = -.25$, $p = .04$) and self-stigma ($r = -.26$, $p = .03$), such that partnered caregivers reported lower levels of internalizing problems in their adolescent child and perceived self-stigma. Caregiver relationship status also significantly correlated with adolescent-reported attitude towards professional psychological help such that adolescent children of partnered caregivers were reported lower levels of positive attitude towards mental health services ($r = -.24$, $p = .05$).

There were no significant relations found between age, gender, ethnicity of youth, family income, caregiver age, caregiver education, and caregiver relationship status with other continuous study variables (absolute value rs = .01-.18, ps > .05).

Bivariate Associations (Dichotomous Service Use Status Variable). Point-Biserial (binary-continuous), *Phi* (binary-binary), and Cramer's *V* (non-binary categorical) correlations were run to examine the bivariate association between the dichotomous dependent variable of T2 mental health service use and selected demographic variables.

There were no significant relations found between youth age and caregiver age with T2 mental health service use (absolute value rs = .01-.19, ps > .10). Similarly, there were no significant relations found between youth gender, youth ethnicity, and caregiver relationship status with T2 mental health service use (absolute value ϕs = .02-.09, ps > .10). Lastly, there were also no significant relations found between family income and caregiver education with T2 mental health service use (absolute value Vs = .23-.31, ps > .10).

Aim (1): Changes over a 6-Month Period

Symptoms, Impairment, and Caregiver Strain. Changes in mental health symptoms, impairment and caregiver strain were described through correlations and paired samples t-tests. Correlation patterns were analyzed between T1 and T2 variables (see Tables 13 and 14). There were significant positive correlations with large effect sizes (rs = .61-.85, ps < .01) between T1 and T2 for all variables. Paired samples t-test with 1000 bootstrap samples were analyzed (see Tables 13 and 14). In terms of caregiver-rated variables, internalizing problems and externalizing problems significantly decreased from T1 to T2 (t(68) = 2.42 and t(68) = 2.06, ps < .05). These changes from T1 to T2 had small effect sizes (Cohen's ds = .30 and .25). In terms of youth-rated variables, internalizing problems, externalizing problems, and total problems significantly decreased from T1 to T2 (t(68) = 2.16, t(68) = 2.01, and t(68) = 2.13, ps < .05). These changes from T1 to T2 had small effect sizes (Cohen's ds = .27, .25 and .26). There were no significant changes in caregiver-rated total problems, caregiver-rated impairment, caregiver strain, and youth-rated impairment from T1 to T2.

Mental Health Service Use. Change in mental health service use was analyzed with a McNemar's test, which is a nonparametric test similar to a paired samples t-test for within subject dichotomous outcome variables (see Table 15). There was a significant difference in the proportion of mental health service receivers and non-receivers between T1 and T2, $p = .04$. When the pattern of mental health service status was examined (see Figures 1 and 2), adolescents who did not receive mental health service at T1 was more likely to stay the same (93.2%), compared to adolescents who received mental health service at T1 (52.0%). Almost half (48.0%) of adolescents who received mental health service at T1 stopped receiving services at T2. Only 6.8% who did not receive mental health service at T1 started to receive mental health service at T2. It is important to note that this change was not significant in the sub-sample without siblings ($p = .09$), highlighting the potential trade off in the loss in power when potentially dependent (sibling) cases were removed.

Aim (2): Mental Health Services Use as a Moderator

To test the hypothesis that the use of mental health services moderates the relations of mental health problems, positive attitudes towards professional help, and stigma between T1 and T2, separate moderated regression analyses were conducted for each variable using the PROCESS Macro statistical software packages (Hayes, 2013). The moderator was a dichotomous variable of youth mental health service use between T1 and T2 (see Tables 16 and 17). All T1 variables significantly predicted T2 variables (ts = 2.79-8.14, ps < .01). However, mental health service use between T1 and T2 only significantly predicted youth-rated internalizing problems at T2 ($t = 2.29$, $p = .02$), such that adolescents who received mental health services reported higher levels of internalizing problems, accounting for T1 youth-rated internalizing problems. There were no significant interaction effects between mental health service use and any of the T1 variables.

Aim (3a): Agreement between Caregivers and Adolescents

Agreement between Caregivers and Adolescents in mental health symptoms, impairment and attitude towards professional help were described through correlations and paired samples t-tests. Correlation patterns were analyzed between caregiver-reported and adolescent-reported variables (see Tables 18 and 19). There were significant positive correlations with “medium to medium-large” effect sizes (rs = .31-.40, ps < .01) between caregiver report and youth report for internalizing problems, externalizing problems, and impairment. There was no significant correlation between caregiver-reported and adolescent-reported attitude towards professional help.

Paired samples *t*-test with 1000 bootstrap samples were analyzed (see Tables 18 and 19). Caregiver-rated attitude towards professional help was significantly higher than adolescent-rated attitude towards professional help ($t(68) = 6.33$, ps < .01). This difference between caregiver report and youth report had a “medium-large” effect size (Cohen’s $d = .75$). There was no significant differences between caregiver report and youth report in terms of internalizing problems, externalizing problems, and impairment.

Aim (3b): Relative Predictive Powers of T1 Caregiver and Youth Factors.

Correlation. Correlation patterns were analyzed within informant separately for the variables that were expected to form the two latent variables, which were caregiver’s perception of youth mental health problems and youth’s perception of mental health problems (see Table 9).

As expected for caregiver’s perception of youth mental health problems, results showed that caregiver-reported internalizing problems, externalizing problems, functional impairment, and caregiver strain were all significantly positively correlated with each other (ps < .01). These correlations (rs = .43-.71) were in the “medium-large to large” effect size rage. In addition, caregiver-reported attitude towards professional psychological help was not significantly associated with caregiver-reported internalizing problems, externalizing problems, functional impairment, and caregiver strain (rs = .08-.20, ps > .05). 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 were not significant, this pattern of correlations supported the latent variable of caregiver's perception of youth mental health problems.

Also as expected for youth's perception of mental health problems, results showed that adolescent-reported internalizing problems, externalizing problems, and functional impairment were all significantly positively correlated with each other (ps $< .01$). These correlations (rs = .51-.68) were all in the "large" effect size rage. In addition, adolescent-reported attitude towards professional psychological help was not significantly associated with adolescent-reported internalizing problems, externalizing problems, and functional impairment (rs = -.10-.00, ps $> .05$). Because the relations among internalizing problems, externalizing problems, functional and impairment were strong, while their relations with adolescent -rated attitude towards professional psychological help were not significant, this pattern of correlations supported the latent variable of youth's perception of mental health problems.

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 caregiver-reported internalizing problems, externalizing problems, functional impairment, and caregiver strain would load onto a latent variable of caregiver's perception of youth mental health problems. Similarly, adolescent's ratings on internalizing problems, externalizing problems, and functional impairment would load onto a latent variable of youth's perception of mental health problems. In this model, χ^2 (13) = 21, comparative fit index (CFI) = .97, Tucker-Lewis fit index (TLI) = .94, and Root Mean Square Error of Approximation (RMSEA) = .09 (90% CI = .00-.17) indicated that the model adequately fit the observed data. Standardized parameter estimates were provided in Figures 3 and 4; unstandardized estimates were shown in Tables 20 and 21. All variables loaded significantly onto the proposed latent variables in the hypothesized directions (βs = .75-.93, *p*s < .01). The two latent variables significantly correlate with each other ($r = .40$, $p < .01$).

<u>*Structural Equation Model.*</u> The hypothesized model with two latent variables was examined. Results showed that none of the residual variances were negative. In this model, comparative fit index (CFI) = .99, Tucker-Lewis fit index (TLI) = .98, and Root Mean Square Error of Approximation (RMSEA) = .03 (90% CI = .00-.10) indicated that the model did adequately fit the observed data. Please note that, with a small sample size and a binary outcome variable, these fit indices may be inconsistent and biased (Xia, 2016). Standardized parameter estimates (StdY estimates) were provided in Figures 5 and 6; unstandardized estimates were shown in Tables 22 and 23.

In terms of the measurement model, all variables loaded significantly onto the proposed latent variable of caregiver's perception of youth mental health problems in the hypothesized directions (βs = .57-.91, *p*s < .01). Similarly, all variables loaded significantly onto the proposed latent variable of youth's perception of mental health problems in the hypothesized directions (βs = .71-.95, *p*s < .01).

In terms of the structural model, caregiver's perception of youth mental health problems was a significant predictor of T2 service utilization ($\beta = .48$, $p < .01$). In addition, youth's perception of mental health problems, caregiver's attitude towards professional help, and youth's attitude towards professional help were not significant predictors of T2 service utilization (βs = .09-.12, *p*s > .05). As expected, the two latent variables (i.e., caregiver's perception of youth mental health problems and youth's perception of mental health problems) were significantly correlated with each other ($r = .42$, $p < .01$). There was no other significant correlations among the predictor variables (i.e., caregiver's perception of youth mental health problems, youth's perception of mental health problems, caregiver's attitude towards professional help, and youth's attitude towards professional help) (absolute values of *r*s = .01-.18, *p*s > .05).

Aim (4): Reasons for Mental Health Service Nonuse, Continuation, and Termination

To describe the reasons for mental health service nonuse, continuation, and termination among inner-city high risk adolescents in the current sample, descriptive and frequency statistics were performed on relevant variables (see Table 24). Some participants endorsed "others" without specifying their reasons. For those who elaborated after endorsing "others," their answers were coded for themes.

The top-ranking reasons for mental health service nonuse per both caregivers and adolescents were no perceived mental health problems (caregiver: 88.2% and youth: 76.2%), problems manageable without help (caregiver: 61.8% and youth: 52.4%), problems manageable with informal help such as friends/religious leaders (caregiver: 70.6% and youth: 31.0%). They also endorsed some logistic barriers, including time/scheduling concerns (caregiver: 8.8% and youth: 14.3%), transportation concerns (caregiver: 14.7% and youth: 2.4%), and financial concerns (caregiver: 11.8% and youth: 2.4%).

The top-ranking reasons for mental health service continuation per both caregivers and adolescents are unmet goals/unresolved problems (caregiver: 100.0% and youth: 69.2%), perceived helpfulness (caregiver: 92.3% and youth: 76.9%), and enjoyment (caregiver: 61.5% and youth: 38.5%).

The top-ranking reasons for mental health service termination per both caregivers and adolescents were met goals/resolved problems (caregiver: 59.1% and youth: 36.4%), problems manageable without help (caregiver: 40.9% and youth: 27.3%), perceived unhelpfulness of therapy (caregiver: 22.7% and youth: 36.4%), and problems manageable with informal help such as friends/religious leaders (caregiver: 36.4% and youth: 18.2%). Caregivers also endorsed some logistic barriers, including time/scheduling concerns (27.3%), transportation concerns (18.2%), and financial concerns (13.6%). For those who elaborated after endorsing "others" as reasons for mental health service termination, three caregivers and one adolescent endorsed therapist-related reasons. Three of them reported negative views regarding their therapists (e.g., "wasn't trying," "would not respond to request," and "was not very helpful"). One caregiver reported that having to switch therapists was a barrier to continue mental health service.

Aim (5): Opinion and Awareness about Mental Health Services

Caregiver's Acceptance of Services for Children, Adolescents, Adults, and Parents. A Friedman's test showed that there was a significant difference among caregiver's acceptance on mental health services for younger children (age 12 and under), adolescents (age 13-17), adults, and parents, $X^2_F(3) = 13.60$, $p < .01$. Kendall's W (coefficient of concordance) estimates agreement between subjects and was calculated as a form of effect size estimate. A Kendall's W of one indicates that all caregivers ranked their acceptance on the four types of mental health services in the same way and therefore they were in complete agreement. For this model, the effect size was smaller than Cohen's interpretation guidelines of small effect (.10), $W = .08$. Post-hoc tests using pairwise Wilcoxon signed-rank tests with a Bonferroni-adjusted alpha level of .008 (.05/6) showed that caregiver's acceptance of mental health services for adolescents (n = 56, *Mdn* = 5, mean rank = 2.63) was significantly higher than their acceptance of mental health services for younger children (n = 56, *Mdn* = 5, mean rank = 2.22), $Z = -3.36$, $p = .001$. Similarly, caregiver's acceptance of mental health services for adults (n = 56, *Mdn* = 5, mean rank = 2.62) was significantly higher than their acceptance of mental health services for younger children (n = 56, *Mdn* = 5, mean rank

= 2.22), $Z = -2.71$, $p = .007$. However, the differences between the remaining pairs were not significant, *p*s > .008 (see Table 25).

Awareness about Confidential Outpatient Mental Health Care. To describe the caregiver and adolescents' awareness about confidential outpatient mental health care in the current sample, descriptive and frequency statistics were performed on relevant variables (see Table 26). Only 21.4% of caregivers and 14.5% of adolescents reported that they were aware of the Michigan law regarding minor's right to receive confidential outpatient mental health care. When caregiver-youth dyads were examined, only three pairs (4.3%) reported shared knowledge of confidential mental health care. 17 pairs (24.6%) reported one-sided knowledge, such that either the caregiver or the adolescent knows about confidential mental health care.

Among those who were aware of the confidential mental health care law, the most commonly reported source of knowledge is school/child's school, endorsed by 22.2% of caregivers and 40.0% of adolescents. The second most commonly reported source of knowledge is non-school mental health providers, endorsed by 22.2% of caregivers and 10.0% of adolescents. 40.0% of adolescents, but no caregivers, reported hearing about confidential mental health care through family or friends.

All adolescent participants were also asked how they would seek mental health confidential care if needed, only 17.4% reported that they knew how to access confidential mental health services. Commonly reported means of access were the internet (41.7%), school (25.0%), medical office (25.0%), and the participant's own mental health provider (16.7%).

Qualitative data of caregiver opinion on the Michigan law regarding minor's right to receive confidential outpatient mental health care were coded for valence (positive, negative, mixed, and indifference). Most caregivers reported positive attitudes (69.6%) and only 10.7% of the caregivers reported clear negative opinions. For the exploratory purpose of this dissertation project, the intensity and theme of caregiver’s opinions were not coded. Future studies employing more stringent qualitative analyses are encouraged.

CHAPTER 4 - DISCUSSION

Many facilitators and barriers to mental health service utilization among adolescents have been identified in the literature. However, less attention has been given to how these variables may affect urban minority youth. By recruiting and examining a sample underrepresented in the literature, the current study aimed to gain a better understanding of the generalizability of identified mental health service use facilitators and barriers. About 50.7% (44.9% for T2) of the adolescents in this sample were rated by their caregivers and/or themselves as experiencing clinically elevated behavioral or emotional problems. About 54.3% (45.2% for T2) of these adolescents with clinically elevated levels of mental health problems reported current mental health service utilization. These estimates indicate an increase in service utilization rate, compared to a similar sample recruited approximately 5 years ago, in which only 36.4% of adolescents with clinically elevated levels of mental health problems reported current mental health service utilization (Tsang et al., 2020). However, a post-hoc chi-square analysis revealed that the differences across samples is not significant (χ^2 (1, 87) = 2.12, p = .15). Nearly half of the adolescents in this sample with clinically elevated mental health symptoms did not seek or receive formal mental health services. The alarming rate of mental health service underutilization suggests that continuous research effort in identifying factors that promote or hinder utilization rate will provide essential information to guide effective dissemination of mental health services to vulnerable adolescents.

The current study provided a unique perspective with an underrepresented sample and it also addressed gaps in the literature through a longitudinal, bi-informant, and mixed methods design. By including a 6-month follow-up interview, I was able to begin to disentangle the reciprocal and dynamic associations among variables and make more informed hypotheses about temporal relations among the variables. As discussed below, the bi-informant approach takes into consideration both caregivers' and youths' perspectives, which can inform building new components into mental health dissemination practices for parents and adolescents as well as the dyad. Lastly, the inclusion of two exploratory goals and qualitative analyses provided a more comprehensive and context-specific understanding of attitudes around mental health service use among this unique population.

