An Examination of the Ohio Scales, Short Form, Hopefulness Domain, Youth- and Caregiver-Report Versions in a Community Care Setting

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Abstract

Hope theorists posit that the construct of "Hopefulness" can be a positive indicator of overall wellness. Research suggests that higher levels of hopefulness have been associated with positive treatment outcomes (e.g., lower behavioral difficulties). However, few studies have examined the role of hopefulness with multiethnic youth, and it is unclear whether extant findings are generalizable to these populations. Further, despite the growing literature on the potential clinical value brought by assessing caregiver perspectives on youth treatment, there is a lack of psychometric investigations on hopefulness measures capturing both caregiver and youth perspectives. As the only measure assessing hopefulness from a multi-stakeholder perspective, the Ohio Scales, Hopefulness Scale (OS Hopefulness Scale), provides a unique opportunity to contribute to the literature by examining the role of youth- and caregiver-reported hopefulness in treatment.

Along these lines, the current study centered on examining the utility of this free four-item measure of hopefulness (i.e., OS Hopefulness Scale) within a large statewide public mental health care system. Collectively, the six aims of this study (done for both youth- and caregiver-report versions) examined the measure's (a) factor structure and (b) internal consistency, along with (c) the relationship between youth- and caregiver-reported hopefulness. Additionally, we explored the measure's relationships with (d) numerous domains of psychopathology (e.g., depression, anxiety, delinquency), and (e) youth functioning. Lastly, (f) change over time in response to treatment delivery was also investigated. Participants included a total of 1,036 youth receiving services through the Hawai'i Child and Adolescent Mental Health Division's system of care from 2014 to 2020, who were ethnically diverse (30.6% multiethnic, n = 317), 60.4% male (n = 626), with an average age of 12.8 (SD = 3.5). As a whole, the study found good factor

structure, acceptable internal consistency, and a significant positive association between youth-reported and caregiver-hopefulness. Additionally, significant inverse relationships were found between caregiver-reported hopefulness with youth mental health problems and youth functioning (more hopefulness related to less problems and functional impairment); while youth-reported hopefulness was found to be significantly inversely related to youth mental health problems but not youth functioning. Finally, significant positive changes in hopefulness and significant relationships with youth functioning were also evident at three-month follow up for both youth- and caregiver-reported hopefulness. The constellation of my findings demonstrates potential for this four-item measure of hopefulness to be a useful, efficient, and cost-effective tool with ethnically diverse samples, which are substantially different from samples included in previous studies of hopefulness. Implications and suggestions for future research are discussed.

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List of Abbreviations

BCQ…….……Burden of Care Questionnaire (Brannan et al., 1995, as cited in Hodges & Wong, 1996)

CAMHD……..……State of Hawai‘i Child and Adolescent Mental Health Division

CAMHMIS …….……Child and Adolescent Mental Health Management Information System

CAFAS……..... Child and Adolescent Functional Assessment Scale

CAS……..... Child Assessment Schedule (Hodges et al., 1982)

CBCL……...……. Child Behavior Checklist (Achenbach & Rescorla, 2001)

CFA…….…….. Confirmatory Factor Analysis

CFI…….…… Comparative Fit Index test statistic

DOH…….….. Department of Health

ML……..…….. The Maximum Likelihood method

Ohio Scales Short Form ……...The Ohio Youth Problem, Functioning, and Satisfaction Scales – Short Form (Used when referring to the abbreviated version of the Ohio Scales as a whole, not a specific scale)

OS……..… Ohio Scales (Used whenever referring to a specific scale within Ohio Scales; e.g., OS Hopefulness Scale, OS Satisfaction Scale, etc.)

OS Hopefulness Scale…….. Ohio Scales, Hopefulness Scale/Domain

OS Problem Severity Scale …Ohio Scales, Short Form, Problem Severity Scale/Domain

OS Hopefulness Scale, Youth-Report…Youth-report version of the Ohio Scales, Hopefulness Scale

OS Hopefulness Scale, Caregiver-Report…Parent/Caregiver-report version of the Ohio Scales, Hopefulness Scale

PCAS……. Parent-rated Child Assessment Schedule (Hodges, 1990c, as cited in Hodges & Wong, 1996)

RMSEA……. Root Mean Square Error of Approximation test statistic

TLI……...…….. Tucker-Lewis Index test statistic

WLSMV……...……. The Weighted Least Squares Mean and Variance Adjusted method

An Examination of the Ohio Scales, Short Form, Hopefulness Domain, Youth- and Caregiver-Report Versions in a Community Care Setting

Despite well-documented and ongoing needs for youth mental health services, research suggests that more than 50% of youth and families still drop out of treatment prematurely (Nock & Ferriter, 2005). This issue is especially alarming in underrepresented children and adolescents, with only 1.5% of minority youth typically receiving mental health care, and of those 1.5%, upwards of 75% may prematurely end treatment services (Copeland, 2006; De Haan et al., 2013; Garland et al., 2000). Treatment can end early because of a variety of reasons, ranging from those associated with logistical and financial considerations (e.g., the client moving away, client can no longer afford services) to motivations surrounding treatment engagement (e.g., poor therapeutic alliance). One factor that has been theoretically and empirically linked to higher treatment attendance is client hopefulness (Chaplin et al., 2006; Huen et al., 2015). Indeed, some research suggests that hopefulness can serve as a critical component in the recovery process of adult and youth clients with mental health problems (Roe et al., 2004).

Hopefulness: Hope Theory

Theories on the role of hope in psychotherapy can be dated back to Freud who said, "expectations, colored by hope and faith," in treatment are often positively associated with the benefits of patients' psychoanalyses (Freud, 1905/1968, p. 289). Research on hope in the past two decades have shown significant and positive relationships between self-reported hopefulness and numerous measures of functioning, ranging from academic achievement and athletic performance to coping with illness and psychological adjustment (Rand & Cheavens, 2009). Even though there is no agreed upon definition of hope or hopefulness, for this paper, hope will refer to "a multi-dimensional dynamic life force characterized by a confident yet uncertain

expectation of achieving good, which to the hoping person, is realistically possible and personally significant," and is thought to positively influence wellness and inform treatment processes in a variety of ways (Herth, 1991; Herth, 1992, p. 1253). Although still under discussion as to whether or not hope and hopelessness are at the opposite ends of the same construct continuum, or if they are two separate dimensions altogether, recent measurement work in this area suggests that hope and hopelessness are distinct yet largely negatively correlated (e.g., r = -.54; Huen et al., 2015). Consistent with this idea, older mental health studies on hopelessness within the context of receiving treatment services have well established that behavioral health outcomes for adults and youth with hopelessness are poor (Abramson et al.,1978; Farran & Popovich, 1990; Voelz et al., 2003).

To date, there seem to be four prominent theories of hope and its relationship with motivation and goal attainment. First is the work of Averill et al. (1990) whose book, "Rules of Hope," explored this construct in relation to social influence and theories of emotion. These authors define hope as, "an emotion that has cognitive rules governing it," (p. 356) whereby the term "rules" refer to societal norms, leading to Averill et al.'s assertion that hope exists when one thinks of a goal that is considered important, attainable, and acceptable, as defined by the rules within one's society. Averill et al. developed their theory of hope through surveying and asking 150 undergraduate students to recall one episode of hopefulness and answer questions about their thoughts and emotions throughout that experience. Supporting their theory that hopeful aspirations are in part determined by societal norms, their study found that participants' levels of hope were positively associated with episodes/events that (a) were moderately within their control, (b) had reasonable chances of fulfillment, (c) were deemed valuable by societal standards, and (d) were socially acceptable (e.g., not materialistic, selfish or immoral; Averill et

al., 1990). Although this definition utilizes a broader ecological or societal-based lens for conceptualizing hope, Averill et al.'s early work in this area did lay the foundation for other hope scholars to begin theorizing hope as being based on perceptions and subjective viewpoints.

A second major theory of hope is the one systematized by Stotland, as cited by Snyder in 1995. In this theory, hope is conceptualized as "an expectation greater than zero of achieving a goal" (Stotland, 1969, p. 2). This definition, unlike the one put forth in Averill et al.'s work, deemphasizes the emotional aspect of hope and instead accentuates the role of cognition, specifically on how someone perceives the likelihood of their goal-related outcomes. To the author's knowledge, there have been no empirical studies on this theory of hope since its initial conception. Third, branching out further from Stotland's conceptualization of Hope, Snyder (1995) theorized hope as a cognitive process critical to goal attainment that comprised of two related but distinct components: Agency and Pathway. Agency refers to one's internal motivation and belief that they are able to pursue their goals, while Pathway refers to one's perception of the routes available for them to take towards their goals. By far, Snyder's theory of hope has garnered the most attention in the scientific literature, possibly in part due to the development of a brief eight-item measure known as the Hope Scale (Snyder et al., 1995). In their psychometric work for trying to develop a reliable and valid measure of hope from this perspective, Snyder et al. (1991) previously conducted a confirmatory factor analysis of the Hope Scale using a variety of participant samples: an outpatient sample from a traumatic stress institute, an inpatient sample from a state hospital, and six non-clinical samples consisting of undergraduate students. Across all samples, Snyder et al.'s factor analytic findings indicated that their two-factor model respectively accounted for 52% to 63% of the variance in participants' responses. Additionally, the Hope Scale has demonstrated convergent validity through a positive

and large correlation (r = .60) with the Optimism scale of the Scheier and Carver's Life Orientation Test, and divergent validity via a negative and large correlation (r = -.51) with the Beck Hopelessness Scale (Gibb, 1990, as cited in Snyder et al., 1991).

Lastly, Herth's (1991) work in the area of hope seems noteworthy of mention. Stemming from Dufault & Martocchio (1985)'s theory of hope, Herth theorized that while there is a cognitive process in hope that is critical to goal attainment, hope research and clinical applications thereafter could make for more profound contributions to our field if investigators focused specifically on hope in people coping with medical illness, loss, or other psychophysical stressors. Although most of the theoretical underpinnings of Herth's model are similar to that of Snyder's two-component model, Herth noted that in addition to Agency and Pathway (referred by Herth as Temporality and Future, and Positive Readiness and Expectancy, respectively), people's perceived social support played a critical role in one's experience of hope. More specifically, known as the Interconnectedness dimension, Herth asserted that external support systems are also positively associated with and crucial in determining one's overall levels of hope. Overall, Herth viewed hope as a multifaceted construct related to goal attainment (Dufault & Martocchio, 1985). Empirical research thus far generally supports Herth's three factor model of hope. In its initial development study, the Herth Hope Scale (Herth HS; Herth, 1991), a self-report hope measure developed by Herth, demonstrated factor analytic support for the three components of Temporality and Future, Positive Readiness and Expectancy, and Interconnectedness. Furthermore, the Herth HS evidenced divergent validity through demonstrating a large negative correlation (r = -.69) with the Beck Hopelessness Scale. Additionally, in their psychometric study of the Herth Hope Index – Dutch version (Herth, 1992; an abbreviated version of the Herth HS), van Gestel-Timmermans et al. (2010) found that

hopefulness moderately and negatively correlated with patient-reported loneliness (r = -.47), aligning with the idea that there is a meaningful relationship between hopefulness and perceived social support. Across both the Herth HS and Herth Hope Index, cross cultural psychometric work in this area suggests successful utilization of these measures across a variety of languages such as Chinese, Dutch, Italian, Norwegian, Portuguese, Spanish, and Swedish (Arnau et al., 2010; Balsanelli, et al., 2010; Benzein & Berg, 2003; Chan et al., 2012; Wahl, 2004; Ripamonti, 2012; van Gestel-Timmermans et al., 2010).

Measures of Hope

Research on hope has continued to advance within the domain of measurement, sometimes in coordination with theoretical frameworks, and at other times independent of them. For example, stemming from Snyder's hope theory (1995) are the aforementioned Hope Scale (Snyder et al., 1995) and also the Children's Hope Scale (CHS; Snyder et al., 1997). Similarly, the aforementioned Herth HS was developed in tandem with Snyder's theoretical work in this area (Herth, 1991). Two frequently used measures of hope that were developed outside of, but potentially related to the four theories above, are the Ohio Scales Youth- and Caregiver-report, Hopefulness Scale (OS Hopefulness Scale; Ogles et al., 2000) and the Miller Hope Scale (Miller & Powers, 1988). I now turn to the only two measures that are specifically tailored for youth, the CHS and the OS Hopefulness Scale.

