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The Differential Relationship of Strengths and Needs Over Time: A Longitudinal Study of Foster Care Youth Using the Child and Adolescent Needs and Strengths (CANS) Assessment

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ABSTRACT

The Differential Relationship of Strengths and Needs Over Time:
A Longitudinal Study of Foster Care Youth Using
The Child and Adolescent Needs and Strengths (CANS) Assessment

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Child psychology research has helped to identify how symptoms and deficits, or psychiatric needs impact the human experience, immediately and across development. Recent investigations indicate that strengths, both those possessed by the individual, and those present in her environment, exert short- and long-term protective influence that buffers the impact of needs. These findings help legitimate the emerging popularity, among providers and consumers, of strengths-based interventions for youth. Strengths-based interventions are derived from the system of care philosophy, a treatment model that aims to utilize individual and environmental resources in therapeutic processes. Preliminary research suggests that utilizing strengths in treatment promotes positive outcomes and that strengths-based interventions may be more effective than traditional, deficit-based services. Nonetheless, questions remain regarding the clinical utility of strengths. This paper suggests that answers to these questions can be approached by delineating the pattern of relationships between strengths and needs across time in an at-risk youth population. The excess of one half-million youth in foster care across the United States represents a group at high risk for undesirable outcomes. Thus, this study examines the longitudinal pattern of correlations obtained between strengths and needs in a sample of 868 foster care youth receiving System of Care services. Strengths and needs

each were measured at specific and aggregate levels with the Child and Adolescent Needs and Strengths (CANS) Assessment. Correlations obtained indicate that: strengths at Time 1 (T1) are correlated with strengths at Time 2 (T2), strengths and needs are inversely correlated at T1 and T2, and strengths at T1 are inversely correlated with needs at T2. T-tests for differences between correlations indicate that, at certain levels of strengths and needs: the correlation between strengths at T1 and T2 exceeds the correlation between needs at T1 and T2, the correlation between strengths and needs at T2 exceeds that at T1, and the correlation between strengths at T1 and needs at T2 exceeds the correlation between needs at T1 and strengths at T2. Results are translated into implications for policy development and service delivery.

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Introduction and Literature Review

Statement of the Problem

Ernest Hemingway's *The Old Man and the Sea* (1952) details the perpetual struggle of elderly fisherman Santiago as the lone helmsman tries to snare a large catch in the Gulf of Mexico. Vainly attempting to reel in the fish, Santiago repeatedly voices a wish for help from "the Boy." A casual reading suggests that Santiago needs his young fishing apprentice Manolin, who waits at shore for the old man to return. However, a more careful reading reveals that Santiago never *calls* for "Manolin;" he only *wishes to himself* for "the Boy"…for the boy *within himself* and the return of the vitality he once possessed many years ago. Hemingway hereby subtly communicates a simple but essential life truth: the strength possessed by the young is a powerful commodity. This same existential fact serves as the basis for a growing trend in contemporary child and adolescent psychology: making clinical use of the youth's personal, familial, and communal strengths to facilitate healthy development.

For the purposes of this study, *strengths* will be defined as positive attributes belonging to the child, his/her family, or his/her community that promote the child's wellbeing and healthy development (Epstein, 1999). In contrast, *needs* will be defined as negative elements exhibited by the child, his/her family, or his/her community that place the child at risk for maladjustment and undesirable outcomes (Compas, Hinden, & Gerhardt, 1995).

Recent research indicates that the strengths possessed by disadvantaged youth, especially if identified and cultivated, may mediate the deleterious developmental

impacts potentiated by adverse life circumstances (Smokowski, Reynolds, & Bezruczko, 2000). As such, current investigations aim to better understand the processes by which strengths may act as mechanisms of psychiatric improvement by delineating the influences of strengths upon developmental outcomes (Gillham, Reivich, & Shatte, 2002).

Strengths-based interventions may represent an improvement in services for at-risk youth, and there is growing support that they are an ideal means of facilitating individual and societal growth (Masten & Coatsworth, 1998; Seligman & Csikszentmihalyi, 2000). The system of care philosophy is a popular youth treatment model espousing interventions that are community- and strengths-based, culturally sensitive, and delivered from a collaborative network of agencies yet tailored to the individual child and her[1] family (Stroul & Friedman, 1986). Recent research suggests system-of-care-based interventions improve overall psychiatric functioning and may be more effective than traditional institution- and office-based services (Burns & Hoagwood, 2002; Pumariega & Winters, 2003). However, the extent to which the system of care philosophy's strengths-focus deserves credit for this relatively high level of service effectiveness is unknown (Gillham, et al., 2002).

[1] For the sake of brevity and clarity, the terms *she* and *her* will be used in place of the terms *he/she* and *him/her*, respectively.

Statement of Significance

Twenty percent of children and adolescents around the world endure mental health problems, but most are underserved or receive services not appropriate for their conditions (DeAngelis, 2004; Lyons, Howard, O'Mahoney, & Lish, 1997). Perhaps most in need of quality services are the 550,000 children and adolescents in foster care[2] (U.S. Department of Health and Human Services, 2003).

Foster care youth are at particular risk for behavioral health problems: many have been reared in unsafe, unloving home environments, and thus have experienced more trauma and physical, developmental, and behavioral health problems than youth in all other child populations (Marx, Benoit, & Kamradt, 2003; Resnick, 2000). Because survivors of childhood abuse are significantly more likely to commit abusive acts themselves, with roughly one third of survivors ultimately abusing their own children, offering effective psychological services to the foster care population is also integral to the safety of future generations (Kaufman & Zigler, 1987; Pears & Capaldi, 2001). The general public also benefits from effective treatment of foster care youth: society profits from the positive contributions made by youth who overcome disadvantage and mature into generative adults, while society must devote human and financial resources to assist and remediate youth who remain limited by adverse circumstances.

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[2] This paper will rely upon the federal definition of *foster care*: "24-hour substitute care for children outside their own homes…The foster care settings include, but are not limited to family foster homes, relative foster homes, group homes, emergency shelters, residential facilities, childcare institutions, and pre-adoptive homes," (Code of Federal Regulations, Title 45, Volume 4, Part 1355, Section 57).

Encouragingly, many at-risk youth achieve positive outcomes; determining whether strengths promote such achievement, and if so, which strengths, would aid the development and implementation of effective strengths-based interventions. By definition, effective interventions would increase the number of youth who achieve positive outcomes. The aim of the present study is to investigate the roles of strengths in development, with focal examination directed at the relationship between strengths and needs over time in an at-risk youth population.

The Evolution of Strengths-based Treatment of Youth And the System of Care Philosophy

Over the past half-century, the conceptualization of psychological functioning during childhood and adolescence has widened to include both adaptive and pathological characteristics (Catalano, Berglund, Ryan, Lonczak, & Hawkins, 2002). In practice, however, the child's symptoms continue to receive the most clinical attention (Kelley, 2003). Thus, researchers detail the importance of developing more viable strengths-based approaches (Kelley, 2003; Larson, 2000). To ascertain the present status of strength-based approaches, a review of their history is essential. The following review describes the gradual shift from the practice of focusing on crises and pathology, while over-relying upon residential care, to the implementation of compelling service models that incorporate comprehensive assessment of the individual's strengths and needs.

The 1960's

Prior to and during the 1960's, interventions for psychopathology among youth were targeted primarily at existing crises (Catalano, et al., 2002) or often were delivered within residential treatment (Duchnowski, Kutash, & Friedman, 2002). Residential care was expensive and usually yielded minimal positive change. Because residential care temporarily separated the child from her everyday socio-familial influences, it also temporarily separated the child from those problems whose etiology or perpetuation was a function of the family system or greater environmental context. Thus, upon release from residential care, children commonly re-experienced their prior problems.

While the Community Mental Health Center (CMHC) Construction Act of 1963 facilitated efforts to increase community services for deinstitutionalized *adults*, it did little to increase financial or political support for children's services, and their elimination from community treatment programs followed (Pumariega & Winters, 2003). As such, children's services remained limited to residential treatment and child guidance programs. Other types of youth programs were planned, but many were not implemented; those that were implemented were poorly maintained (Pumariega & Winters, 2003). However, problems among youth and within families increased (Catalano, et al., 2002), and by the late 1960's, it became evident that initiatives for more effective programs would be necessary (Joint Commission on Mental Health of Children, 1969).

The 1970's

In 1972, Congress expanded the CMHC Construction Act of 1963 to include a youth program called *Part F*. Part F funded the design and implementation of novel

youth services to be delivered through an increasing number of CMHC's nationwide. However, Part F monies were soon redistributed to other new CMHC programs and little progress was made in community child mental health (Pumariega & Winters, 2003).

Nonetheless, the 1970's saw theoretical expansions and conceptual shifts that would later prove integral to the development of new youth service paradigms. For example, Fishbein and Ajzen (1975) pondered intention behind behavior, which would inform theories of prevention science during the 1980's (Catalano, et al., 2002). More influentially, new programs called *the alternative services* offered resources at runaway houses and drop-in centers, based on the notion that the estrangement of youth from their families was not due to pathology inherent to the child or adolescent, but rather was a function of the changing society (Pumariega & Winters, 2003). The spirit of this astigmatic, client-centered notion is reflected in present-day strengths-based approaches.

By the late 1970's, evidence of theoretical advancement already could be observed in empirical studies, such as that by Freedman, Donahoe, Rosenthal, Schlundt, and McFall (1978), which utilized the Adolescent Problems Inventory, a measure that took account of character strengths, such as interpersonal skills, not merely areas of psychological weakness. And in 1978, President Carter's Commission on Mental Health created the National Institute of Mental Health's National Plan for the Chronically Mentally Ill, which drew public attention to the under-serving of children and adolescents with serious emotional disturbances. The Plan laid the foundation for the beginning of a new era in children's mental health services.

The 1980's

This decade marked a time of remarkable growth in mental health services for children and adolescents. An increased demand for behavioral healthcare services in adult populations, due largely to trends like increased service availability and the de-stigmatization of service-seeking (Lyons, et al., 1997), may have contributed to increased awareness regarding the importance of mental health services for children. In addition, predictors of behavior were analyzed and a science of prevention for youth problems was developed (Catalano, et al., 2002). Further, literary works like Jane Knitzer's *Unclaimed Children* (1982) reported the grave circumstances faced by children who did not receive appropriate care and thereby catalyzed the advent of the system of care philosophy, which is detailed below.

Federal legislation during the 1980's also positively impacted youth services (Duchnowski, Kutash, & Friedman, 2002; Pumariega & Winters, 2003). The Mental Health System Act of 1980 allocated federal funding for underserved children and funded formerly non-reimbursable services by soliciting funding at the state level. In 1984, a formerly state-level initiative, the Child and Adolescent Service System Program (CASSP), was awarded federal funding. CASSP offered solutions to three main types of problems in children's mental health care: challenges to obtaining services, symptom-focused assessment and treatment, and limited service-seeking practices by families.

Coordinated children's mental health services in the early 1980's were relatively difficult to obtain, as they were being delivered in a range of venues that included mental health centers, schools, juvenile detention centers, and child welfare agencies. Each

venue was managed by a different government department and thus delivered venue-specific services that were uncoordinated with those delivered elsewhere. Thus, some interventions were duplicated and others were not delivered. CASSP called for interagency collaboration and removed the standards formerly used to determine a child's eligibility for each type of service, making it possible for *any* child to receive wide-ranging, but coordinated interventions.

Concomitantly, CASSP utilized newly acquired federal funds to employ more children's mental health service personnel at the state level and to facilitate care efforts at the state and community levels. Research conducted during the 1990's indicates that CASSP has succeeded at improving collaboration among agencies and at promoting the planning and delivery of services that are comprehensive and community-based (Clausen, Landsverk, Granger, Chadwick, & Litrownik, 1998).

CASSP approached a solution to the second problem of children's mental health care during the 1980's by de-emphasizing pathological characteristics of the child and calling attention to protective influences in the child's environment, such as community and family support. Moreover, CASSP identified the clinical relevance of these influences, suggesting that they be incorporated into the conceptualization of the child's and her family's functioning and thus her treatment plan (Lyons et al., 1997; Lyons, Uziel-Miller, Reyes, & Sokol, 2000).

By endorsing a view of the child's environment as a source of both potential stressors and potential solutions, CASSP sought to decrease the stigma experienced by families whose children needed services, the third problem within children's mental

health services at the time, and unfortunately, one which persists to some degree today. CASSP also emphasized the importance of availing services to the rest of the child's family, of obvious benefit to these family members, but of potential further benefit to the child in need as well. Finally, CASSP welcomed feedback from ethnically diverse families, ensuring that services delivered were sensitive to cultural differences, and empowering families with the ability to make suggestions for personalizing their care.

The system of care philosophy articulated.

Essential to the future development of children's mental health services, CASSP laid a foundation of mental health service upon which a proposal for the system of care philosophy was modeled. Stroul and Friedman (1986) called for "a multiagency approach to the delivery of services that need to be community based, child centered, and family focused" (Pumariega & Winters, 2003, p. 11). During the 1990's, services derived from the system of care philosophy were increasingly implemented.

The 1990's

The last decade of the 20th Century was an era of program development and improvement for children's mental health services, with theoretical and practical advancements influencing one another. For example, in the youth psychology literature, researchers explicated what previously had been a set of loosely termed theoretical constructs. Defining these terms offered a common nomenclature to providers across contexts. Jessor, Van Den Bos, Vanderryn, Costa and Turbin (1995) declared that protective factors are "variables…that might serve to moderate, buffer, or insulate against risk," and risk factors are "those conditions or variables that are associated with a higher

likelihood of negative or undesirable outcomes—morbidity or mortality, in classical usage, or, more recently, behaviors that can compromise health, wellbeing, or social performance" (p. 923). As such, *strengths* and *needs*, as defined above, are the contemporary shorthand terms for *protective factors* and *risk factors*, respectively. Although these definitions improved conceptualization and communication of treatment foci in research and clinical settings, agreed-upon definitions for terms such as these are still being explicated (Lehner, 2004).

Jessor and colleagues (1995) also provided preliminary evidence that strengths and needs are orthogonal (i.e., not polar constructs). This finding was corroborated by the results of a study at decade's end conducted by Lyons and colleagues (2000), who documented improvements in individuals' overall level of psychiatric functioning, despite insignificant reductions in symptomatology. These studies indicated that persons do not necessarily possess a level of strengths that is inverse to their level of needs, which would necessarily be the case if strengths and needs could be conceptually positioned at opposite ends of a continuum of psychiatric functioning.

However strengths and needs are conceptually positioned, the idea that strengths can serve as protective factors by limiting the risk potentiated by needs was labeled *resilience* by Masten and Coatsworth (1998). Most research on resilience falls within the field known as positive psychology, which took shape during the 1990's (see Seligman and Csikszentmihalyi, 2000). Positive youth psychology suggests that an exclusive focus on problems may over-pathologize the child, claiming that strengths are part of each individual's psyche and that enhancing them can prevent negative outcomes, and thus is

beneficial to the individual, her community, and society as a whole (Seligman & Csikszentmihalyi, 2000).