Demographics

The relation between socioeconomic deprivation and mental health problems in adolescence is well-documented (Reiss, 2013). Children and adolescents from families with lower socioeconomic status are more likely to have mental health problems than their peers from families with higher socioeconomic status (odds ratios ranging from 1.18 to 3.34) (Reiss, 2013). Among different indicators of socioeconomic status, the strongest predictors of mental health problems are low household income and low parental education (Reiss, 2013). Additionally, stress, trauma, and discrimination appears to fall disproportionally on the poor and ethnic minorities further contributing to mental health symptoms (Hatch & Dohrenwend, 2007). Consistent with the literature, the current study revealed significant negative correlations found between family income as well as caregiver education with measures of youth mental health problems (e.g., internalizing problems, externalizing problems, functional impairment, and caregiver strain), but only for behavior problems rated by caregivers; however, there were no significant associations between family income and caregiver education with adolescent-rated measures of youth mental health problems. Post-hoc analyses adding family income and caregiver education as covariates did not significantly impact the results. Caregiver's and adolescents' subjective ratings of perceived mental health problems, although correlated, have distinct relations with objective variables (e.g., family income and parent education). Researchers and clinicians may enhance accuracy in predicting objective outcomes by continuing to adapt a multi-informant approach to ensure completeness of their conceptualizations.

Change Over a 6-month Period

As expected, mental health symptoms, impairment, and caregiver strain were relatively stable over the 6-month period. The stabilities (Pearson correlation) in this sample for caregiver reported adolescent symptoms was .77 to .85, which is commensurate with previous findings (CBCL 12-month stability of .81; Achenbach & Rescorla, 2001). The stabilities (Pearson correlation) in this sample for adolescent reported symptoms was .70 to .79, which is higher than previous findings (YSR 7-month stability of .56; Achenbach & Rescorla, 2001). Even though perceived mental health symptoms were found to be relatively stable over time, there were also small but statistically significant decreases in both caregiver-reported and adolescent-reported internalizing problems and externalizing problems. There were no well-established stability estimate for functional impairment and caregiver strain in the literature. In the current sample, youth functional impairment (.72 for caregiver reported and .61 for adolescent reported) and caregiver strain (.68) appeared to be relatively stable over a 6-month period and were commensurate with the stabilities of mental health symptoms. There were no significant changes in functional impairment (both caregiver and youth rated) and caregiver strain from T1 to T2, providing support for the notion that, mental health symptoms often associate with but are not equivalent to impairment and caregiver strain (Accurso et al., 2015; McKnight et al., 2016; McKnight & Kashdan, 2009). Given that there were non-significant trends of reduction in caregiver-reported impairment and caregiver stress ($ps < .10$), it is also possible that, given how small the symptoms reductions were, any related changes in functional impairment and caregiver stress could be too small to be detected with the current sample size.

Contrary to hypotheses, mental health service use between baseline and follow-up did not moderate the observed reduction in mental health symptoms, nor did it predict changes in functional impairment, caregiver strain, positive attitudes towards professional help, and stigma. There are many possible reasons for the lack of effect of treatment on perceived mental health problems and mental health related attitudes. The first reason reflects on a primary limitation of the current study, which is the use of a dichotomous (simple yes or no) variable for mental health service use. To keep the research interview within a reasonable length, I did not include procedures that could have captured the timing and details about mental health services utilized, such as a timeline followback method (Robinson et al., 2014). As such, the mental health service use variable in this study did not differentiate among different types of service, such as psychiatric medication review, regular psychotherapy, and drop-in social work services at schools. Also, the frequency, duration, and quality of mental health care received were not collected, resulting in the inability to analyze a potential dose-response or other types of potential effects. These data points and other missing information may have clarified which aspects of treatment may have been associated with improvement (Kirk et al., 2019). Secondly, other studies conducted through our lab with similar samples have shown that low-income, urban families are typically exposed to more than average on-going stressful life events (Richardson et al., 2019), which is associated consistently with increased risk for internalizing and exterminating problems in adolescents (March-Llanes et al., 2017). Exposure to stressful events during the study may have negated some of the detectable effects of treatment. In addition, usual care services in community mental health settings often vary in treatment modalities, theoretical orientation, service intensity, therapist characteristics, and alliance formed with families (Bond et al., 2014; Higa-McMillan et al., 2017), which can affect how impactful these mental health encounters are on mental health outcome and beliefs (Anderson et al., 2016; Welmers-van de Poll et al., 2018). Lastly, there is also evidence that youth symptom type, severity, comorbidity, and other client characteristics moderate treatment gain (Bonadio & Tompsett, 2018). These potential moderators were not included in the current study.

It is noteworthy that one of the study variables (T2 caregivers' report of their positive attitudes towards seeking professional psychological help) had poor internal consistency (Cronbach's alphas = .43). The internal consistency of the caregivers' report of positive attitudes towards professional help variable was satisfactory at baseline and when reported by the youth participants at follow-up (Cronbach's alphas = .63 to .69). It is unclear why the same measure with highly similar and comparable means and standard deviations administered similarly lead to different internal consistency outcomes. Nonetheless, the above findings regarding change in caregiver-rated positive attitudes towards professional help over time should be interpreted with caution.

Adolescents who received mental health services between baseline and follow-up, compared to those who did not, were found to report higher levels of internalizing problems at follow-up, after baseline youth-rated internalizing problems were accounted for. This unexpected finding suggests that the adolescents in the current study were better off not receiving mental health services with respect to internalizing problems at follow-up. The same pattern has not been found with externalizing problems and functional impairment. Meta-analyses of treatment for adolescent depression has found significantly smaller effect sizes for treating depression compared to other adolescent problems (Weisz et al., 2006). The difficulty in modulating internalizing problems among adolescents has been linked to the literature on the non-linearity of neurodevelopmental trajectory. Because subcortical limbic structures (e.g., amygdala) mature earlier than prefrontal cortical regions, adolescents are believed to have an imbalance in the two neural regions that generate and regulate emotions respectively, resulting in inefficient top-down regulation of emotions. Some researchers have argued that he adolescent brain, compared with the brains of children and adults, might be conducive to increased internalizing symptoms and less responsive to treatment aiming to reduce internalizing problems compared with other developmental periods (Casey et al., 2013; Drysdale et al., 2014). In addition, anecdotally, many adolescents gain insights about their own internal emotional experiences and learn to accept and express their feelings and thoughts more openly over the course of psychotherapy. As such, the increase in reporting of internalizing problems at follow-up by adolescents who received mental health services may also indicate an improvement in recognizing and willingness in revealing their emotional struggles.

Caregiver-Youth (Dis)agreement

Consistent with past literature, modest positive correlations (*r*s = .31-.40, *p*s < .01) were found in the current study between caregiver report and youth report for internalizing problems, externalizing problems, and impairment (Rescorla et al., 2013; Van Roy et al., 2010; Villabø et al., 2012; Weems et al., 2010), showing that caregivers and adolescents do agree to a certain level about youth mental health problems. At the same time, given the size of the correlations, caregiver report and youth report on mental health problems were different enough to be treated as distinct variables and with differential association with other factors.

Contrary to hypothesis, there were no significant correlation between caregiver report and youth report on positive attitudes towards professional help (*r* = -.01). Furthermore, caregiver report and youth report on positive attitudes towards professional help were significantly different with a “medium-large” effect size (Cohen's *d* = .75). In the current sample, caregivers endorsed higher levels of positive attitude towards professional help than their adolescent children, despite past research evidence suggesting that adolescents were more likely to report a need to seek formal mental health help than their caregivers (Williams et al., 2011).

Predicting Service Utilization

Mental health underutilization (i.e., clinically elevated mental health symptoms without concurrent mental health service) was observed, with 23.2% of all participating adolescents at baseline and 24.6% of all participating adolescents at follow-up. There was a significant difference in the proportion of mental health service receivers and non-receivers between baseline and follow-up, such that adolescents who did not receive mental health service at baseline were much more likely to stay the same (93.2%), compared to adolescents who received mental health service at baseline (52.0%). Almost half (48.0%) of adolescents who received mental health service at baseline stopped receiving services at follow-up.

To further illustrate the factors predicting mental health service use, a SEM model was analyzed. The overall model fit was adequate, indicating that the proposed relations were plausible among the included variables in this sample, however, the model does not preclude the possibility that other relevant variables may be omitted. As expected, caregiver-reported internalizing problems, externalizing problems, functional impairment, and caregiver strain showed medium to high inter-correlations and emerged as a single latent variable, named as "caregiver's perception of youth mental health problems." This latent variable replicated my previous finding that mental health symptoms, disruption to daily activities, and parenting stress appear to work together, contributing to a single construct of caregiver's perception of mental health problems in their children. Similar findings were shown with adolescent-reported internalizing problems, externalizing problems, and functional impairment, which emerged as another latent variable, named as "youth's perception of youth mental health problems." These two latent variables, tapping into a similar trait but differing by informant, showed a moderate association with each other (*r* = .40), suggesting that these variables are related but distinct from each other. Caregiver's perception of youth mental health problems and youth's perception of youth mental health problems did not have any significant correlations with either caregiver-rated or youth-rated positive attitude towards professional psychological help, supporting the measurement portion of the SEM model.

When examined as a whole, caregiver's perception of youth mental health problems significantly predicted mental health service utilization at follow-up, such that adolescents whose caregivers perceived higher levels of mental health problems in them were more likely to engage in treatment 6 months later. However, only caregiver's perceived problems, but not adolescent's perceived problems, were predictive of future service utilization. Although there was no significant difference between caregiver report and youth report in terms of internalizing problems, externalizing problems, and impairment, when combined to form a construct of perception of mental health problems, caregiver and youth report showed differential predictive powers in mental health service use. Compared to previous findings (Tsang et al., 2020), the addition of youth perception of mental health problems and the longitudinal design did not change the conclusion that caregivers appeared to be the sole gatekeeper determining whether an adolescent received mental health services. In other words, a major limitation in the previous study, namely the possible role of unmeasured adolescent elements was not supported in the current study, and instead helps to reinforce the conclusions from the prior investigation. This finding also aligns well with the qualitative data from this investigation, discussed below, that the most commonly reported factors for mental health service enrollment decision were the caregivers' perception of the severity of the adolescents' problems.

Contrary to hypothesis, caregiver's positive attitude towards professional help did not contribute significantly to future service enrollment. In other words, holding positive attitudes did not facilitate mental health care enrollment, yet low levels of positive attitudes also did not hinder service use. It appears that when the participating caregivers see mental health care as a necessity due to the severity, stress, and impairment of the adolescents' mental health problems they enroll their child in services regardless of their views of those services. Another possible reason for failing to find a relation between caregiver's positive attitude towards professional help and future service enrollment reflects the nuances among different aspects of attitude towards professional help that potentially clouded the finding. For instance, Mojtabai and colleagues (2016) found that willingness to seek professional help and feeling comfortable talking to a professional about personal problems, but not perceived benefits of professional help, were predictive of future help seeking. Given that the measure used in the current study does not differentiate among multiple facets of attitudes, such as perceived helpfulness and trust of providers, the influence of attitudes may have been masked.

Reasons for Service Non-use, Continuation, and Termination

In their meta-analysis, de Haan and colleagues (2013) estimated that premature termination rate was approximately 28.4% to 50.0%. They found two main definitions of premature termination in the literature, both of which involved professional judgments from therapists or clinical researchers. Although the current dissertation did not collect collateral information from mental health providers and hence unable to cross-examine professionals' and clients' perspectives, the findings paint a less frequently studied picture of the health care decision-making process on the recipients' end. In particular, the current study included both the caregivers' and adolescents' subjective experience of why treatment was ended. A primary limitation of this portion of the current dissertation is that, although the list of potential factors for mental health care decision-making was created to illicit responses from the participating families, most participants did not elaborate but rather used it as a checklist. Future studies allowing more open-ended types of questions is encouraged.

Based on the information gathered, the reasons behind mental health service enrollment decisions for the participating adolescents appeared to be more homogenous for those who decided to continue mental health services and for those who have never used mental health services, compared to those who terminated services. Across all participating caregivers and adolescents, regardless of treatment status (i.e., nonuse, continuation, or termination), the most commonly reported factors for mental health service enrollment decisions were the presence/absence and severity of perceived problems. Reliance on informal help such as friends/religious leaders is ranked next as a reason for service nonuse and termination, and is endorsed by a higher proportion of participating families who never used mental health services (70.6% & 31.0%) than for those who stopped (36.4% & 18.2%). Furthermore, perceived (un)helpfulness also appeared as an important element when families consider service continuation or termination (22.7% & 36.4%). The reasons or details why and how treatment was unhelpful or helpful in the eyes of the participants, unfortunately, were beyond the scope of this dissertation and would benefit from further attention in future studies. In addition, consistent with the well-documented environmental and logistic barriers on mental health service use (Corrigan et al., 2017; Czyz et al., 2013; Downs & Eisenberg, 2012; Iskra et al., 2018), the participating families also endorsed some logistic barriers, with similar rates for transportation concerns and financial concerns across the service nonuser (Transportation: 14.7% & 2.4% and Financial: 11.8% & 2.4%) and terminator groups (Transportation: 18.2% & 9.1% and Financial: 13.6% & 9.1%). Time/scheduling concerns were endorsed by a higher proportion of service terminators (27.3% & 9.1%) than nonusers (8.8% & 14.3%).

This pattern that the presence/absence and severity of perceived problems were the most commonly reported factors for mental health care decision-making, to some extent, supports the quantitative modeling portion of this study where perceived mental health problems, but not positive attitudes towards professional help, significantly predicted service enrollment status in the SEM model. Interestingly, the adolescents' enjoyment reported by themselves as well as caregivers' were endorsed by around half of the participating families who decided to continue mental health services. Enjoyment may be a component or indicator of therapeutic alliance. Researchers found that the quality of the relationship with the therapist, especially parent–therapist alliance, was a strong predictor of treatment continuation and therapy engagement. Specifically, adolescent–therapist agreement on the etiology of the adolescent's mental health problems predicted better youth treatment engagement (Yeh et al., 2019). Furthermore, when compared to families who completed the preordained number of treatment sessions, having poorer relationship with the therapist, greater reduction in parent–therapist alliance or adolescent–therapist alliance overtime, more unbalanced alliance (i.e., parent–therapist alliance minus adolescent–therapist alliance) were all predictive of premature treatment drop-out (de Haan et al., 2013).

Of note, an adolescent and a few caregivers who terminated mental health services also endorsed negative views of their therapist, such as feeling that the clinician "wasn't trying," "would not respond to request," and "was not very helpful". The literature has shown the associations between different therapist factors and therapy engagement. For instance, therapist turnover, which is a common problem among community mental health settings, was identified as a predictor of reduced client attendance to sessions (Babbar et al., 2018). The field will likely benefit from future research on how negative experiences with mental health providers affect future mental health service decisions, including the decision to switch providers versus end care altogether. Clinicians should continue to pay close attention to therapeutic alliance ruptures and make every efforts to repair these tears through validation and open discussion in order to minimize premature drop-out and maximize therapy outcome (Eubanks et al., 2018; O'Keeffe et al., 2020). Future studies will also benefit from investigating how possible underlying cultural mistrust may affect adolescent mental health service decisions (Cigularov et al., 2008; de Haan et al., 2018; Jon-Ubabuco & Dimmitt Champion, 2019; Murry et al., 2011; Ward & Besson, 2013).

Service Recipient Characteristics

The literature on mental health related stigma often focus on demographic (e.g., age and sex) and psycho-social predictors (e.g., raters' personal mental health status, familiarity with mental illness), as well as differential associations based on types of stigma (e.g., social/public and self-stigma) (Corrigan & Nieweglowski, 2019; Mackenzie et al., 2019; Nearchou et al., 2018; Schnyder et al., 2017; Wong et al., 2018; Wu et al., 2017). However, less attention has been invested in the nuances based on the target of stigma. For instance, Svensson and Hansson (2016) found that stigma, as defined as negative attitudes about and avoidance of people with mental illness, was significantly higher towards a person with psychosis than a person with depression. The current study attempted to address this gap by comparing acceptance towards mental health service targeting different people groups, namely younger children (age 12 and under), adolescents (age 13-17), adults (age 18 and above) who received services for their own problems, and parents who received services for their children's problems. A small but statically significant difference was found among caregiver's acceptance of mental health services for these four groups. Specifically, mental health services for adolescents and for adults were both rated as significantly more acceptable than mental health services for younger children. It is possible that some of these participating caregivers believed that their children, when they were age 12 or younger, were too young to participate in or benefit from mental health services, even if the caregivers perceived mental health problems in these children at the time. Anecdotally, I have heard many parents expressing concerns that children “don’t understand” and “just play games” during therapy. Further studies investigating differences in mental health literacy, stigma, and beliefs towards sub-categories of mental health services (e.g., types, modality, and recipient characteristics) can likely provide novel insights for improving interventions and policies designed to improve mental health care utilization rates. Special efforts in identifying any myths or unsupported biases and educating the community about how mental health treatment with young children actually looks like as well as the scientific evidence of treatment efficacy may be particularly beneficial.