Children's Hope Scale Stemming from Snyder's hope theory (1995), the CHS (Snyder et al., 1997) is a youth self-report comprised of 6 items assessing Agency and Pathway. In their original work in this area, Snyder et al. administered this measure to 372 non-clinical youth ages 9 to 14, as well as four additional clinically referred or impaired samples, and found confirmatory factor analytic support for the two scales of Agency and Pathway across all factor

analyses. The measure's total score also evidenced good internal consistencies through Cronbach alpha coefficient analyses ($.72 \leq \alpha \leq .86$). Furthermore, the CHS showed significant positive correlations with youth hopefulness as rated by knowledgeable observers ($.37 \leq r \leq .53$) and a youth questionnaire of self-worth (Self-Perception Profile for Children, global self-worth index, Harter, 1985; $23 \leq r \leq .55$), as well as a significant and negative correlation ($-.27 \leq r \leq -.48$) with a youth depression survey (Child Depression Index, Kovacs, 1985). A study by Valle, Huebner, & Suldo (2004) further evaluating the CHS with 460 culturally diverse and largely low-income high school students also found that Agency and Pathway were positively correlated, yet distinct elements of hope. More specifically, Valle et al. (2004) conducted confirmatory factor analyses to compare a two-factor model to a one-factor model and found that the correlated two-factor model showed a significantly better model fit ($\Delta x^2 1, 17.6, p > .01$) than the one-factor model. Furthermore, although Valle et al. did not report scale level internal consistencies, excellent internal consistency for the total scale was observed through a Cronbach alpha coefficient analysis ($\alpha = .84$). Their study also suggested sufficient convergent validity of the CHS through strong, significant positive relationships between CHS total scores and measures of youth-reported life satisfaction (Students' Life Satisfaction Scale, Huebner, 1991; $r = .55$), as well as perceived social support (Child and Adolescent Social Support Scale, Malecki et al., 2000; $r = .53$). In regard to psychological problems, CHS total scores showed significant, modest, and inverse correlations with youth self-reported behavioral problems (Youth Self-Report Form of the Child Behavior Checklist, Achenbach & Edelbrook, 1991; $r = -.32$), including areas related to being withdrawn, somatic complaints, anxious depressed, delinquent behavior, and aggressiveness (Valle et al., 2004). A recent meta-analysis by Hellman et al. (2018) on 164 studies utilizing the CHS found for its total scale an average internal consistency

score in the acceptable range at α = .81 (95% CI = .79 – .82), and an average test-retest (*n* = 15) correlation of .71 (95% CI = .64 – .78). Finally, in regard to research and clinical applications, the CHS has been used for exploratory and psychometric investigations examining hope with typically underrepresented populations (Haroz et al., 2015; Shadlow et al., 2015; Yang et al., 2019), and studying the predictive or mediating role of youth hopefulness with constructs such as optimism, violence, and social behavior (Bahena, 2014; Stark et al., 2017; Taysi et al., 2015).

OS Hopefulness Scale The OS Hopefulness Scale is also widely used as a youth self-report hope measure (Kapp et al., 2015; Riley et al., 2009). This four-item scale is one of four domains evaluated within a larger assessment, the Ohio Scales, Short Form (Ogles et al., 2000). The three other domains of the Ohio Scales, Short Form are Problem Severity (20 items), Functioning (20 items), and Satisfaction (four items). All four domains of the Ohio Scales, Short Form were originally developed as an evaluative tool for assessing mental health treatment outcomes for youth ages 5-18 years old receiving public behavioral health services in southeastern Ohio. Although the OS Hopefulness Scale was not developed specifically to align with any one of the four prominent hope theories earlier reviewed, its items are conceptually consonant with the overall theme of optimism about a youth's future. Indeed, the assessment manual for this scale indicates that it aims to "provide a method to briefly assess the parents' and youth's outlook on the future" and that clinicians can either "incorporate parent/youth report of the presence of hopefulness as a strength to be used in treatment, or lack of hopefulness as a target for treatment" (Ogles et al., 2004, p. 290).

Despite the limitation of not specifically aligning with a prominent hope theory, the OS Hopefulness Scale carries three noteworthy strengths. First, unlike the CHS, the OS Hopefulness Scale, and the larger Ohio Scales, Short Form, from which it is drawn offers both youth- and

parent-report perspectives (i.e., the OS Hopefulness Scale is the only youth measure of hope that incorporates this multi-informant perspective). From this point forward in the manuscript, I will use the terms OS Hopefulness Scale, Youth-Report and OS Hopefulness Scale, Caregiver-Report to refer to the youth- and parent/caregiver-report versions, respectively. It is also important to note that, with the exception of the third item inquiring about the stress or pressure currently present in their life, the items on the youth- and caregiver-report do not mirror one another. Generally, youth are asked to rate the level of hopefulness about their own life and well-being, whereas primary caregivers are asked to rate how hopeful they are about their ability to care for their child (Ogles et al., 2004; See Appendices A and B for youth- and caregiver-report versions).

Second, although limited, reliability and validity research on the OS Hopefulness Scale is favorable. Psychometric studies on the Ohio Scales, Short Form's four domains broadly indicate promising reliability and validity findings (Laba et al., 2022). Additionally, however, the amount of psychometric research published in scientific peer-reviewed journals tends to vary by Ohio Scales domain. There have been few studies to date that have specifically investigated the psychometric properties of the OS Hopefulness Scale. Most of the time, analyses of the OS Hopefulness Scale occur within the context of a larger study on the original Ohio Scales or Ohio Scales, Short Form. For example, in Ogles et al.'s (2000) foundational work on the original and larger Ohio Scales, exploratory factor analyses for both youth- and caregiver-report versions indicated the four-domain factor structure previously reported (i.e., Problem Severity, Functioning, Satisfaction, Hopefulness). Additionally, within that seminal study, exploratory factor analyses for both youth- and caregiver-reports indicated a one factor solution that accounted for 57% of the variance of the four hopefulness items, with all four items evidencing

factor loadings above .39 on that one single factor. Internal consistency Cronbach alpha coefficients were good for the youth-report scale (α = .86) and excellent for the caregiver-report scale (α = .93). Test-retest reliability findings were also strong for both report versions (i.e., youth-report, r =.77, and caregiver-report, r = .88). Outside of Ogles et al. (2000)'s study, Cox (2007) found moderate to strong significant positive correlations among the four items of the OS Hopefulness Scale (.22 < r < .53). There currently exists no peer-reviewed publications in the area of interrater reliability for the OS Hopefulness Scale, possibly due to the differences in items on the youth- and caregiver-versions, as mentioned previously. In regard to sensitivity to change, Ogles et al. (2004) examined youth- and caregiver-reported changes between intake and after three months of receiving treatment, but failed to find any significant differences on OS Hopefulness Scale scores. Convergent and divergent validity have thus far not been examined for the OS Hopefulness Scale.

A third strength associated with the OS Hopefulness Scale is its utilization in mental health agencies or service systems. In addition to being the only measure of hope that was developed and initially validated with low-income youth and families receiving public mental health services, it is currently the only hope measure that is routinely administered in public mental health systems within the context of measurement feedback initiatives (Milette-Winfree et al., 2019; Turchik et al., 2007). In the past few years, treatment progress monitoring through empirically supported outcome measurement strategies has increasingly become an important aspect of community mental health care (Kotte et al., 2016). Indeed, the implementation of progress monitoring has been found to be positively associated with better retention and treatment outcomes (Kotte et al., 2016). To my knowledge, the four public mental health systems in which the larger Ohio Scales (including one of more subcomponents, such as the OS

Hopefulness Scale) has been implemented include: (a) the State of Hawai'i Child and Adolescent Mental Health Division (CAMHD; Milette-Winfree et al., 2019), (b) the Ohio Department of Mental Health (Douglass et al., 2006), (c) the Oklahoma Systems of Care (OKSOC; Oklahoma Mental Health & Substance Abuse, n.d.), and (d) the Texas Department of Mental Health and Mental Retardation (TDMHMR, 2004). Furthermore, although not implemented throughout its state public mental health system, the Ohio Scales are implemented in all the psychiatric residential treatment facilities in the state of Kansas (Kapp et al., 2015). As one of only two studies investigating the relationship between hopefulness and youth problem severity and functioning thus far, Kapp et al. (2015) found that an increase in hopefulness scores from admission to discharge explained 18.1% of the variance in the problem severity scores and 19.4% of the variance in functioning scores of youths receiving treatment at psychiatric residential facilities in Kansas.

Furthering OS Hopefulness Scale Research

Notwithstanding the many strengths of the OS Hopefulness Scale identified above, the body of literature in this area also suggests several areas for improvement. Of note, the literature review on the OS Hopefulness Scale presented above is exhaustive, and not restricted to only studies examining its psychometric properties. Forthcoming studies on this instrument could potentially focus on at least two domains: the scale's psychometric properties (Cox, 2007) and examining the relationship between hope and typically evaluated constructs within the context of treatment services (Kapp et al., 2015). With regard to psychometric investigation, to the author's knowledge, there have been no further psychometric investigations of the OS Hopefulness Scale since Ogles et al.'s (2000) original psychometric study, aside from the Ogles et al. (2004) study investigating sensitivity to change. Thus, the scale's basic properties such as factor structure and

internal consistency have been investigated only once. With respect to examining the relationship between the OS Hopefulness Scale and a variety of youth and caregiver dimensions within a treatment service context, there is the opportunity for exploration in a number of ways. For example, to the author's knowledge, there has thus far not been a study investigating the relationship between youth self-reported feelings of hope and parent-reported hopefulness for providing adequate care for their child. Additionally, although one might expect an inverse relationship between hopefulness and feelings of depression, research is lacking between youth- and caregiver-reported hopefulness and overall functioning and problems with anxiety, externalizing behaviors, and delinquency. Furthermore, little can be said with regard to hopefulness changes over time associated with receiving treatment services. In addition to the issues above, although the samples used in Ogles et al.'s (2000) study were clinically impaired and came from low-income backgrounds, these participants largely consisted of White youth from rural southeastern Ohio, potentially lacking generalizability to non-White youth. As such, the extent to which the concept of hopefulness presents in the same way to communities of diverse backgrounds with both youth and caregiver reports remain unclear.

Present Study

The current study examined various aspects of the OS Hopefulness Scale among a large multiethnic sample of youth and families receiving public mental health services in Hawai'i, as well as expanded on the hopefulness literature through exploration of youth and caregiver hopefulness within the context of receiving community care. This investigation was divided into six aims, two of which examined traditional psychometric properties, while the remaining four focused on the utility of the OS Hopefulness Scale in the context of a state-wide public mental health system through exploration of hopefulness and typically evaluated constructs within the

context of treatment services. The first aim examined the factor structure of both the youth- and caregiver-report OS Hopefulness Scale to determine the fit of the original one factor model on responses from a large multiethnic sample. It was predicted that a one-factor model would fit with the current sample for both youth and caregiver reports. Second, internal consistency reliability for both youth and caregiver reports was also assessed, and were predicted to fall within the acceptable range for these analyses. Third, the relationship between youth and caregiver hopefulness ratings was examined. In regard to this aim, it is important to remember that the youth-report is a self-report about the youth's own hopefulness, whereas the caregiver report examines how hopeful they are about their ability to care for their child. Though there have been no studies specifically investigating this type of relationship, group therapy literature on client hopelessness and outcomes suggest that hope can be shared by individuals in the same space or going through an experience together (Kivlighan et al., 2016). Along these lines, although largely exploratory, it was hypothesized that the youth and caregiver reports will positively and significantly relate with one another at treatment intake. Fourth, the relationship between mental health problems and youth and caregiver hopefulness was investigated through examining the association between hopefulness and problems with depression, anxiety, delinquency, and externalizing behaviors. Although significant inverse relationships were broadly predicted for this aim, it was also expected that the most pronounced negative relationship would be between hopefulness and depression problems (Beck et al., 1979). Fifth, the relationship between hopefulness and overall youth functioning was explored. Here, it was hypothesized that higher levels of hopefulness, for both youth- and caregiver-reports, would be associated with higher levels of overall youth functioning. Sixth, this study determined the extent to which the OS Hopefulness Scale youth- and caregiver-reports change over time in response to

treatment delivery. Since studies investigating this matter have produced mixed results, with Weis and Ash (2009) finding positive correlations between youth outcomes and increased change in both adolescent and parent level of hopefulness, but Ogles et al. (2004) finding no significant change, this aim is largely exploratory. Within this last aim, for both youth- and caregiver-reports, the OS Hopefulness Scale was expected to evidence significant pre-post treatment changes, of comparable magnitude, to improvement detected using a measure of functional impairment.