In efforts to augment decades of pathology-based research and provide a more comprehensive picture of the human experience, positive youth psychology examines many healthy character traits besides resilience, as well as positive emotions, and even positive institutions (Seligman, Steen, Park, & Peterson, 2005). As such, positive youth psychology is consistent with the system of care philosophy, viewing strengths as resources in therapeutic and developmental processes. Research suggests that strengths can be identified and then used in and/or enhanced by the treatment process (Allison, Stacey, Dadds, Roeger, Wood, & Martin, 2003; Lyons et al., 2000). In both approaches, the operative and conditional notion is that if functional deficits and problem behaviors are associated with future behavior and wellbeing (e.g., Armistead, Forehand, Beach, & Brody 1995; Flay, 2002), so too must be strengths, which deserve clinical attention.

Consistent with the focus on prevention championed by positive youth psychology, newly acquired state funds were used to create novel primary prevention programs during the 1990's. Prevention-focused interventions for at-risk youth were also the topic of multiple symposia across the United States and of a book series entitled *Children at Risk: Assessment, Longitudinal Research, and Intervention* (Brambring, Loesel, & Skowronek, 1990). These endeavors called greater attention to the interaction between strengths and needs.

One source of strengths whose clinical utility had been highlighted by CASSP in the 1980's was the family, and during the 1990's providers encouraged the participation

of all members by prioritizing those services that could be delivered to parents and siblings (Beardslee, Versage, Wright, & Salt, 1997; Lyons et al., 1997; Lyons, Lee, Carpinello, Rosenberg, Zuber, Fazio, & McIntyre, 2001). Providers of family services also focused more clinical attention on identifying and developing individual and familial strengths (Allison et al., 2003). Subsequent research confirmed that families responded to these efforts by increasing their involvement (Clausen, et al., 1998). Near the end of the decade, the 1999 White House Conference on Mental Health and the Surgeon General's Report on Mental Health called for the continuation of astigmatic diagnostics and increased effectiveness in the delivery of child and adult services, demonstrating support for the improvements already made while highlighting the need for further reform.

Present Day

Developments in both theoretical conceptualizations and service programming within youth mental health services have continued into the new millennium. During the past several years, the concept of resilience has received further empirical attention. In the preceding review, there has been discussion of the notion that children's strengths buffer the impact of their psychiatric needs and associated functional impairments. Oswald, Cohen, Best, Jenson, and Lyons (2001) were the first to document clear evidence for this assertion. The authors determined that the individual strengths possessed by a sample of emotionally and behaviorally disturbed youth receiving system-of-care-based services can reduce the impact of psychiatric symptoms as evidenced by less need for restrictive placements.

In a similar vein, Rutter (1999) had purported that resilience varies across individuals because it is manifested and identified relative to context. For example, a child growing up in a rural area with relatively less opportunity for social interaction outside of school might nonetheless develop appropriate social skills. This child would be exhibiting a type of resilience that is distinct from that exhibited by another child whose educational opportunities were limited but who, through her own efforts, became a spelling bee champion. Allison and colleagues (2003) extend Rutter's declaration, noting that the individual's very *development* of her own resilience is contingent upon the strengths possessed by the family. In addition, they suggest that the youth's appropriate reliance upon protective factors that are available in her familial and extra-familial environment is itself a manifestation of resilience. Consistent with these findings, Lehner (2004) conceptualizes resilience *not* as one specific strength, but rather as a trait-like ability to defend against adversity that is likely comprised of a subset of specific strengths. Outside the field of psychological research, the importance of resilience processes in youth development are becoming hot topics in mainstream publications, such as *Forbes* and *USA Today* (see Elias, 2005; Karlgaard, 2005).

In recent years, researchers also have undertaken the task of modeling the interactions of strengths and needs. As discussed above, studies by Jessor and colleagues (1995) and by Lyons and colleagues (2000) offered preliminary support for organizing strengths and needs as orthogonal constructs. Allison and colleagues (2003) replicated these findings. In their survey of over 400 parents, the investigators found that family strengths were identifiable even in cases of clinical-level problematic behavior by the

children and that parents of these children often still perceived themselves to be functioning at relatively high levels. In addition, these results highlighted the need for models of family functioning that accurately account for the sometimes nonlinear relationship between parental and child functioning. Specifically, if indeed strengths and needs are orthogonal constructs, this adds complexity to the development of interventions for youth who are considered "gifted." Under a conceptualization of strengths and needs as poles on a continuum, the gifted student might not be thought to require any school services; after all, she is excelling academically. Under an orthogonal conceptualization, however, the gifted student still is considered at risk for difficulty at school because she might be mentally under-stimulated, which could lead to her eventually acting out or becoming reclusive. With these possibilities in mind, researchers such as Lubinski and Benbow (2000) consider designing individualized treatment plans for talented youth that emphasize the development of social skills, which tends to present a challenge for gifted youth (Winner, 2000). The possibility that even gifted students may benefit from in-school or other services underscores the critical importance of attending to the individual and her unique characteristics before planning services (or deciding not to do so).

Research conducted during the past several years suggests that services based on the system of care philosophy appeal to consumers. Parents whose families receive strengths-based services join other consumers of these services in reporting higher rates of satisfaction than those receiving traditional services (Bjoerkman, Hansson, & Sandlund, 2002; Stacey, Allison, Dadds, Roeger, Wood, & Martin, 2001, 2002). A prior investigation by Hubble, Duncan, and Miller (1999) determined that the consumer's view

of the therapeutic relationship and her expectation of therapeutic progress are two of the variables that account for substantial outcome variance. Because these variables are related to consumer satisfaction, the findings by Bjoerkman and colleagues (2002) and Stacey and colleagues (2001, 2002) become more compelling, as the relatively high satisfaction reported by consumers of strengths-based services may be indirectly related to their therapeutic improvement. Findings that service compliance and retention tend to increase with consumer satisfaction (Lyons, et al., 1997) support this possibility, as satisfied consumers who are engaged in their treatment probably reach relatively more positive outcomes.

It makes intuitive sense that consumers would prefer and tend to remain engaged longer in services that are strengths-based. Child psychologist and strengths-based service advocate Karl Dennis (personal communication, March 1, 2002) makes the humorous observation that when initial treatment sessions are symptom-focused, they can feel to the consumer like miserable dates with a person who attempts to identify and discuss all of your weaknesses and then suggests you meet again the next week to do more of the same. Dennis rhetorically asks: why would you want to continue a relationship with such a person? Relatively high rates of consumer satisfaction and treatment adherence may share mutual influence with provider satisfaction, as providers of strengths-based services report feeling more positive about their work than providers of traditional services (Mills, Friend, Conroy, et al., 2000).

Concomitant to theoretical advancements since 2000, practical advancements continue to be made. Indeed, services based on the system of care philosophy are now

being offered by both federal and private institutions (Burns & Hoagwood, 2002). DeAngelis (2004) details four main practical improvements in children's mental health services over the past few years. First, in response to the 2001 Surgeon General's National Action Agenda for Children's Mental Health, which called attention to the need for further service reform, the American Psychological Association (APA) has formed national and local task forces to continue to increase awareness, and to design and implement solutions. Second, mental healthcare systems in states like New Mexico are making cooperation and coordination utmost priorities. However, it is important to note the results of recent studies suggesting that while collaboration helps the system to operate more smoothly, it may not have any impact on service outcomes for the youth themselves (Bickman, Lambert, Andrade, & Penaloza, 2000). Third, educators at some schools are piloting a holistic "wellness orientation" that champions tolerance and inclusion and squelches stressors, like bullying and harassment, in efforts to empower children to express their strengths.

Simultaneously, individualized education plans, commonly referred to as "IEPs," are becoming increasingly used. Finally, implementing user-friendly terms is helping to de-stigmatize service-seeking by families. For example, mental health counselors are being increasingly referred to as "family support workers." As noted by Allison and colleagues (2003), current strengths-based work with families focuses on engendering a view of the therapist as a facilitator of a growth process rather than as an expert responsible for imparting advice or information to otherwise-ignorant consumers. This may be another reason for high rates of consumer satisfaction.

Despite theoretical and practical developments in youth services, inaccuracy in two broad areas, treatment planning and outcomes measurement, is still problematic. However, increasing attention to the individual's strengths when planning and evaluating their services might likely increase the accuracy of these endeavors. Specifically, poor treatment planning may take several forms, including inaccurate budgeting. Accurate budgeting is integral to service delivery because there is an excess of youth in need, while community, state, and federal fiscal resources for children's mental health services are finite. It is not surprising that most youth in need of treatment do not receive it, especially because predictions of service utilization are often based on speculation (Lyons, 2004). The United States spends over $9 Billion annually to provide services for this demographic (Bess, Scarcella, Jantz, & Geen, 2002). Merely allocating additional local and federal funding for foster care programs is not a desirable solution because this would pull monies from other youth programs, which themselves face the same trends of increasing needs coupled with limited resources.

Service utilization is notoriously difficult to predict (Lyons, et al., 1997). However, increasing the accuracy of service utilization estimates is an important goal, as this would more correctly inform budgeting, which ultimately might help foster care programs to enjoy budget surpluses, leaving additional resources that could be distributed to other youth and community programs. This solution necessitates the use of assessment measures that are individualized, but comprehensive in their evaluation of both strengths and needs.

When budgeting is accurate, poor treatment planning still can occur. Often this is manifested in erroneous placement recommendation. Because length-of-service bears linear relation to cost, there always exists a financial pressure to reduce either the number of youth served or their lengths of service. Thus, even those youth who *do* receive services are often enrolled in community-based programs for an insufficient length of time before they are placed in other treatment settings. Many times, these are settings in which the level of care is inappropriately intensive for the youth's individual needs (Lyons, et al., 2001; Lyons et al., 1997). In this situation as well, a viable solution might likely be to increase the use of individualized, yet comprehensive assessment tools.

An additional danger inherent to erroneous placement recommendations is that they can precipitate other detrimental occurrences, such as the overcrowding of intensive treatment sites and the subsequent spatial and financial need for a decisive discharge of residents. This perpetuates a movement-without-treatment cycle: a series of placement changes coupled with insufficient receipt of services. Insufficient foster care resources and the consequent overcrowding of foster homes may be one reason that new programs designed to place at-risk youth in foster homes instead of detention centers are underutilized (see DeAngelis, 2004). This effect may be compounded by the fact that children already stay longer in foster family agencies than in other placement arrangements (Legislative Analyst's Office of California, 2002).

Improving treatment planning for youth services is imperative, but doing so will not necessarily curb unsound outcomes measurement, the second factor that limits the effective implementation of youth services. Indeed, this factor can occur even when

services are well planned and sufficiently delivered. Fortunately however, like poor treatment planning, unsound outcomes measurement can be avoided by attending to the individual's strengths and needs.

For example, state-level organizations like the Department of Children and Family Services (DCFS) track the number of geographic moves a child makes during a given time frame. Similarly, but on a larger scale, the Adoption and Foster Care Analysis and Reporting System (AFCARS) monitors nationwide placement stabilization figures. Reviewing these figures helps to ensure that individual children and adolescents are not moved more frequently than necessary and to accurately predict placement changes.

Indeed, placement figures are important indicators of utilization outcomes. However, it might reasonably be inferred that the more longstanding a child's placement, the better the interventions must be working and/or the better the youth must be functioning. Such an inference may not reflect the actual state of affairs.

As discussed above, a child may change placements for reasons not indicative of a problem in psychological functioning or in service delivery. Moreover, reasons for a placement change may be positively associated with the child's functioning or service delivery, such as the child's return home from a treatment facility. Such a move could represent a positive outcome, especially given that a decrease in restrictiveness-of-site is a goal of the system of care philosophy. Thus, the comprehensive evaluation of individual clinical outcomes is necessary for the elucidation of gross utilization figures. In turn, such evaluation can be accomplished by tracking the individual's strengths and needs.

Historical Synthesis: The Present Need to Ascertain the Clinical Utility of Strengths

While attending to strengths may represent a solution to present-day problems that limit the effectiveness of children's mental health services, many clinicians would argue that strengths-based approaches are naïve, inefficient, and thus, problematic in themselves (Allison et al., 2003). Indeed, emphasizing strengths runs contrary to clinical diagnostics, which, by convention, identifies "what's wrong" so it can be "fixed" via therapeutic intervention. Thus, even those clinicians who might prefer to offer strengths-based services are pressured to make pathology the focus of diagnosis and treatment, especially when this must be done in order to document medical necessity and thereby legitimate services to a payor (e.g., private insurance company, managed care system, county or federal program).

Therefore, it is not surprising that strengths-based assessment measures for youth were scarce until the beginning of the 21st Century (Oswald, et al., 2001), and that symptom-based measures remain more prevalent today. Indeed, symptom-based measures for youth appear to possess greater clinical and practical utility in the present system. After all, it can be argued that the evaluation of strengths is clinically and practically relevant only when combined with an evaluation of symptoms, because only then can the potential protective influences of strengths be reflected. Further, researchers who advocate the use of strengths-based assessments acknowledge that they are more difficult to create (Early, 2001; Catalano, et al., 2002).

In addition, strengths-based assessments may be less prevalent because developing tools that are designed to identify character and community assets, even for

the purpose of utilizing these assets as resources in treatment, may seem relatively less urgent than developing symptom-based assessments designed to identify serious deficits that could critically impact functioning were they to go untreated. For example, the APA encourages the development and implementation of assessments that diagnose individuals with learning disorders (DeAngelis, 2004), and there is little debate over the seriousness of overlooking these conditions. Indeed, failing to diagnose and treat the youth's learning disorder might result in more observable direct effects than failing to identify and build one of her strengths, such as the ability to interact well with adults.

In spite of challenges to strengths-based assessment and treatment, a growing body of research suggests that strengths should be given clinical attention, as they bear essential, positive, and possibly causal relationships with the youth's levels of physical and psychosocial functioning (Compas, Hinden, & Gerhardt, 1995; Rae-Grant, Thomas, Offord, & Boyle, 1989). Further, empirical support continues to amass for the use of comprehensive youth assessments that evaluate strengths (e.g., Lyons & Schaefer, 2000; Pobanz, 2001; Shillinglaw, 1999). Such studies have led to the development of many strengths-based assessments, such as the 4-D Series (Gilgun, 2004), and to the standard usage of measures like the Child and Adolescent Needs and Strengths assessment (CANS; Lyons, 2004; Appendix A) by large county and state programs, including the Los Angeles County DCFS and the Illinois DCFS. Given this debate over the clinical importance and utility of strengths, it is important to review the relevant literature.