Confidential Mental Health Care

Parent and adolescent awareness of confidential mental health care was strikingly low in the current sample, with only 21.4% of caregivers and 14.5% of adolescents reported that they knew about the Michigan law regarding minor’s right to receive confidential outpatient mental health care. Among those who knew about the law, the awareness also seemed to be largely unshared between caregiver-youth dyads, suggesting that caregiver-child communication may not be a common avenue or dialogue for learning about the availability of confidential mental health care. This speculation was supported by further examination of the source of knowledge reported, which revealed similarities and differences between caregivers and adolescents. Both caregivers and youth identified (child’s) school as a primary source of knowledge. However, more caregivers than youth reported learning about confidential mental health care through non-school mental health providers. In contrast, almost half of the adolescents, but no caregivers, reportedly obtained this information through family or friends. These finding suggest that schools may be an effective site and agent for the dissemination of confidential mental health care information and referrals to both caregivers and youth.

It is encouraging that when caregivers were made aware of the laws regarding confidential mental health care, most caregivers reported positive attitudes (69.6%) and only 10.7% of the caregivers reported clear negative opinions. These estimates appeared comparable or higher than expected based on a study focusing on physical health care. Specifically, Song and colleagues (2019) found that adolescent-parent agreement on whether a service should be provided confidentially differed by the type of service (e.g., ranging from routine health care to abortion). Although data on the broader scope of outpatient mental health service were not collected in their study, it was estimated that 52.3% parents and 58.8% adolescents believed routine health care should be provided confidentially, while 43.0% parents and 48.2% adolescents believe counseling service for drug or alcohol use should be provided confidentially. The next question is whether this general positive view translates into a supportive attitude if their own adolescent seek confidential mental health care. Trotman and colleagues (2018) found that 78% of surveyed parents perceived benefits of having confidential interviews at health care settings. However, only 11% of the same group of parents stated that they would want their adolescent to speak to their provider privately. These researchers identified the lack of understanding on confidential policy as one potential reason for the hesitation in letting their adolescent children engage in confidential physical health care, as they found that only half of the parents surveyed could correctly identify the clinic policy on adolescent confidentiality (Trotman et al., 2018). Future studies are needed to expand these finding further to the mental health realm. For instance, conducting more rigorous qualitative studies on caregivers' beliefs and worries around regular and confidential mental health care as well as intervention studies focusing on clarifying the limits of confidentiality and obligation to report to parents when reasonable suspicion of adolescent safety concerns arise (e.g., suicide risk, sexual abuse disclosure).

Gilbert, Rickert, and Aalsma (2014) surveyed 504 adolescents and found that about half them reported receiving confidential physical health care for at least a portion of their most recent annual checkup with a physician. In contrast, over 80% of the adolescents in the current sample reported having no idea of how they could seek mental health confidential care if needed. The alarmingly poor awareness about confidential mental health care can lead to serious consequences in youth mental health outcomes. Over the past decade (2007 to 2017), the rates of death by suicide and suicide attempts in the United States increased drastically. In particular, rates of suicide among African American adolescents showed a significantly larger increase than youth identified with other ethnicity. The most significant increase was detected among African American adolescent girls, such that the suicide rate more than tripled (Shain, 2019). Even more concerning is that youths with suicidal risk, among many other vulnerable groups of adolescents, are particularly susceptible to confidentiality concerns (Lehrer et al., 2007; Williams & Chapman, 2011). As indicated by the current data, efforts in reaching adolescents who are in active needs of confidential mental health care should utilize platforms familiar and easily accessible to the youth, such as the internet, schools, medical offices, and mental health settings. The extent to which those platforms are offering confidential care to adolescents is unknown.

Study Limitations and Future Directions

Several methodological limitations of this study need to be considered. First, the current sample is not representative of all urban African American adolescents and their caregivers. Given that the primary care clinic where most of the participating families were recruited is located in a city with high rates of poverty, offers free behavioral health service, funded by a community foundation, most of these families had reduced logistic barriers (e.g., financial and insurance obstacles) and easier access to mental health care. The estimate of mental health utilization rate is likely inflated, compared to the broader community. Also, these families willingly volunteered their time to participate in a psychological study, indicating that they may hold higher than average positive perceptions about and trust in psychologists and health care staff. Secondly, data collection ended earlier than planned due to limited research funding. As such, the relatively small sample size led to generally insufficient statistical power for the quantitative analyses in the current study. On the other hand, the SEM model in the current study could be interpreted with relatively more confidence, given that it replicated and extended on the finding of a previous study conducted with a similar sample. Furthermore, the qualitative outcomes on confidential mental health care and differential acceptability of treatment based on recipient characteristics should be treated as preliminary, because of the unique characteristics of where and how the sample was recruited, exploratory nature, and sample size. Replications with more rigorous methodology should be employed to replicate these qualitative findings. Additional samples such as middle income and suburbanites also require further study.

As mentioned earlier in this discussion section, future studies will likely benefit from employing more refined measures of mental health service use, such as delineating between medication services and psychotherapy without medication as well as the degree of caregiver involvement in services. Also, the use of more sophisticated methodology, including medical record review, data from therapists, diary assigned at baseline, or timeline followback method (Robinson et al., 2014), are recommended in order to collect more accurate data on the frequency and duration of mental health service use. Lastly, there is a clear lack of research data on time-limited mental health care without parent consent and knowledge as permitted by regional laws in the literature. An increase in attention from researcher and policy makers on confidential mental health care will likely enhance adolescent mental health utilization rates, especially among some underserved and vulnerable groups of adolescents who are particularly susceptible to confidentiality concerns, such as sexual minority youths and those with more internalizing emotional symptoms, suicidal risk, parent-child conflicts, and risky behaviors (Lehrer et al., 2007; Williams & Chapman, 2011).

Conclusions and Implications

In sum, the current study replicated and extended on my previous finding on caregivers serving as gatekeepers in terms of youth mental health service enrollment (Tsang et al., 2020). Remarkable rates of mental health service underutilization and strikingly low levels of awareness of confidential mental health care were found in the current sample of urban youth. The longitudinal design provided clarification on temporal relations such that caregiver's perception of youth mental health problems not only correlate with concurrent youth mental health service enrollment but also predicts future service utilization. The inclusion of adolescent's perception of youth mental health problems in the current dissertation also reinforced the previously drawn conclusion on differential predictive pattern of youth mental health problems on service enrollment based on informants. Contrary to hypothesis, caregiver's attitudes towards professional psychological help was not a significant predictor of future mental health service use among adolescents. In other words, holding positive attitudes did not facilitate mental health care enrollment, yet the absence of positive attitudes also did not hinder service use. Findings from the qualitative and quantitative analyses on mental health service use facilitators and barriers were mostly consistent with past literature, providing evidence for the generalizability of identified mental health care decision-making determinants to the underrepresented sample of urban families, who are also mostly African American and low-income.

The current study has potential implication for the dissemination and implementation of mental health service among urban adolescents. First of all, caregiver's perception of youth mental health problems was found to be the primary determinant of mental health care involvement, supporting the helping caregivers identify mental health problems and their impact on youth and parent functioning can likely promote service use. This conclusion is consistent with the "Gateway Provider Model" (Stiffman et al., 2004), which emphasized the importance of "gateway providers." Gateway providers are defined as adults who often direct adolescents to services and resources, such as parents, teachers, social workers, juvenile justice authorities, and medical providers. This model suggests that gateway providers are more likely to perceive adolescents' problems and connect them with services when the gateway providers have knowledge of a) accurate screening information and b) community resources available and feasible for the adolescent.

To address the first piece of essential information, it is recommended that the field continues to implement, increase and extend psychoeducation, screening, and other assessment/feedback models in order to help adolescents, their parents, and other gateway providers to identify and recognize mental health problems (Jorm, 2012). Secondly, Stiffman and colleagues (2004) noted that the lack of knowledge about available resources likely discourages gateway providers to identify problems. In other words, many adolescents' mental health problems can be overlooked or minimized even if their caregivers and other helping adults have sufficient mental health awareness. Advertising the availability of local services, making simplified procedures for accessing services, and making mental health services more readily available can likely enhance the chance of youth mental health problems being detected and treated. In addition, the current findings indicated that schools may be an effective site and agent for the dissemination of information regarding mental health care to both caregivers and youth. Given that most adolescents have near daily access to school, schools may be an ideal setting for the dissemination of confidential mental health services, potentially reducing transportation problems. Finally, despite the findings that adolescents' perception of their own mental health problems and their positive attitudes towards professional help did not influence service enrollment per se, these same adolescent factors have been shown to associate with clinical outcomes and symptom improvement over the course of therapy (Edbrooke-Childs et al., 2016; Hawley & Weisz, 2005). It is important that we continue to promote mental health literacy among youth, with the goal of preparing them for treatment and optimizing treatment gain, even though increased mental health literacy among youth may not have a direct effect on service enrollment. Future efforts also may benefit from continuing to address psychosocial and logistical barriers around confidential mental health care, such that adolescents can have improved access to the mental health care that they may need.

APPENDIX A – TABLES AND FIGURES

Table 1 *Descriptive Statistics of Demographic Information in Full Sample*

Variables (*n*)	Mean (*SD*)	Percentage (*n*)	Range
Youth Age (69)	15.13 (1.45)		13-17
Caregiver Age (69)	44.58 (7.92)		31-67
Youth Gender (69)			
Girls		60.9% (42)	
Boys		39.1% (27)	
Youth Race/Ethnicity (69)			
African-American/Black		81.2% (56)	
Caucasian/White		13.0% (9)	
Latino-American		1.4% (1)	
Others		4.4% (3)	
Caregiver Race/Ethnicity (69)			
African-American/Black		78.3% (54)	
Caucasian/White		11.6% (8)	
Latino-American		2.9% (2)	
Others		7.2% (5)	
Caregiver Participant (68)			
Biological Mother		92.6% (63)	
Biological Father		2.9% (2)	
Grandmother		1.5% (1)	
Aunt		1.5% (1)	
Other Family Members		1.5% (1)	
Yearly Income (68)			
$0 - 29,999		52.9% (36)	
$30,000 - 59,999		21.7% (15)	
$60,000 - 79,999		2.9% (2)	
$80,000 +		22.1% (15)	
Caregiver Relationship Status (68)			
Single/Divorced/Separated/Widowed		63.2% (43)	
Partnered		36.8% (25)	
Caregiver Education Level (69)			
No HS Diploma/GED		11.6% (8)	
HS Diploma/GED		29.0% (20)	
Some College		42.0% (29)	
Bachelor’s Degree		7.2% (5)	
Graduate Degree		10.1% (7)	
Days Between T1 and T2	209.10 (42.06)		176-366

Table 2 *Descriptive Statistics of Study Variables in Full Sample*

Variables (*n*)	T1 Mean (*SD*)	T2 Mean (*SD*)	T1 Range	T2 Range
Caregiver-Rated Youth Behavioral Problem				
Internalizing Problems (69)	56.72 (11.10)	54.42 (11.39)	33-85	33-86
Externalizing Problems (69)	53.77 (11.03)	51.83 (11.28)	29-80	34-76
Total Problems (69)	56.80 (11.56)	53.68 (12.13)	27-86	27-79
Youth-Rated Youth Behavioral Problem				
Internalizing Problems (69)	54.78 (9.72)	52.70 (10.13)	32-78	32-82
Externalizing Problems (69)	53.04 (10.58)	51.38 (10.32)	29-78	29-72
Total Problems (69)	55.38 (10.31)	53.54 (10.04)	30-80	26-73
Youth Functional Impairment				
Caregiver-Rated (69)	11.29 (9.00)	9.71 (8.30)	0-37	0-37
Youth-Rated (69)	11.23 (7.60)	10.14 (7.33)	0-30	0-25
Caregiver Strain (69)	5.31 (2.15)	4.91 (2.22)	3.00-12.74	3.00-12.72
Attitude towards Professional Psychological Help				
Caregiver-Rated (69)	33.79 (3.98)	34.41 (3.30)	21-40	25-40
Youth-Rated (69)	28.99 (4.96)	28.76 (4.80)	16-38	15-39
Social Stigma				
Caregiver-Rated (69)	10.04 (4.70)	9.68 (4.31)	5-20	5-20
Youth-Rated (69)	9.74 (3.62)	9.10 (3.48)	5-19	5-17
Self-Stigma				
Caregiver-Rated (69)	19.26 (6.43)	18.29 (6.27)	10-44	10-40
Youth-Rated (69)	22.49 (6.45)	21.22 (6.63)	11-41	10-39

Table 3 *Descriptive Statistics of Demographic Information in Sub-sample (No Siblings)*

Variables (*n*)	Mean (*SD*)	Percentage (*n*)	Range
Youth Age (56)	14.96 (1.44)		13-17
Caregiver Age (56)	44.45 (8.00)		31-67
Youth Gender (56)			
Girls		64.3% (36)	
Boys		35.7% (20)	
Youth Race/Ethnicity (56)			
African-American/Black		82.1% (46)	
Caucasian/White		12.5% (7)	
Latino-American		1.8% (1)	
Others		3.6% (2)	
Caregiver Race/Ethnicity (56)			
African-American/Black		76.8% (43)	
Caucasian/White		10.7% (6)	
Latino-American		3.6% (2)	
Others		8.93% (5)	
Caregiver Participant (55)			
Biological Mother		91.1% (51)	
Biological Father		1.8% (1)	
Grandmother		1.8% (1)	
Aunt		1.8% (1)	
Other Family Members		1.8% (1)	
Yearly Income (55)			
$0 - 29,999		56.4% (31)	
$30,000 - 59,999		20.0% (11)	
$60,000 - 79,999		3.6% (2)	
$80,000 +		20.0% (11)	
Caregiver Relationship Status (55)			
Single/Divorced/Separated/Widowed		65.5% (36)	
Partnered		34.5% (19)	
Caregiver Education Level (56)			
No HS Diploma/GED		12.5% (7)	
HS Diploma/GED		32.1% (18)	
Some College		37.5% (21)	
Bachelor's Degree		7.1% (4)	
Graduate Degree		10.7% (6)	

Table 4 *Descriptive Statistics of Study Variables in Sub-sample (No Siblings)*

Variables (*n*)	T1 Mean (*SD*)	T2 Mean (*SD*)	T1 Range	T2 Range
Caregiver-Rated Youth Behavioral Problem				
Internalizing Problems (56)	57.54 (10.23)	54.68 (11.28)	33-85	33-86
Externalizing Problems (56)	54.98 (10.96)	52.18 (11.02)	29-80	34-76
Total Problems (56)	58.18 (10.94)	54.38 (11.48)	37-86	29-79
Youth-Rated Youth Behavioral Problem				
Internalizing Problems (56)	55.16 (9.91)	53.02 (10.32)	32-78	32-82
Externalizing Problems (56)	54.27 (10.76)	52.39 (10.32)	29-78	29-72
Total Problems (56)	56.45 (10.37)	54.30 (9.97)	30-80	26-73
Youth Functional Impairment				
Caregiver-Rated (56)	12.07 (9.31)	10.19 (8.67)	0-37	0-37
Youth-Rated (56)	11.26 (7.70)	10.41 (7.77)	0-30	0-25
Caregiver Strain (56)	5.49 (2.27)	4.96 (2.31)	3.00-12.74	3.00-12.72
Attitude towards Professional Psychological Help				
Caregiver-Rated (56)	33.74 (4.24)	34.41 (3.40)	21-40	25-40
Youth-Rated (56)	29.25 (5.14)	29.19 (4.40)	16-38	21-39
Social Stigma				
Caregiver-Rated (56)	9.91 (4.84)	9.70 (4.43)	5-20	5-20
Youth-Rated (56)	9.82 (3.62)	9.32 (3.61)	5-19	5-17
Self-Stigma				
Caregiver-Rated (56)	19.36 (6.87)	18.43 (6.22)	10-44	10-40
Youth-Rated (56)	22.48 (6.44)	20.99 (6.67)	11-39	10-39

Table 5 *Mental Health Service Use in Full Sample*

Variables (n)	Caregiver Report	Youth Report	Either Caregiver/Youth Report
T1 Youth Mental Health Service Use			
Current (69)			
Yes	29.9% (20)	31.9% (22)	36.2% (25)
No	71.0% (49)	68.1% (47)	63.8% (44)
Ever (69)			
Yes	46.4% (32)	46.4% (32)	55.1% (38)
No	53.6% (37)	53.6% (37)	44.9% (31)
T2 Youth Mental Health Service Use			
Current (69)			
Yes	18.8% (13)	18.8% (13)	23.2% (16)
No	81.2% (56)	81.2% (56)	76.8% (53)
Since T1 (69)			
Yes	37.7% (26)	29.0% (20)	39.1% (27)
No	62.3% (43)	71.0% (49)	60.9% (42)