Methods

Participants

This investigation consisted of a sample of caregivers and youth receiving community mental health services through the State of Hawai'i Department of Health (DOH) CAMHD's system of care. CAMHD is the major statewide public sector entity responsible for delivering a wide range of mental health services to an array of youth and families in Hawai'i, including youth with special needs, youth traditionally classified as having severe emotional and behavioral disturbances, and families receiving Medicare and Medicaid assistance. Services are provided in a variety of forms, ranging from case management to community- and residential-based settings. Across all study aims and both informant types (i.e., youth and caregiver), a total of 1,036 youth were studied in the current investigation. Of these 1,036 youth participants, 436 youth had only youth-report data, and 343 youth had both youth- and corresponding caregiver-report data. The current study's various aims, as well as the corresponding youth- and caregiver-report analyses within each of those aims, utilized subsets of the overarching 1,036 youth sample. The 1,036 youth participants included in the current investigation were between the ages of 5.02 and 18.24 (M = 12.75, SD = 3.45), and 60.4% male (n = 626). Furthermore, although a large portion of the current sample did not disclose their ethnicity (n = 496; 47.9%), primary ethnicities reported were: Multiethnic (n = 317; 30.6%), Native Hawaiian or Pacific Islander (n = 85; 8.2%), Asian (n = 66; 6.4%), White (n = 62; 6.0%), Black or African American (n = 9; 0.9%), and American Indian or Alaska Native (n = 1; 0.1%). See Table 1 for diagnostic and full demographic information.

Measures

The Ohio Youth Problem, Functioning, and Satisfaction Scales – Short Form (Ohio Scales Short Form; Ogles et al., 1999)

Consisting of four domains: Problem Severity, Functioning, Hopefulness and Satisfaction, the Ohio Scales Short Form is a questionnaire designed to assess treatment outcomes of mental health services for youth ages 5-18 years old. Broadly speaking, the Problem Severity scale aims to help identify youths' target problems; the Functioning scale measures youths' daily level of functioning through everyday activities such as completing household chores and how well they get along with others; the Hopefulness scale assesses youth hopefulness about their future as well as caregiver hopefulness in regard to their parenting; and the Satisfaction scale examines youth and caregiver satisfaction with, and inclusion in, services provided. The four domains can be assessed independently of one another, and from both youth- and caregiver-report perspectives. This study primarily focused on youth- and caregiver-reports for the OS Hopefulness Scale, as well as to some extent, the OS Problem Severity Scale for my fourth aim concerning the relationship between hopefulness and problems with depression, anxiety, delinquency, and externalizing behaviors.

The OS Hopefulness Scale, youth-report, consists of four items: (a) Overall, how satisfied are you with your life right now?; (b) How energetic and healthy do you feel right now?; (c) How much stress or pressure is in your life right now?; and (d) How optimistic are you about the future? While the youth hopefulness domain measures youth's self-reported hopefulness about life or overall well-being, the caregiver report aims to measure caregiver hopefulness about caring for their child (Ogles et al., 2000). Thus, the caregiver hopefulness domain consists of four similar, though not identical, items: (a) Overall, how satisfied are you with your relationship with your child right now?; (b) How capable of dealing with your child's

problems do you feel right now?; (c) How much stress or pressure is in your life right now?; and (d) How optimistic are you about your child's future right now? Although item anchors differ slightly by question, all answers are given on a 6-point scale (see Appendices A and B for youth- and caregiver-report items and anchors, respectively). A total scale score is calculated by summing all four individual item scores, with lower scores indicating higher hopefulness.

The OS Problem Severity Scale consists of 20 items composed of four subscales: Externalizing, Delinquency, Anxiety, and Depression (Laba et al., 2022). Similar to the OS Hopefulness Scale, reporters must rate each item on a 6-point scale, from zero "not at all" to five "all the time", and a total scale score is calculated by summing all 20 individual item scores, with higher scores indicating more severe disturbance. The 20 items are identical in language across youth and caregiver versions. Items from the OS Problem Severity Scale were initially developed and tested with multiple samples consisting of severely impaired and low-income youth in Ohio (Ogles et al., 2000). Over the last 20 years, the OS Problem Severity Scale has demonstrated a wide array of psychometric support, including evidence for its factor structure (Bonadio & Tompsett, 2016; Laba et al., 2022), internal consistency reliabilities (Bonadio & Tompsett, 2016; Ogles et al., 2000, 2004), test-retest reliability (Dowel & Ogles, 2008; Ogles et al., 2004), and convergent and discriminant validities (Laba et al., 2022; Turchik et al., 2007).

The Child and Adolescent Functional Assessment Scale (CAFAS; Hodges, 1989)

Consisting of eight subscales, the CAFAS is a widely used measure for examining levels of functional impairment in youth ages 5-17 years old with emotional, behavioral, and substance use concerns. This clinician-rated instrument includes 200 items that make up eight scales. Four scales reflect externalizing symptoms (School/Work Role Performance, Home Role Performance, Community Role Performance, Behavior Toward Others), two reflect internalizing

symptoms (Mood/Emotions & Self-Harmful Behavior), one examines thought processes (Thinking), and one inquires about substance use (Substance Abuse). Using a four-level scoring approach (i.e., severe impairment = 30, moderate impairment = 20, mild impairment = 10, minimal or no impairment = 0), individual scale scores are used to determine the degree of impairment or dysfunction in each domain. To obtain the total CAFAS score, scale ratings are summed to a score ranging from 0 to 240. Higher scores indicate more functional impairment for individual scale scores as well as the total score (Hodges, 1989).

The CAFAS is a well-validated instrument, with psychometric studies thus far suggesting good reliability and validity (Hodges & Wong, 1996). For example, this instrument has demonstrated fair to good interrater reliabilities (e.g., intraclass correlation coefficients ranging from .54 to .96) among samples composed of three student/lay rater groups (unclassified students, sophomores in an undergraduate psychology course, and first semester clinical psychology graduate students). However, it is also important to note that this same study found questionable internal consistency estimates for CAFAS total scale scores at intake, 6-, 12-, and 18-month follow-up ($.63 \leq \alpha \leq .68$). In addition to reliability estimates, Hodges & Wong also found substantial support for the CAFAS's convergent and discriminative validity. For example, CAFAS total scores have evidenced significant positive zero-order bivariate correlations with an array of instruments measuring broadband psychopathology such as the CBCL (Achenbach & Rescorla, 2001), Child Assessment Schedule (CAS; Hodges et al., 1982), Parent-rated Child Assessment Schedule (PCAS; Hodges, 1990c, as cited in Hodges & Wong, 1996), and Burden of Care Questionnaire (BCQ; Brannan et al., 1995, as cited in Hodges & Wong, 1996). Additionally, youths with high CAFAS total scores have been found more likely than youths with low CAFAS total scores to experience difficulties with personal relationships, be physically

aggressive towards others, have thoughts of harming oneself, be involved with the juvenile justice system, hold negative views towards school, perform poorly in academic-related tasks, and engage in truancy and disruptive behaviors that lead to disciplinary actions or suspension from school (Hodges & Wong, 1996). Finally, discriminative validity has been demonstrated for the CAFAS through its ability to successfully differentiate between patients receiving inpatient, alternative, and outpatient services (Hodges & Wong, 1996; Nakamura et al., 2007).

Procedures

Within the CAMHD service system, care coordinators (the term used for youth mental health case managers in Hawai'i) are tasked with the administration of the OS Problem Severity and Hopefulness Scales with their families on a monthly basis, and personally completing the CAFAS measure for all youth on their caseload on a quarterly basis. Although the practice of completing the CAFAS on a quarterly basis now spans several decades, the mandate for monthly administration of the OS Hopefulness and Problem Severity domain was implemented in only 2014. Accordingly, CAMHD archival data from January 2014 to December 2020 was utilized for the present study. Specifically, a data-limited dataset, including archival youth- and caregiver-rated OS Hopefulness and Problem Severity domain reports as well as care coordinator-rated CAFAS data were electronically extracted from the Child and Adolescent Mental Health Management Information System (CAMHMIS). Prior to analyzing the data, all policies and procedures were approved through the University of Hawai'i at Mānoa's Institutional Review Board.

Analytic Strategy

Data Preparation

Participant inclusionary criteria varied by each study aim, resulting in overlapping, but slightly different samples used throughout the study. Although one final sample for all six analyses could have been created by cumulatively applying all study aims' inclusionary criteria, the sample for each study aim was slightly varied in order to maximize the number of records used for data analyses. For aims one and two, which examined factor structure and internal consistency, respectively, only youth and/or caregivers that had 25% (i.e., one of four scale score items) or more completed of the OS Hopefulness domain report filled out within 30 days of intake into CAMHD were included. For aim three, which investigated the relationship between youth- and caregiver-reported hopefulness, both youth and caregivers were required to have completed at least 25% of the standard OS Hopefulness domain, within 30 days of intake into CAMHD. For the fourth study aim, which explored the relationship between youth and caregiver hopefulness, and youth mental health problems, youth and caregiver reports were included if they had completed 25% or more of the OS Hopefulness or Problem Severity domain report filled out within 30 days of intake into CAMHD. To be included in the study's fifth aim concerned with the relationship between youth and caregiver hopefulness, and overall youth functioning, only youth and caregivers that had completed at least 25% of an intake OS Hopefulness domain report filled in within 30 days of intake into CAMHD, and a fully complete intake CAFAS report completed by a care coordinator within 45 days of intake into CAMHD, were included. Lastly, for the sixth aim of exploratorily examining changes over time in response to treatment delivery, youth and/or caregivers were included if they had at least a partially (≥25%) completed (a) OS Hopefulness domain report filled out by the youth and/or caregiver within 30 days of intake into CAMHD, (b) three-month follow-up OS Hopefulness domain report filled out by the youth and/or caregiver within 30 days of the 90-day posttreatment time

period, (c) intake CAFAS report filled out by a care coordinator within 45 days of intake into CAMHD, and (d) three-month follow-up CAFAS report filled out by a care coordinator within 45 days of the 90-day post-treatment time period, in youth and caregiver analyses, respectively. See Figure 1 for a visual display of inclusionary criteria for all six aims and how they relate to one another.

Data Integrity

Following missing data recommendations from Newman (2014), total and subscale scores of the OS Hopefulness, OS Problem Severity, and CAFAS were handled using either Full Information Maximum Likelihood (FIML) estimation or through Multiple Imputation. The first and second aims (i.e., CFA and internal consistency) utilized M*plus* (Version 8.7), which defaults to FIML, and this missing data strategy was used for those analyses. Regarding missing data treatment for aims three to six, missing data were imputed using IBM SPSS Statistics (Version 28.0.1) with demographic auxiliary variables (i.e., age, sex) that were significantly correlated with the variables of interest (e.g., OS Hopefulness total score, OS Problem Severity total score, CAFAS total score), as suggested by Newman (2014).

Additionally, to gain a preliminary understanding of the current dataset with respect to normality, the distributional properties of skewness and kurtosis of the OS Hopefulness Scale, OS Problem Severity Scale, and CAFAS were examined. Skewness and kurtosis values between -1.0 to 1.0 and -2.0 and 2.0, was regarded as “excellent” and “acceptable”, respectively (George & Mallery, 2013). Transformations were considered if the data were found to be non-normally distributed.