Investigations Highlighting the Clinical Utility of Strengths and Supporting Strengths-based Interventions

As depicted in Table 1, empirical studies suggest that strengths are clinically relevant and support the use of strengths-based interventions in four main ways. First, research suggests that possessing strengths positively impacts development and that building them is beneficial to the child or adolescent (Pobanz, 2001, Shillinglaw, 1999, Lindemann, 2001; Lyons, et al., 2000; Masten, 2001; Voegler, 2000; Werner & Smith, 2001). Moreover, strengths may be so essential to and influential upon maturation that neglecting to build them may impede individual development (Masten & Coatsworth, 1998), as can be observed when the talents of gifted youth are not recognized and/or afforded a context for expression (Lubinski & Benbow, 2000;).

Second, research suggests that strengths are ubiquitous. For example, Masten (2001) contends that all children can exhibit resilience. Thus, virtually any child or adolescent in need of services could be considered a candidate for strengths-based interventions.

Third, research suggests that certain strengths remain relatively stable across developmental phases, such as adolescence (Harter, 1990) and that strengths account for substantial variance in therapeutic outcome (Hubble et al., 1999). As such, strengths represent both ideal resources for use in therapy and characteristics that can be developed through therapy. Finally, as discussed above, several indicators of service outcomes, including consumer satisfaction, support strengths-based treatments.

Evidence for the Influence of Strengths across Time

The literature draws a basic distinction between strengths possessed by the child, called *dispositional attributes*, and strengths present in the child's environment, which include *family attributes* and *extrafamilial circumstances* (Garmezy, 1985; Lehner, 2004). Functioning is measured by *school performance, social behavior, psychological adjustment*, and *physical health*.

School performance.

International research indicates that resilient children tend to perform more optimally in academic settings than non-resilient children (Hart, Hofmann, Edelstein, & Keller, 1997). Indeed, several dispositional child attributes, such as cooperation, behavioral adaptation, intrapersonal strengths, problem-solving style, academic self-concept, and extracurricular participation predict academic success, with the latter mediating the effects of risk factors on school performance (Robertson, 2001; Voydanoff & Donnelly, 1999).

Social skills, in particular, carry relatively high predictive power, as recent evidence indicates that they more reliably predict academic success than do certain risk factors, such as problem behaviors (Malecki & Elliot, 2002). The social skills of elementary school-aged children have been associated with present, and predictive of future academic achievement (Roberston, 2001), and show association with longer-term life satisfaction variables, such as occupational and marital satisfaction and the establishment of adult social networks (Spitzberg & Cupach, 1988). A more general dispositional child attribute, the experience of personal interest, or curiosity, is positively

associated with indicators of academic success, such as above-average reading retention, grades, and test scores (see Hunter & Csikszentmihalyi, 2002).

Family attributes, such as parental involvement, parental monitoring, and perceived parental supervision also predict academic success (Roberston, 2001; Voydanoff & Donnelly, 1999). Certain extrafamilial circumstances also may be influential. Research indicates that having friends who are planning to attend college predicts academic success and mediates the effects of risk factors on school performance (Voydanoff & Donnelly, 1999). In addition, the level of opportunity for socioeconomic advancement that the child or adolescent perceives within her neighborhood community predicts positive school attendance, behavior, and grades (Ainsworth, 2002).

Social behavior.

Longitudinal research by Vance, Bowen, Fernandez, and Thompson (2002) indicates that dispositional child attributes, such as the possession of reading, problem-solving, and interpersonal skills predict positive behavioral functioning. Further, children who display relatively high levels of resilience tend to perform more optimally in social settings than non-resilient children (Hart, et al., 1997). In addition, family attributes, such as family support, experiencing a positive relationship with parents, and having at least one consistently-employed parent also predict positive behavioral functioning (Vance, et al., 2002).

Additional longitudinal research suggests that certain family attributes have an especially longstanding influence upon social behavior. Observing positive interactions between parents, receiving nurturant-involved parenting, and experiencing positive

relationships with siblings during early- to mid-adolescence predict the exhibition of affective behaviors toward romantic partners during young adulthood (Conger, Cui, Bryant, & Elder, 2002). Experiencing positive extra-familial relationships, such as those with non-deviant peers, also predicts positive behavioral functioning (Vance, et al., 2002).

Psychological adjustment.

Certain dispositional attributes affect the child or adolescent's psychological adjustment in at least four general ways. First, resilient children tend to develop an internal locus of control more quickly than do non-resilient children (Hart, et al., 1997). Second, youth who participate in extracurricular activities are at less risk for developing a mental illness (Rae-Grant, et al., 1989). Third, optimism, perceived mastery, high coping ability, and self-esteem are positively associated with healthy psychological adjustment and mediate the effects of risk factors on psychological adjustment (Herman-Stahl & Petersen, 1996). Fourth, research on levels of psychological adjustment among children receiving inpatient services suggests that various strengths, such as having a sense of humor, an ability to enjoy positive life experiences, and a strong relationship with a sibling, protect against psychological symptoms and risk behaviors and even may improve functioning regardless of level of pathology (Lyons, et al., 2000).

Certain dispositional child attributes also affect psychological adjustment in at least three specific ways. First, adolescents who are more optimistic or who are more skilled at coping with distress appear to be inoculated against symptoms of depression (Herman-Stahl & Petersen, 1996); youth who experience difficulty regulating emotions,

specifically those children and adolescents who display high levels of anger and fear, are more prone to demonstrating external and internal problem behaviors, respectively (Rydell, Berlin, & Bohlin, 2003). Second, youth who tend to experience boredom in much of what they do usually possess lower self-esteem and exhibit less autonomous behavior than do more interested adolescents (McCleod & Vodanovich, 1991). Third, research on levels of psychiatric adjustment within juvenile justice populations suggests that youth who possess greater levels of strengths exhibit less violence than youth who possess lower levels of strengths (Shillinglaw, 1999).

Family attributes, such as parental monitoring and involvement, also are positively associated with healthy psychological adjustment; extrafamilial circumstances, such as the presence of caring adults, friends planning to attend college, positive relationships with peers, and a positively-perceived school environment, also are positively associated with healthy psychological adjustment (Herman-Stahl & Petersen, 1996; Voydanoff & Donnelly, 1999). Positive peer relationships may help protect against symptoms of depression in particular. In rural areas, risk for adolescent depression may also be reduced by the presence of certain community variables, such as social resources (Herman-Stahl & Petersen, 1996). Nationally representative research on levels of psychological adjustment in younger Canadian children also highlights the importance of community variables, as children from advantaged neighborhoods exhibit less behavioral problems (Boyle & Lipman, 2002).

Physical health.

Many dispositional child attributes, such as religiosity, church attendance, engaging in prosocial activities, placing value upon physical health, perceiving the effects of maintaining health, possessing an internal locus of control with regard to health, and holding a positive orientation to school and to parents are positively associated with health-enhancing behavior, and mediate the effects of risk factors on physical condition (Jessor, Turbin, & Costa, 1998). The effects of religiosity on physical health also have been documented in other studies, which indicate that religious beliefs predict positive decisions with regard to alcohol use and that children employ religiously derived coping strategies (e.g., prayer) in order to tolerate physical conditions like asthma (Brown, Parks, Zimmerman, & Phillips, 2001; Ezop, 2002; Mason & Windle, 2002).

Further, Dowling, Getsdottir, Anderson, von Eye, and Lerner (2003) corroborated findings by Donovan, Jessor, and Costa (1991), demonstrating that psychosocial conventionality is related to adolescent health behavior, with strengths that are related to conventionality predicting positive change in health behavior over one- and three-year intervals. The authors suggest that strengths-based services themselves may stimulate conventionality, and thereby contribute to health behavior, both directly and indirectly. Conversely, youth demonstrating low levels of moral and/or spiritual strengths demonstrate more risk-taking behaviors than those demonstrating higher levels of moral and/or spiritual strengths (Lyons & Schaeffer, 2000). Other child attributes, such as the experience of personal interest, also positively influence choices affecting physical

health, as interested adolescents report relatively less illicit substance use than non-interested adolescents (Miller & Miller, 1998).

Family attributes, such as observing parent-modeled health behaviors and extrafamilial circumstances, such as observing friend-modeled health behaviors and experiencing positive relationships with adults, are positively associated with health-enhancing behavior. Family attributes and extrafamilial circumstances also mediate the effects of risk factors upon physical condition (Jessor, et al., 1998).

Other extrafamilial circumstances also affect the child or adolescent's physical health. Positive peer relationships may reduce the likelihood of substance use (Mason & Windle, 2002; Miller & Miller, 1998). Community variables, such as the presence of employment opportunities in the community, may reduce levels of drug use, as employed adolescents are less likely to try illicit substances than their unemployed peers. Socioeconomic status is also positively associated with initial illicit substance use (Miller & Miller, 1998).

Implications of Extant Strengths Research

In the preceding review and in the body of strengths literature as a whole, it is helpful to discuss specific types of strengths and their respective effects in distinct contexts. In reality, strength dimensions can be highly complex and their effects less subject to decisive categorization. Although this means that the conclusions drawn thus far require corroboration, it also means that strengths research is an area replete with possibility for novel inferences. For example, coupling the discovery by Hunter and

Csikszentmihalyi (2002) that interested adolescents maintain relatively high self-concepts with the suggestion by Robertson (2001) that high academic self-concept positively influences academic achievement, it is reasonable to infer that stimulating interest may indirectly improve academic performance. This inference, in particular, is supported by the results of other studies (e.g., Csikszentmihalyi, et al., 1993; Schiefele & Csikszentmihalyi, 1995), but should be further investigated.

In a similar vein, the research discussed above supports the notion that strengths positively impact developmental outcomes and may help justify the system of care philosophy's strengths-focus. However, these studies may not generalize to foster care populations, leaving open to debate the question of how responsible the system of care philosophy's strengths-focus is for the effectiveness of its interventions. Additionally, the findings reported above should be interpreted with caution, as the research has been limited by several factors. These factors include the utilization of samples that were highly specific, subject to considerable attrition, or not large enough to detect small effect sizes. Other limitations include the exclusive use of self-report measurements and the investigation of relationships between strengths and one or a limited number of circumscribed functional indicators. Finally, most studies failed to sufficiently control for bidirectional influence between strengths and functioning.

Study Description and Hypotheses

The present study utilizes an applied population—a large sample of youth in foster care who have been identified as at risk for placement disruption—and examines

the relationships between strengths, at specific and aggregate levels, and needs, at domain and aggregate levels. Through the use of the cross-lagged panel correlation technique (CLC), this study approaches causal inferences by analyzing longitudinal data collected at two points using an observational instrument whose reliability and validity are supported by recent research, thereby transcending many of the limitations of previous research.

Figure 1 depicts the hypothesized CLC used to examine the relationships between strengths and needs across time in this study. Correlations (a) and (b) can be termed *auto correlations*, as they are associations between the same measure administered at different times; correlations (c) and (d) can be termed *crossed correlations*, as they are associations between different measures administered at the same time; correlations (e) and (f) can be termed *cross-lagged correlations*, as they are associations between different measures administered at different times.

First, based on deductive reasoning and extant research on the stability of strengths and needs, respectively, it is hypothesized that, at specific and aggregate levels of strengths and needs, the correlation between strengths at Time 1 (T1) and strengths at Time 2 (T2) will be positive and statistically significant, and the correlation between needs at T1 and needs at T2 will be positive and statistically significant. In Figure 1, this hypothesis is represented by the use of unidirectional arrows connecting strengths across time (a) and needs across time (b).

Second, based on the notion that strengths and needs influence one another, it is hypothesized that, at specific and aggregate levels of strengths and needs, strengths and

needs will be inversely and significantly correlated at T1 and at T2. In Figure 1, this hypothesis is represented by the use of bidirectional arrows connecting strengths and needs at T1 (c) and strengths and needs at T2 (d).

Third, given research documenting the positive impacts of strengths and the negative impacts of needs, it is expected that, at specific and aggregate levels of strengths and needs, strengths at T1 will be inversely and significantly correlated with needs at T2, and needs at T1 will be inversely and significantly correlated with strengths at T2. In Figure 1, this hypothesis is represented by the use of unidirectional arrows connecting strengths at T1 and needs at T2 (e) and needs at T1 and strengths at T2 (f).

Fourth, strengths-based services aim to identify and fortify the youth's protective factors while simultaneously identifying and addressing her needs. Further, positive youth psychology conceptualizes strengths as longstanding, trait-like attributes. Thus, I hypothesize that, at specific and aggregate levels of strengths and needs, the correlation between strengths at T1 and strengths at T2 will be significantly greater than the correlation between needs at T1 and needs at T2. In Figure 1, this hypothesis is represented by the use of a red and weighted unidirectional arrow connecting strengths at T1 and strengths at T2 (a), to distinguish it from the black and thinner unidirectional arrow connecting needs at T1 and needs at T2 (b).

Fifth, because aspects of an individual's personality may become more interactive over time, I hypothesize that, at specific and aggregate levels of strengths and needs, the correlation between strengths and needs will be significantly greater at T2 than it is at T1. In Figure 1, this hypothesis is represented by the use of a red and weighted bidirectional

arrow connecting strengths and needs at T2 (d), to distinguish it from the black and thinner bidirectional arrow connecting strengths and needs at T1 (c).

Sixth, given preliminary research indicating that strengths may be more predictive of outcomes than needs, which would mean that strengths exert more protection than needs generate risk, I hypothesize that, at specific and aggregate levels of strengths and needs, the correlation between strengths at T1 and needs at T2 will be significantly greater than the correlation between needs at T1 and strengths at T2. In Figure 1, this hypothesis is represented by the use of a red and weighted unidirectional arrow connecting strengths at T1 and needs at T2 (e), to distinguish it from the black and thinner unidirectional arrow connecting needs at T1 and strengths at T2 (f).

Method

Setting

This research study was conducted through the Mental Health Services and Policy Program (MHSPP) at Northwestern University's Feinberg School of Medicine. The MHSPP works in collaboration with the State of Illinois DCFS System of Care (SOC) Program to plan and evaluate foster care services for thousands of wards of the state across Illinois. Wards are referred for SOC services by the private foster care provider when there is a concern about placement stability. The SOC program provides strengths-based clinical services to youth and family members across settings that include the family's home, residential treatment centers, and 28 foster homes statewide.

To track consumer satisfaction, the MHSPP and DCFS survey parents whose families receive SOC services at six-month intervals. Preliminary surveys indicate that over 92% of parents believe the overall quality of the services their families receive to be 'good' or 'excellent'. To augment consumer satisfaction rates with figures of clinical outcomes, SOC caseworkers administer the CANS to each youth upon initiation of SOC interventions, (at least) every six months thereafter, and upon conclusion of SOC interventions. Caseworkers then submit CANS assessments to the MHSPP, where they are entered into a confidential database.

Participants

The participants in this study were selected from the population of youth receiving SOC services between the inception of the program on July 1, 2002 and April

1, 2004, when analyses of data collected for this project began. Because CANS are administered upon the initiation of services and at least every six months thereafter, the optimal time window between any two assessments was precisely six months. T2 CANS' that were conducted within 3 months of the optimal time window were included for analysis. Mean domain scores were obtained only if 80% or more of the items within that domain were rated. However, because the CANS Attachment Item applies only to children who are younger than six years and the Vocational Item applies only to children who are older than 12 years, these items appropriately were not rated in many cases. As such, whether these items were completed was not included in calculating the percentage of completion within their respective domains.

