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Child and Adolescent Functional Assessment Scale® (CAFAS®) Overview of Reliability and Validity

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The Child and Adolescent Functional Assessment Scale (CAFAS: Hodges, 2000a; 2000b), assesses the degree of impairment in youth with emotional, behavioral, psychiatric, or substance use problems. The CAFAS provides an objective, comprehensive assessment of a youth's needs that is sensitive to change to over time, making it the most widely used outcome measure available. Using information collected during a routine clinical interview, the practitioner selects items that describe the youth's problematic behaviors, as well as strengths and goals. This is done for eight life domains: At School, At Home, in the Community (delinquency), Behavior Toward Others, Moods/emotions, Self Harm, Substance Use, and Thinking (assessing irrationality). A Total Score and subscale scores are generated, with higher scores indicating greater impairment in day-to-day functioning. Therefore, as treatment progresses, lower CAFAS total and subscale scores indicate improvement.

Common applications of the CAFAS include assessing the needs of youth who access services across the System of Care (mental health, child welfare and social services, juvenile justice, education, prevention, and community-based programs) and evaluating outcomes for programs, Evidence-Based Treatments (EBTs) and Evidence Informed Practices (EIPs). The CAFAS has been translated into French, Spanish, and Dutch.

Originally developed in 1989 and supported by over 20 years of research and 80 published articles, the CAFAS is a robust, psychometrically sound measure. Reliability studies have demonstrated that the CAFAS has satisfactory internal consistency and interrater reliability (Hodges & Wong, 1996), as well as test-retest reliability (Hodges, 1995). Studies investigating the validity of the CAFAS have included evaluations of concurrent and predictive validity.

Concurrent validity. Studies show that the CAFAS is able to differentiate between youth being served at varying levels of intensity of care (e.g., youths in inpatient facilities scored significantly higher than youth receiving home-based and out-patient services) (Hodges & Wong, 1996); youths in different living arrangements (e.g., youths living at home or in foster care were less impaired than youths in residential treatment facilities) (Hodges, Doucette-Gates & Liao, 1999); youth with varying severity of psychiatric diagnoses, (e.g., youths with more serious psychiatric disorders were more impaired than youth diagnosed with less serious disorders [e.g., adjustment, anxiety]) (Hodges, Doucette-Gates, & Liao, 1999); and youths with varying number of psychiatric diagnoses (e.g., youth with a psychiatric disorder were more impaired than youth with no diagnosis and youth with more than one disorder were more impaired, with an incremental increase in the CAFAS total score observed for each additional disorder) (Ezpeleta, Granero, de la Osa, Domenech, & Bonillo, 2006). In addition, higher impairment scores on the CAFAS have been associated with problems in social relationships (Hodges & Wong, 1996), involvement with juvenile justice (Doucette-Gates, Hodges, & Liao, 1998; Hodges, Doucette-Gates & Liao, 1999; Hodges & Wong, 1996), school related problems (Doucette-Gates, Hodges, & Liao, 1998; Hodges, Doucette-Gates, & Liao, 1999; Hodges & Wong, 1996), and child and family risk factors (Manteuffel, Stephens, & Santiago, 2002; Walrath, Mandell, Liao, Holden, DeCarolis, Santiago, & Leaf, 2001).

Predictive Validity. CAFAS scores at intake predicted subsequent episodes of care (Hodges, Doucette-Gates, & Kim, 2000), care that is more restrictive (Doucette, Hodges, & Laio, 1998; Hodges, Doucette-Gates, & Kim, 2000), and cost of services (Hodges & Wong, 1997; Doucette, Hodges, & Laio, 1998). In addition, intake CAFAS score was predictive of future contacts with the law and school attendance (Hodges & Kim, 2000). In a study with youth in a juvenile justice residential center, higher CAFAS scores at discharge predicted recidivism during the year after discharge (Quist & Matshazi, 2000).

Assessing Outcomes. Demonstrating sensitivity to change over time is a requirement of all outcomes measures. Studies have established that the CAFAS is sensitive to assessing the degree and rate of change over time. In a large evaluation study conducted at Fort Bragg, statistically significant reduction in impairment was observed from intake to both 6 and 12 months, with large to moderate effect sizes (Hodges & Wong, 1996; Hodges, Wong, & Latessa, 1998; Hodges, 1999). A second large evaluation study of over 60 communities, which were part of the Center for Mental Health Services (CMHS) System of Care Initiative, found significant improvement in

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functioning from intake to 6 months (Hodges, Doucette-Gates, & Liao, 1999), and from intake to 2 years post intake (Manteuffel, Stephens, & Santiago, 2002). Outcome results for individual CMHS-funded sites have been reported, revealing significant reduction in youth impairment (Resendez, Quist, & Matshazi, 2000; Rosenblatt & Furlong, 1998).