Power and Sample Size

A common parameter used to determine adequate sample size to meet power requirements for running confirmatory factor analyses is having 5-10 participants per variable (Floyd & Widaman, 1995). Following this guideline, the OS Hopefulness 4-item domain required a total of at least 20 to 40 participants per youth and caregiver analyses pertaining to the first two aims of the study. Estimated sample sizes for analyses regarding aims three, four, and five were conducted using G*power (Faul et al., 2009), set at an alpha of .05 and a power level of .80, with effect sizes varying by study aim according to the literature for those types of analyses. Regarding the third aim, which examined the relationship between youth- and caregiver-reported hopefulness, there are no existing studies in the literature from which to estimate an effect size. Thus, the number of potential participants for detecting small (r = .10), medium (r = .30), and large (r = .50) effect sizes, as defined by Cohen (1988), were calculated using G*power (six, 13, and 29, respectively). For the fourth and fifth aims, previous analyses examining bivariate correlations between hopefulness and potentially related measures have generally suggested medium effect sizes (Valle et al., 2004). Thus, a sample size of at least 21 participants were needed for both the fourth and fifth aims. Lastly, aforementioned research investigating the extent to which the OS Hopefulness Scale is sensitive to changes associated with youth service delivery suggest medium to large effect sizes (Weis & Ash, 2009). Therefore, a sample size of at least 34 to 90 participants was needed for the sixth aim. Cumulatively across all proposed analyses, a minimum of 90 youth and 90 caregiver participants were required for all analyses. All study aims were adequately powered.

Aim 1: Confirmatory Factor Analysis (youth and caregiver). A confirmatory factor analysis was performed on each of the caregiver and youth samples to examine the extent to which OS Hopefulness domain items grouped together in our multiethnic community sample. In

order to achieve the necessary metric, the first item loading on each factor was restricted to 1.0, with the remaining items' factor loadings estimated in relation to the value of 1.0. Further, factor loadings were evaluated to confirm that all four items adequately and significantly loaded onto the hypothesized factor. When estimating parameters in CFA models, research suggests that the weighted least squares mean and variance-adjusted (WLSMV) method is preferable (less biased & more accurate than) to a robust maximum likelihood (MLR) method when conducting CFAs with ordinal, Likert-type scale items, primarily because the WLSMV method does not assume normality and continuity of observed variables (Li, 2016). However, Li (2016) also found that particularly when data is considered to have moderately nonnormal latent distribution (skewness = 1.5; kurtosis = 3.0), MLR demonstrates better performance than WLSMV. Thus, if data for this study are found relatively normal with regard to skewness and kurtosis (< 1.5 and < 3.0; Li, 2016), MLR will be used for estimation. In addition, model fit was examined using three test statistics, as recommended by Hu & Bentler (1999): Root Mean Square Error of Approximation (RMSEA; Steiger, 1990) lower than .08 or .05 (adequate or good fit, respectively), Comparative Fit Index (CFI; Bentler, 1990) greater than .90 or .95 (adequate or good fit, respectively), and Tucker-Lewis Index (TLI; Tucker & Lewis, 1973) greater than .90 or .95 (adequate or good fit, respectively). Item loadings with z-scores outside the -1.96 to 1.96 range, calculated by [Estimate / Standard Error] at the 95% confidence level ($\alpha = .05$), were considered adequate and significant.

Aim 2: Internal Consistency (youth and caregiver). Using Cronbach's alpha coefficients, internal consistency reliabilities for both caregiver- and youth-reports of the hopefulness domain were assessed. In general, alpha coefficients greater than .70 are considered

"acceptable," while coefficients greater than .80 and .90 are seen as "good" and "excellent" respectively (George & Mallery, 2013).

Aim 3: Youth and Caregiver Hopefulness. This aim utilized zero-order bivariate Pearson product correlation coefficients to investigate the degree of concordance between youth- and caregiver-rated hopefulness domain totals. Cohen's (1988) guidelines for *r* were used to interpret small (*r* of about .10 or less), medium (*r* of about .30), and large (*r* greater than .50) effect sizes. Furthermore, correlation coefficients were regarded as significant against alphas of .05 and .01.

Aim 4: Hopefulness and Youth Mental Health Problems. Zero-order bivariate Pearson product correlations were used to examine patterns between the OS Hopefulness Scale and OS Problem Severity Scale, separately by youth- and caregiver-reports. Although there are studies showing that high levels of hopelessness are linked to higher risk of suicide (Barnes et al., 2017), suggesting that depressive problems are associated with lower hopefulness, there are currently no youth studies specifically comparing the construct of hope with depression, anxiety, delinquency, and externalizing behaviors. Accordingly, although statistically significant positive correlations between OS Hopefulness Scale scores and all four OS Problem Severity Scale subscales (i.e., depression, anxiety, delinquency, and externalizing behaviors) were expected, this aim was somewhat exploratory in nature. Cohen's (1988) guidelines for *r* were used to interpret small (*r* of about .10 or less), medium (*r* of about .30), and large (*r* greater than .50) effect sizes. Furthermore, correlation coefficients were regarded as significant against alphas of .05 and .01.

Aim 5: Hopefulness and Youth Functioning. Zero-order bivariate Pearson product correlations were also used to examine patterns between the OS Hopefulness Scale and CAFAS total score, separately by youth- and caregiver-report. Cohen's (1988) guidelines for *r* were used

to interpret small (*r* of about .10 or less), medium (*r* of about .30), and large (*r* greater than .50) effect sizes. Furthermore, correlation coefficients were regarded as significant against alphas of .05 and .01.

Aim 6: Changes Over Time in Response to Treatment Delivery (youth and caregiver). Paired sample *t*-tests and effect size statistics, separately by youth- and caregiver-report, were used to determine the extent to which OS Hopefulness Scale scores changed over a three-month period. Cohen's (1988) guidelines for *d* were used to interpret small (*d* of about .2 or less), medium (*d* of about .5), and large (*d* of about .8) effect sizes. Similarly, and for comparative purposes, paired sample *t*-tests were used to examine the extent to which CAFAS scores changed over a three-month treatment period.

Furthermore, for both youth and caregiver reports, zero-order bivariate Pearson product correlation coefficients were computed between OS Hopefulness intake and follow-up scale scores. Likewise, and only for comparative reasons, zero-order bivariate Pearson product correlation coefficients were also examined exploratorily between CAFAS intake and follow-up total scale scores, for both youth and caregiver reports. Consistent with the other aims, Cohen's (1988) guidelines for *r* were used to interpret small (*r* of about .10 or less), medium (*r* of about .30), and large (*r* greater than .50) effect sizes.

Results

Data Integrity

As previously noted, data integrity analyses and treatment of missing data varied by aim. OS Hopefulness total, OS Problem Severity total and subscale, as well as CAFAS total minimum values, maximum values, means, standard deviations, skewness and kurtosis, are presented in

Table 2. Overall, data integrity analyses found that both caregiver- and youth-reported hopefulness data were largely considered normally distributed.

Aim 1: Confirmatory Factor Analysis

Two CFAs were conducted to examine the extent to which the one-factor model fit the study's multiethnic community sample, separately by youth- and caregiver-report. Data integrity analyses on skewness and kurtosis found that both caregiver- (.44 and -.37, respectively) and youth-reported (.47 and -.17, respectively) hopefulness data were considered excellent (George & Mallery, 2013). Thus, robust maximum likelihood (MLR) was used in lieu of diagonally weighted least squares (WLSMV).

Youth-report (*n*= 396). Model indices for the one-factor model included, RMSEA = .07, CFI = .99, TLI = .98. Aligning with expectations, results indicated that the one-factor youth-report model demonstrated adequate to good model fit, with all items significantly loading onto the one factor. Factor loadings were acceptable (.62, .65, .66, .76), with significant z-scores ranging from 16.31 to 43.38.

Caregiver-report (*n*= 986). Model indices for the one-factor model included, RMSEA = .09, CFI = .98, TLI = .96. As hypothesized, results indicated that the one-factor caregiver-report model demonstrated approximately adequate to good model fit, with all items significantly loading onto the one factor. Factor loadings were acceptable (.52, .65, .72, .83), with significant z-scores ranging from 20.37 to 69.66.

Aim 2: Internal Consistency

Youth-report (*n*= 396). As expected, youth scores fell in the "acceptable" range for the total scale score (α = .79). Inter-item correlations for both youth- and caregiver reports are presented in Table 3.

Caregiver-report (*n*= 986). Caregiver scores also performed as hypothesized, with total scores falling in the "good" range (α = .80).

Aim 3: Youth and Caregiver Hopefulness (*n*= 291)

Concerning the relationship between youth and caregiver hopefulness ratings, the total scale correlation performed as expected, evidencing a small and positive correlation at the total scale level ($r = .16$, $p < .01$).

Aim 4: Hopefulness and Youth Mental Health Problems

Youth-report (*n*= 436). The total scale correlation for youth-reported hopefulness and problem severity performed as expected, indicating a large and positive correlation at the total scale level ($r = .57$, $p < .01$). Similarly, medium to large positive correlations were also found between the total youth-reported Hopefulness scale score and all Problem Severity subscale scores: Depression ($r = .65$, $p < .01$), Anxiety ($r = .58$, $p < .01$), Externalizing ($r = .30$, $p < .01$), Delinquency ($r = .20$, $p < .01$), See Table 4 for all youth and caregiver-report bivariate correlations.

Caregiver-report (*n*= 984). Aligning with expectations, the total scale correlation for caregiver-reported hopefulness and problem severity evidenced a large and positive correlation at the total scale level ($r = .59$, $p < .01$). Also performing as hypothesized, medium to large positive correlations were found between the total caregiver-reported Hopefulness scale score and all Problem Severity subscale scores: Externalizing ($r = .51$, $p < .01$), Delinquency ($r = .47$, $p < .01$), Depression ($r = .42$, $p < .01$), Anxiety ($r = .29$, $p < .01$).

Aim 5: Hopefulness and Youth Functioning

Youth-report (*n*= 179). Contrary to expectations, the correlation for youth-reported hopefulness and CAFAS scores did not reach statistical significance at the total scale level ($r =$

.03, p = .70). Given this somewhat unexpected result, two follow up correlations were completed, based on some research suggesting that the CAFAS Total scale score can be broken down further into Internalizing and Externalizing dimensions (Hodges, 2014). The total youth-reported Hopefulness scale score and the CAFAS Externalizing subscale did not reach statistical significance (r = -.09, p = .23). Notably, however, a medium and positive correlation was found between the total youth-reported Hopefulness scale score and the CAFAS Internalizing subscale (r = .34, p < .01). See Table 5 for all youth and caregiver-report bivariate correlations.

Caregiver-report (*n*= 446). As predicted, the total scale correlation for caregiver-reported hopefulness and problem severity evidenced a medium and positive correlation at the total scale level (r = .30, p < .01). To remain consistent with analyses for youth-reported hopefulness and youth functioning, two follow up correlations with the CAFAS's Internalizing and Externalizing dimensions (Hodges, 2004) were performed. Small to medium positive correlations were found between the total caregiver-reported Hopefulness scale score and the CAFAS subscale scores: Internalizing (r = .12, p = .01), Externalizing (r = .31, p < .01).

Aim 6: Changes Over Time in Response to Treatment Delivery (youth and caregiver)

Youth-report. Both paired sample t-tests performed as expected. Total youth-reported Hopefulness scale scores collected at three-month follow up (M = 10.98, SD = 4.23) were significantly lower (indicating higher hopefulness) than total scores collected at intake (M = 11.91, SD = 4.33), t(202) = 3.54, p <.01, evidencing a small effect size (d = .25). A significant and medium effect sized decrease (d = .67) was also found between total CAFAS scores at follow up (M = 80.00, SD = 35.48) as compared to total CAFAS scores at intake (M = 103.19, SD = 32.90), t(112) = 7.09, p < .01 (See Table 6). Further aligning with expectations, significant, positive, and large and medium-large relationships, respectively, were observed between total

youth-reported Hopefulness intake and three-month follow up scores ($r = .55$, $p < .01$) as well as CAFAS intake and three-month follow up scores ($r = .40$, $p < .01$). See Figure 2 for youth-reported cross-lag panel correlations between total Hopefulness scores and CAFAS scores at intake and three-month follow up.