After these inclusion procedures, longitudinal data for 868 participants were eligible for analysis. Table 2 illustrates the participants' demographic characteristics. Males comprised 53% of the sample, and females 47%. Participants ranged in age from six months to 21 years, with a mean age of 14 years. Participants' ethnicities included African American (68%), Caucasian (26%), and other races (6%). Over 99% had been assigned a DSM-IV psychiatric diagnosis.

Materials

The CANS

The CANS-MH is a 45-item measure that is designed to integrate psychometric and clinimetric approaches to assessment by combining technical precision and clinical utility. The CANS can be completed in a matter of minutes, yet its design affords a

comprehensive snapshot of the youth's functioning across several contexts at both general (i.e., domain and overall) and specific (i.e., item) levels.

The CANS was designed from a communication-based approach to assessment that emphasizes coordination of care in the simple but comprehensive exchange of information among all parties responsible for the child and his or her mental healthcare (Lyons, Weiner, & Lyons, 2004). The CANS provides ratings across six domains: Problem Presentation, Risk Behaviors, Functioning, Care Intensity and Organization, Caregiver Needs and Strengths, and Child/Adolescent Strengths (see Appendix A).

As illustrated in Table 3, additional CANS domains were created by placing items in novel groupings so that the impact of strengths on the same (as well as some additional) contexts of functioning as researched in the strengths literature could be examined. Each CANS domain consists of items rated on a four-point scale. With regard to the child's or adolescent's needs, the scale ranges from '0' - no evidence, no need for action to '3' - clear evidence, immediate or intensive action. With regard to the child's or adolescent's strengths, the scale ranges from '0'- a strength that may serve as the focal point of a strength-based intervention, to '3' - no strength is recognized on this item. On each needs and each strengths item, a score of 'U' can be selected for "unknown" and ratings of 'N/A' for "not applicable" exist for items that are age-sensitive (e.g., the Vocational Item is appropriate for children who are at least 14 years old).

Because ratings specify a recommended level of action and a potential focus for interventions, this tool is helpful in service planning and evaluation (Leon, Uziel-Miller, Lyons, & Tracy, 1998; Lyons, Kisiel, Dulcan, Chesler & Cohen, 1997; Lyons, Mintzer,

Kisiel, & Shallcross, 1998; Lyons et al., 2001). At intake, the CANS provides a comprehensive picture of each youth's functioning, prospectively indicating the level of service intervention required. This makes it relatively simple and cost-effective to subsequently plan individualized services that are of appropriate type and intensity.

The use of standardized CANS profiles also allows for the common conceptualization of each youth's functioning, thereby enhancing communication among caretakers, service providers, legal officers, and other supervisors whose collaboration may augment the rehabilitation of SOC youth. Over time, the impact of SOC services is evaluated through the repeated use of the CANS to assess youth at six months (or more frequent) intervals and upon termination of services. As such, a longitudinal picture of each youth's functioning is obtained, retrospectively indicating the nature and degree of psychological change.

The aggregation of longitudinal client profiles yields overall outcomes statistics concerning the direction and nature of developmental change, thereby providing an appraisal of general SOC service effectiveness. More circumscribed outcomes evaluations are obtained simply by parsing results according to geographic region or to foster care agency. These quality assurance statistics are then used to inform service planning and delivery at agency- and region-levels, ultimately improving the effectiveness of SOC services on the whole.

Selection of the CANS

Investigators have called for the longitudinal assessment of strengths with reliable and valid theory-based assessment measures besides self-report instruments (Dumont &

Provost, 1999; Gillham, et al., 2002). Recent research suggests that the CANS is a viable choice for these purposes, with evidence for its inter-rater reliability, and predictive validity in particular, having recently been reported (Anderson, Lyons, Giles, Price, & Estles, 2003; Lyons, et al., 2004; Lyons et al., 2001). Further, the CANS possesses concurrent validity with the widely used Child and Adolescent Functional Assessment Scale (CAFAS; K. Hodges, 1997) in both intensive community treatment and juvenile justice programs. Moderately high Pearson's r correlations obtained between ratings on the CANS and CAFAS indicate mutual validation of the measures, while not suggesting that they are mere duplicates (Dilley, Weiner, Lyons, & Martinovich, 2005; Lyons, et al., 2004; Rautkis, Hdalio & Lyons, 2001).

The CANS possesses relatively greater ease-of-use and accessibility, which may also be reasons the IL-DCFS implements it over the CAFAS. A final reason the CANS is used by the SOC program and that it is an appropriate measure for the variables of interest in the present study is its developmental sensitivity. Because what is considered 'normal development' changes with age, rating CANS items necessitates attention to the youth's environmental circumstances and developmental stage.

To become a certified administrator of the CANS, the SOC provider first attends a training seminar that provides an orientation to the measure, as well as guidelines for its implementation and instructions for its use. The provider then completes a CANS assessment based on client information from a fictional case vignette. The CANS ratings supplied by the provider must correlate .70 or higher with "gold standard" CANS ratings on the same vignette, which establishes acceptable inter-rater reliability and thereby

certifies the provider as a CANS administrator. The provider is recertified bi-annually by retesting for inter-rater reliability in this same manner.

Procedure

Data Collection

The author collected data from the MHSPP database, which consists of over 5,000 CANS assessments of foster care youth enrolled in the SOC program. These assessments included demographic and diagnostic information (see Appendix A). As discussed in greater detail above, T1 CANS were the first administered to the individual youth within the specified date range; for some youth, these were the CANS conducted at intake. T2 CANS were those administered to the individual youth approximately six months after the youth's T1 CANS; for some youth, these were the CANS conducted at discharge. Items with missing values were converted to '0', indicating 'no evidence' of that particular strength or need.

Data Analyses

Scores on every CANS item and domain were averaged within youth and then across the sample. As shown in Table 3, aggregate strengths comprised mean scores on all strength-related items and aggregate means comprised mean scores on all non-strength, or need-related items. So that the results of this study could be more easily compared to those of previous investigations, five additional domains were established and included in these analyses: School/Work Performance, Interpersonal Functioning,

Psychiatric Adjustment, Criminal Behavior, and Physical Health. The specific items loading on these domains are listed in Table 3.

Pearson's r correlations were obtained and tested for significance at alpha levels of .05, .01, and .001 (N = 868). It should be noted that, for the purposes of this study, because the CANS rates needs and strengths inversely on the '0' - '3' scale, with a more severe need being rated closer to '3' and a more pronounced strength being rated closer to '0', positive correlations between strengths and needs represented inverse relationships.

Next, to determine whether pairs of correlations differed significantly (at the alpha levels noted above), they were compared using a t-test for differences between dependently sampled correlations (df = 867). These procedures were repeated across three phases of analyses. Phase 1 examined the relationship between aggregated strengths and aggregated needs; Phase 2 between aggregated strengths and needs domains; and Phase 3 between strengths items and aggregated needs.

Selection of CLC.

By approximating the magnitudes of correlations between variables within and across time, CLC helps to make preliminary estimations of causality and causal direction in longitudinal sets of observational data, and has been used with regularity for this purpose since at least the 1950's (Locascio, 1982). Specifically, Locascio (1982) notes that "the difference between cross-lagged correlation coefficients is usually used as an index of causal dominance," (p. 1024) in the most common CLC design, a two-wave,

two-variable panel, offering the hypothetical example of a study examining the relationship between variables 'X' and 'Y' at two points in time:

> When the [cross-lagged correlation] coefficients are of the same sign, the presumption is that if the absolute value of the former coefficient is significantly greater than the absolute value of the latter, the X variable is considered to have caused Y or has causal predominance over Y. If the absolute value of the latter is greater than the absolute value of the former, Y is considered to have caused X or has causal predominance over X. (p. 1024)

Other researchers (e.g., Chaney, Mullins, Wagner, Hommel, Page, & Doppler, 2004; Kenny & Harackiewicz, 1979) would also suggest that CLC can be used to make causal interpretations, when certain assumptions are met. Because the present study endeavored only to explore the relationship between strengths and needs at two time points as a means of identifying *plausible* causal pathways, CLC constituted an appropriate choice of analytic approach. Further, CLC afforded a clear and straightforward means of preliminarily evaluating the temporal nature of the strengths-needs relationship, and its results can be easily discussed through a descriptive approach. Thus, CLC, like the CANS, was also selected to promote communication of the present findings among consumers, researchers, and providers.

Despite CLC's appeal, it has been the subject of three key criticisms: CLC lacks a no-cause baseline for comparison between cross-lagged correlations, mediating variables can produce spurious cross-lagged correlation differences, and heterogeneous stabilities of auto correlations can lead to inaccurate inferences (Locascio, 1982; Rogosa, 1980).

Because CLC lacks a no-cause baseline to which cross-lagged correlations can be compared, it appears impossible to determine the direction of causal effects. For example, in comparing the variables 'X' and 'Y,' it cannot be determined whether X is causing increases in Y or Y is causing decreases in X. However, researchers such as Kenny (1979) and Locascio (1982) have responded to this criticism of CLC by noting that the valence of crossed correlations suggests the direction of causal effects; specifically, positive crossed correlations suggest that one variable causes increases in the other, while negative crossed correlations suggest that one variable causes decreases in the other. While considering the valence of crossed correlations does not indicate which variable is causing an increase or decrease in the other, the plausibility of alternative hypotheses of causal direction can be evaluated and compared to determine which is/are most consistent with previous research, theory, and the data obtained.

For example, Eron, Huesmann, Lefkowitz, and Walder (1972) conducted a seminal CLC study (see Achenbach, McConaughy, & Howell, 1987; Brady & Matthews, 2006; Cooley-Quille, Turner, & Beidel, 1995) evaluating the plausibility of five possible causal pathways between a preference for watching violent television and aggressive behavior, measuring these variables at two time points. The researchers were able to confidently rule-out four of the possible causal pathways based on deductive reasoning and previous research, and thereby determined that the fifth pathway best fit the data obtained: a preference for watching violent television in the third grade predicted aggressive behavior in the thirteenth grade.

Further, Locascio suggests that after CLC is used to identify plausible causal pathways between variables, subsequent experimental studies can be used to further evaluate causality. Locascio based this suggestion on the work of Kenny (1979), who made the following observation regarding the utility of CLC:

> The career of a hypothesized causal relationship might be as follows: first, the consistent replication of a cross-sectional relationship; second, the finding of time-lagged relationships between cause and effect; third, the finding of cross-lagged differences; and fourth, an experiment in which the causal variable is manipulated [pp.248-249]. [Kenny (1979), as cited by Locascio, (1982); p. 1033-1034]

Based on the work of Kenny & Harackiewicz (1979), Locascio (1982) argues that the second and third main criticisms of CLC are not reasons to discontinue use of CLC, but rather that these criticisms should be considered "assumptions to be met in applying CLC…which when violated, can invalidate, to varying degrees, conclusions reached…" (p. 1034). Bearing this arguable caveat in mind, the second key criticism of CLC is that mediating variables can produce spurious cross-lagged correlation differences. Specifically, when causal parameters do not change over time, a condition termed *stationarity* is reached; stationarity in a CLC study would ensure that any differences between cross-lagged correlations are a function of causal influences between the variables, and not due to influences of mediating variables (because they have been determined to be constant). However, the criticism goes, stationarity often cannot be established in CLC studies. In response, Locascio explains that stationarity is a more

stringent assumption than necessary to legitimate the use of CLC, and offers a mathematical proof establishing that all that need be assumed is that the influences of mediating variables are *proportional* across time. Citing the work of Cook and Campbell (1979), who have argued that stationarity, itself, is an *astringent* and even reasonable assumption in many longitudinal datasets, Locascio notes that his tempered version of stationarity is usually tenable, and adds that even if conventional stationarity is used as an assumption in CLC, it can be established in most studies.

The third key criticism of CLC is that heterogeneous auto correlations can obscure causal inferences. Locascio responds by explaining that this criticism is true, but only in cases in which the auto correlation coefficients differ largely, and that even in such cases, the existence of a cross-lagged causal parameter difference is not likely to be neutralized; rather, it is more likely that only the *size* of the cross-lagged causal parameter difference would be obscured. Thus, Locascio suggests that the choice of CLC is most supported when analyzing variables whose stabilities can reasonably be assumed to be similar.

In sum, the work of Locascio (1982) helps to legitimate CLC as useful for investigating relationships between two variables over time and for identifying potential causality between these variables, the aims of the present study's analyses. However, this paper's Discussion will address how the problems inherent to CLC nonetheless constitute limitations in the present study.

Results

Hypothesis 1

Hypothesis 1 stated that, at specific and aggregate levels of strengths and needs, strengths at T1 will be positively and significantly correlated with strengths at T2, and needs at T1 will be positively and significantly correlated with needs at T2. In other words, Hypothesis 1 stated that auto correlations (a) and (b) would be positive and statistically significant across phases, as depicted in Figure 1.

When strengths and needs each were aggregated, correlation (a) was positive and statistically significant ($r = .73$, $p < .001$), as was correlation (b) ($r = .72$, $p < .001$). These results are shown in Table 4 and Figure 2.

When strengths were aggregated and needs were organized by domain, each correlation (b) was positive and statistically significant: School/Work ($r = .71$), Interpersonal ($r = .71$), Psychiatric Adjustment ($r = .71$), Criminal Behavior ($r = .74$), Physical Health ($r = .77$), Problem Presentation ($r = .71$), Risk Behavior ($r = .73$), and Functioning ($r = .68$) ($p < .001$). These results are shown in Table 5 and Figures 3-10.

When strengths were organized by individual item strengths and needs were aggregated, each correlation (a) was positive and statistically significant: Family ($r = .71$), Interpersonal ($r = .64$), Relationship Permanence ($r = .65$), Educational ($r = .64$), Vocational ($r = .70$), Wellbeing ($r = .58$), Spiritual/Religious ($r = .72$), Talents/Interests ($r = .66$), and Inclusion ($r = .60$) ($p < .001$). These results are shown in Table 6 and Figures 11-19.

Thus, in each phase of analyses, the auto correlations were positive and statistically significant. These results are consistent with Hypothesis 1.

Hypothesis 2

Hypothesis 2 stated that, at specific and aggregate levels of strengths and needs, strengths and needs will be positively and significantly correlated at T1 and at T2. In other words, Hypothesis 2 stated that crossed correlations (c) and (d) would be positive and statistically significant across phases, as depicted in Figure 1.

When strengths and needs each were aggregated, correlation (c) was positive and statistically significant ($r = .53$, $p < .001$), as was correlation (d) ($r = .68$, $p < .001$). These results are shown in Table 4 and Figure 2.