Table 6 *Mental Health Service Use in Sub-sample (No Siblings)*

Variables (n)	Caregiver Report	Youth Report	Either Caregiver/Youth Report
T1 Youth Mental Health Service Use			
Current (56)			
Yes	32.1% (18)	35.7% (20)	39.3% (22)
No	67.9% (38)	64.3% (36)	60.7% (34)
Ever (56)			
Yes	50% (28)	50% (28)	58.9% (33)
No	50% (28)	50% (28)	41.1% (23)
T2 Youth Mental Health Service Use			
Current (56)			
Yes	21.4% (12)	23.2% (13)	26.8% (15)
No	78.6% (44)	76.8% (43)	73.2% (41)
Since T1 (56)			
Yes	41.1% (23)	33.9% (19)	42.9% (24)
No	58.9% (33)	66.1% (37)	57.1% (32)

Table 7 *Correlation Matrix of Demographic Variables and Primary Study Variables at T1 in in Full Sample*

Variables (n)	Youth Age (69)	Youth Gender (69)	Youth Ethnicity (69)	Family Income (68)	Caregiver Age (69)	Caregiver Education (69)	Caregiver Relationship Status (68)
Caregiver-Rated Youth Behavioral Problem							
Internalizing Problems (69)	-.08	.12	.08	-.36**	-.12	-.28*	-.25*
Externalizing Problems (69)	-.37**	.06	-.04	-.33**	-.15	-.26*	-.22†
Youth-Rated Youth Behavioral Problem							
Internalizing Problems (69)	-.04	.05	.22†	-.06	-.18	.03	-.18
Externalizing Problems (69)	-.11	-.04	.12	-.06	-.16	-.10	.04
Youth Functional Impairment							
Caregiver-Rated (69)	-.27*	.09	.04	-.26*	-.13	-.25*	-.15
Youth-Rated (69)	.04	.03	.13	-.12	-.18	-.09	-.01
Caregiver Strain (69)	-.08	.03	.18	-.28*	.01	-.17	-.22†
Attitude towards Professional Psychological Help							
Caregiver-Rated (69)	-.09	-.11	.17	-.05	.12	.01	.12
Youth-Rated (69)	-.01	.24*	-.21†	-.06	-.08	-.10	-.24*
Social Stigma							
Caregiver-Rated (69)	.14	-.05	-.10	-.16	-.25*	.03	-.18
Youth-Rated (69)	.06	.13	-.15	-.08	-.10	-.08	-.08
Self-Stigma							
Caregiver-Rated (69)	-.08	.10	.07	-.06	-.07	.09	-.26*
Youth-Rated (69)	-.36**	-.08	.24†	-.13	-.05	-.08	-.04

Note. Gender was coded as a dichotomous variable with 1 = boy and 2 = girl. Ethnicity was coded as a dichotomous variable with 1 = African American and 2 = non-African American. 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. Education was coded as ordinal variable with 1 = No HS Diploma/GED; 2 = HS Diploma/GED; 3 = Some College; 4 = Bachelor Degree; 5 = Graduate Degree. Caregiver Relationship Status was coded as a dichotomous variable with 1 = Single/Divorced/Separated/Widowed; 2= Partnered.

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

Table 8 *Correlation Matrix of Demographic Variables and Primary Study Variables at T1 in Sub-sample (No Siblings)*

Variables (n)	Youth Age (56)	Youth Gender (56)	Youth Ethnicity (56)	Family Income (55)	Caregiver Age (56)	Caregiver Education (56)	Caregiver Relationship Status (55)
Caregiver-Rated Youth Behavioral Problem							
Internalizing Problems (56)	-.06	.04	0.08	-.32*	-.03	-.22	-.22
Externalizing Problems (56)	-.33*	-.01	0.01	-.25	-.15	-.24	-.13
Youth-Rated Youth Behavioral Problem							
Internalizing Problems (56)	-.01	-.03	.31*	.05	-.23†	.09	-.08
Externalizing Problems (56)	.01	-.13	.14	-.07	-.25†	-.15	.06
Youth Functional Impairment							
Caregiver-Rated (56)	-.21	.07	-.06	-.31*	-.04	-.24†	-.16
Youth-Rated (56)	.04	-.07	.28*	-.02	-.28*	-.10	.09
Caregiver Strain (56)	-.10	.03	.15	-.28*	.06	-.13	-.23†
Attitude towards Professional Psychological Help							
Caregiver-Rated (56)	-.01	-.16	.16	.04	.08	.05	.15
Youth-Rated (56)	.07	.26*	-.24†	-.05	.01	-.07	-.30*
Social Stigma							
Caregiver-Rated (56)	.06	-.02	.02	-.11	-.24†	.04	-.18
Youth-Rated (56)	.15	.11	-.13	-.05	-.19	-.12	-.05
Self-Stigma							
Caregiver-Rated (56)	-.03	.12	.10	-.12	-.06	.09	-.28*
Youth-Rated (56)	-.37**	-.18	.18	-.18	-.08	-.07	-.02

Note. Gender was coded as a dichotomous variable with 1 = boy and 2 = girl. Ethnicity was coded as a dichotomous variable with 1 = African American and 2 = non-African American. 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. Education was coded as ordinal variable with 1 = No HS Diploma/GED; 2 = HS Diploma/GED; 3 = Some College; 4 = Bachelor Degree; 5 = Graduate Degree. Caregiver Relationship Status was coded as a dichotomous variable with 1 = Single/Divorced/Separated/Widowed; 2= Partnered.

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

Table 9 *Correlation Matrix of Primary Study Variables at T1 in Full Sample*

Variables (*n*)	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Int – C (69)	.57**	.85**	.40**	.17	.35**	.71**	.30*	.51**	.11	.15	-.02	.07	-.02	.00
2. Ext – C (69)	—	.83**	.27*	.38**	.39**	.71**	.39**	.43**	.08	.15	.10	.23†	.00	.08
3. Tot – C (69)	—	—	.36**	.26*	.40**	.83**	.33**	.59**	.18	.21†	.04	.13	-.01	.08
4. Int – Y (69)	—	—	—	.51**	.83**	.27*	.68**	.15	.01	.00	-.05	.18	-.01	.20†
5. Ext – Y (69)	—	—	—	—	.84**	.20†	.62**	.03	.06	-.10	-.24*	.36**	-.07	.15
6. Tot – Y (69)	—	—	—	—	—	.30*	.72**	.16	.06	-.04	-.13	.30**	.00	.17
7. FI – C (69)	—	—	—	—	—	—	.30*	.59**	.20	.18	.05	.09	.04	-.01
8. FI – Y (69)	—	—	—	—	—	—	—	.20†	.08	-.07	-.03	.32**	-.16	.15
9. CS (69)	—	—	—	—	—	—	—	—	.16	-.01	.25*	-.10	.17	.11
10. ATPPH – C (69)	—	—	—	—	—	—	—	—	—	.00	-.12	-.07	-.11	.03
11. ATPPH – Y (69)	—	—	—	—	—	—	—	—	—	—	.01	.06	.04	-.33**
12. Soc S – C (69)	—	—	—	—	—	—	—	—	—	—	—	-.05	.32**	-.06
13. Soc S – Y (69)	—	—	—	—	—	—	—	—	—	—	—	—	-.01	.05
14. Self S – C (69)	—	—	—	—	—	—	—	—	—	—	—	—	—	.10
15. Self S – Y (69)	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Note. Int = Internalizing Problems; Ext = Externalizing Problems; Tot = Total Problems; FI = Functional Impairment; CS = Caregiver Strain; ATPPH = Attitude towards Professional Psychological Help; Soc S = Social Stigma; Self S = Self-Stigma; C = Caregiver report; Y = Youth report.

Table 10 *Correlation Matrix of Primary Study Variables at T1 in Sub-sample (No Siblings)*

Variables (*n*)	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Int – C (56)	.53**	.84**	.34*	.18	.31*	.68**	.31*	.50**	.16	.15	.03	.04	.01	-.12
2. Ext – C (56)	—	.82**	.19	.37**	.33*	.72**	.39**	.47**	.06	.17	.16	.19	-.01	.02
3. Tot – C (56)	—	—	.27*	.22	.31*	.83**	.33*	.61**	.19	.23†	.14	.07	-.01	-.01
4. Int – Y (56)	—	—	—	.53**	.83**	.24†	.66**	.05	.01	.04	-.02	.11	.04	.21
5. Ext – Y (56)	—	—	—	—	.85**	.19	.70**	.05	.01	-.13	-.17	.29*	-.11	.14
6. Tot – Y (56)	—	—	—	—	—	.27*	.77**	.13	.05	-.06	-.07	.22	.02	.18
7. FI – C (56)	—	—	—	—	—	—	.38**	.61**	.23†	.17	.16	.09	.03	-.12
8. FI – Y (56)	—	—	—	—	—	—	—	.20	.09	-.02	-.05	.20	-.15	.16
9. CS (56)	—	—	—	—	—	—	—	—	.16	-.03	.27*	-.04	.25†	.13
10. ATPPH – C (56)	—	—	—	—	—	—	—	—	—	.02	-.04	-.14	-.18	-.03
11. ATPPH – Y (56)	—	—	—	—	—	—	—	—	—	—	-.02	.08	.03	-.35**
12. Soc S – C (56)	—	—	—	—	—	—	—	—	—	—	—	.01	.38**	.05
13. Soc S – Y (56)	—	—	—	—	—	—	—	—	—	—	—	—	-.05	.04
14. Self S – C (56)	—	—	—	—	—	—	—	—	—	—	—	—	—	.11
15. Self S – Y (56)	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Note. Int = Internalizing Problems; Ext = Externalizing Problems; Tot = Total Problems; FI = Functional Impairment; CS = Caregiver Strain; ATPPH = Attitude towards Professional Psychological Help; Soc S = Social Stigma; Self S = Self-Stigma; C = Caregiver report; Y = Youth report.

Table 11 *Correlation Matrix of Primary Study Variables at T2 in Full Sample*

Variables (*n*)	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Int – C (69)	.68**	.85**	.44**	.26*	.43**	.72**	.48**	.55**	.23†	.15	.03	.03	-.08	.01
2. Ext – C (69)	—	.90**	.32**	.51**	.46**	.75**	.50**	.58**	.31*	.12	.02	.16	-.07	.05
3. Tot – C (69)	—	—	.46**	.44**	.55**	.85**	.56**	.66**	.32**	.17	.09	.12	-.04	-.02
4. Int – Y (69)	—	—	—	.44**	.84**	.35**	.64**	.23†	.24*	-.03	.06	.12	.08	.17
5. Ext – Y (69)	—	—	—	—	.78**	.39**	.67**	.27*	.25*	-.02	-.02	.26*	.01	.18
6. Tot – Y (69)	—	—	—	—	—	.47**	.75**	.34**	.33**	.00	.04	.18	.01	.15
7. FI – C (69)	—	—	—	—	—	—	.55**	.66**	.26*	.15	.18	-.04	.10	.06
8. FI – Y (69)	—	—	—	—	—	—	—	.30*	.13	.06	.05	.10	.03	.19
9. CS (69)	—	—	—	—	—	—	—	—	.23†	.04	.16	.03	.10	.01
10. ATPPH – C (69)	—	—	—	—	—	—	—	—	—	.13	-.29*	-.02	-.35**	-.09
11. ATPPH – Y (69)	—	—	—	—	—	—	—	—	—	—	-.14	-.07	-.17	-.36**
12. Soc S – C (69)	—	—	—	—	—	—	—	—	—	—	—	.08	.38**	.02
13. Soc S – Y (69)	—	—	—	—	—	—	—	—	—	—	—	—	.02	.29*
14. Self S – C (69)	—	—	—	—	—	—	—	—	—	—	—	—	—	.05
15. Self S – Y (69)	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Note. Int = Internalizing Problems; Ext = Externalizing Problems; Tot = Total Problems; FI = Functional Impairment; CS = Caregiver Strain; ATPPH = Attitude towards Professional Psychological Help; Soc S = Social Stigma; Self S = Self-Stigma; C = Caregiver report; Y = Youth report.

Table 12 *Correlation Matrix of Primary Study Variables at T2 in Sub-sample (No Siblings)*

Variables (*n*)	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Int – C (56)	.68**	.85**	.40**	.22†	.39**	.71**	.46**	.55**	.23†	.14	.00	-.02	-.04	.03
2. Ext – C (56)	—	0.90**	.24†	.48**	.41**	.78**	.52**	.57**	.30*	.08	.06	.10	-.03	.07
3. Tot – C (56)	—	—	.42**	.38**	.50**	.87**	.57**	.69**	.32*	.16	.13	.05	.02	.01
4. Int – Y (56)	—	—	—	.41**	.85**	.36**	.65**	.21	.24†	-.10	.09	.02	.14	.19
5. Ext – Y (56)	—	—	—	—	.76**	.37**	.71**	.27*	.17	-.07	.04	.19	.04	.23†
6. Tot – Y (56)	—	—	—	—	—	.47**	.78**	.34*	.28*	-.06	.12	.07	.11	.17
7. FI – C (56)	—	—	—	—	—	—	.54**	.69**	.28*	.18	.21	-.07	.14	.07
8. FI – Y (56)	—	—	—	—	—	—	—	.30*	.13	.01	.08	.07	.04	.23†
9. CS (56)	—	—	—	—	—	—	—	—	.27*	.04	.23†	-.02	.11	.00
10. ATPPH – C (56)	—	—	—	—	—	—	—	—	—	.17	-.22	-.08	-.28*	-.15
11. ATPPH – Y (56)	—	—	—	—	—	—	—	—	—	—	-.19	-.17	-.20	-.31*
12. Soc S – C (56)	—	—	—	—	—	—	—	—	—	—	—	.10	.36**	.05
13. Soc S – Y (56)	—	—	—	—	—	—	—	—	—	—	—	—	.05	.33*
14. Self S – C (56)	—	—	—	—	—	—	—	—	—	—	—	—	—	.10
15. Self S – Y (56)	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Note. Int = Internalizing Problems; Ext = Externalizing Problems; Tot = Total Problems; FI = Functional Impairment; CS = Caregiver Strain; ATPPH = Attitude towards Professional Psychological Help; Soc S = Social Stigma; Self S = Self-Stigma; C = Caregiver report; Y = Youth report.