Caregiver-report. As predicted, the paired sample *t*-test demonstrated that total caregiver-reported Hopefulness scale scores collected at three-month follow up ($M = 10.78$, $SD = 4.19$) were significantly lower than total scores collected at intake ($M = 12.46$, $SD = 4.47$), $t(20580) = 9.01$, $p < .01$, indicating higher hopefulness at follow up with a medium effect size ($d = .51$). Similarly, a significant decrease and medium effect size ($d = .49$) were also found when total CAFAS scores at follow up ($M = 81.46$, $SD = 32.95$) were compared to total CAFAS scores at intake ($M = 95.77$, $SD = 29.67$), $t(354) = 9.17$, $p < .01$ (See Table 6). Further aligning with expectations, significant, positive, and large relationships were observed between total caregiver-reported Hopefulness intake and three-month follow up scores ($r = .55$, $p < .01$) as well as CAFAS intake and three-month follow up scores ($r = .55$, $p < .01$). See Figure 3 for caregiver-reported cross-lag panel correlations between total Hopefulness scores and CAFAS scores at intake and three-month follow up.

Discussion

The present study examined the utility of the OS Hopefulness Scale in a large community mental health sample of multiethnic youth and families through its psychometric properties, and relationships to other typically evaluated constructs within the context of treatment service delivery. This investigation helps to increase our field's attention to the understudied area of hopefulness in community youth mental health services, and is also the first study to investigate the OS Hopefulness Scale with a majority multiethnic sample. Overall results confirmed a one-

factor structure for both youth- and caregiver-report models, and acceptable to good internal consistency. As hypothesized, a small and positive correlation between youth and caregiver OS Hopefulness total scale scores was found. In addition, large and positive correlations were found between the youth- and caregiver-reported OS Hopefulness total scores, and youth- and caregiver-reported OS Problem Severity total scores, respectively. Contrary to expectations, correlation between youth-reported OS Hopefulness and CAFAS total scores were not statistically significant at the total scale level. Notably, caregiver-reported OS Hopefulness and CAFAS total scores evidenced a medium and positive correlation. Finally, OS Hopefulness intake and three-month follow up total scores were significantly and positively related to one another.

Consistent with findings from Ogles et al. (2000)'s foundational study on the Ohio Scales, my first hypothesis that the OS Hopefulness Scale's one-structure model would fit significantly across both informant types was supported through confirmatory factor analyses. For both youth- and caregiver-reports, all fit indices (i.e., RMSEA, CFI, TLI) indicated adequate to good fits. Although there are currently no other existing studies (to the author's knowledge) examining the factor structure of the OS Hopefulness Scale, there are several potentially related measures worth noting within the broader psychometric literature in this area. Firstly, studies on Synder's CHS (1995) have generally found adequate to good fit for its purported two-factor model (i.e., Agency, Pathway) in various ethnic groups both within and outside of the United States (Valle et al., 2004; Yang et al., 2019). Additionally, work on Herth's Hope Index have found mixed psychometric support for its three-factor model (i.e., Temporality and Future, Positive Readiness and Expectancy, Interconnectedness), with differing studies suggesting a one-factor model (Phillips-Salimi et al., 2007), a two-factor model (van Gestel-Timmermans et al.,

2010; Haugan et al., 2013), or the original three-factor model (Herth, 1992; Chan et al., 2012). In interpreting my first aim's findings, it is important to consider the difficulty of directly comparing measures of hope as they each map on to different theories. As a result, it is currently unclear which definition of hope or measurement scheme best captures the construct. Additionally, comparison of the OS Hopefulness and other hope measures should be tempered with the knowledge that OS Hopefulness does not follow a particular theory of hopefulness, and it remains to be seen if hope is uni- or multidimensional, or even a multi-level construct. Notably, however, the overall literature in this area seems to collectively suggest that the construct of hope (or hope-related constructs) can potentially be assessed regardless of its specific definition. Specifically related to the OS Hopefulness Scale, however, although this study's findings demonstrate the presence of factor validity, it is unclear what exactly this factor represents. Forthcoming studies in this area may consider directly comparing the hope measures mentioned above to investigate various factor structures, both within and across measures, as well as convergent and divergent validity patterns with other related indices. As previously mentioned, creation of the OS Hopefulness Scale was not attached to a theory of hopefulness, and the extent to which this measure comports with leading theories of hopefulness, remain unknown. Further, it also remains unclear precisely what construct is represented by the scale's one factor model.

The second study aim examined internal consistencies for youth- and caregiver-reports on the OS Hopefulness Scale. It was hypothesized that scores for both youth- and caregiver-reports would demonstrate acceptable internal reliability. Hypotheses for this aim were generally supported, although the pattern of findings regarding internal reliabilities varied slightly by informant type. Specifically, utilizing commonly acknowledged qualitative labels and

benchmarks for describing Cronbach alpha coefficients (George & Mallery, 2013), the youth-reported OS Hopefulness total scores fell in the acceptable range, while the caregiver-reported OS Hopefulness total scores fell in the good range. However, the reader is reminded that the magnitude of this difference was small (i.e., .01). These findings comport with prior studies examining the OS Hopefulness measure in other contexts. For example, using numerous samples of predominantly White youth within Ohio, Ogles et al. (2000) and Ogles et al., (2001) found youth-report Cronbach alpha coefficients of .75 to .87, respectively; and caregiver-reported values of .71 to .87. Overall then, this investigation's results fall within the range of values for the literature in this area, and it is notable that studies cumulatively suggest acceptable and good internal consistencies for both informant types.

Considering that this is the first study to examine the OS Hopefulness Scale's psychometric properties in a multiethnic community sample as well as the lack of existing measures of hope aligning squarely with the OS Hopefulness, I tentatively provide comparisons against studies that examined internal consistencies of other hope measures. To start, psychometric studies investigating the CHS (Synder, 1995) have consistently found internal consistency values in the good range (Valle et al., 2004; Yang et al., 2019). Regarding the Herth Hope Index, Cronbach alpha coefficients have largely been found to fall in the acceptable and good range (Herth, 1992). At the broadest level then, it appears that internal consistencies for measures of hope more broadly have been slightly mixed, fluctuating between the acceptable and good range. Finally, when interpreting these findings, it is important to take into account two considerations. Firstly, the Cronbach alpha coefficient is a statistic of internal consistency that is sensitive to item sample size (Schmitt, 1996), such that a larger number of items favor higher coefficient values, and assumes tau-equivalence (i.e., equal factor loadings for all items; Cho &

Kim, 2015). Accordingly, the low number of items (i.e., four) on the OS Hopefulness Scale may have contributed to less than excellent Cronbach alpha coefficients, and it may be particularly noteworthy that the demonstrated acceptable and good values demonstrated in this study are commensurate with the CHS (six items; Synder, 1995) and the Herth Hope Index (12 items; Herth, 1992), both of which are longer instruments. Future studies utilizing the OS Hopefulness Scale and other hope measures may consider using alternative measures of reliability such as Omega (McDonald, 1999).

My third hypothesis noting that youth- and caregiver-reported hopefulness would significantly and positively relate to one another, was supported. However, this finding is difficult to interpret this time given the absence of peer-reviewed publications around caregiver-child concordance on self-reported hopefulness (to this author's knowledge). As a reminder to readers, caregiver-reported OS Hopefulness Scale items do not measure caregivers' estimates about how hopeful their child is; rather, caregivers report their sense of hopefulness in their ability to care for their child. Therefore, although potentially related, it seems worthwhile to differentiate this construct from youth self-reported hopefulness about their own future. Further complicating the matter, given that OS Hopefulness Scales across informant types do not map onto any particular theory of hope, it is unclear exactly what this relationship means. These limitations notwithstanding, the small positive association indicates a potential future area of study, possibly intersecting other research domains into the hope literature. For instance, if caregiver hopefulness is related to overall parental psychopathology or wellbeing (e.g., caregiver depression), my findings potentially relate to literature on the positive relationship between maternal depression and youth psychopathology (Ivanova et al., 2022). As another example, perhaps caregiver hopefulness, as captured in this study, serves as a proxy for caregiver

involvement and may align with prior work purporting that adolescents' sense of hopefulness and life satisfaction increases when caregivers are more actively involved in services (e.g., aiding their adolescent's goals; Munoz et al., 2019). Additionally, it is possible my results speak to hope as a shared experience amongst people in the same environment, as seen in a study examining shared hope in group therapy (Kivlighan et al., 2016).

The fourth aim investigated the relationship between mental health problems and hopefulness for both youth- and caregiver-reports. Consistent with my hypotheses, results across both informant types evidenced significant inverse relationships between hopefulness and mental health problems more broadly. In addition, lower levels of hopefulness were also significantly associated with higher levels of specific psychopathological domains such as anxiety, depression, delinquency, and externalizing concerns, with the strongest relationship shown between hopefulness and depression.[1] Although there is currently no empirical literature on the relationship between youth-reported hopefulness and overall youth-reported mental health problems, it is worthwhile to review work surrounding youth-reported hopefulness and specific domains of psychopathology reported by youth.

Starting with depression, one may naturally expect hopefulness to be largely and inversely related to depression, as hopefulness is sometimes seen as the antonym of hopelessness, a symptom of depression. My findings are consistent with this line of reasoning, and using commonly acknowledged qualitative labels and benchmarks for describing effect sizes (Cohen, 1988), this association is larger than the inverse relationship found between hopefulness and mental health problems more broadly. At the same time, some caution should be used when interpreting this large and inverse relationship. Specifically, work by Huen et al. (2015) suggests that while hopefulness and hopelessness are inversely related, they are separate constructs and do

[1] Readers are reminded that lower scores on the OS Hopefulness Scale indicate higher hopefulness and lower scores on the OS Problem Severity Scale indicate less reported mental health problems. Thus, inverse relationships are indicated by positive correlations.

not represent opposite ends of one unidimensional domain. Lower levels of hopefulness were also significantly associated with higher levels of anxiety, supporting the larger evidence base that hopefulness and anxiety have a strong inverse relationship (Caretta et al., 2014; DiPierro et al., 2018). As predicted, lower levels of hopefulness in this study were also significantly correlated with higher self-reported delinquency. My finding here is consistent with a few studies demonstrating a small, yet significant inverse association between delinquency and hope, potentially serving as a protective factor for youth with adverse childhood experiences (Fite et al., 2014; Sparks et al., 2021). Regarding the demonstrated negative relationship between youth-reported hopefulness and youth-reported externalizing concerns (e.g., "arguing with others," "fits of anger"), the lack of an existing literature in this area makes it challenging to place this finding within a broader context. At this time, one might speculate that the small inverse relationship found here is due to lower hopefulness corresponding with mental health problems more broadly. Thus, the extent to which hopefulness uniquely relates to the specific psychopathology domain of externalizing concerns remains an area of future study.

Similarly, hypotheses regarding the relationship between caregiver-reported hopefulness and caregiver-reported ratings of their child's mental health problems were supported. Considering that the OS Hopefulness Scale is the only measure of hope inquiring about caregivers' perspectives on their ability to care for their child, coupled with the general paucity of studies using the OS Hopefulness Scale, this study appears to be the first to explore the relationship between caregiver-reported hopefulness and youth psychopathology. However, my finding here could potentially be situated within the broader research literature in the following way. Understanding that caregivers' reports on their ability to take care of their child plausibly indicates stress and caregiver psychopathology levels, results above support findings that youth

mental health problems are consistently related to caregiver mental health problems (Greder et al., 2017; Ivanova et al., 2022). Along these lines, the medium to large correlations between caregiver-reported hopefulness and caregiver-reported mental health problems for their children are somewhat expected.