When strengths were aggregated and needs were organized by domain, each correlation (c) was positive and statistically significant: School/Work ($r = .31$), Interpersonal ($r = .46$), Psychiatric Adjustment ($r = .34$), Criminal Behavior ($r = .34$), Problem Presentation ($r = .48$), Risk Behavior ($r = .37$), and Functioning ($r = .46$) ($p < .001$), with the exception of correlations involving the Physical Health Domain, in which (c) was positive, but not statistically significant ($r = .07$). Each correlation (d) was positive and statistically significant: School/Work ($r = .44$), Interpersonal ($r = .62$), Psychiatric Adjustment ($r = .51$), Criminal Behavior ($r = .49$), Problem Presentation ($r = .65$), Risk Behavior ($r = .50$), and Functioning ($r = .59$) ($p < .001$), with the exception of correlations involving the Physical Health Domain, in which (d) was positive, but not statistically significant ($r = .06$). These results are shown in Table 5 and Figures 3-10.

When strengths were organized by individual item and needs were aggregated, each correlation (c) was positive and statistically significant: Family (r = .32), Interpersonal (r = .45), Relationship Permanence (r = .34), Educational (r = .30), Vocational (r = .26), Wellbeing (r = .47), Spiritual/Religious (r = .32), Talents/Interests (r = .24), and Inclusion (r = .27) ($p < .001$). Each correlation (d) also was positive and statistically significant: Family (r = .48), Interpersonal (r = .58), Relationship Permanence (r = .47), Educational (r = .44), Vocational (r = .42), Wellbeing (r = .61), Spiritual/Religious (r = .34), Talents/Interests (r = .39), and Inclusion (r = .46) ($p < .001$). These results are shown in Table 6 and Figures 11-19.

Thus, with the exception of correlations involving the Physical Health Domain in Phase 2, the crossed correlations were positive and statistically significant across each phase of analyses. These results are largely consistent with Hypothesis 2.

Hypothesis 3

Hypothesis 3 stated that, at specific and aggregate levels of strengths and needs, strengths at T1 will be positively and significantly correlated with needs at T2, and needs at T1 will be positively and significantly correlated with strengths at T2. In other words, Hypothesis 3 stated that cross-lagged correlations (e) and (f) would be positive and statistically significant across phases, as depicted in Figure 1.

When strengths and needs each were aggregated, correlation (e) was positive and statistically significant (r = .43, $p < .001$), as was correlation (f) (r = .48, $p < .001$). This result is shown in Table 4 and Figure 2.

When strengths were aggregated and needs were organized by domain, each correlation (e) was positive and statistically significant: School/Work ($r = .27$), Interpersonal ($r = .40$), Psychiatric Adjustment ($r = .34$), Criminal Behavior ($r = .29$), Problem Presentation ($r = .41$), Risk Behavior ($r = .31$), and Functioning ($r = .40$) ($p < .001$), with the exception of correlations involving the Physical Health Domain, in which (e) was positive, but not statistically significant ($r = .05$). Each correlation (f) was positive and statistically significant: School/Work ($r = .27$), Interpersonal ($r = .41$), Psychiatric Adjustment ($r = .28$), Criminal Behavior ($r = .35$), Problem Presentation ($r = .44$), Risk Behavior ($r = .37$), and Functioning ($r = .38$) ($p < .001$), with the exception of correlations involving the Physical Health Domain, in which (f) was positive, but not statistically significant ($r = .02$). These results are shown in Table 5 and Figures 3-10.

When strengths were organized by individual item and needs were aggregated, each correlation (e) was positive and statistically significant: Family ($r = .29$), Interpersonal ($r = .36$), Relationship Permanence ($r = .26$), Educational ($r = .26$), Vocational ($r = .22$), Wellbeing ($r = .35$), Spiritual/Religious ($r = .26$), Talents/Interests ($r = .18$), and Inclusion ($r = .24$) ($p < .001$). Each correlation (f) also was positive and statistically significant: Family ($r = .33$), Interpersonal ($r = .41$), Relationship Permanence ($r = .32$), Educational ($r = .27$), Vocational ($r = .33$), Wellbeing ($r = .42$), Spiritual/Religious ($r = .28$), Talents/Interests ($r = .28$), and Inclusion ($r = .31$) ($p < .001$). These results are shown in Table 6 and Figures 11-19.

Thus, with the exception of correlations involving the Physical Health Domain in Phase 2, the cross-lagged correlations were positive and statistically significant across each phase of analyses. These results are largely consistent with Hypothesis 3.

Hypothesis 4

Hypothesis 4 stated that, at specific and aggregate levels of strengths and needs, the correlation between strengths at T1 and strengths at T2 will be significantly greater than the correlation between needs at T1 and needs at T2. In other words, Hypothesis 4 stated that auto correlation (a) would significantly exceed auto correlation (b) across phases, as depicted in Figure 1.

When strengths and needs each were aggregated, correlation (a) exceeded correlation (b), but this difference was not statistically significant ($t = .20$). This result is shown in Table 4 and Figure 2.

When strengths were aggregated and needs were organized by domain, correlation (a) exceeded each correlation (b), with the exception of correlations involving the Criminal Behavior and Physical Health Domains, in which correlation (b) exceeded correlation (a). However, none of the differences obtained were statistically significant ($-0.37 \leq t \leq 1.14$). These results are shown in Table 5 and Figures 3-10.

When strengths were organized by individual item and needs were aggregated, correlation (b) exceeded each correlation (a). The differences obtained were statistically significant in the cases of the following strengths: Wellbeing ($t = -2.87$, $p < .01$) and Inclusion ($t = -2.38$, $p < .05$). These results are shown in Table 6 and Figures 11-19.

Thus, in no phase of analyses did auto correlation (a) significantly exceed auto correlation (b). These results are not consistent with Hypothesis 4.

Hypothesis 5

Hypothesis 5 stated that, at specific and aggregate levels of strengths and needs, the correlation between strengths and needs will be significantly higher at T2 than at T1. In other words, Hypothesis 5 stated that crossed correlation (d) would significantly exceed crossed correlation (c) across phases, as depicted in Figure 1.

When strengths and needs each were aggregated, correlation (d) exceeded correlation (c), but this difference was not statistically significant ($t = 3.92$, $p < .001$). This result is shown in Table 4 and Figure 2.

When strengths were aggregated and needs were organized by domain, each correlation (d) significantly exceeded each correlation (c): School/Work ($t = 3.47$, $p < .01$), Interpersonal ($t = 4.53$, $p < .001$), Psychiatric Adjustment ($t = 4.83$, $p < .001$), Criminal Behavior ($t = 4.24$, $p < .001$), Problem Presentation ($t = 4.46$, $p < .001$), Risk Behavior ($t = 3.58$, $p < .001$), and Functioning ($t = 3.36$, $p < .01$), with the exception of correlations involving the Physical Health Domain, in which correlation (c) exceeded correlation (d), though this difference was not statistically significant ($t = -0.10$). These results are shown in Table 5 and Figures 3-10.

When strengths were organized by individual item and needs were aggregated, each correlation (d) significantly exceeded each correlation (c): Family ($t = 4.28$, $p < .001$), Interpersonal ($t = 3.48$, $p < .01$), Relationship Permanence ($t = 3.72$, $p < .001$),

Educational ($t = 3.82$, $p < .001$), Vocational ($t = 3.82$, $p < .001$), Wellbeing ($t = 3.55$, $p < .001$), Talents/Interests ($t = 4.05$, $p < .001$), and Inclusion ($t = 4.82$, $p < .001$), with the exception of correlations involving the Spiritual/Religious Item, in which this difference was not statistically significant ($t = .70$). These results are shown in Table 6 and Figures 11-19.

Thus, in each phase of analyses, most of the crossed correlations (d) exceeded the crossed correlations (c), and these differences were statistically significant across most of Phases 2 and 3. These results are partially consistent with Hypothesis 5.

Hypothesis 6

Hypothesis 6 stated that the association between strengths at T1 and needs at T2 will be significantly greater than the association between needs at T1 and strengths at T2. In other words, Hypothesis 6 stated that cross-lagged correlation (e) would significantly exceed cross-lagged correlation (f) across phases, as depicted in Figure 1.

When strengths and needs each were aggregated, correlation (f) exceeded correlation (e), but this difference was not statistically significant ($t = -1.75$). This result is shown in Table 4 and Figure 2.

When strengths were aggregated and needs were organized by domain, correlation (e) significantly exceeded correlation (f) in the Psychiatric Adjustment Domain ($t = 2.11$, $p < .05$). In the School/Work, Physical Health, and Functioning Domains, correlation (e) exceeded correlation (f), but none of these differences were statistically significant ($.13 \leq t \leq 1.32$). In all other domains, correlation (f) exceeded

correlation (e), but none of these differences were statistically significant ($-1.81 \leq t \leq -0.42$). These results are shown in Table 5 and Figures 3-10.

When strengths were organized by individual item and needs were aggregated, correlation (f) significantly exceeded correlation (e) when correlations involved the following strengths: Relationship Permanence ($t = -2.04$, $p < .05$), Wellbeing ($t = -2.25$, $p < .05$), Talents/Interests ($t = -3.18$, $p < .01$), and Inclusion ($t = -2.06$, $p < .05$). In all other domains, correlation (f) exceeded correlation (e), but these differences were not statistically significant ($-1.52 \leq t \leq -0.39$). These results are shown in Table 6 and Figures 11-19.

Thus, with the exception of correlations involving the Psychiatric Adjustment Domain in the Phase 2, cross-lagged correlation (f) exceeded cross-lagged correlation (e), and often this difference was statistically significant. These results are largely inconsistent with Hypothesis 6.

Discussion

Three key groups of findings from this study merit discussion and may carry implications for the further development and implementation of strengths-based interventions for at-risk youth. The first group of findings concerns the stability of strengths and needs in the present sample; the second concerns the contemporaneous relationship between strengths and needs; and the third concerns the relationship between strengths and needs across six months.

With regard to the stability of strengths and needs in this sample, the correlation between strengths at T1 and strengths at T2 was positive and statistically significant across each phase of analyses. These results suggest that the strengths possessed by this sample of foster care youth may have represented stable characteristics across six months of treatment. This inference is supported by extant research suggesting that strengths can remain relatively stable across time (e.g., Harter, 1990). In addition, needs at T1 and needs at T2 were positively and significantly correlated across each phase of analyses, which suggests that the needs of these foster care youth may also have remained stable across six months, in spite of treatment. This inference is supported by research by Oswald and colleagues (2001) indicating that youth can remain at risk and needs can persist over time, despite the presence of strengths and the receipt of mental health services. Further, the auto correlation of aggregate needs significantly exceeded the respective auto correlations of two strengths items: Wellbeing and Inclusion, which suggests that, in this sample, aggregate needs may have remained relatively more stable than these strengths. Taken together, these inferences regarding the stability of strengths

and needs over a period of months may serve as a reminder that while the youth's strengths might constitute resources across the course of treatment (see Hubble, et al., 1999), strengths-based interventions should still attend to needs (which they are designed to do), and not neglect them under the erroneous premise that they will simply abate as strengths increase.

With regard to the contemporaneous relationship between strengths and needs, the correlations between strengths and needs at T1 and at T2 were positive (though inverse in this study, as explained above) and statistically significant across each phase of analyses, with one exception. These results suggest that the strengths and needs of this sample of foster care youth may have exerted contemporaneous influence upon one another in most cases. Although causation, and the direction thereof, between these variables cannot be inferred, it is plausible that transactions occurred between these factors, given research suggesting that risk and protective factors can interact with one another (e.g., Compas, Hinden, & Gerhardt, 1995; Jessor, et al., 1995).

Further, this possibility stands to reason when one considers how strengths and needs impact the individual's experience. For example, a high school student who has an interest in playing basketball (a strength) might be motivated to maintain a high enough grade point average to remain on the school basketball team, despite academic difficulty due to the presence of ADHD (a need). However, this same student might be kicked off the basketball team if she had difficulty with anger management (a need) and became involved in a fight on the court. Indeed, it seems possible that the individual's strengths and needs contemporaneously influence one another, which indicates that it may be

important to address potential interactions between these variables when delivering mental health services to the child or adolescent. It is also interesting to note that the correlation between strengths and needs at T2 significantly exceeded that at T1, with two exceptions. Thus, if the strengths and needs of this sample did interact, they may have become increasingly influential of one another in most cases, which could be argued to suggest that mental health services should continue to address the potential interaction between strengths and needs throughout the course of treatment.

Additionally, regardless of whether the strengths and needs of this sample interacted, that they were inversely correlated to a significantly greater degree after six months in nearly all instances suggests that strengths increased as needs decreased, and vice versa. Given that these youth were receiving strengths-based mental health services, it could be argued that for most of the participants, strengths increased and needs decreased (rather than that strengths decreased and needs increased), but speculations of service effectiveness cannot be made based on these results.

With regard to the relationship between strengths and needs over a six-month period, the correlations between strengths at T1 and needs at T2 were positive and statistically significant across each phase of analyses, with one exception. These results suggest that the strengths possessed by this sample of foster care youth may have exerted protective influence upon their needs in most cases. Although causation between these variables cannot be inferred, if there is a causal relationship between these variables in this sample, the only plausible direction-of-effect is from strengths at T1 to needs at T2, for the simple reason that T1 precedes T2. The plausibility of this possible direction-of-

effect is also supported by the work of Kenny (1979) and Locascio (1982), because the crossed correlations obtained were *inverse*, suggesting that, if a causal relationship exists in these cases, strengths caused *decreases* in needs (rather than that needs caused increases in strengths). This possible direction-of-effect is interesting to consider in light of extant research suggesting that strengths may serve as protective factors against various types of risk (e.g., Herman-Stahl & Petersen, 1996; Voydanoff & Donnelly, 1999). However, it is important to note that this study did not reveal a significant correlation between aggregate strengths at T1 and the Physical Health Needs domain at T2, despite research suggesting that some youngsters rely upon strengths to mediate physical health risk factors (e.g, Brown, et al., 2001; Ezop, 2002).

Positive and statistically significant correlations were also revealed between needs at T1 and strengths at T2 across each phase of analyses, with one exception, suggesting that the needs of this sample of foster care youth may have constituted risk to their strengths in most cases. Inasmuch as there is a causal relationship between these variables in this sample, the only plausible direction-of-effect is from needs at T1 to strengths at T2, again because T1 precedes T2. Additionally, because the crossed correlations obtained were inverse, it appears that, if a causal relationship exists in these cases, needs caused decreases in strengths (rather than that strengths caused increases in needs; see Kenny, 1979; Locascio, 1982). This possible direction-of-effect is interesting to consider in light of the notion that needs can serve as risk factors that contribute to undesirable outcomes, in part by limiting protection that may be offered by strengths (see Masten, 2000).