Table 13 *Changes from T1 to T2 for Mental Health Symptoms, Impairment, and Caregiver Strain in Full Sample*

Variables (n)	T1-T2 Correlation	Paired T-test Bootstrap *t*	T1 Mean (*SD*)	T2 Mean (*SD*)	Cohen's *d*
Caregiver-Rated					
Internalizing Problems (69)	.77**	2.42*	56.72 (11.10)	54.42 (11.39)	.30
Externalizing Problems (69)	.77**	2.06*	53.77 (11.03)	51.83 (11.28)	.25
Total Problems (69)	.85**	3.86†	56.80 (11.56)	53.68 (12.13)	.49
Functional Impairment (69)	.72**	1.95†	11.29 (9.00)	9.71 (8.30)	.24
Caregiver Strain (69)	.68**	1.91†	5.31 (2.15)	4.91 (2.22)	.23
Youth-Rated					
Internalizing Problems (69)	.70**	2.16*	54.78 (9.72)	52.70 (10.13)	.27
Externalizing Problems (69)	.79**	2.01*	53.04 (10.58)	51.38 (10.32)	.25
Total Problems (69)	.76**	2.13*	55.38 (10.31)	53.54 (10.04)	.26
Functional Impairment (69)	.61**	1.37	11.23 (7.60)	10.14 (7.33)	.17

Note. 1000 bootstrap samples were used for paired sample t-tests.
$^\dagger p < .10$, $^*p < .05$, $^{**} p < .01$

Table 14 *Changes from T1 to T2 for Mental Health Symptoms, Impairment, and Caregiver Strain in Sub-sample (No Siblings)*

Variables (n)	T1-T2 Correlation	Paired T-test Bootstrap *t*	T1 Mean (*SD*)	T2 Mean (*SD*)	Cohen's *d*
Caregiver-Rated					
Internalizing Problems (56)	.73**	2.77*	57.54 (10.23)	54.68 (11.28)	.36
Externalizing Problems (56)	.75**	2.72*	54.98 (10.96)	52.18 (11.02)	.36
Total Problems (56)	.84**	4.58*	58.18 (10.94)	54.38 (11.48)	.59
Functional Impairment (56)	.69**	1.94†	12.07 (9.31)	10.19 (8.67)	.26
Caregiver Strain (56)	.68**	2.20*	5.49 (2.27)	4.96 (2.31)	.29
Youth-Rated					
Internalizing Problems (56)	.66**	1.96†	55.16 (9.91)	53.02 (10.32)	.26
Externalizing Problems (56)	.78**	2.03*	54.27 (10.76)	52.39 (10.32)	.27
Total Problems (56)	.72**	2.19*	56.45 (10.37)	54.30 (9.97)	.28
Functional Impairment (56)	.62**	0.94	11.26 (7.70)	10.41 (7.77)	.13

Note. 1000 bootstrap samples were used for paired sample t-tests.
†$p < .10$, *$p < .05$, ** $p < .0$

Table 15 *McNemar's Tests on Changes in Mental Health Service Use Status from T1 to T2*

	X^2	*p*	Number of Youth
Full Sample (*N* = 69)	4.27	.04	
Received MH Service at both T1 and T2			13
Did Not Receive MH Service			41
Received MH Service at T1 but not T2			12
Received MH Service at T2 but not T1			3
Sub-sample (No Siblings) (*n* = 56)	3.77	.09	
Received MH Service at both T1 and T2			12
Did Not Receive MH Service			31
Received MH Service at T1 but not T2			10
Received MH Service at T2 but not T1			3

Table 16 *Summary of Moderated Regression Analyses in Full Sample*

Variables	*B*	*SE B*	*t*	R^2
T2 Internalizing Problems – C				.60**
T1 Internalizing Problems	.76	.12	6.37**	
MH Service Use	1.25	2.10	.59	
T1 X Service Use	.02	.19	.12	
T2 Externalizing Problems – C				.60**
T1 Externalizing Problems	.69	.12	5.87**	
MH Service Use	1.45	2.21	.66	
T1 X Service Use	.14	.20	.71	
T2 Functional Impairment – C				.53**
T1 Functional Impairment	.74	.13	5.80**	
MH Service Use	-.03	.09	-.34	
T1 X Service Use	.05	.22	.25	
T2 Caregiver Strain – C				.41**
T1 Caregiver Strain	1.21	.32	3.83**	
MH Service Use	.04	.04	1.08	
T1 X Service Use	.39	.50	.79	
T2 Internalizing Problems – Y				.53**
T1 Internalizing Problems	.67	.11	6.08**	
MH Service Use	4.34	1.90	2.29*	
T1 X Service Use	-.02	.21	-.10	
T2 Externalizing Problems – Y				.63**
T1 Externalizing Problems	.77	.09	8.14**	
MH Service Use	.96	1.74	.55	
T1 X Service Use	-.03	.17	-.20	
T2 Functional Impairment – Y				.41**
T1 Functional Impairment	.55	.13	4.38**	
MH Service Use	.22	.12	1.88†	
T1 X Service Use	-.03	.20	-.16	
T2 Positive Attitude – C				.27**
T1 Positive Attitude	2.18	.60	3.67**	
MH Service Use	.95	.75	1.27	
T1 X Service Use	-.48	1.00	-.48	
T2 Social Stigma – C				.32**
T1 Social Stigma	.12	.03	3.68**	

MH Service Use	.04	.04	1.10	
T1 X Service Use	.04	.05	.92	
T2 Self-stigma – C				.17**
T1 Self-stigma	.08	.03	2.79**	
MH Service Use	.02	.03	.71	
T1 X Service Use	.00	.05	.05	
T2 Positive Attitude – Y				.20**
T1 Positive Attitude	.37	.12	3.02**	
MH Service Use	.96	1.10	.87	
T1 X Service Use	.13	.26	.51	
T2 Social Stigma – Y				.20**
T1 Social Stigma	3.36	.93	3.60**	
MH Service Use	.38	.81	.46	
T1 X Service Use	-1.97	1.40	-1.41	
T2 Self-stigma – Y				.35**
T1 Self-stigma	.69	.14	5.02**	
MH Service Use	.05	.14	.34	
T1 X Service Use	-.17	.21	-.79	

Note. All continuous predictors were centered before being entered into the regression.

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

Table 17 *Summary of Moderated Regression Analyses in Sub-sample (No Siblings)*

Variables	*B*	*SE B*	*t*	R^2
T2 Internalizing Problems – C				.53**
T1 Internalizing Problems	.72	.17	4.29**	
MH Service Use	1.68	2.51	.67	
T1 X Service Use	.07	.24	.29	
T2 Externalizing Problems – C				.57**
T1 Externalizing Problems	.62	.14	4.56**	
MH Service Use	.86	2.33	.37	
T1 X Service Use	.24	.21	1.14	
T2 Functional Impairment – C				.50**
T1 Functional Impairment	.65	.16	4.07**	
MH Service Use	-.13	.11	-1.21	
T1 X Service Use	.39	.27	1.44	
T2 Caregiver Strain – C				.47**
T1 Caregiver Strain	.27	.07	4.01**	
MH Service Use	.01	.02	.42	
T1 X Service Use	.09	.10	.84	
T2 Internalizing Problems – Y				.49**
T1 Internalizing Problems	.60	.13	4.67**	
MH Service Use	4.66	2.19	2.12*	
T1 X Service Use	.05	.24	.19	
T2 Externalizing Problems – Y				.60**
T1 Externalizing Problems	.72	.11	6.64**	
MH Service Use	-.26	1.94	-.13	
T1 X Service Use	.08	.19	.40	
T2 Functional Impairment – Y				.42**
T1 Functional Impairment	.90	.23	3.99**	
MH Service Use	.21	.13	1.54	
T1 X Service Use	.04	.37	.10	
T2 Positive Attitude – C				.29**
T1 Positive Attitude	1.98	.62	3.17**	
MH Service Use	1.28	.63	1.55	
T1 X Service Use	-.01	1.10	-.01	
T2 Social Stigma – C				.33**
T1 Social Stigma	.12	.04	3.13**	
MH Service Use	.05	.02	1.23	

T1 X Service Use	.05	.06	.92	
T2 Self-stigma – C				.16*
T1 Self-stigma	.07	.03	2.38*	
MH Service Use	.02	.03	.60	
T1 X Service Use	.01	.05	.17	
T2 Positive Attitude – Y				.20**
T1 Positive Attitude	.32	.12	2.57*	
MH Service Use	.07	1.11	.06	
T1 X Service Use	.22	.25	.89	
T2 Social Stigma – Y				.16*
T1 Social Stigma	.56	.19	2.89**	
MH Service Use	.03	.94	.03	
T1 X Service Use	-.36	.26	-1.37	
T2 Self-stigma – Y				.35**
T1 Self-stigma	.67	.16	4.22**	
MH Service Use	1.03	1.51	.68	
T1 X Service Use	-.14	.23	-.59	

Note. All continuous predictors were centered before being entered into the regression.

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

Table 18 *Caregiver Youth Agreement for T1 Mental Health Symptoms, Impairment, and Attitude in Full Sample*

Variables (n)	C-Y Correlation	Paired T-test Bootstrap *t*	Caregiver Mean (*SD*)	Youth Mean (*SD*)	Cohen's *d*
Internalizing Problems (69)	.40**	1.36	56.72 (11.10)	54.78 (9.72)	.17
Externalizing Problems (69)	.38**	.49	53.77 (11.03)	53.04 (10.58)	.06
Functional Impairment (69)	.31**	.05	.87 (.69)	.86 (.58)	.01
Attitude towards Professional Help (69)	-.01	6.33**	33.79 (3.98)	28.99 (4.96)	.75

Note. 1000 bootstrap samples were used for paired sample t-tests.
$^{\dagger}p < .10$, $*p < .05$, $** p < .0$

Table 19 *Caregiver Youth Agreement for T1 Mental Health Symptoms, Impairment, and Attitude in Sub-sample (No Siblings)*

Variables (n)	C-Y Correlation	Paired T-test Bootstrap *t*	Caregiver Mean (*SD*)	Youth Mean (*SD*)	Cohen's *d*
Internalizing Problems (56)	.34*	1.58	57.54 (10.23)	55.16 (9.91)	.21
Externalizing Problems (56)	.37**	.45	54.98 (10.96)	54.27 (10.76)	.06
Functional Impairment (56)	.37**	.63	.93 (.72)	.87 (.59)	.08
Attitude towards Professional Help (56)	.01	5.03**	33.74 (4.24)	29.25 (5.14)	.68

Note. 1000 bootstrap samples were used for paired sample t-tests.
$^{\dagger}p < .10$, $^{*}p < .05$, $^{**}\ p < .0$

Table 20 *Standardized and Unstandardized Coefficients for CFA Model in Full Sample*

Observed variable	Latent construct	*B*	*SE B*	β
Internalizing Problems	Caregiver's Perception	1.00		.77**
Externalizing Problems	Caregiver's Perception	.98	.15	.76**
Functional Impairment	Caregiver's Perception	.05	.01	.93**
Caregiver Strain	Caregiver's Perception	.01	.001	.63**
Internalizing Problems	Youth's Perception	1.00		.75**
Externalizing Problems	Youth's Perception	.99	.15	.68**
Functional Impairment	Youth's Perception	.07	.01	.91**

Note. StdYX Standardization

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

Table 21 *Standardized and Unstandardized Coefficients for CFA Model in Sub-sample (No Siblings)*

Observed variable	Latent construct	*B*	*SE B*	β
Internalizing Problems	Caregiver's Perception	1.00		.72**
Externalizing Problems	Caregiver's Perception	1.13	.20	.76**
Functional Impairment	Caregiver's Perception	.05	.01	.94**
Caregiver Strain	Caregiver's Perception	.01	.003	.64**
Internalizing Problems	Youth's Perception	1.00		.69**
Externalizing Problems	Youth's Perception	1.14	.17	.72**
Functional Impairment	Youth's Perception	.05	.01	.97**

Note. StdYX Standardization

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

Table 22 *Standardized and Unstandardized Coefficients for SEM Model in Full Sample*

Measurement Model				
Observed variable	Latent construct	*B*	*SE B*	β
Internalizing Problems	Caregiver's Perception	1.00		.73**
Externalizing Problems	Caregiver's Perception	1.16	.26	.85**
Functional Impairment	Caregiver's Perception	.08	.02	.91**
Caregiver Strain	Caregiver's Perception	.15	.04	.57**
Internalizing Problems	Youth's Perception	1.00		.71**
Externalizing Problems	Youth's Perception	1.03	.29	.64**
Functional Impairment	Youth's Perception	.08	.02	.95**
Structural Model				
Predictor variable	Outcome variable	*B*	*SE B*	β
Caregiver's Perception	Current Service Utilization	.06	.02	.48**
Caregiver's Attitude	Current Service Utilization	.03	.04	.11
Youth's Perception	Current Service Utilization	.02	.02	.12
Youth's Attitude	Current Service Utilization	.02	.03	.09

Note. StdY Standardization

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

Table 23 *Standardized and Unstandardized Coefficients for SEM Model in Sub-sample (No Siblings)*

Measurement Model				
Observed variable	Latent construct	*B*	*SE B*	β
Internalizing Problems	Caregiver's Perception	1.00		.71**
Externalizing Problems	Caregiver's Perception	1.23	.33	.81**
Functional Impairment	Caregiver's Perception	.10	.02	.98**
Caregiver Strain	Caregiver's Perception	.17	.05	.55**
Internalizing Problems	Youth's Perception	1.00		.63**
Externalizing Problems	Youth's Perception	1.21	.38	.70**
Functional Impairment	Youth's Perception	.10	.03	1.04**
Structural Model				
Predictor variable	Outcome variable	*B*	*SE B*	β
Caregiver's Perception	Current Service Utilization	.75	.25	.54**
Caregiver's Attitude	Current Service Utilization	.09	.45	.04
Youth's Perception	Current Service Utilization	.16	.25	.10
Youth's Attitude	Current Service Utilization	.20	.34	.10

Note. StdY Standardization

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

Table 24 *Descriptive Statistics of Therapy/Counseling Service Nonuse, Continuation, and Termination*

Variables (n)	Caregiver Report	Youth Report
Service Nonuse	n = 34	n = 42
No Mental/Behavioral Health Problems	88.2% (30)	76.2% (32)
Manageable Without Help	61.8% (21)	52.4% (22)
Informal Help (e.g., Friends, Religious Leaders)	70.6% (24)	31.0% (13)
Manageable with Psychotropic Medication	2.9% (1)	0.0% (0)
Financial Concerns	11.8% (4)	2.4% (1)
Transportation Concerns	14.7% (5)	2.4% (1)
Scheduling/Time Concerns	8.8% (3)	14.3% (6)
Admin/System Concerns (e.g., Lack of Insurance, Paperwork)	5.9% (2)	0.0% (0)
Service Unavailability	5.9% (2)	0.0% (0)
Stigma/Discouraged by Others	5.9% (2)	0.0% (0)
Procrastination	2.9% (1)	4.8% (2)
Others - Unspecified	8.8% (3)	0.0% (0)
Service Continuation	n = 13	n = 13
Unmet Therapy Goals/Unresolved Problems	100.0% (13)	69.2% (9)
Perceived Helpfulness	92.3% (12)	76.9% (10)
Enjoyment	61.5% (8)	38.5% (5)
Encouraged by Others	30.8% (4)	30.8% (4)
Others - Gain Maintenance	7.7% (1)	15.4% (2)
Others - Therapy is Good for Everyone	7.7% (1)	0.0% (0)
Others - Family Psychiatric History	7.7% (1)	0.0% (0)
Others - Cannot Determine	15.4% (2)	0.0% (0)
Others - Unspecified	0.0% (0)	15.4% (2)
Service Termination	n = 22	n = 11
Therapy Goals Met/Problem Resolved	59.1% (13)	36.4% (4)
Perceived Unhelpfulness of Therapy	22.7% (5)	36.4% (4)
Manageable Without Help	40.9% (9)	27.3% (3)
Informal Help (e.g., Friends, Religious Leaders)	36.4% (8)	18.2% (2)
Manageable with Psychotropic Medication	4.5% (1)	18.2% (2)
Financial Concerns	13.6% (3)	9.1% (1)
Transportation Concerns	18.2% (4)	9.1% (1)
Scheduling/Time Concerns	27.3% (6)	9.1% (1)
Admin/System Concerns (e.g., Lack of Insurance, Paperwork)	9.1% (2)	9.1% (1)
Stigma/Discouraged by Others	4.5% (1)	0.0% (0)
Others - Child Life Events (e.g., Went to College)	4.5% (1)	0.0% (0)
Others - Therapist Unreachable	9.1% (2)	0.0% (0)
Others - Therapist Left & Family did not Want to Start Over	4.5% (1)	0.0% (0)
Others - Perceived Unhelpfulness of Therapist	0.0% (0)	9.1% (1)
Others - Case Closed Against Will by Agency	0.0% (0)	9.1% (1)
Others - Prefer Not to Take Psychotropic Medication	0.0% (0)	9.1% (1)

Table 25 *Pairwise Wilcoxon Signed-Rank Tests with Bonferroni Adjustment on Caregiver Acceptance of Different Types of Mental Health Services*

Pairs	*Z*	*p*	Bonferroni-adjusted α
Youth vs Child	-3.36	.001*	.008
Youth vs Adult	-.30	.76	
Youth vs Parent	-.74	.46	
Child vs Adult	-2.71	.007*	
Child vs Parent	-1.37	.17	
Adult vs Parent	-1.10	.27	

Note. Child = age 12 and under; Youth = age 13-17; Adult = adult receiving therapy for own problems; Parent = adults receiving therapy for their child(ren)'s problems.