Although not part of this study's originally proposed analyses or hypotheses, it is potentially worth briefly noting the cross-informant correlations between hopefulness and mental health problems. As one might expect at the broadest level, there was a positive yet non-significant correlation between youth-reported hopefulness and caregiver-reported problem severity. Concerning its performance related to particular domains of psychopathology, results mirrored the pattern of correlations found between youth-reported hopefulness and problem severity, such that youth-reported hopefulness had the largest inverse relationship with caregiver-reported depression, followed by anxiety. With regard to the relationship between caregiver-reported hopefulness and youth-reported problem severity most broadly, a somewhat expected medium and inverse relationship was found. Interestingly, caregiver-reported hopefulness inversely related to all youth-reported subdomains of psychopathology, but achieved statistical significance for only the externalizing and delinquency areas. To this author's knowledge, there currently is no literature in this area for situating my findings within the larger research base. Given the complexity in interpreting cross-informant relationships between youth- and caregiver-reported hopefulness and mental health problems (e.g., reporter type for hopefulness, by reporter type for mental health problem, by mental health problem type), this type of work remains an area of future study.

Regarding the fifth study aim, results varied somewhat by informant type such that the relationship between youth-reported hopefulness and care coordinator-rated youth functioning

was near zero and did not reach statistical significance; while caregiver-reported hopefulness significantly and positively related to better youth functioning as rated by care coordinators, at a medium effect size. Starting with youth-reported hopefulness, results were contrary to expectations. Similar to aim four, it is difficult to compare my results with the broader existing literature because, to my knowledge, there are no such studies that have investigated this relationship. Also, two additional issues complicate interpretation of my results even further. First, youth functioning was measured using the CAFAS which consists of four externalizing subscales, two internalizing subscales, one substance use subscale and one psychosis subscale (Hodges, 2004). The effects of this potential disproportionate focus on externalizing functioning in relation to youth reported hopefulness remains unknown. Second, the CAFAS is a measure rated by a care coordinator, rather than youths themselves, and the outcomes of simultaneously muddling informant type, construct, and construct focus are not well understood. Appreciating these potential confounds with regard to placing my findings within the context of the existing literature, my youth-reported results are inconsistent with the general notion that higher levels of hopefulness are associated with better youth functioning, as indicated by academic achievement (Bryce et al., 2019), feelings of self-worth (Ciarrochi et al., 2007; Synder et al., 1997), and life satisfaction and well-being (Marques et al., 2015; Bryce et al., 2019). For example, Marques et al. (2015) found that students with high levels of hopefulness had significantly higher functioning in school (i.e., school engagement, academic achievement) and intrapersonal domains (i.e., life satisfaction, self-worth, mental health), as compared to students with average and low levels of hopefulness. Looking to some literature outside of mental health, cancer research has demonstrated that patients who reported more daily hope also reported higher social and role functioning at the same time point (Steffen et al., 2018).

Taken together, the constellation of my findings and the broader literature potentially suggest that the relationship between hopefulness and functioning varies by the type of functioning assessed (e.g., academic, social). As such, although not an initially proposed aim in my study, supplementary analyses examined the relationships between youths' levels of hopefulness and the CAFAS' externalizing and internalizing domains. My findings here indicated that higher levels of hopefulness were found to be significantly associated with the higher levels of internalizing (but not externalizing) functioning. Moving forward, the extent to which my findings are considered inconsistent with the literature should be tempered against the confounds and limitations mentioned above.

Performing as predicted, and consistent with Weis and Ash's (2009) study on caregiver-reported hopefulness and youth functioning, higher levels of caregiver-reported hopefulness was significantly associated with higher levels of care coordinator-reported youth functioning. Additionally, although not a part of this study's originally proposed hypotheses or analyses, noteworthy of brief mention are the CAFAS subscale by caregiver-reported hopefulness results. Specifically, a medium and significant positive relationship was found between caregiver-reported hopefulness and youths' externalizing functioning, and a smaller yet still significant positive relationship was evidenced for caregiver-reported hopefulness and internalizing functioning. Considering that this is the first study to examine these subscale relationships in detail, there are numerous potential areas of future study including closer investigation into why relationships between hopefulness and youth functioning differed by informant type and functioning domain.

My sixth and final aim concerning the extent to which youth- and caregiver-reported hopefulness changed over time in response to treatment delivery aligned with a priori

hypotheses: youth-reported hopefulness increased at a small effect size level and caregiver reported hopefulness increased a medium effect size level, after three months of treatment. Furthermore, both youth- and caregiver-reported hopefulness at intake was significantly and positively related to youth- and caregiver-reported hopefulness after three months of services. Prior work on change in hopefulness over time have largely been mixed. Although Ogles et al. (2004) did not find significant changes in hopefulness after three months of treatment, two subsequent and more recent studies did find that both youth- and caregiver-reported hopefulness improved significantly between treatment admission and 3-month follow up (Weis & Ash, 2009) and discharge (Kapp et al., 2015). Moving forward, future research in this area may consider additional longitudinal studies using more penetrating analytic designs, such as following youth and caregivers' levels of hopefulness across numerous time points, rather than using just pre- to post-treatment study designs.

Limitations

Despite some notable strengths of the present study, my findings should be considered within the context of a few limitations. Firstly, applicable to all study aims, is the issue of potential sample bias with regard to youth and families that filled out the necessary Ohio Scales measures to be included in this investigation. The extent to which my study participants were representative of youth typically served in public mental health systems, both inside and outside of our state are not fully known. Relatedly, youths' ethnicities were missing for a large number of study participants, potentially exacerbating this overall generalizability concern. Notably, however, available demographic data for participants in my study did suggest that my sample was similar to the general CAMHD population along a variety of parameters, such that the average participant had a mean age of approximately 13 years, slightly more than half of

included youth were male, and the most predominantly reported ethnicity was multiethnic and Pacific Islander. Another potential sample bias issue relates to heterogenous data collection methods for obtaining Ohio Scales measures from youth and families more broadly. Specifically, data collection efforts by CAMHD care coordinators have reportedly varied (e.g., the OS Hopefulness Scale and Problem Severity Scale were administered in different settings including home or in the community, or different formats including in-person or over the phone; Kotte et al., 2016), and the extent to which such variability may have influenced my study results remain unknown.

A second limitation applicable to all study aims broadly concerns my reliance on questionnaire data for all analyses. Namely, although leveraging reports from multiple types of informants (i.e., youth, caregivers, care coordinators), multiple methods of assessment were not utilized. This limitation was especially pronounced in my fourth aim, where I examined different scale scores (i.e., hopefulness versus problem severity) from the same questionnaire for the same informant (youth or caregiver). The extent to which my correlations were artificially inflated because of common method variance remains unknown, and future work in this area should consider leveraging multi-method assessment strategies. Additionally, as with all types of research endeavors that rely on questionnaire data, testing effects and instrument decay (Campbell, 1957) may have affected my findings.

A third limitation relates mostly to my fifth study aim for examining the relationship between hopefulness and youth functioning, but also to some extent my fourth aim on hopefulness and youth mental health problems; namely, cross informant correlational analyses that confound construct and informant type. For instance, as mentioned previously, in depth interpretation of findings that compare care coordinator reported functioning against youth

reported hopefulness is difficult because informant type and assessed construct vary simultaneously. A better approach would entail each informant providing reports on all constructs of interest. Finally, and also related to difficulties with interpreting cross-informant type relationships, different types of informants may be potentially more valid reporters of certain types of problems than others. For instance, some research suggests that caregivers may be more skilled at identifying certain forms of difficulties (e.g., rule breaking) compared to others (e.g., anxious thoughts; Aebi et al., 2017).

Implications and Future Studies

Considering the present study at the wholistic level, the OS Hopefulness Scale demonstrates potential to be a useful, efficient, and cost-effective tool with ethnically diverse samples that are substantially different from those included in previous studies. Given that it is the only measure of hopefulness that incorporates caregiver perspective, this study also advances the literature on hopefulness as reported by multiple informants. In light of the paucity of research on the OS Hopefulness Scale thus far, future investigations could extend the current literature in this area by examining the scale's convergent validity with other measures of hope (e.g., CHS, Herth Hope Index), and divergent validity (e.g., measures of depression) as well.

Future research replicating the psychometric analyses performed in the current study should also be considered along diversity dimensions in addition to ethnicity, such as examining the potential for differential scale performances with youth experiencing certain types of psychopathologies and translated versions of this measure. Furthermore, given the variety of interventions that youth in public mental health care settings receive (e.g., intensive in-home, family functioning therapy, residential treatment), forthcoming studies could investigate levels of youth- and caregiver-reported hopefulness across different levels of care and mental health

problem severities. Scholars could also highly consider using measurement invariance analyses to investigate the extent to which individuals of different backgrounds have varying perspectives on the construct of hope itself.

Expanding on work for identifying meaningful relationships between youth- and caregiver-reported hopefulness and psychological problems along with more distal treatment outcomes also seems warranted. Evaluation of the OS Hopefulness Scale's predictive validity related to numerous types of adaptive outcomes across multiple time points would help increase our field's understanding of how hopefulness, mental health problems, and functioning develop and covary over time. Additionally, latent profile analysis exploring different groups/classes of youth- and caregiver-reported hopefulness and problem severity scores (e.g., high youth hopefulness, low problem severity; high caregiver hopefulness, high problem severity) could potentially examine interactions between class membership assignment and response to treatment.

The focus of this project centered on examining the utility of a free multi-informant four-item measure of hopefulness (i.e., OS Hopefulness Scale; Ogles et al., 2004), a construct that has received little attention but is potentially important for youth and caregiver wellness, within a large statewide public mental health care system. Collectively, my study found good factor structure, acceptable internal consistency, sensitivity to change over time, and significant relationships with youth mental health problems and functioning as generally expected. Notwithstanding several limitations and future directions of inquiry, this study was the first to examine hopefulness in a primarily multiethnic youth community mental health sample and provides hope to our scientific community for a free, reliable and valid empirically supported strategy in this domain.

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Table 1

Demographic Information for Youth Study Participants

Variable	n	%
Age		
Minimum: 5.02	-	-
Maximum: 18.24	-	-
Mean (SD): 12.75 (3.45)	-	-
Gender		
Male	626	60.4
Female	410	39.6
Ethnicity		
Multiethnic	317	30.6
Native Hawaiian or other Pacific Islander	85	8.2
Asian	66	6.4
White	62	6.0
Black or African American	9	0.9
American Indian or Alaska Native	1	0.1
Unreported or refused to report	496	47.9
DSM-5 Principal Diagnostic Categories		
Depressive Disorders	164	15.8
Disruptive, Impulse-Control, and Conduct Disorders	153	14.8
Attention-Deficit/Hyperactivity Disorder	149	14.4
Posttraumatic Stress Disorder	65	6.3
Anxiety Disorders	46	4.4
Bipolar and Related Disorders	11	1.1
Substance-Related and Addictive Disorders	11	1.1
Other Trauma- and Stressor Related Disorders	7	.7
Schizophrenia Spectrum and Other Psychotic Disorders	6	.6
Obsessive-Compulsive Disorders and Related Disorders	6	.6
Intellectual Disabilities	6	.6
Autism Spectrum Disorder	3	.3
Other Infrequent CAMHD Diagnoses	2	.2
General Medical Conditions or Codes No Longer Used	64	6.2
None	343	33.1

Note. DSM-5 = Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition. The Youth principal diagnoses reported are categorized using the larger superordinate DSM-5 classification

system. While at least one principal diagnosis was clearly noted for each youth (including the possibility of no diagnosis or “None”), because of the database structure housing this information, we could not glean any additional principal diagnosis. Thus, youth with more than one principal diagnosis (e.g., co-principal diagnostic conditions) are most likely under identified.