Further examination of the temporal relationship between strengths and needs in this sample indicated that the correlation between aggregate strengths at T1 and the Psychiatric Needs Domain at T2 was significantly greater than the correlation between the Psychiatric Needs Domain at T1 and aggregate strengths at T2. Thus, aggregate strengths may have offered relatively more protective influence than the needs within the Psychiatric Needs Domain generated risk, in this sample. The notion that, for some youth, certain domains of strengths can offer relatively greater protection than certain domains of needs generate risk may deserve further consideration, given results obtained by Malecki and Elliot (2002), who determined that the social skills possessed by a sample of elementary school youth were more reliable predictors of academic performance than problem behaviors. It should be recalled, however, that the present study did not examine the effects of strengths and needs on any independent measures of functioning.

Additionally, given that the correlation between aggregate needs at T1 and some specific strengths (i.e., Relationship Permanence, Wellbeing, Talents/Interests, and Inclusion) at T2 was significantly greater than the correlation between these specific strengths at T1 and aggregate needs at T2, aggregate needs may have generated more risk than these particular strengths offered protective influence, in this sample. The possibility that the additive effects of risk factors can limit the protection offered by a specific strength is reflected in contemporary models of risk and protection in youth, such as that delineated by Armistead and colleagues (1995).

Yet further examination of the temporal relationship between the strengths and needs possessed by this sample of foster care youth indicated that the correlation between

strengths at T1 and needs at T2 significantly exceeded the correlation between needs at T1 and strengths at T2 only in an instance in which *aggregate* strengths were measured. Thus, it is possible that strengths offered more protection than needs generated risk only when each participant's strengths were measured as a cumulative set. This possibility seems plausible, as a higher level of strengths would presumably offer greater protective influence, a notion discussed in support of strengths-*building*—in addition to strengths-based—interventions (see Allison, et al., 2003; Lyons et al., 2000). This possibility is also consistent with Lehner's (2004) explication that resilience can be conceptualized as an attribute that is comprised of a subset of more specific strengths.

Additionally, the correlation between needs at T1 and strengths at T2 significantly exceeded the correlation between strengths at T1 and needs at T2 only in some instances in which *aggregate* needs were measured. Thus, it is possible that needs generated greater risk than strengths generated protection in this sample only when needs were measured as a cumulative set. This possibility is deductively valid: the more needs (i.e., risk factors), the higher the risk. Thus, these findings might be taken as a reminder of the importance of practicing comprehensive diagnostic screenings that assess for the presence of needs beyond those pertaining to the presenting problem, as multiple risks may collectively impact the youth's strengths, and likely other indicators of her functioning, in detrimental ways.

It may seem trite to highlight the importance of taking account of both strengths and needs across multiple domains, since it can easily be argued that this kind of comprehensive evaluation is intuitively viable. However, as described early in this paper,

youth mental health services have been plagued for at least the past half-century by the insufficient implementation of viable ideals, and some clinicians continue to insist that services that incorporate strengths are merely naïve and inefficient (Allison, et al., 2003). Thus, it may be worth underscoring the apparent importance of incorporating strengths in youth mental health services and into prediction models of risk and resilience processes, as exemplified by researchers such as Armistead and colleagues (1995), and Compas, Hinden, and Gerhardt (1995), among others.

Taken together, these groups of findings indicate that the strengths and needs of foster care youth may represent relatively stable factors over time, and that these factors may exert reciprocal influence on one another, both contemporaneously and across time. These findings also suggest that further study may be warranted to develop accurate models of the differential relationship between strengths and needs across time and additional ideas about how the interaction of these factors may influence the youth's functioning.

Limitations of the Present Study and Directions for Future Research

Although the present study was a quasi-experimental investigation of the relationship between strengths and needs at two time points, and thus may have constituted an appropriate instance for using the CLC analytic approach, it is important to address how CLC's weaknesses constitute limitations. It may also be beneficial to consider how the presence of these limitations allows for the development of new investigations designed to examine strengths and needs in youth populations.

As discussed in this paper's Method, CLC has been criticized for three main reasons, to which Locascio (1982) responded in order to support the use of CLC for exploring the temporal relationship between two (or more) variables. The debate over whether CLC constitutes a viable analytic approach in such instances provides a lens through which to critically examine the present findings.

In response to the criticism that CLC lacks a no-cause baseline for comparison, which seems integral to determining whether one variable is causing an increase in the other or instead is decreased by the other, Locascio cited Kenny's (1979) research indicating that the valence of crossed correlations suggests the direction of causal effects. The crossed correlations obtained in the present study were inverse, supporting the inference that strengths caused decreases in needs and needs caused decreases in strengths, as addressed earlier in the Discussion. As such, the present study may have been somewhat robust to the first criticism of CLC. Nonetheless, it should be stressed that while this study highlights the potential roles that strengths and needs might play in generating protection and risk, respectively, it does not offer sufficient evidence to indicate that strengths and needs did indeed cause decreases in one another. Further, as observed by Chaney and colleagues (2004), even if strengths and needs did cause decreases in one another, CLC would not indicate whether it was the onset and/or the maintenance of strengths that was diminished by the presence of needs nor whether it was the onset and/or the maintenance of needs that was diminished by the presence of strengths. Future research might ideally address this onset-maintenance distinction, as the results could be used to inform models of risk and resilience processes in youth.

The second criticism of CLC is that cross-lagged correlation differences, which are of central interest, are particularly sensitive to the effects of mediating variables. All longitudinal designs are threatened by confounding variables, and while the present study may have minimized some potential confounding effects by using the same measure, and in many cases, the same raters, it is likely that other developmental factors influenced the participants' levels of strengths and needs. In addition, while it is tempting to assume that the causal parameters of the mediating variables were proportional across this study, which Locascio suggested is common and sufficient to rule out spurious CLC effects, this study did not identify or measure mediating variables, nor did it take any steps to promote stationarity, which would have ensured that mediating parameters were constant. Because the present study did not establish stationarity, which Kenny and Harackiewicz (1979) propose as a fundamental assumption of CLC, confidence in even those interpretations that can be taken to be merely suggestive of causal strengths-needs relationships is further reduced.

In addition to stationarity, Kenny and Harackiewicz (1979) argue that studies using CLC must also meet the assumptions of *instrument reliability* and *synchronicity in measurement* in order for appropriate causal interpretations to be made. The present study used an instrument whose inter-rater reliability has been documented (e.g., Anderson, et al., 2003), but whose internal consistency reliability, which is of interest in assuming instrument reliability (Kenny, 1975), has yet to be researched. Additionally, the present study attempted to ensure that both strengths and needs were measured simultaneously at two time points by creating an optimal time window at which the T2 CANS' could be

conducted, but this did not ensure absolute synchronicity. Because it is difficult to determine whether the present study met these assumptions, it bears repeating that the present findings should be taken only as suggestive evidence for the idea that strengths and needs may have exerted causal influence upon one another.

The third criticism of CLC is that heterogeneous auto correlations obscure cross-lagged correlation differences. Locascio argues that this phenomenon is only problematic in cases in which the auto correlation coefficients differ largely, and suggests that CLC is viable when the respective stabilities of the variables compared can be reasonably assumed to be similar. While the auto correlation coefficients were relatively similar in most of the present analyses, Locascio cautions against comparing auto correlations in a CLC design as a means of determining their homogeneity, as the auto correlations are often affected by the cross-lagged correlations. Thus, because this study did not obtain external estimates of auto correlations, their homogeneity cannot be concretely established. Locascio also noted that when auto correlations differ largely, while the existence of a cross-lagged causal parameter difference is not likely to be neutralized, the size of the cross-lagged causal parameter difference can be obscured. Thus, if the auto correlations obtained in the present study differ more than they would be assumed to or would appear to, then while the cross-lagged differences obtained may reflect the existence of real-world differences, they may not accurately reflect the magnitude of those differences.

Given the methodological limitations of the present study, future longitudinal studies of strengths and needs could be improved in two main ways. First, when CLC is

implemented, causal inferences would be strengthened by strict adherence to the assumptions of this model and by inclusion of hierarchical regression analyses comparing the partial correlations between strengths and needs. Such studies could evaluate the nuances of causal pathways; for example, it could be determined whether strengths and needs affect one another contemporaneously, and then that each perpetuates itself over time to a greater degree than strengths at T1 directly moderate needs at T2 and vice versa. Second, longitudinal research using any analytic approach should assess the interactions of both strengths and needs with independent measures of functioning, while controlling for confounding variables.

In considering the second means of improving future investigations, it is interesting to note that there are likely to be many "confounding" variables, which, instead of or in addition to being controlled for, could be categorized as strengths or as needs, and then studied. For example, time spent with a responsible older sibling might ideally be categorized as a strength—a familial attribute, to be specific. However, there is an inherent challenge to categorizing strengths, which are internally inconsistent: for one child, a certain characteristic offers a protective influence; for another, it simply may not. Indeed, just as each youth possesses a unique set of strengths, each strength may vary in the degree to which it is possessed and to which it impacts functioning. Further, as a set of characteristics, "strengths" are not some general construct that a child or adolescent either does or does not possess, but rather are personal and contextual characteristics that exert influences whose effects are unique to the individual and her life. Thus, determining whether to categorize a certain characteristic as a strength for the *individual* probably

necessitates examining its role in her life. Although their power would be reduced, longitudinal studies of small samples of youth would allow for observation of individual-specific relationships between strengths and needs. Alternatively, larger-scale studies could compare the interactions of strengths and needs across different youth populations (e.g., children of divorced parents, juvenile justice youth), perhaps stratified by sex, age, or ethnicity. Such studies would also help to establish the generalizability of the present findings.

Considering the nuances of risk and resilience processes at a more general level also leads to interesting ideas for future research. For example, by definition, developing resilience necessitates experiencing (at least some) adversity. A research question follows: is there a dose-effect relationship between adversity and resilience? In other words, at an individual level, does exposure to a certain amount of adversity or risk at an appropriate developmental stage tend to generate an optimal degree of reliance upon the individual's strengths, thereby preparing her to marshal those strengths the next time she faces a challenge? If so, then encountering some risk factors might actually be viewed as a catalyst for growth. Such a view would be consistent with existential or cognitive behavior therapies that encourage meaning-making in order to reframe life struggles as opportunities for change, and is supported by the notion that protective factors may influence outcomes under conditions of high risk, but not under low risk (see Compas, Hinden, & Gerhardt, 1995; Smokowski, Reynolds, & Bezruczko, 2000). This view is also supported by more recent research indicating that experiencing some negative affect is

necessary for optimal emotional and social functioning (e.g., Fredrickson & Losada, 2005).

Concluding Comments

This study suggests that the strengths and needs possessed by foster children and adolescents may constitute relatively stable factors that interact to exert protection and risk, respectively. These findings indicate that strengths, in addition to needs, may be worth addressing in treatment. Indeed, like the young, vital Santiago that the Old Man wishes he could be again, youth who rely upon well-developed strengths might likely be best prepared to face challenge in the sea of life. However, one recurring theme that can be pulled from the history of youth mental health services reviewed early in this paper is the futility of theory development without subsequent practical implementation. Thus, far more important than the theoretical interpretations of the present findings and of those revealed by related investigations is whether they will be used to improve the real-world application of the system of care philosophy and other strengths-based approaches to the mental health treatment of youth.

Table 1
Evidence for the Clinical Utility of Strengths in Child and Adolescent Mental Health Services

Study	Sample	Context in Which Effects were Measured	Conclusions
Ainsworth, 2002	13,000 10th graders	Academic	Perceived opportunity for advancement within the community predicts academic success
Boyle & Lipman, 2002	Nationally representative sample of Canadian youth aged 4-10	Social, psychiatric	Children from advantaged neighborhoods exhibit less behavioral problems
Brown, Parks, Zimmerman, & Phillips, 2001	Longitudinal study of 14-19 year olds across three years	Physical health	Religiosity predicts less alcohol consumption and problem drinking behavior
Conger, Cui, Bryant, & Elder, 2002	Longitudinal study with two data collection points: participants at13 and 20 years	Social, lifespan development	Observing warm interactions between parents predicts healthy romantic relationship styles years later
Dowling, Getsdottir, Anderson, von Eye, & Lerner, 2003	Nationally representative sample of 1000 5th – 9th graders	Physical health	Strengths related to conventionality predict positive change in health behavior; strengths-based interventions may enhance conventionality
Ezop, 2002	Youth suffering from asthma	Physical health	Children use prayer and other religious coping strategies to manage symptoms of physical illness

Garmezy, 1985	General youth population	Academic, social, psychiatric, physical health, lifespan development	Strengths can be categorized according to dispositional child attributes, family attributes, and extra-familial circumstances
Hart, Hofmann, Edelstein, & Keller, 1997	Icelandic youth	Academic, social, psychiatric	Resilient children perform better, develop an internal locus of control more quickly
Herman-Stahl & Petersen, 1996	Junior high youth from rural areas	Psychiatric	Well-developed coping abilities, perceived mastery, high self-esteem, optimism, positive family and peer relationships, social resources reduce symptoms of depression
Hubble, Duncan, & Miller, 1999	General youth and adult populations	Psychiatric	Client strengths account for the most variance in therapeutic outcome
Hunter & Csikszentmihalyi, 2002	1215 6^{th} – 12^{th} graders attending public schools	Psychiatric	Interest is associated with wellbeing

Jessor, Turbin, Costa, 1998	1500 high school students from an urban area	Physical health	Religiosity, church attendance, prosocial activities, taking responsibility for physical health, observing parents and peers model health-conscious behavior, positively-perceived school environment and parental relationships are positively associated with health-enhancing behavior, and mediate the effects of risk factors on physical condition
Lubinski & Benbow, 2000	Gifted youth population	Psychiatric, lifespan development	Neglecting to build strengths hampers psychological adjustment and development
Lyons & Schaefer, 2000	Youth in residential treatment	Psychiatric	Higher moral/spiritual strengths associated with lower risk-taking behavior
Lyons, Uziel-Miller, Reyes, & Sokol, 2000	Youth in residential treatment	Psychiatric	Sense of humor, ability to enjoy positive life experiences, positive sibling relationship buffer psychological symptomatology, risk behaviors; may improve functioning regardless of symptoms

Malecki & Elliot, 2002	3rd and 4th graders functioning at age-appropriate levels	Academic	Social skills are better predictors of adjustment than are certain needs, like problem behaviors
Mason & Windle, 2002	16 and 17 year olds	Physical health	Religiosity and peer relationships predict decision to use substances, with church attendance predicting lower quantity and frequency of substance consumption
Masten, 2001	General youth population	Psychiatric	Resilience is common among children
McCleod & Vodanovich, 1991	Undergraduate college students	Psychiatric	Interested adolescents have higher self-esteem, act more autonomously
Miller & Miller, 1998	17,000 11-17 year olds	Physical Health	Interested adolescents, those with jobs, and those with positive peer relationships and opportunities for advancement within their community report less substance use
Rae-Grant, Thomas, Offord, Boyle, 1989	Over 3000 youth aged 4-16 in Ontario	Psychiatric	Positive peer relationships, extracurricular participation buffer mental illness
Robertson, 2001	Disadvantaged 5th and 6th graders	Academic	Behavioral adaptation, social skills, positive self-concept, parental supervision predict academic achievement