*$p < .008$

Table 26 *Descriptive Statistics of Awareness about Confidential Outpatient Mental Health Care*

Variables (n)	Caregiver Report	Youth Report
Know about Confidential MH Care	n = 56	n = 69
Yes	21.4% (12)	14.5% (10)
No	78.6% (44)	85.5% (59)
Dyadic Knowledge about Confidential MH Care	Dyad (n = 69)	
Both caregiver and adolescent know	4.3% (3)	
Either caregiver or adolescent knows	24.6% (17)	
Neither caregiver nor adolescent know	71.0% (49)	
Source of Knowledge about Confidential MH Care	n = 9	n = 10
School/Child's School	22.2% (2)	40.0% (4)
Mental Health Provider/Agency (Non-School)	22.2% (2)	10.0% (1)
Medical Office	11.1% (1)	10.0% (1)
Health Fair	11.1% (1)	0.0% (0)
Research Participated In	11.1% (1)	0.0% (0)
Parent's Workplace	11.1% (1)	0.0% (0)
Media	11.1% (1)	10.0% (1)
Friends/Family	0.0% (0)	40.0% (4)
Cannot Determine	0.0% (0)	0.0% (0)
Know about How to Access Confidential MH Care	--	n = 69
Yes		17.4% (12)
No		82.6% (57)
How to Access Confidential MH Care	--	n = 12
School		25.0% (3)
Child's Own Mental Health Provider		16.7% (2)
Medical Office		25.0% (3)
Internet		41.7% (5)
Cannot Determine		8.3% (1)
Valence of Opinion About Confidential MH Care	n = 56	--
Positive	69.6% (39)	
Negative	10.7% (6)	
Mixed (Both Positive and Negative)	7.1% (4)	
Indifference (No Opinion/Neither Positive nor Negative)	12.5% (7)	

Figure 1 *Change in youth mental health service status from T1 to T2 in Full Sample*

Figure 2 *Change in youth mental health service status from T1 to T2 in Sub-sample (No Siblings)*

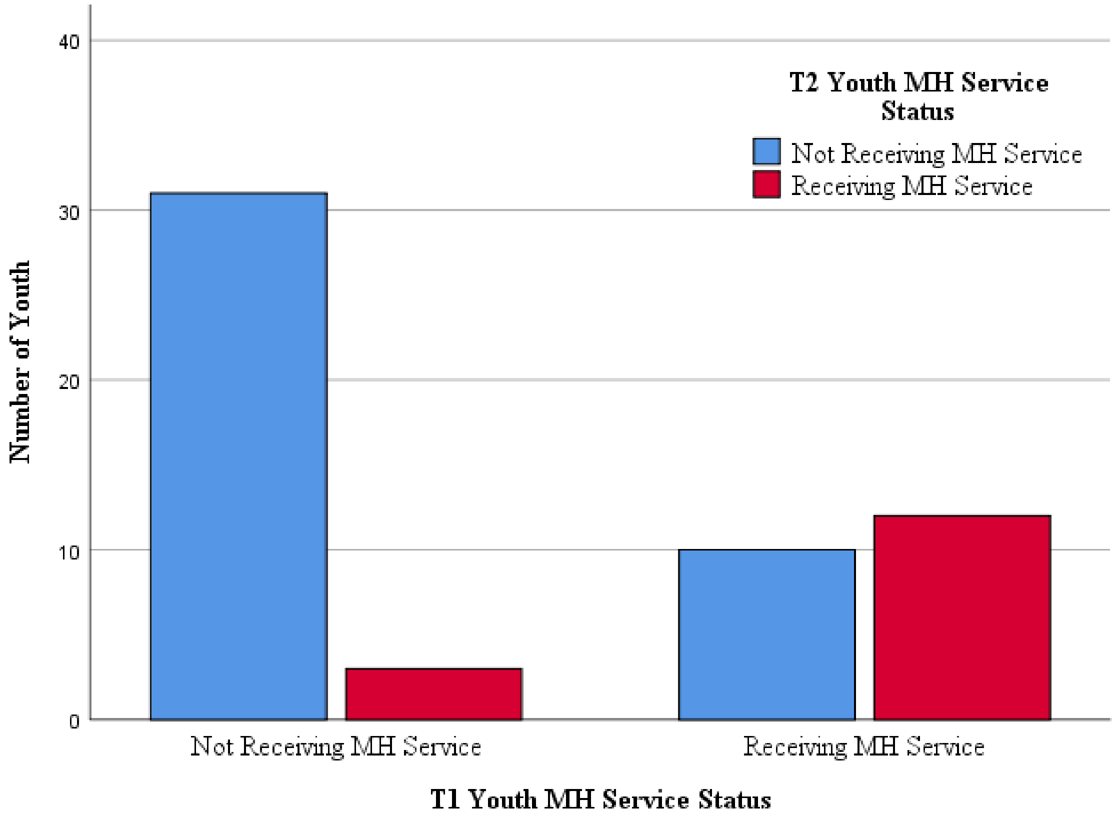
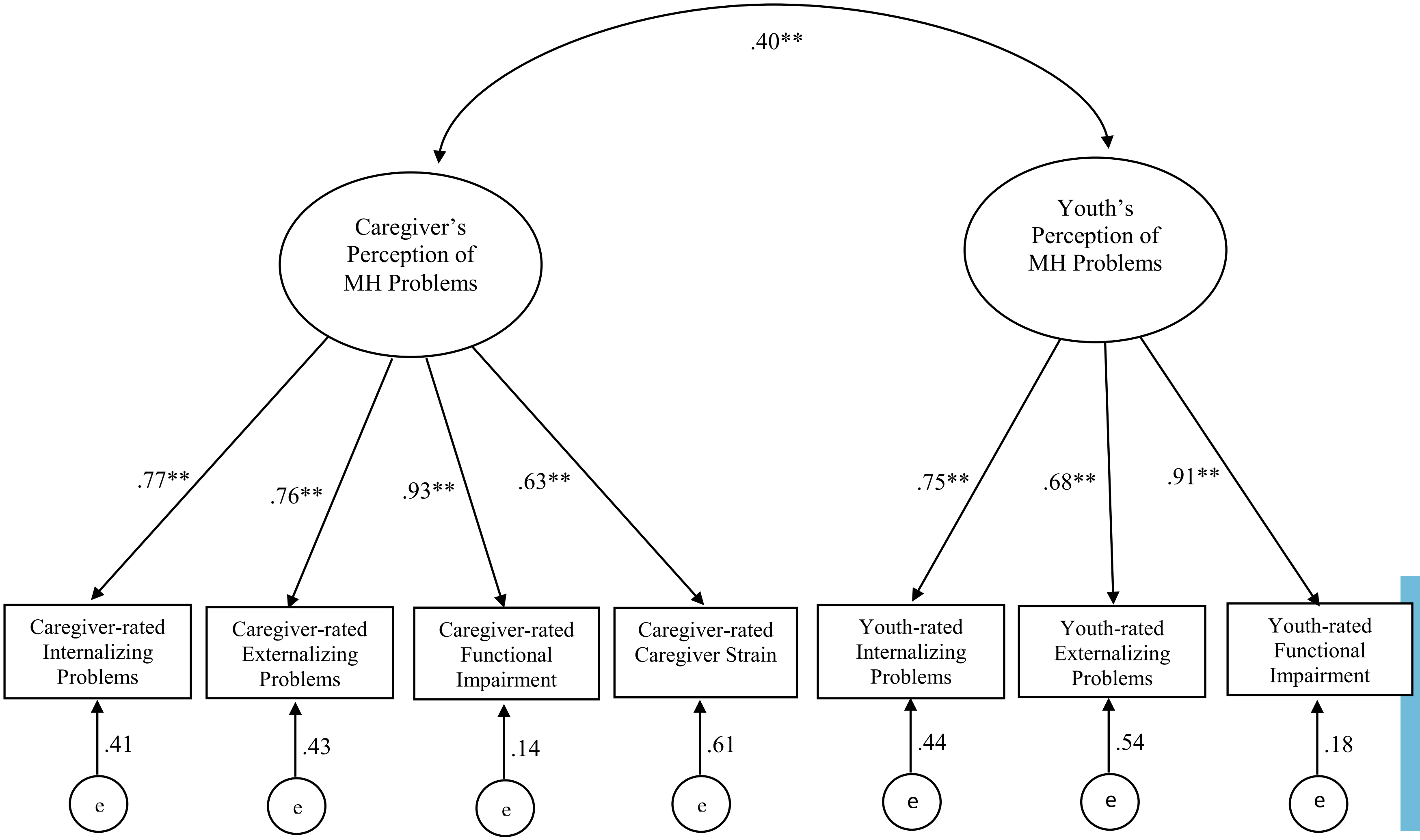


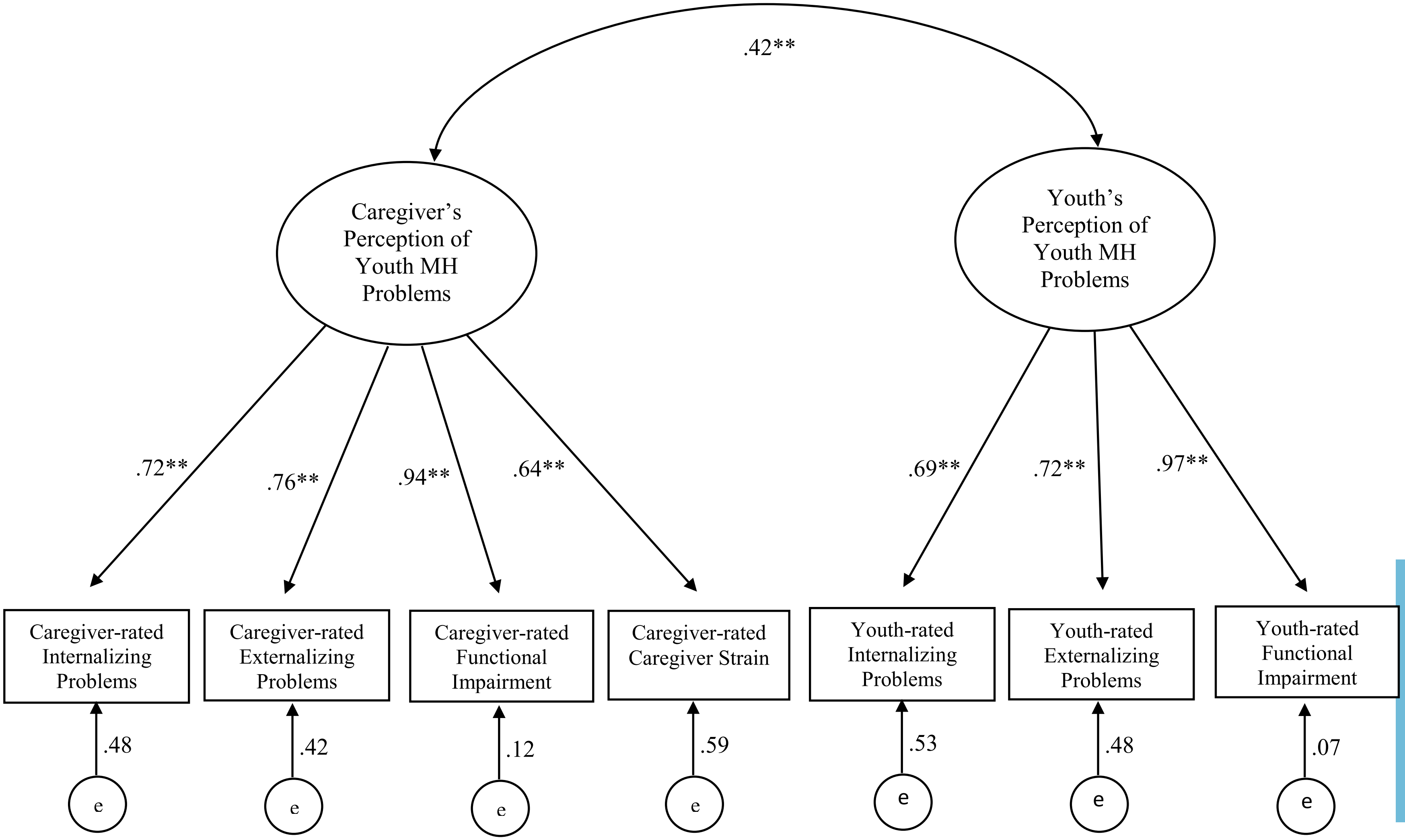
Figure 3 *Results for the CFA Model with StdYX Standardization in Full Sample*



Note. N =69, *df* = 13, χ^2 = 20.75, *p* = .08, CFI = .97, TLI = .94, RMSEA = .09 (90% CI = .00-.17), e = error.

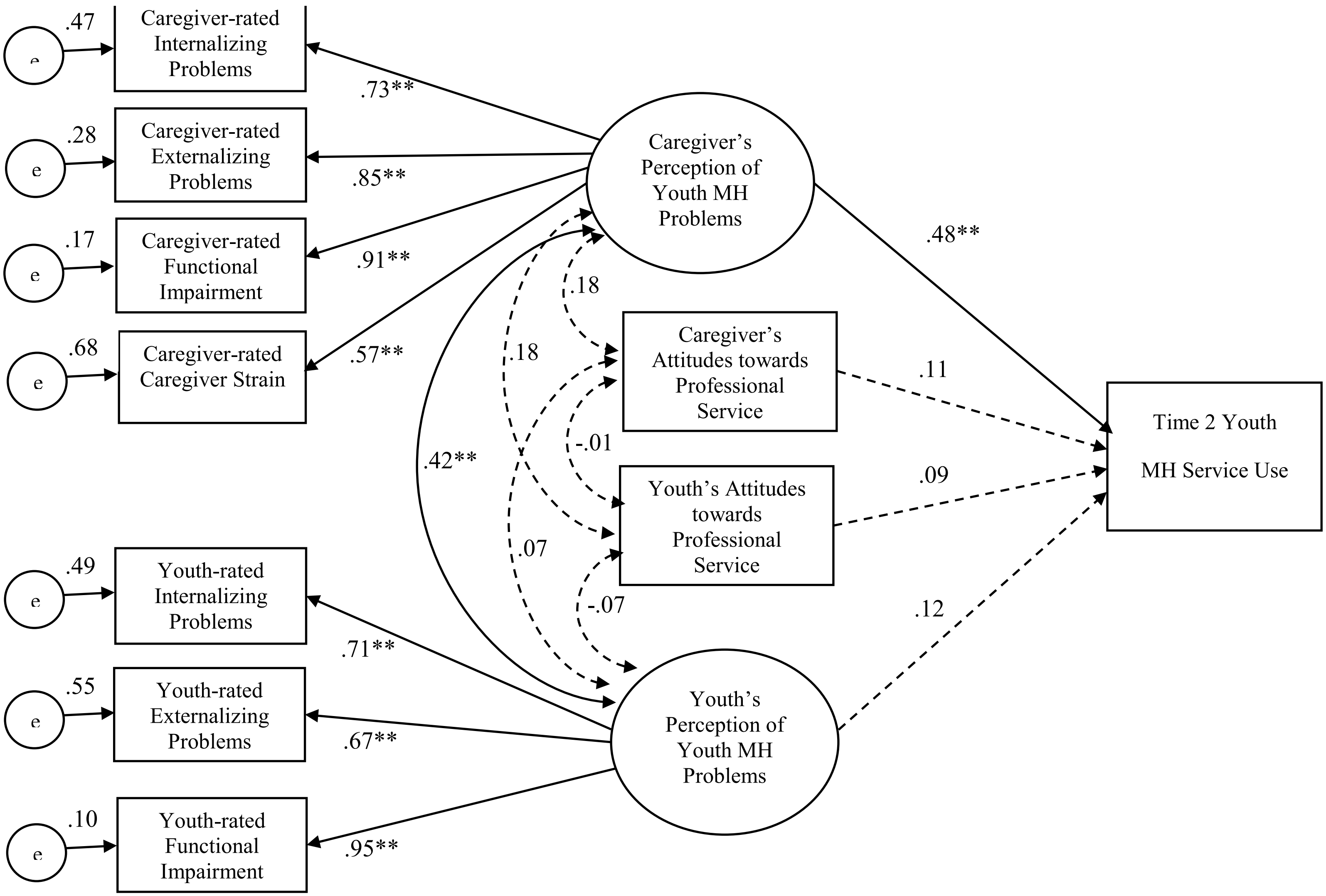
$^{\dagger}p < .10$, $^{*}p < .05$, $^{**}p < .01$

Figure 4 *Results for the CFA Model with StdYX Standardization in in Sub-sample (No Siblings)*