Table 2

Means and Normality Statistics for OS Hopefulness Domain, Total Scores, OS Problem Severity Domain, Total and Subscale Scores, and CAFAS Total Scores

Measure	Informant	Subscale	# of items	Min	Max	Mean	SD	Skewness	Kurtosis
Hopefulness	Youth (*n*=399)	Total	4	4	24	11.64	4.29	.47	-.17
	Caregiver (*n*=986)	Total	4	4	24	12.70	4.55	.44	-.37
Problem Severity	Youth (*n*=404)	Externalizing	8	0	38	11.70	8.06	.68	-.05
		Delinquency	3	0	15	2.50	3.53	1.64	2.17
		Anxiety	3	0	15	4.36	4.07	.86	-.15
		Depression	6	0	28	6.66	6.84	1.13	.56
		Total	20	0	87	24.91	17.06	.77	.27
	Caregiver (*n*=966)	Externalizing	8	0	40	15.86	9.69	.26	-.77
		Delinquency	3	0	15	2.52	3.39	1.70	2.50
		Anxiety	3	0	15	3.93	3.57	0.92	.23
		Depression	6	0	30	6.74	6.04	1.04	.65
		Total	20	0	95	28.79	16.98	.61	.14
CAFAS	Care coordinator (*n*=469)	Total	8	10	210	95.12	31.09	.67	.69

Note. Hopefulness = Ohio Scales Short Form, Hopefulness Domain; Problem Severity = Ohio Scales Short Form, Problem Severity Domain; CAFAS = Child and Adolescent Functional Assessment Scale

Table 3

OS Hopefulness Domain, Youth- and Caregiver-Reports Inter-item Correlations

	Youth-Report				Caregiver-Report			
	H1	H2	H3	H4	H1	H2	H3	H4
Youth-Report								
H1: Overall, how satisfied are you with your life right now?	-							
H2: How energetic and healthy do you feel right now?	.57	-						
H3: How much stress or pressure is in your life right now?	.52	.45	-					
H4: How optimistic are you about the future?	.56	.44	.41	-				
Caregiver-Report								
H1: Overall, how satisfied are you with your relationship with your child right now?	.17	.10	.14	.12	-			
H2: How capable of dealing with your child's problems do you feel right now?	.10	.11	.10	.12	.68	-		
H3: How much stress or pressure is in your life right now?	.10	.10	.14	.11	.44	.52	-	
H4: How optimistic are you about your child's future right now?	.06	.06	-.02	.10	.54	.56	.36	-

Note. $n = 287$

Table 4

OS Hopefulness Domain, Total Scores, and OS Problem Severity Domain, Total and Subscale Scores, Youth- and Caregiver-Reports Bivariate Correlations

	1	2	3	4	5	6	7	8	9	10	11	12
Youth-Report[1]												
Hopefulness												
1. Total	-											
Problem Severity												
2. Externalizing	***.30****	-										
3. Delinquency	***.20****	.42**	-									
4. Anxiety	***.58****	.42**	.22**	-								
5. Depression	***.65****	.45**	.23**	.76**	-							
6. Total	***.57****	.83**	.54**	.78**	.83**	-						
Caregiver-Report[2]												
Hopefulness												
7. Total	**.16****	.24**	.14*	.06	.10	**.20****	-					
Problem Severity												
8. Externalizing	-.01	.44**	.14*	.05	.03	.26**	***.51****	-				
9. Delinquency	.05	.10	.40**	-.00	-.04	.10	***.47****	.35**	-			
10. Anxiety	.13*	.12*	-.02	.34**	.24**	.22**	***.29****	.33**	.13**	-		
11. Depression	.22**	.20**	.10	.29**	.35**	.31**	***.42****	.41**	.30**	.67**	-	
12. Total	**.11**	.36**	.19**	.19**	.18**	.32**	***.59****	.85**	.53**	.66**	.79**	-

Note. Hopefulness = Ohio Scales Short Form, Hopefulness Domain; Problem Severity = Ohio Scales Short Form, Problem Severity Domain; Bolded text denotes key relationships. Italicized text denotes results that align with hypothesis.

[1]n = 436; [2]n = 984

*p <.05; **p < .01

Table 5

OS Hopefulness Domain, Total Scores, Youth- and Caregiver-Reports, and CAFAS Total Scores Bivariate Correlations

	1	2	3	4	5
Hopefulness Total					
1. Youth-Report[1]	-				
2. Caregiver-Report[2]	.14	-			
CAFAS					
3. Externalizing	**-.09**	**.31****	-		
4. Internalizing	***.34*****	**.12***	-.02	-	
5. Total	**.03**	**.30****	.77**	.48**	-

Note. Hopefulness = Ohio Scales Short Form, Hopefulness Domain; CAFAS = Child and Adolescent Functional Assessment Scale; Externalizing = Elevated School/Work, Home, Community, and Behavior Toward Others subscale scores; Internalizing = Elevated Moods/Emotions and Self-Harmful Behavior subscale scores (Hodges, 2004). Bolded text denotes key relationships. Italicized text denotes results that align with hypothesis.

[1]$n = 179$; [2]$n = 446$

*$p < .05$; **$p < .01$

Table 6

Intake and 3-Month Follow-Up Scores for OS Hopefulness Domain, Youth- and Caregiver-Reports, and CAFAS Analyses

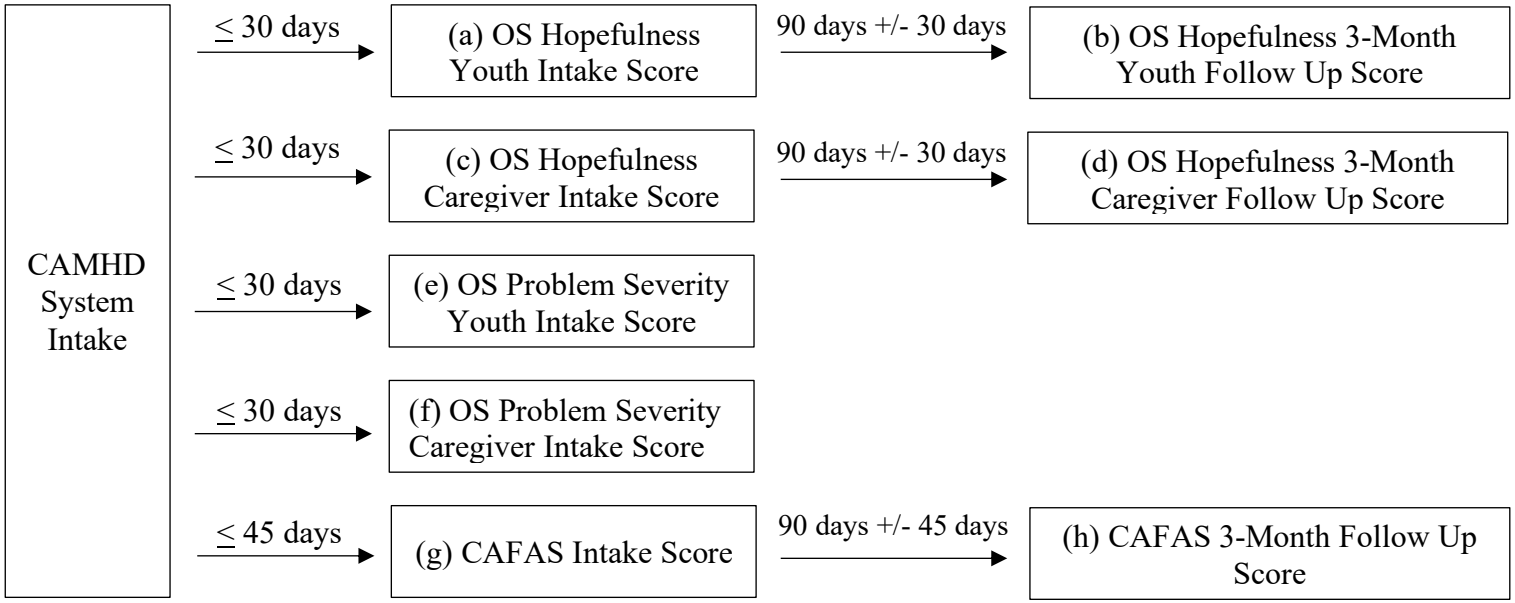
Measure	Test Occasion	*M*	*n*	*SD*	*t*	*df*	Significance (2-tailed)	Effect Size
Youth-Report Hopefulness	Intake	11.91	203	4.33	3.54	202	<.01**	.25
	Follow-up	10.98	203	4.23				
CAFAS	Intake	103.19	113	32.90	7.09	112	<.01**	.67
	Follow-up	80.00	113	35.48				
Caregiver-Report Hopefulness	Intake	12.46	538	4.47	9.01	20580	<.01**	.51
	Follow-up	10.78	538	4.19				
CAFAS	Intake	95.77	355	29.67	9.17	354	<.01**	.49
	Follow-up	81.46	355	32.95				

Note. Hopefulness = Ohio Scales Short Form, Hopefulness Domain; CAFAS = Child and Adolescent Functional Assessment Scale.

**$p < .01$

Figure 1

Inclusionary criteria per study aim



Aim 1: Confirmatory factor analysis using youth-report (a)

Confirmatory factor analysis using caregiver-report (c)

Aim 2: Internal consistency using youth-report (a)

Internal consistency using caregiver-report (c)

Aim 3: Youth and caregiver hopefulness (a) + (c)

Aim 4: Investigating hopefulness and youth mental health problems using youth-report (a) + (e)

Investigating hopefulness and youth mental health problems using caregiver-report (c) + (f)

Aim 5: Investigating hopefulness and youth functioning using youth-report (a) + (g)

Investigating hopefulness and youth functioning caregiver-report (c) + (g)

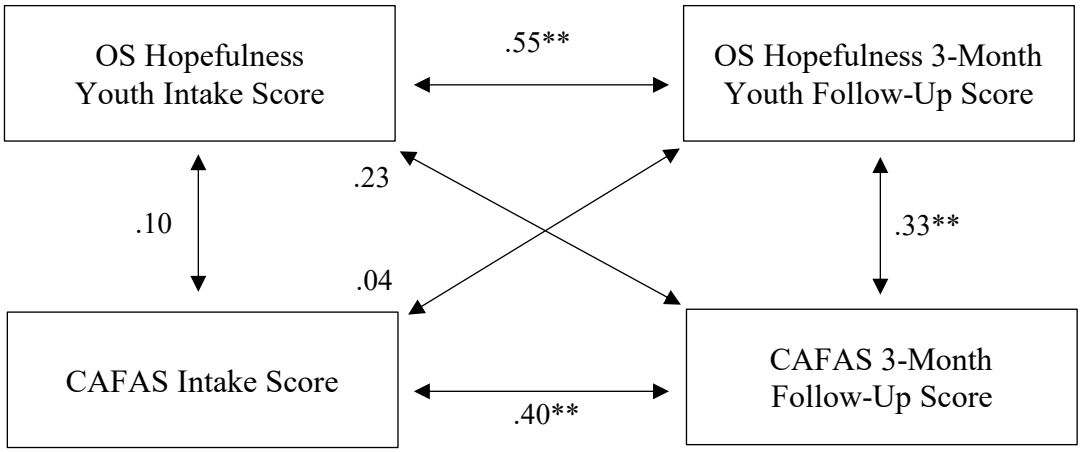
Aim 6: Changes over time in response to treatment delivery using youth-report (a) + (b) and (g) + (h)

Changes over time in response to treatment delivery using caregiver-report (c) + (d) and (g) + (h)

Note. CAMHD = Hawai'i State Child and Adolescent Mental Health Division; OS Hopefulness = Ohio Scales, Hopefulness Domain; OS Problem Severity = Ohio Scales, Short Form, Problem Severity Domain; CAFAS = Child and Adolescent Functional Assessment Scale.