Additionally several smaller evaluations studies have also demonstrated that the CAFAS is sensitive to assessing outcomes. An evaluation of a school-based intensive mental health program found significant pre to post differences, with large to moderate effect sizes (Vernberg, Jacobs, Nyre, Puddy, & Roberts, 2004). In an outcomes study of youth with Serious Emotional Disturbance (SED) served by public mental health in Hawaii, a statistically significant improvement in functioning was observed over a three-year period. The authors were also able to demonstrate that this improvement was achieved in less time (i.e., the average length of time to achieve the same results was reduced by 40% to 60%) (Daleiden, Chorpita, Donkervoet, Arensdorf, & Brogan, 2006). In an evaluation of a home-based model for treating youth with SED, the authors found that youth significantly improved every four months, over the full course of 24 months of treatment (Williams & Sherr, 2008).

Generalizability. The CAFAS has been shown to be a robust indicator of youth's functional impairment in a wide array of service settings, cultural contexts, and among youth with diverse backgrounds. A sample of the settings and populations that routinely use the CAFAS include: at-risk youth who are simultaneously served by multiple agencies, (e.g., mental health, schools, juvenile justice, and child welfare) (Walrath, dosReis, Miech, Liao, Holden, DeCarolis, Santiago, & Leaf, 2001; Walrath, Nickerson, Crowel, & Leaf, 1998; Walrath, Sharp, Zuber, & Leaf, 2001; Walrath, Mandell, & Leaf, 2001); delinquent youth and youth served by juvenile justice (Abram, Choe, Washburn, Romero, & Teplin, 2009; Quist & Matshazi, 2000; Rosenblatt, Rosenblatt, & Biggs, 2000; Timmons-Mitchell, Bener, Kishna, & Mitchell, 2006); youth placed in foster care, residential settings, and youth removed from their homes due to abuse and neglect (Reifsteck, 2005; Walrath, Ybarra, Holden, Liao, Santiago, & Leaf, 2003; Zima, Bussing, Crecelius, Kaufman, & Berlin, 1999), and youth referred for specialized educational services to assess the impact of school-based mental health programs (Rosenblatt & Rosenblatt, 1999; Roy, Roberts, Vernberg, & Randall, 2008; Vernberg, Jacobs, Nyre, Puddy, & Roberts, 2004).

Effectiveness of Evidence Informed Practices. The CAFAS has been used to evaluate Evidence Based Treatments (EBTs) to determine if the EBT implemented in a local community is effective. The CAFAS has also been used to evaluate locally-derived interventions, which may then become Evidence Informed Practices (EIPs). The CAFAS has formally been used to evaluate the implementation and effectiveness of several EBTs, including Multisystemic Therapy, where a randomized controlled trial showed greater improvement for the treatment group (Timmons-Mitchell, Bener, Kishna, & Mitchell, 2006) and Parent Management Training – Oregon, where cases receiving PMTO made significant improvement on all subscales (Hodges, Wotring, Forgatch, Lyon, & Spangler, 2008). In addition, the CAFAS was used to demonstrate the effectiveness of well-defined clinical practices aimed at addressing the needs of youth with SED. A home-based program, developed by the Family Guidance Service in Michigan, resulted insignificantly greater improvement, compared to other comparable youth served at other sites, using propensity analysis (Hodges & Grunwald, 2005). The CAFAS has been used to evaluate Children's Psychosocial Rehabilitation (CPSR), which is an intensive community-based treatment for children with SED. CPSR implemented at a large Idaho agency demonstrated significant improvement on CAFAS total and subscale scores (Williams, 2009a). The authors also determined that there was a dosage effect (i.e., more service hours per week were associated with greater improvement) and studied the rate of improvement over time (Williams, 2009b).

In summary, the psychometric properties of the CAFAS are robust; with published accounts substantiating that is has evidence of reliability, concurrent validity, predictive validity, and sensitivity to change. Furthermore, the widespread use of the CAFAS supports its generalizability, demonstrating that the CAFAS can be used for a wide variety of youth and cultural contexts. It is an effective tool for evaluating EBTs and EIPs. The CAFAS remains the gold standard for assessing and tracking outcomes for youth.

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