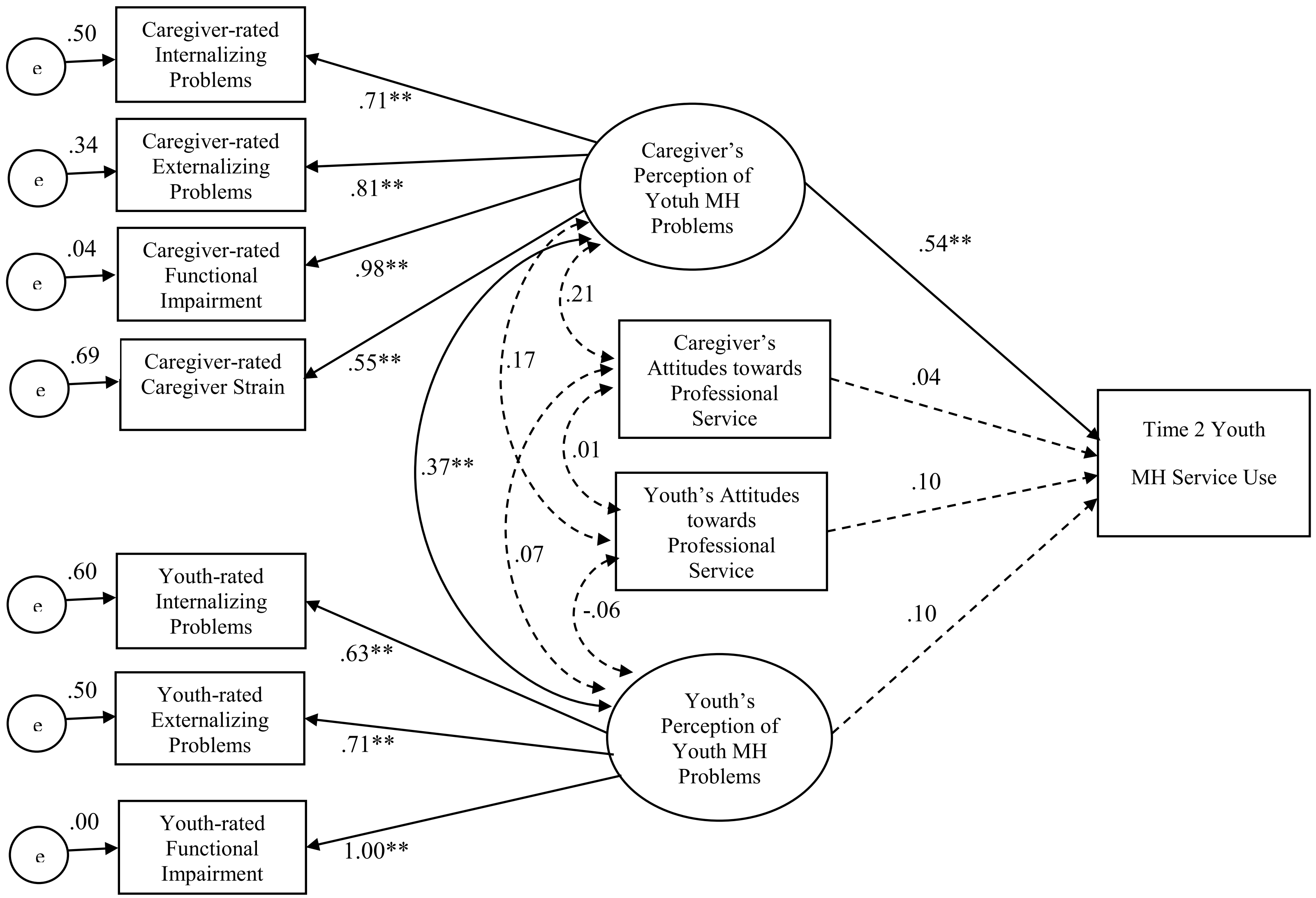
Note. N =56, *df* = 13, χ^2 = .17.55, *p* = .18, CFI = .98, TLI = .96, RMSEA = .08 (90% CI = .00-.16), e = error.
†p < .10, *p < .05, ** p < .01

Figure 5 *Results for the SEM Model with StdY Standardization in Full Sample*



Note. N =69, CFI = .99, TLI = .98, RMSEA = .03 (90% CI = .00-.10), e = error.
†p < .10, *p < .05, ** p < .01

Figure 6 *Results for the SEM Model with StdY Standardization in in Sub-sample (No Siblings)*



Note. N =56, CFI = .97, TLI = .95, RMSEA = .04 (90% CI = .00-.11), e = error.
$^{\dagger}p < .10$, $^{*}p < .05$, $^{**}p < .01$

APPENDIX B – CAREGIVER MEASURES (BASELINE)

1. Has your child ever received any mental health services (e.g., counseling, therapy)?
   Yes No
   a. How old was your child when he/she started therapy? ________________________
   b. About how many times has your child seen that person? ____________________
   c. Would you describe your child's experience so far as:

Very unhelpful   Unhelpful   Neither unhelpful nor helpful   Helpful   Very helpful

2. Is your child currently receiving any mental health services (e.g., counseling, therapy)?
   Yes No

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/point to the 2 if the item is very true or often true of your child. Circle/point to the 1 if the item is somewhat or sometimes true of your child. If the item is not true of your child, circle/point to 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.	0	1	2
2	Drinks alcohol without parents' approval.	0	1	2
3	Argues a lot.	0	1	2
4	Fails to finish things he/she starts.	0	1	2
5	There is very little he/she enjoys.	0	1	2
6	Bowel movements outside toilet.	0	1	2
7	Bragging, boasting.	0	1	2
8	Can't concentrate, can't pay attention for long.	0	1	2
9	Can't get his/her mind off certain thoughts; obsessions.	0	1	2
10	Can't sit still, restless, or hyperactive.	0	1	2
11	Clings to adults or too dependent.	0	1	2
12	Complains of loneliness.	0	1	2
13	Confused or seems to be in fog.	0	1	2
14	Cries a lot.	0	1	2
15	Cruel to animals.	0	1	2
16	Cruelty, bullying, or meanness to others.	0	1	2
17	Daydreams or gets lost in his/her thoughts,	0	1	2
18	Deliberately harms self or attempts suicide.	0	1	2
19	Demands a lot of attention.	0	1	2
20	Destroys his/her own things.	0	1	2
21	Destroys things belonging to his/her family or others.	0	1	2
22	Disobedient at home.	0	1	2

23	Disobedient at school.	0 1 2
24	Doesn’t eat well.	0 1 2
25	Doesn’t get along with other kids.	0 1 2
26	Doesn’t seem to feel guilty after misbehaving.	0 1 2
27	Easily jealous.	0 1 2
28	Breaks rules at home, school, or elsewhere.	0 1 2
29	Fears certain animals, situations, or places, other than school.	0 1 2
30	Fears going to school.	0 1 2
31	Fears he/she might think or do something bad.	0 1 2
32	Feels he/she wants to be perfect.	0 1 2
33	Feels or complains that no one loves him/her.	0 1 2
34	Feels others are out to get him/her.	0 1 2
35	Feels worthless or inferior.	0 1 2
36	Gets hurt a lot, accident-prone.	0 1 2
37	Gets in many fights.	0 1 2
38	Gets teased a lot.	0 1 2
39	Hangs around others who get in trouble.	0 1 2
40	Hears sounds or voices that aren’t there.	0 1 2
41	Impulsive or acts without thinking.	0 1 2
42	Would rather be alone than with others.	0 1 2
43	Lying or cheating.	0 1 2
44	Bites fingernails.	0 1 2
45	Nervous, high-strung, or tense.	0 1 2
46	Nervous movements or twitching.	0 1 2
47	Nightmares.	0 1 2
48	Not liked by other kids,	0 1 2
49	Constipated, doesn’t move bowels.	0 1 2
50	Too fearful or anxious.	0 1 2
51	Feels dizzy or lightheaded.	0 1 2
52	Feels too guilty.	0 1 2
53	Overeating.	0 1 2
54	Overtired without good reason.	0 1 2
55	Overweight.	0 1 2
56	Physical problems (without known medical cause):	0 1 2
	a. aches or pains	0 1 2
	b. headaches	0 1 2
	c. Nausea, feels sick	0 1 2
	d. Problems with eyes (Not if corrected by glasses)	0 1 2
	e. rashes or other skin problems	0 1 2
	f. Stomachaches	0 1 2
	g. Vomiting, throwing up	0 1 2
	h. Other	0 1 2
57	Physically attacks people.	0 1 2
58	Picks nose, skin, or other parts of body.	0 1 2
59	Plays with own sex parts in public.	0 1 2

60	Plays with own sex parts too much.	0	1	2
61	Poor school work.	0	1	2
62	Poorly coordinated or clumsy.	0	1	2
63	Prefers being with older kids.	0	1	2
64	Prefers being with younger kids.	0	1	2
65	Refuses to talk.	0	1	2
66	Repeats certain acts over and over.	0	1	2
67	Runs away from home.	0	1	2
68	Screams a lot.	0	1	2
69	Secretive, keeps things to self.	0	1	2
70	Sees things that aren’t there.	0	1	2
71	Self-conscious or easily embarrassed.	0	1	2
72	Sets fires.	0	1	2
73	Sexual problems.	0	1	2
74	Showing off or clowning.	0	1	2
75	Too shy or timid.	0	1	2
76	Sleeps less than most kids.	0	1	2
77	Sleeps more than most kids during day and/or night.	0	1	2
78	Inattentive or easily distracted.	0	1	2
79	Speech problem.	0	1	2
80	Stares blankly.	0	1	2
81	Steals at home.	0	1	2
82	Steals outside the home.	0	1	2
83	Stores up too many things he/she doesn’t need.	0	1	2
84	Strange behavior.	0	1	2
85	Strange ideas.	0	1	2
86	Stubborn, sullen, or irritable.	0	1	2
87	Sudden changes in mood or feelings.	0	1	2
88	Sulks a lot.	0	1	2
89	Suspicious.	0	1	2
90	Swearing or obscene language.	0	1	2
91	Talks about killing self.	0	1	2
92	Talks or walks in sleep.	0	1	2
93	Talks too much.	0	1	2
94	Teases a lot.	0	1	2
95	Temper tantrums or hot temper.	0	1	2
96	Thinks about sex too much.	0	1	2
97	Threatens people.	0	1	2
98	Thumb-sucking.	0	1	2
99	Smokes, chews, or sniffs tobacco.	0	1	2
100	Trouble sleeping.	0	1	2
101	Truancy, skips school.	0	1	2
102	Underactive, slow moving, or lacks energy.	0	1	2
103	Unhappy, sad, or depressed.	0	1	2
104	Unusually loud.	0	1	2

105	Uses drugs for nonmedical purposes (don't include alcohol or tobacco)	0	1	2
106	Vandalism.	0	1	2
107	Wets self during day.	0	1	2
108	Wets the bed.	0	1	2
109	Whining.	0	1	2
110	Wishes to be opposite sex.	0	1	2
111	Withdrawn, doesn't get involved with others.	0	1	2
112	Worries.	0	1	2
113	Other problems.	0	1	2

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 (**PINK**) 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

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 you believed your child was having a mental breakdown, your first step would be to get professional help for him/her.	1	2	3	4
2. Having your child talk about problems with a psychologist is a bad way to get rid of his/her emotional troubles.	1	2	3	4
3. If your child were having a serious emotional crisis at this point in his/her life, you would be sure that psychotherapy would help him/her get relief.	1	2	3	4
4. A person who is willing to cope with his or her problems and fears without getting professional help is admirable.	1	2	3	4
5. You would want to get psychological help if you were worried or upset for a long period of time.	1	2	3	4
6. You might want to have psychological counseling in the future	1	2	3	4
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.	1	2	3	4
8. Psychotherapy takes more time and expense than it's worth for a person like your child.	1	2	3	4
9. A person should work out his or her own problems; getting psychological counseling would be a last resort.	1	2	3	4
10. Personal and emotional troubles, like many things, tend to work out by themselves.	1	2	3	4

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 your child needed psychological help. We are going to use the same rating scale.

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

1. Having your child see a psychologist for emotional or interpersonal problems is looked down on in your community	1	2	3	4
2. A parent whose child sees a psychologist for emotional or interpersonal problems is seen as weak or not as good as other parents	1	2	3	4
3. People will see a parent in a less positive way if they find out that their child has seen a psychologist	1	2	3	4
4. A parent should not tell people that their child has seen a psychologist	1	2	3	4
5. Parents who have children that see psychologists are not as well liked as other parents	1	2	3	4

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 your child needed psychological help. This scale (**PINK)** 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. You would feel like you weren't as good as other parents if your child went to a therapist for psychological help.	1 2 3 4 5
2. Your self-confidence would NOT be threatened if you sought professional help for your child.	1 2 3 4 5
3. Seeking psychological help for your child would make you feel less intelligent.	1 2 3 4 5
4. Your self-esteem would increase (go up?) if your child talked to a therapist.	1 2 3 4 5
5. Your view of yourself would not change just because you made the choice for your child to see a therapist.	1 2 3 4 5
6. It would make you feel inferior to ask a therapist for help for your child.	1 2 3 4 5
7. You would feel okay about yourself if you made the choice to seek professional help for your child.	1 2 3 4 5
8. If your child went to a therapist, you would be less satisfied with yourself as a parent.	1 2 3 4 5
9. Your self-confidence would remain the same if your child went to a therapist for a problem you could not solve.	1 2 3 4 5
10. You would feel worse about yourself if you could not solve your child's problems	1 2 3 4 5

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	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 – ADOLESCENT MEASURES (BASELINE)

1. Have you ever received any mental health services (e.g., counseling, therapy)?
   Yes No
   a. How old were you when you started therapy? ______________________
   b. About how many times have you seen that person? ______________________
   c. Would you describe your experience so far as:

Very unhelpful Unhelpful Neither unhelpful nor helpful Helpful Very helpful

2. Are you currently receiving any mental health services (e.g., counseling, therapy)?
   Yes No

Youth Self Report (YSR)

Below is a list of items that describe kids. For each item that describes you ***now or within the past 6 months***, please circle/point to the **2** if the item is ***very true or often true*** of you. Circle/point to the **1** if the item is **somewhat or sometimes true** of you. If the item is ***not true*** of you, circle/point to the **0**.

0 = Not True **1 = Somewhat or Sometimes True** **2 = Very True or Often True**

1. I act too young for my age.	0	1	2
2. I drink without my parents' approval.	0	1	2
3. I argue a lot.	0	1	2
4. I fail to finish things that I start.	0	1	2
5. There is little that I enjoy.	0	1	2
6. I like animals.	0	1	2
7. I brag.	0	1	2
8 I have trouble concentrating or paying attention.	0	1	2
9. I can't get my mind off certain thoughts.	0	1	2
10. I have trouble sitting still.	0	1	2
11. I'm too dependent on adults.	0	1	2
12. I feel lonely.	0	1	2
13. I feel confused or in a fog.	0	1	2
14. I cry a lot.	0	1	2
15. I am pretty honest.	0	1	2
16. I am mean to others.	0	1	2
17. I daydream a lot.	0	1	2
18. I deliberately try to hurt or kill myself.	0	1	2
19. I try to get a lot of attention.	0	1	2
20. I destroy my own things.	0	1	2
21. I destroy things belonging to others.	0	1	2
22. I disobey my parents.	0	1	2
23. I disobey at school.	0	1	2
24. I don't eat as well as I should.	0	1	2

25. I don’t get along with other kids.	0	1	2
26. I don’t feel guilty after doing something I shouldn’t.	0	1	2
27. I am jealous of others.	0	1	2
28. I break the rules at home, school, or elsewhere.	0	1	2
29. I am afraid of certain animals, situations, or places, other than school.	0	1	2
30. I am afraid of going to school.	0	1	2
31. I am afraid I might think or do something bad.	0	1	2
32. I feel that I have to be perfect.	0	1	2

33. I feel that no one loves me.	0	1	2
34. I feel that others are out to get me.	0	1	2
35. I feel worthless or inferior.	0	1	2
36. I accidentally get hurt a lot.	0	1	2
37. I get in many fights.	0	1	2
38. I get teased a lot.	0	1	2
39. I hang around with kids who get in trouble.	0	1	2
40. I hear sounds or voices that other people think aren’t there.	0	1	2
41. I act without stopping to think.	0	1	2
42. I would rather be alone than with others.	0	1	2
43. I lie or cheat.	0	1	2
44. I bite my fingernails.	0	1	2
45. I am nervous or tense.	0	1	2
46. Parts of my body twitch or make nervous movements.	0	1	2
47. I have nightmares.	0	1	2
48. I am not liked by other kids.	0	1	2
49. I can do certain things better than most kids.	0	1	2
50. I am too fearful or anxious.	0	1	2
51. I feel dizzy or lightheaded.	0	1	2
52. I feel too guilty.	0	1	2
53. I eat too much.	0	1	2
54. I feel overtired without good reason.	0	1	2
55. I am overweight.	0	1	2
56. Physical problems **without known medical cause:**			
a. Aches or pains (not stomach or headaches)	0	1	2
b. Headaches	0	1	2
c. Nausea, feel sick	0	1	2
d. Problems with eyes (not if corrected by glasses)	0	1	2
e. Rashes or other skin problems	0	1	2
f. Stomach aches	0	1	2
g. Vomiting, throwing up	0	1	2
h. Other (please list): ___________________	0	1	2