Figure 2

Youth-report cross-lag panel correlations between Hopefulness and CAFAS scores at intake and three-month follow-up

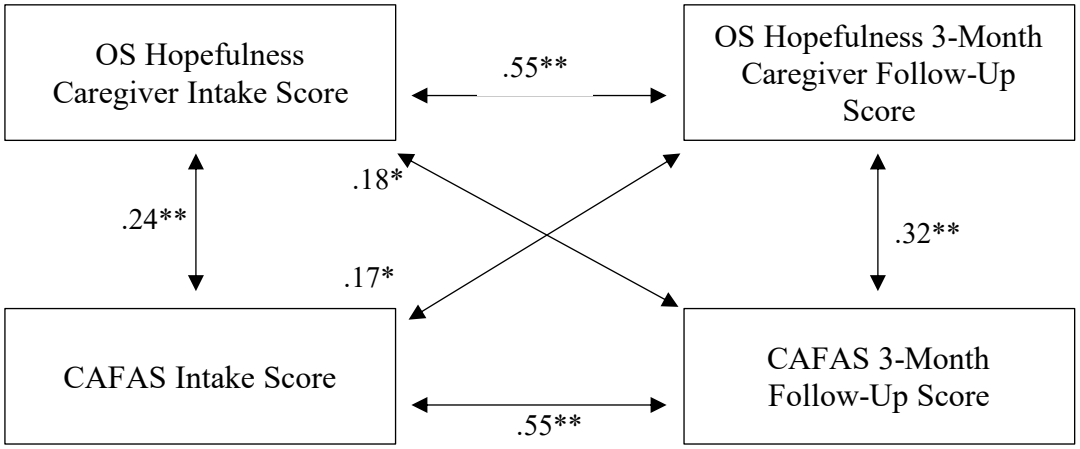


Note. $n = 62$. OS Hopefulness = Ohio Scales, Hopefulness Domain; CAFAS = Child and Adolescent Functional Assessment Scale.

*$p < .05$; **$p < .01$

Figure 3

Caregiver-report cross-lag panel correlations between Hopefulness and CAFAS scores at intake and three-month follow-up



Note. n = 208. OS Hopefulness = Ohio Scales, Hopefulness Domain; CAFAS = Child and Adolescent Functional Assessment Scale.

* $p < .05$; ** $p < .01$

Appendix A: Ohio Scales Short Form, Youth-Report

Ohio Mental Health Consumer Outcomes System
Ohio Youth Problem, Functioning, and Satisfaction Scales **Y**
Youth Rating – Short Form (Ages 12-18)

Name: _____ Date: _____ Grade: _____ ID#: _____ Completed by Agency

Date of Birth: _____ Sex: ☐ Male ☐ Female Race: _____

Instructions: Please rate the degree to which you have experienced the following problems in the past 30 days.	Not at All	Once or Twice	Several Times	Often	Most of the Time	All of the Time
1. Arguing with others	0	1	2	3	4	5
2. Getting into fights	0	1	2	3	4	5
3. Yelling, swearing, or screaming at others	0	1	2	3	4	5
4. Fits of anger	0	1	2	3	4	5
5. Refusing to do things teachers or parents ask	0	1	2	3	4	5
6. Causing trouble for no reason	0	1	2	3	4	5
7. Using drugs or alcohol	0	1	2	3	4	5
8. Breaking rules or breaking the law (out past curfew, stealing)	0	1	2	3	4	5
9. Skipping school or classes	0	1	2	3	4	5
10. Lying	0	1	2	3	4	5
11. Can't seem to sit still, having too much energy	0	1	2	3	4	5
12. Hurting self (cutting or scratching self, taking pills)	0	1	2	3	4	5
13. Talking or thinking about death	0	1	2	3	4	5
14. Feeling worthless or useless	0	1	2	3	4	5
15. Feeling lonely and having no friends	0	1	2	3	4	5
16. Feeling anxious or fearful	0	1	2	3	4	5
17. Worrying that something bad is going to happen	0	1	2	3	4	5
18. Feeling sad or depressed	0	1	2	3	4	5
19. Nightmares	0	1	2	3	4	5
20. Eating problems	0	1	2	3	4	5

(Add ratings together) Total _____

Instructions: Please circle your response to each question.

1. Overall, how satisfied are you with your life right now?
    1. Extremely satisfied
    2. Moderately satisfied
    3. Somewhat satisfied
    4. Somewhat dissatisfied
    5. Moderately dissatisfied
    6. Extremely dissatisfied
2. How energetic and healthy do you feel right now?
    1. Extremely healthy
    2. Moderately healthy
    3. Somewhat healthy
    4. Somewhat unhealthy
    5. Moderately unhealthy
    6. Extremely unhealthy
3. How much stress or pressure is in your life right now?
    1. Very little stress
    2. Some stress
    3. Quite a bit of stress
    4. A moderate amount of stress
    5. A great deal of stress
    6. Unbearable amounts of stress
4. How optimistic are you about the future?
    1. The future looks very bright
    2. The future looks somewhat bright
    3. The future looks OK
    4. The future looks both good and bad
    5. The future looks bad
    6. The future looks very bad

Total: _____

Instructions: Please circle your response to each question.

1. How satisfied are you with the mental health services you have received so far?
    1. Extremely satisfied
    2. Moderately satisfied
    3. Somewhat satisfied
    4. Somewhat dissatisfied
    5. Moderately dissatisfied
    6. Extremely dissatisfied
2. How much are you included in deciding your treatment?
    1. A great deal
    2. Moderately
    3. Quite a bit
    4. Somewhat
    5. A little
    6. Not at all
3. Mental health workers involved in my case listen to me and know what I want.
    1. A great deal
    2. Moderately
    3. Quite a bit
    4. Somewhat
    5. A little
    6. Not at all
4. I have a lot of say about what happens in my treatment.
    1. A great deal
    2. Moderately
    3. Quite a bit
    4. Somewhat
    5. A little
    6. Not at all

Total: _____

Instructions: Below are some ways your problems might get in the way of your ability to do everyday activities. Read each item and circle the number that best describes your current situation.	Extreme Troubles	Quite a Few Troubles	Some Troubles	OK	Doing Very Well
1. Getting along with friends	0	1	2	3	4
2. Getting along with family	0	1	2	3	4
3. Dating or developing relationships with boyfriends or girlfriends	0	1	2	3	4
4. Getting along with adults outside the family (teachers, principal)	0	1	2	3	4
5. Keeping neat and clean, looking good	0	1	2	3	4
6. Caring for health needs and keeping good health habits (taking medicines or brushing teeth)	0	1	2	3	4
7. Controlling emotions and staying out of trouble	0	1	2	3	4
8. Being motivated and finishing projects	0	1	2	3	4
9. Participating in hobbies (baseball cards, coins, stamps, art)	0	1	2	3	4
10. Participating in recreational activities (sports, swimming, bike riding)	0	1	2	3	4
11. Completing household chores (cleaning room, other chores)	0	1	2	3	4
12. Attending school and getting passing grades in school	0	1	2	3	4
13. Learning skills that will be useful for future jobs	0	1	2	3	4
14. Feeling good about self	0	1	2	3	4
15. Thinking clearly and making good decisions	0	1	2	3	4
16. Concentrating, paying attention, and completing tasks	0	1	2	3	4
17. Earning money and learning how to use money wisely	0	1	2	3	4
18. Doing things without supervision or restrictions	0	1	2	3	4
19. Accepting responsibility for actions	0	1	2	3	4
20. Ability to express feelings	0	1	2	3	4

(Add ratings together) Total _____

Appendix B: Ohio Scales Short Form, Caregiver-Report

Ohio Mental Health Consumer Outcomes System
Ohio Youth Problem, Functioning, and Satisfaction Scales **P**
Parent Rating – Short Form

Child's Name: _____ Date: _____ Child's Grade: ___ ID#: _____ (Completed by Agency)

Child's Date of Birth: _____ Child's Sex: ☐ Male ☐ Female Child's Race: _____

Form Completed By: ☐ Mother ☐ Father ☐ Step-mother ☐ Step-father ☐ Other: _____

Instructions: Please rate the degree to which your child has experienced the following problems in the past 30 days.	Not at All	Once or Twice	Several Times	Often	Most of the Time	All of the Time
1. Arguing with others	0	1	2	3	4	5
2. Getting into fights	0	1	2	3	4	5
3. Yelling, swearing, or screaming at others	0	1	2	3	4	5
4. Fits of anger	0	1	2	3	4	5
5. Refusing to do things teachers or parents ask	0	1	2	3	4	5
6. Causing trouble for no reason	0	1	2	3	4	5
7. Using drugs or alcohol	0	1	2	3	4	5
8. Breaking rules or breaking the law (out past curfew, stealing)	0	1	2	3	4	5
9. Skipping school or classes	0	1	2	3	4	5
10. Lying	0	1	2	3	4	5
11. Can't seem to sit still, having too much energy	0	1	2	3	4	5
12. Hurting self (cutting or scratching self, taking pills)	0	1	2	3	4	5
13. Talking or thinking about death	0	1	2	3	4	5
14. Feeling worthless or useless	0	1	2	3	4	5
15. Feeling lonely and having no friends	0	1	2	3	4	5
16. Feeling anxious or fearful	0	1	2	3	4	5
17. Worrying that something bad is going to happen	0	1	2	3	4	5
18. Feeling sad or depressed	0	1	2	3	4	5
19. Nightmares	0	1	2	3	4	5
20. Eating problems	0	1	2	3	4	5

(Add ratings together) Total _____

Instructions: Please circle your response to each question.

1. Overall, how satisfied are you with your relationship with your child right now?
   1. Extremely satisfied
   2. Moderately satisfied
   3. Somewhat satisfied
   4. Somewhat dissatisfied
   5. Moderately dissatisfied
   6. Extremely dissatisfied
2. How capable of dealing with your child's problems do you feel right now?
   1. Extremely capable
   2. Moderately capable
   3. Somewhat capable
   4. Somewhat incapable
   5. Moderately incapable
   6. Extremely incapable
3. How much stress or pressure is in your life right now?
   1. Very little
   2. Some
   3. Quite a bit
   4. A moderate amount
   5. A great deal
   6. Unbearable amounts
4. How optimistic are you about your child's future right now?
   1. The future looks very bright
   2. The future looks somewhat bright
   3. The future looks OK
   4. The future looks both good and bad
   5. The future looks bad
   6. The future looks very bad

Total: _____

Instructions: Please circle your response to each question.

1. How satisfied are you with the mental health services your child has received so far?
   1. Extremely satisfied
   2. Moderately satisfied
   3. Somewhat satisfied
   4. Somewhat dissatisfied
   5. Moderately dissatisfied
   6. Extremely dissatisfied
2. To what degree have you been included in the treatment planning process for your child?
   1. A great deal
   2. Moderately
   3. Quite a bit
   4. Somewhat
   5. A little
   6. Not at all
3. Mental health workers involved in my case listen to and value my ideas about treatment planning for my child.
   1. A great deal
   2. Moderately
   3. Quite a bit
   4. Somewhat
   5. A little
   6. Not at all
4. To what extent does your child's treatment plan include your ideas about your child's treatment needs?
   1. A great deal
   2. Moderately
   3. Quite a bit
   4. Somewhat
   5. A little
   6. Not at all

Total: _____

Instructions: Please rate the degree to which your child's problems affect his or her current ability in everyday activities. Consider your child's current level of functioning.	Extreme Troubles	Quite a Few Troubles	Some Troubles	OK	Doing Very Well
1. Getting along with friends	0	1	2	3	4
2. Getting along with family	0	1	2	3	4
3. Dating or developing relationships with boyfriends or girlfriends	0	1	2	3	4
4. Getting along with adults outside the family (teachers, principal)	0	1	2	3	4
5. Keeping neat and clean, looking good	0	1	2	3	4
6. Caring for health needs and keeping good health habits (taking medicines or brushing teeth)	0	1	2	3	4
7. Controlling emotions and staying out of trouble	0	1	2	3	4
8. Being motivated and finishing projects	0	1	2	3	4
9. Participating in hobbies (baseball cards, coins, stamps, art)	0	1	2	3	4
10. Participating in recreational activities (sports, swimming, bike riding)	0	1	2	3	4
11. Completing household chores (cleaning room, other chores)	0	1	2	3	4
12. Attending school and getting passing grades in school	0	1	2	3	4
13. Learning skills that will be useful for future jobs	0	1	2	3	4
14. Feeling good about self	0	1	2	3	4
15. Thinking clearly and making good decisions	0	1	2	3	4
16. Concentrating, paying attention, and completing tasks	0	1	2	3	4
17. Earning money and learning how to use money wisely	0	1	2	3	4
18. Doing things without supervision or restrictions	0	1	2	3	4
19. Accepting responsibility for actions	0	1	2	3	4
20. Ability to express feelings	0	1	2	3	4

(Add ratings together) Total _____