Shillinglaw, 1999	Juvenile justice youth	Psychiatric, social	Youth with identified strengths exhibit less violence
Spitzberg & Cupach, 1988	General youth population	Social, lifespan development	Interpersonal skills predict long-term variables (e.g., job- and marital-satisfaction, existence of supportive social network)
Vance, Bowen, Fernandez, & Thompson, 2002	Aggressive youth, adolescents diagnosed with psychiatric disorders assessed across 4-year interval	Social, psychiatric	Reading, problem-solving, interpersonal skills, positive family relationships, having a consistently-employed parent, having friendships with non-deviant peers predict positive behavioral functioning
Voydanoff & Donnelly, 1999	Nationally representative sample of 10-17 year olds	Academic	Participation in extracurricular activities, having friends who plan to attend college, positively perceived school environment buffer impact of negative peer behavior on grades

Table 2
Demographic Characteristics of the Sample

Demographic	N (%)
Gender	
Male	461 (53.1)
Female	407 (46.9)
Race/Ethnicity	
African American	590 (68.1)
Caucasian	226 (26.3)
Other/Multi Ethnic	52 (6.6)
Age	
18-21	79 (9.1)
12-17	481 (55.4)
6-11	266 (30.7)
6 months-5 years	42 (4.8)

Table 3
Domains of Functioning Under Study

CANS Domains	Domains Created for This Study
Problem Presentation	School/Work
Psychosis	Intellectual/Developmental
Attention Deficit/Impulse Control	School
Depression/Anxiety	
Oppositional Behavior	Interpersonal
Antisocial Behavior	Oppositional Behavior
Substance Abuse	Antisocial Behavior
Adjustment to Trauma	Attachment
Attachment	Danger to Others
Situational Consistency	Sexually Abusive Behavior
Temporal Consistency	Social Behavior
	Family Functioning
Risk Behaviors	Sexual Development
Danger to Self	
Danger to Others	Psychiatric Adjustment
Elopement	Psychosis
Sexually Abusive Behavior	Attention Deficit/Impulse Control
Social Behavior	Depression/Anxiety
Crime/Delinquency	Adjustment
	Danger to Self
Functioning	
Intellectual/Developmental	Criminal Behavior
Physical/Medical	Antisocial Behavior
Family	Crime/Delinquency
School	Substance Abuse
Sexual Development	Danger to Others
	Sexually Abusive Behavior
Strengths	
Family	Physical Health
Interpersonal	Physical/Medical
Relationship Permanence	
Educational	
Vocational	
Wellbeing	
Spiritual/Religious	
Talents/Interests	
Inclusion	

Table 4
Pearson's r Correlations between Aggregate Strengths and Aggregate Needs; T-tests for Differences between Corresponding Pairs of these Correlations

Correlations						T - Statistics		
A	**B**	**C**	**D**	**E**	**F**	**A - B**	**D - C**	**E - F**
0.73***	0.72***	0.53***	0.68***	0.43***	0.48***	0.20	3.92***	-1.75

*p< .05. **p< .01. ***p<.001.

Table 5
Pearson's r Correlations between Aggregate Strengths and Needs Domains; T-tests for Differences between Corresponding Pairs of These Correlations

Needs	**Correlations**						**T - Statistics**		
Domains	**A**	**B**	**C**	**D**	**E**	**F**	**A - B**	**D - C**	**E - F**
School / Work	0.73***	0.71***	0.31***	0.44***	0.27***	0.27***	0.47	3.47**	0.13
Interpersonal	0.73***	0.71***	0.46***	0.62***	0.40***	0.41***	0.61	4.53***	-0.42
Psychiatric Adjustment	0.73***	0.71***	0.34***	0.51***	0.34***	0.28***	0.48	4.83***	2.11*
Criminal Behavior	0.73***	0.74***	0.34***	0.49***	0.29***	0.35***	-0.04	4.24***	-1.81
Physical Health	0.73***	0.77***	.07	.06	.05	.02	-0.37	-0.10	1.32
Problem Presentation	0.73***	0.71***	0.48***	0.65***	0.41***	0.44***	0.55	4.46***	-1.04
Risk Behavior	0.73***	0.73***	0.37***	0.50***	0.31***	0.37***	0.12	3.58***	-1.72
Functioning	0.73***	0.68***	0.46***	0.59***	0.40***	0.38***	1.14	3.36**	0.62

*p< .05. **p< .01. ***p<.001

Table 6
Pearson's r Correlations between Aggregate Needs and Strengths Items; T-tests for Differences between Corresponding Pairs of These Correlations

Strengths Items	**Correlations**						**T - Statistics**		
	A	**B**	**C**	**D**	**E**	**F**	**A - B**	**D - C**	**E - F**
Family	0.71***	0.72***	0.32***	0.48***	0.29***	0.33***	-0.18	4.28***	-1.14
Interpersonal	0.64***	0.72***	0.45***	0.58***	0.36***	0.41***	-1.79	3.48**	-1.52
Relationship Permanence	0.65***	0.72***	0.34***	0.47***	0.26***	0.32***	-1.43	3.72***	-2.04*
Educational	0.64***	0.72***	0.30***	0.44***	0.26***	0.27***	-1.56	3.82***	-0.39
Vocational	0.70***	0.73***	0.26***	0.42***	0.22***	0.33***	-1.56	3.82***	-0.39
Wellbeing	0.58***	0.72***	0.47***	0.61***	0.35***	0.42***	-2.87**	3.55***	-2.25*
Spiritual / Religious	0.72***	0.72***	0.32***	0.34***	0.26***	0.28***	-0.14	0.70	-0.74
Talents / Interests	0.66***	0.72***	0.24***	0.39***	0.18***	0.28***	-1.18	4.05***	-3.18**
Inclusion	0.60***	0.72***	0.27***	0.46***	0.24***	0.31***	-2.38*	4.82***	-2.06*

*p< .05. **p< .01. ***p<.00

Figure 1. Overall hypothesized pattern of correlations: Strengths and needs

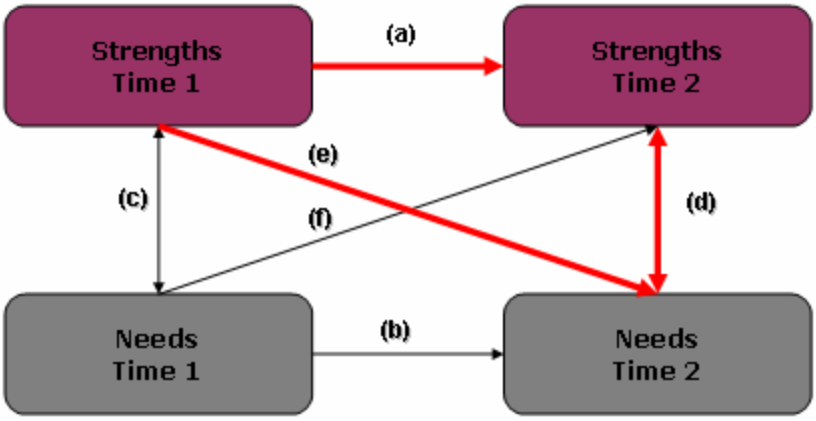


Figure 2. Obtained pattern of correlations: Aggregate strengths & aggregate needs

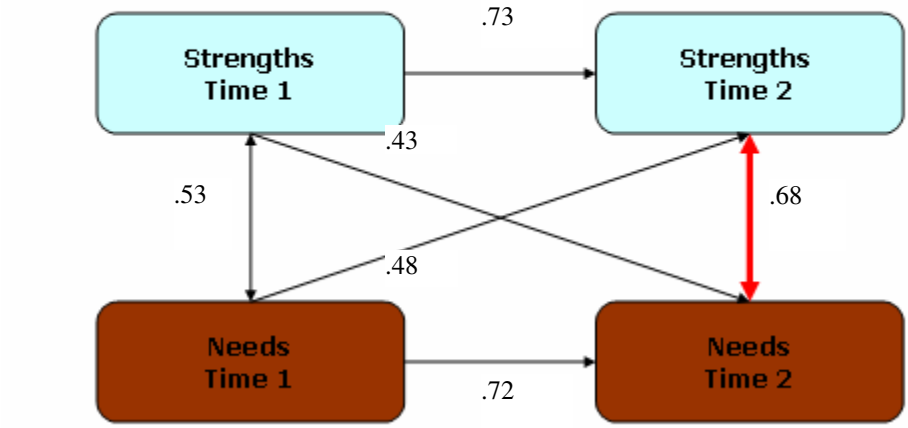


Figure 3. Obtained pattern of correlations: Aggregate strengths & school / work needs domain

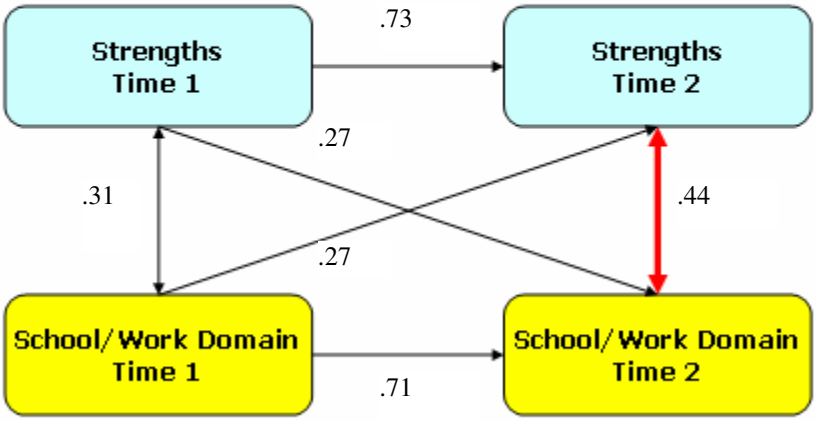


Figure 4. Obtained pattern of correlations: Aggregate strengths & interpersonal needs domain

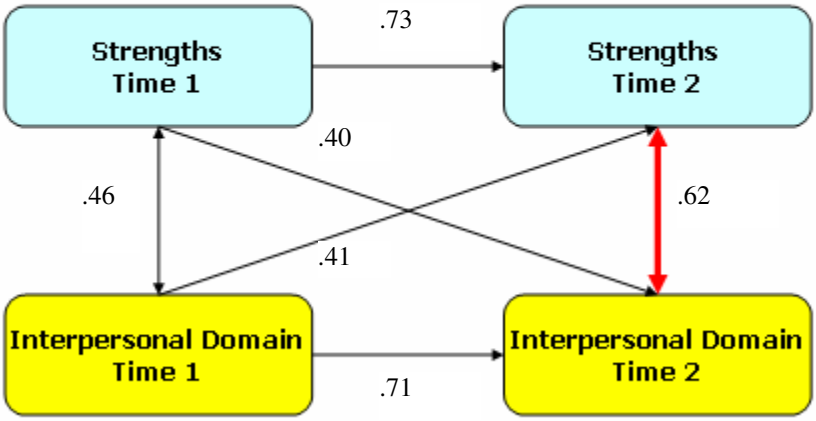


Figure 5. Obtained pattern of correlations: Aggregate strengths & psychiatric adjustment needs domain

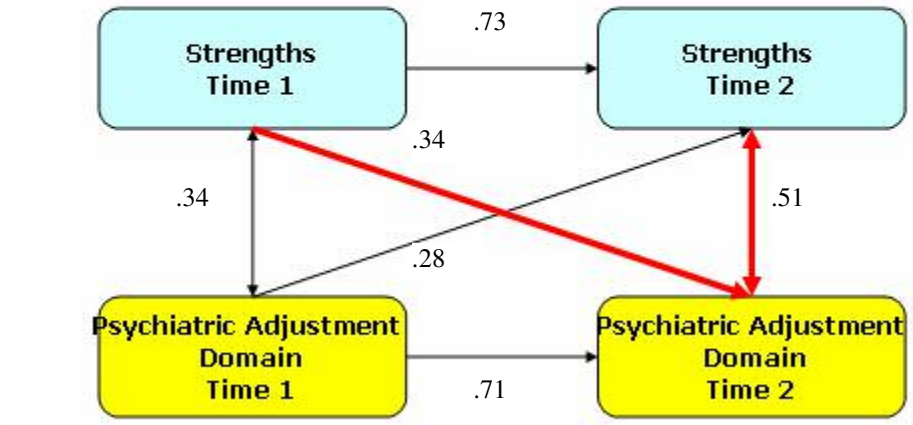


Figure 6. Obtained pattern of correlations: Aggregate strengths & criminal behavior needs domain

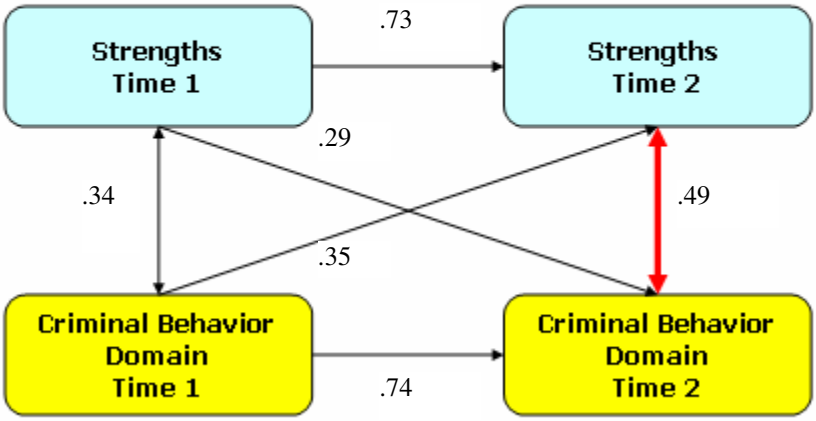


Figure 7. Obtained pattern of correlations: Aggregate strengths & physical health needs domain

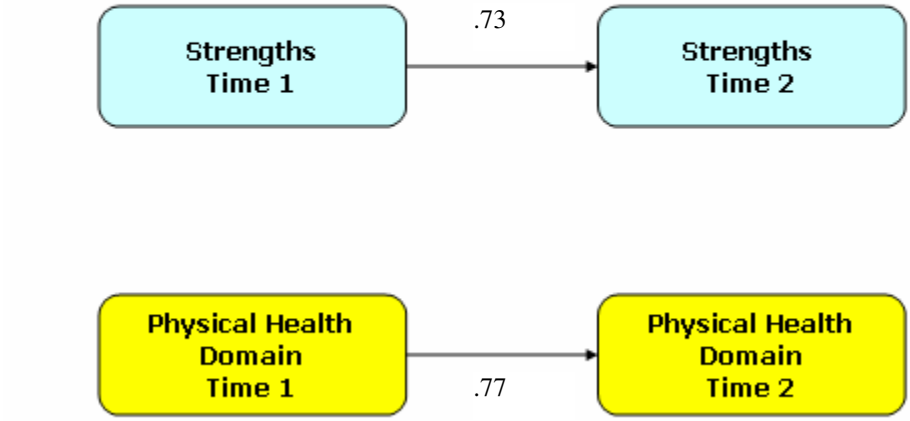


Figure 8. Obtained pattern of correlations: Aggregate strengths & problem presentation needs domain