57. I physically attack people.	0	1	2
58. I pick my skin or other parts of my body.	0	1	2
59. I can be pretty friendly.	0	1	2
60. I like to try new things.	0	1	2

61. My schoolwork is poor.	0	1	2
62. I am poorly coordinated or clumsy.	0	1	2
63. I would rather be with older kids than kids my own age.	0	1	2
64. I would rather be with younger kids than kids my own age.	0	1	2
65. I refuse to talk.	0	1	2
66. I repeat certain acts over and over (please describe): ____ ________________	0	1	2
67. I run away from home.	0	1	2
68. I scream a lot.	0	1	2
69. I am secretive or keep things to myself.	0	1	2
70. I see things that other people think aren’t there (describe): ______________	0	1	2
71. I am self-conscious or easily embarrassed.	0	1	2
72. I set fires.	0	1	2
73. I can work well with my hands.	0	1	2
74. I show off or clown.	0	1	2
75. I am too shy or timid.	0	1	2
76. I sleep less than most kids.	0	1	2
77. I sleep more than most kids during day and/or night	0	1	2
78. I am inattentive or easily distracted.	0	1	2
79. I have a speech problem (describe): ________________________________	0	1	2
80. I stand up for my rights.	0	1	2
81. I steal at home.	0	1	2
82. I steal from places other than home.	0	1	2
83. I store up too many things I don’t need (please describe): ___________________________________	0	1	2
	0	1	2
85. I have thoughts that other people would think are strange (please describe):	0	1	2
86. I am stubborn.	0	1	2
87. My moods or feelings change suddenly.	0	1	2
88. I enjoy being with people.	0	1	2
89. I am suspicious.	0	1	2
90. I swear or use dirty language.	0	1	2
91. I think about killing myself.	0	1	2
92. I like to make others laugh.	0	1	2
93. I talk too much.	0	1	2
94. I tease others a lot.	0	1	2
95. I have a hot temper.	0	1	2
96. I think about sex too much.	0	1	2
97. I threaten to hurt people.	0	1	2

98. I like to help others.	0	1	2
99. I smoke, chew, or sniff tobacco.	0	1	2
100. I have trouble sleeping (describe): ________________________________	0	1	2
101. I cut classes or skip school.	0	1	2
102. I don't have much energy.	0	1	2
103. I am unhappy, sad, or depressed.	0	1	2
104. I am louder than other kids.	0	1	2
105. I use drugs for nonmedical purposes (**don't** include alcohol or tobacco)	0	1	2
106. I like to be fair to others.	0	1	2
107. I enjoy a good joke.	0	1	2
108. I like to take life easy.	0	1	2
109. I try to help other people when I can.	0	1	2
110. I wish I were of the opposite sex.	0	1	2
111. I keep from getting involved with others.	0	1	2
112. I worry a lot.	0	1	2

Columbia Functional Impairment Scale- Youth Version

I will be asking you about different behaviors that may or may not be a problem for you. Please tell me the number that you think best describes your situation. This rating scale is from 0 to 4. 0 means that you do not think the behavior described is a problem for you. 2 means that you think that the behavior described is some problem for you. 4 means that you think the behavior described is a very bad problem for you. 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 you have with:						
1. …getting into trouble?	0	1	2	3	4	N/A
2. …getting along with your (primary female caregiver)?	0	1	2	3	4	N/A
3. …getting along with your (primary male caregiver)?	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 you have:						
5. …with your behavior at school? (or at your 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 your primary caregivers?	0	1	2	3	4	N/A

How much of a problem do you have:						
8. …with feeling nervous or afraid?	0	1	2	3	4	N/A
9. …getting along with your sister(s) and/or brother(s)?	0	1	2	3	4	N/A

10.	…getting along with other kids your age?	0 1 2 3 4 N/A

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

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 (**PINK)** 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 you believed you were having a mental breakdown, your first step would be to get professional help for yourself.	1 2 3 4
2. Talking about problems with a psychologist is a bad way to get rid of your emotional troubles.	1 2 3 4
3. If you were having a serious emotional crisis at this point in your life, you would be sure that psychotherapy would help you get relief.	1 2 3 4
4. A person who is willing to cope with his or her problems and fears without getting professional help is admirable.	1 2 3 4
5. You would want to get psychological help if you were worried or upset for a long period of time.	1 2 3 4
6. You are open to psychological counseling in the future.	1 2 3 4
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.	1 2 3 4
8. Psychotherapy takes more time and expense than it’s worth for a person like you.	1 2 3 4
9. A person should work out his or her own problems; getting psychological counseling would be a last resort.	1 2 3 4
10. Personal and emotional troubles, like many things, tend to work out by themselves.	1 2 3 4

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 needed psychological help. We are going to use the same rating scale.

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

1. Going to see a psychologist for emotional or interpersonal problems is looked down on in my community	1 2 3 4
2. A person who sees a psychologist for emotional or interpersonal problems is seen as weak or not as good as other people	1 2 3 4
3. People will see a person in a less positive way if they find out that they have seen a psychologist	1 2 3 4
4. A person should not tell people that they have seen a psychologist	1 2 3 4
5. People that see psychologists are not as well liked as other people	1 2 3 4

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 needed psychological help. This scale (**<u>PURPLE)</u>** 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. You would feel like you weren't as good as other people if you went to a therapist for psychological help.	1 2 3 4 5
2. Your self-confidence would NOT be threatened if you sought professional help for yourself.	1 2 3 4 5
3. Seeking psychological help for yourself would make you feel less intelligent.	1 2 3 4 5
4. Your self-esteem would go up if you talked to a therapist.	1 2 3 4 5
5. Your view of yourself would not change just because you made the choice to see a therapist.	1 2 3 4 5
6. It would make you feel inferior to ask a therapist for help.	1 2 3 4 5
7. You would feel okay about yourself if you made the choice to seek professional help.	1 2 3 4 5
8. If you went to a therapist, you would be less satisfied with yourself.	1 2 3 4 5
9. Your self-confidence would remain the same if you went to a therapist for a problem you could not solve.	1 2 3 4 5
10. You would feel worse about yourself if you could not solve your own problems	1 2 3 4 5

APPENDIX D — ADDITIONAL CAREGIVER MEASURES (FOLLOW-UP)

1. Has your child received medications for emotional/behavioral problems since the last time we met? Yes No
    a. If yes, specify medication name & dosage: ________________

2. Has your child received mental health services (e.g., counseling, therapy) since the last time we met? Yes No
    a. About how many times has your child seen that person since the last time we met? _________________________
    (Note: try to get a count, e.g., once a week for 6 months is about 24 times)
3. Is your child currently receiving any mental health services (e.g., counseling, therapy)? Yes No

4. If your child…
    a. has <u>never received</u> mental health services, what are the reasons?
        i. Child has no emotional/behavioral/social problems
        ii. Child/family can sort it out without help
        iii. Child is taking psychotropic medication (e.g., Prozac/Adderall) and is doing okay without therapy/counseling.
        iv. Child/family can seek help from others (e.g., friends, religious leaders)
        v. Financial concerns (e.g., co-pay is too high)
        vi. Transportation concerns (e.g., no reliable vehicle)
        vii. Scheduling/Time concerns (e.g., conflict with caregivers' work schedule, conflict with child's school/activity schedule)
        viii. Admin/System concerns (e.g., insurance system has been hard to navigate)
        ix. Service availability (e.g., waitlist is too long)
        x. Discouraged in my culture/community/neighborhood
        xi. Procrastination (e.g., never got around to it)
        xii. Others:______________________

    b. has <u>received mental health services but stopped</u>, what were the reasons to stop?
        i. Problems resolved/reduced
        ii. Therapy was not helpful
        iii. Child/family could sort it out without help
        iv. Child was taking psychotropic medication (e.g., Prozac/Adderall) and is doing okay without therapy/counseling
        v. Child/family could seek help from others (e.g., friends, religious leaders)
        vi. Financial concerns (e.g., co-pay is too high)
        vii. Transportation concerns (e.g., no reliable vehicle)
        viii. Scheduling/Time concerns (e.g., conflict with caregivers' work schedule, conflict with child's school/activity schedule)
        ix. Admin/System concerns (e.g., insurance system has been hard to navigate)
        x. Discouraged in my culture/community/neighborhood
        xi. Others: ______________________

   c. is <u>currently receiving mental health services</u>, what are the reasons to continue?
      i. Still has some problems to work on
      ii. Therapy has been helpful
      iii. Child/family enjoys therapy
      iv. Encouraged in my culture/community/neighborhood
      v. Others: ___________________

5. Do you have other children (not the one being interviewed today) who received/is receiving mental health services?
   a. No
   b. Yes (list gender and age):____

6. Would you describe your child(ren)'s experience with mental health services so far as:

Very unhelpful   Unhelpful   Neither unhelpful nor helpful   Helpful   Very helpful

7. Do you know any adults who received/is receiving mental health services (e.g., friends, family, coworkers)?
   a. No
   b. Yes (list gender and age): ____
   c. If yes, would you describe their experience with mental health services so far as:

Very unhelpful   Unhelpful   Neither unhelpful nor helpful   Helpful   Very helpful

8. Have you ever received mental health services for yourself?   Yes   No
   a. If yes, would you describe your own experience with mental health services so far as:

Very unhelpful   Unhelpful   Neither unhelpful nor helpful   Helpful   Very helpful

Follow-up questions:

1	**2**	**3**	**4**	**5**
Very Not Acceptable	Not Acceptable	Neither Acceptable Nor Not Acceptable	Acceptable	Very Acceptable

In your opinion…	
how acceptable is therapy for young children (12 or under)?	1 2 3 4 5
how acceptable is therapy for teenagers (13 or older)?	1 2 3 4 5
how acceptable is it for adults to go to therapy for their children's problems?	1 2 3 4 5
how acceptable is it for adults to go to therapy for their own problems?	1 2 3 4 5
In your community…	
how acceptable is therapy for young children (12 or under)?	1 2 3 4 5
how acceptable is therapy for teenagers (13 or older)?	1 2 3 4 5
how acceptable is it for adults to go to therapy for their children's problems?	1 2 3 4 5
how acceptable is it for adults to go to therapy for their own problems?	1 2 3 4 5

Confidential Care

1) In Michigan, teenagers ages 14 and up can get some mental health counseling/therapy without getting permission from parent/guardian. Did you know that?
   Yes No
   i) If you did, how did you know? (try to get who, when, where, how)

   ii) How does that make you feel?

APPENDIX E — ADDITIONAL ADOLESCENT MEASURES (FOLLOW-UP)

1. Have you received any medications for your feelings and behaviors since the last time we met? Yes No
    a. If yes, specify medication name & dosage: _________________
2. Have you talked to a mental health professional, such as therapist, counselor, or social worker, for your feelings or behaviors since the last time we met? Yes No
    a. About how many times have you seen that person since the last time we met?

___________________ (Note: try to get a count, e.g., once a week for 6 months is about 24 times)

3. Are you currently receiving any mental health services (e.g., counseling, therapy)? Yes No
4. If you…
    a. have <u>never received</u> mental health services, what are the reasons?
        i. I have no emotional/behavioral/social problems
        ii. I/my family can sort it out without help
        iii. I am taking psychotropic medication (e.g., Prozac/Adderall) and is doing okay without therapy/counseling.
        iv. I/my family can seek help from others (e.g., friends, religious leaders)
        v. Financial concerns (e.g., co-pay is too high)
        vi. Transportation concerns (e.g., no reliable vehicle)
        vii. Scheduling/Time concerns (e.g., conflict with caregivers' work schedule, conflict with child's school/activity schedule)
        viii. Admin/System concerns (e.g., insurance system has been hard to navigate)
        ix. Service availability (e.g., waitlist is too long)
        x. Discouraged in my culture/community/neighborhood
        xi. Procrastination (e.g., never got around to it)
        xii. Others:______________________

    b. have <u>received mental health services but stopped</u>, what were the reasons to stop?
        i. Problems resolved/reduced
        ii. Therapy was not helpful
        iii. I /my family could sort it out without help
        iv. I am taking psychotropic medication (e.g., Prozac/Adderall) and is doing okay without therapy/counseling
        v. I/my family could seek help from others (e.g., friends, religious leaders)
        vi. Financial concerns (e.g., co-pay is too high)
        vii. Transportation concerns (e.g., no reliable vehicle)
        viii. Scheduling/Time concerns (e.g., conflict with caregivers' work schedule, conflict with child's school/activity schedule)
        ix. Admin/System concerns (e.g., insurance system has been hard to navigate)
        x. Discouraged in my culture/community/neighborhood
        xi. Others: ______________________

    c. am <u>currently receiving mental health services</u>, what are the reasons to continue?
        i. Still has some problems to work on
        ii. Therapy has been helpful

iii. I/my family enjoy therapy
iv. Encouraged in my culture/community/neighborhood
v. Others: ___________________

5. Would you describe your experience with mental health services so far as:

Very unhelpful Unhelpful Neither unhelpful nor helpful Helpful Very helpful

6. Do you know anyone who received/is receiving mental health services (e.g., brothers/sisters, friends, family)?
   a. No
   b. Yes (list gender and age):
   ____
   c. If yes, would you describe their experience with mental health services so far as:

Very unhelpful Unhelpful Neither unhelpful nor helpful Helpful Very helpful

Confidential Care

2) In Michigan, teenagers ages 14 and up can get some mental health counseling/therapy without getting permission from parent/guardian. Did you know that?
   Yes No
   i) If you did, how did you know? (try to get who, when, where, how)

3) If you or a friend wants to see a mental health therapist or counselor without getting permission from parent/guardian, do you know where you or your friend can find it?
   Yes No
   i) If you do, how? (try to get who, when, where, how)

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ABSTRACT

MENTAL HEALTH SERVICE UTILIZATION AMONG URBAN ADOLESCENTS: THE ROLES OF PERCEIVED MENTAL HEALTH PROBLEMS, ATTITUDES TOWARDS PROFESSIONAL HELP, AND STIGMA

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Mental health among adolescents is widely acknowledged as a significant concern in the United States. Based on a national survey, Merikangas et al. (2010) found that among 13-17 year olds, 42% to 48% reported experiencing mental health concerns. It is estimated that only half of adolescents with mental health problems utilize mental health services (Costello et al., 2014). An initial study found that caregivers of disadvantaged youth appeared to function as the "gatekeepers" to mental health services (Tsang et al., 2020). Also, the results suggested that positive attitude towards professional psychological help, but not stigma, predicted service enrollment. The current study was designed to replicate and extent the original study using a new sample and adapted a longitudinal design to investigate the independent and combined effects of parent and adolescent perceptions of mental health problems, attitudes towards professional help, and stigma on adolescent mental health service utilization. For this dissertation, 69 predominately African American, low-income, urban youth (81.2% African American, 60.9% girls, Age 13–17 years, *M* = 15.13, *SD* = 1.45) and their caregivers were interviewed initially and then 6 months

later. Remarkable rates (i.e., 23.2% at T1 and 24.6% at T2) of mental health service underutilization and strikingly low awareness (i.e., 21.4% caregivers and 14.5% youth) of confidential mental health care were found in the current sample of urban youth. SEM model suggested that caregiver's perception of youth mental health problems, but not adolescent-reported variables, was predictive of future youth mental health service enrollment. Contrary to hypothesis, caregiver's positive attitude towards professional psychological help was not a significant predictor of future mental health service use among adolescents. Implications regarding mental health service utilization and dissemination among adolescents living in an urban community were discussed.

AUTOBIOGRAPHICAL STATEMENT

Yi Tak (Daisy) Tsang was born and raised in Hong Kong. She is currently a predoctoral intern at the University of Michigan Mary A. Rackham Institute and will graduate with her Doctor of Philosophy in Clinical Psychology with a minor in Statistics from Wayne State University in August 2020. She received her B.A. with Highest Distinction in Psychology from the University of Virginia in 2013. She graduated with a Master of Arts in Clinical Psychology from Wayne State University in August 2017.

Daisy's research focuses on fostering resilience through disseminations and implementation science. Her research experience with the diverse community in Detroit and clinical experience in the field led her to become deeply aware of the striking disparity between mental health concerns and service utilization rates, particularly among minority and lower-income families. She is strongly committed to understanding factors that maximize mental health gain and translating science into impactful and sustainable clinical applications. In her leisure time, Daisy enjoys water sports, reading mystery novels, and spending time with family and friends.