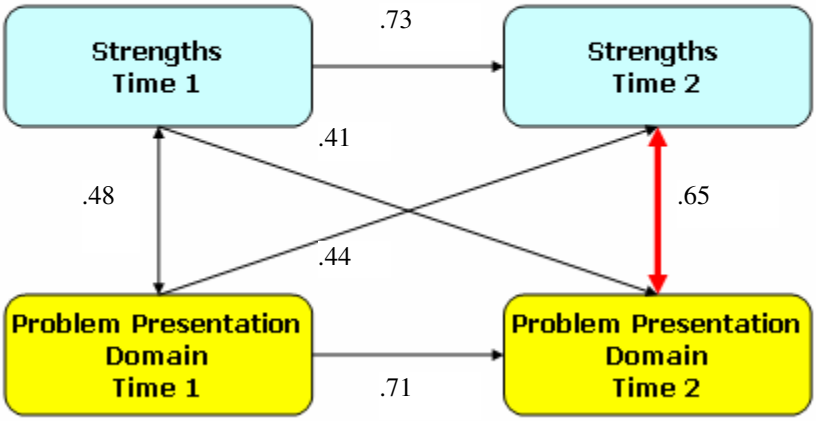


Figure 9. Obtained pattern of correlations: Aggregate strengths & risk behavior needs domain

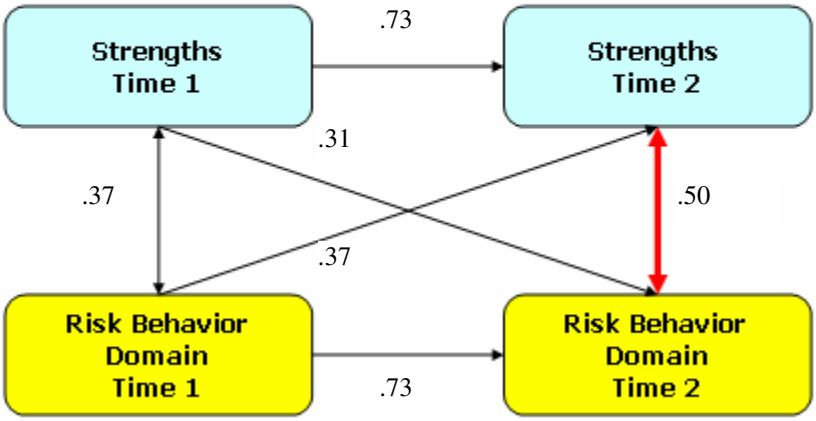


Figure 10. Obtained pattern of correlations: Aggregate strengths & functioning needs domain

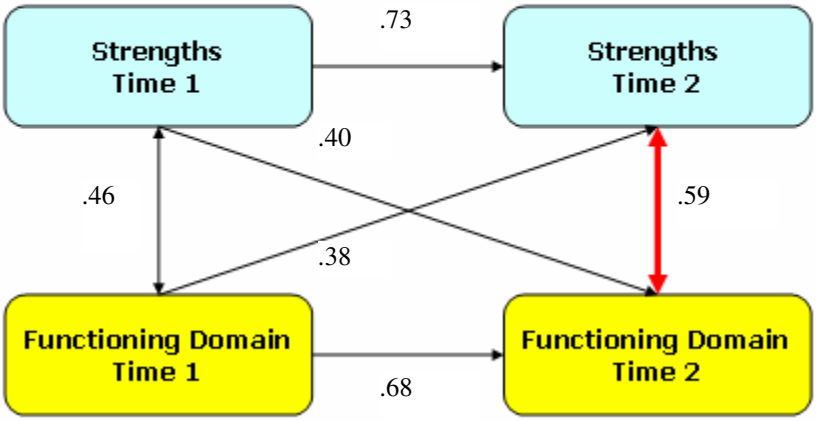


Figure 11. Obtained pattern of correlations: Family strengths item & aggregate needs

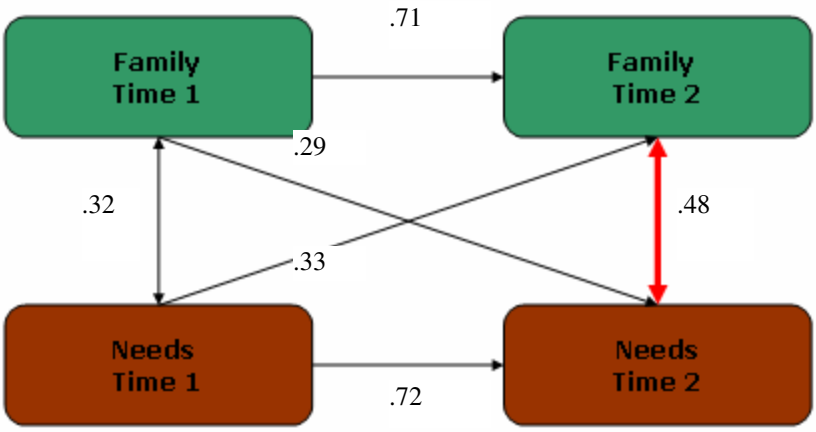


Figure 12. Obtained pattern of correlations: Interpersonal strengths item & aggregate needs

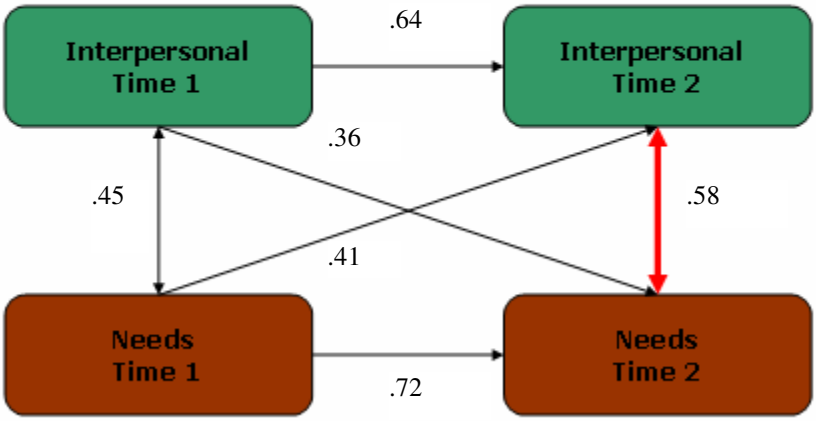


Figure 13. Obtained pattern of correlations: Relationship permanence strength item & aggregate needs

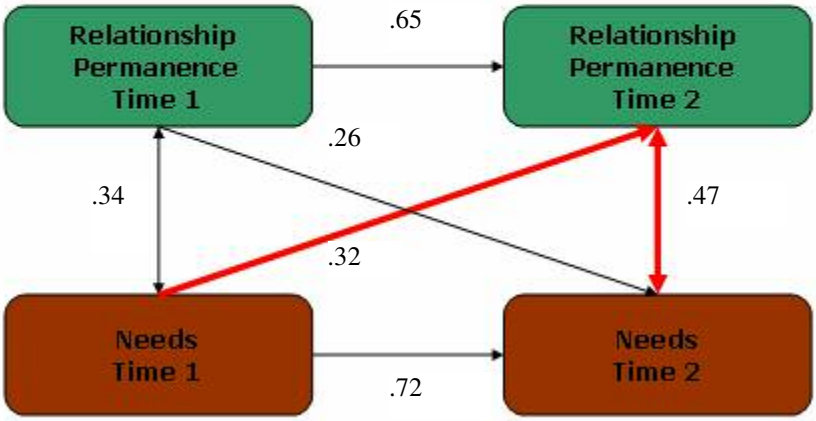


Figure 14. Obtained pattern of correlations: Educational strengths item & aggregate needs

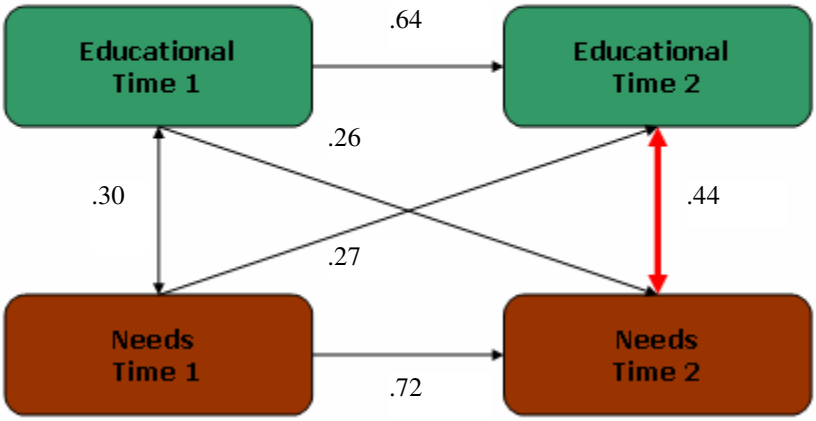


Figure 15. Obtained pattern of correlations: Vocational strengths item & aggregate needs

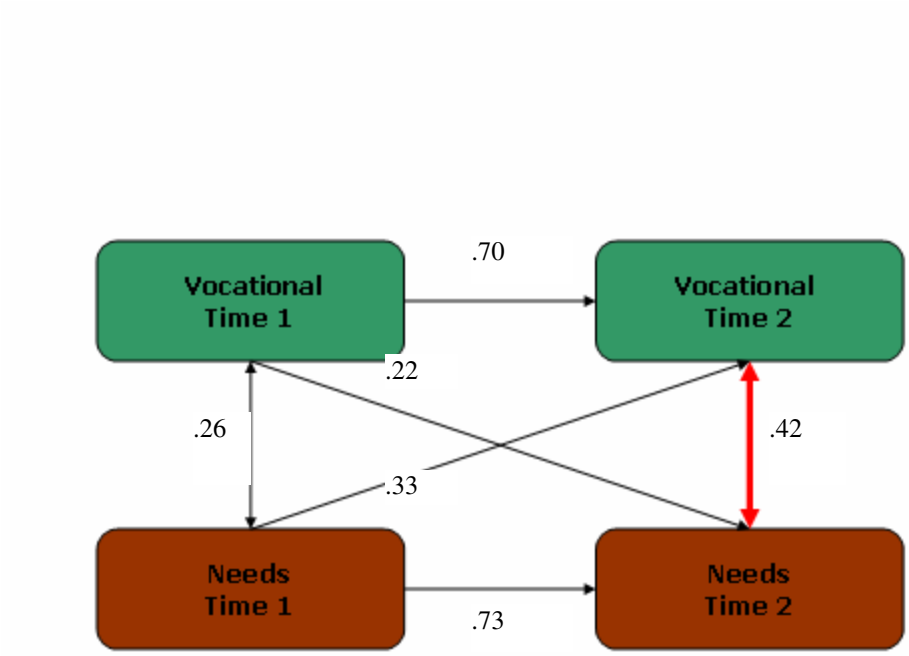


Figure 16. Obtained pattern of correlations: Wellbeing strength item & aggregate needs

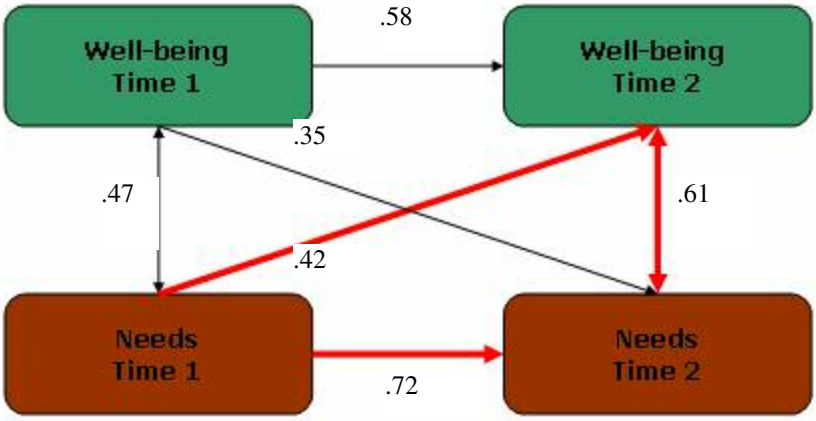


Figure 17. Obtained pattern of correlations: Spiritual/Religious strengths item & aggregate needs

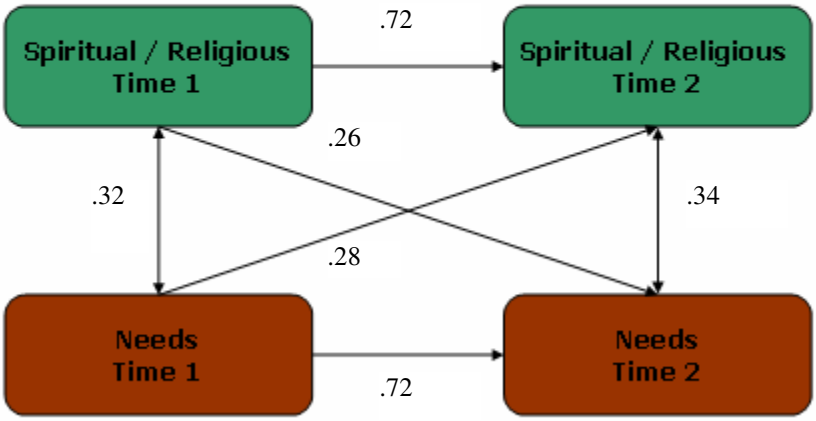


Figure 18. Obtained pattern of correlations: Talents/Interests strengths item & aggregate needs

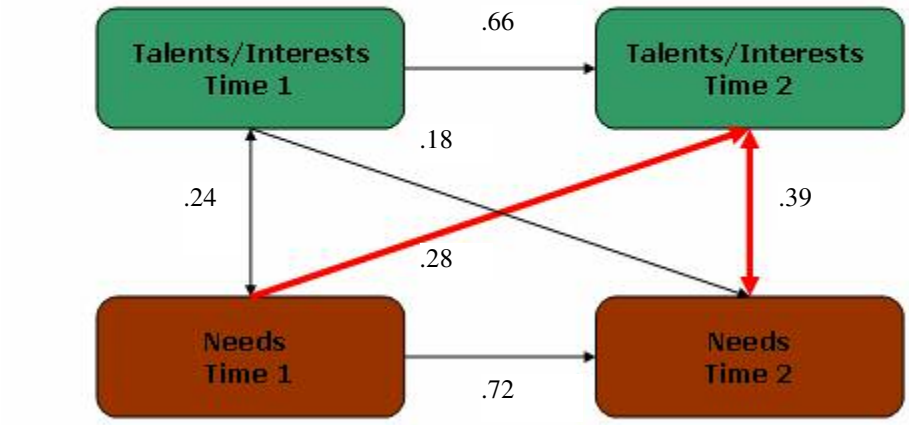
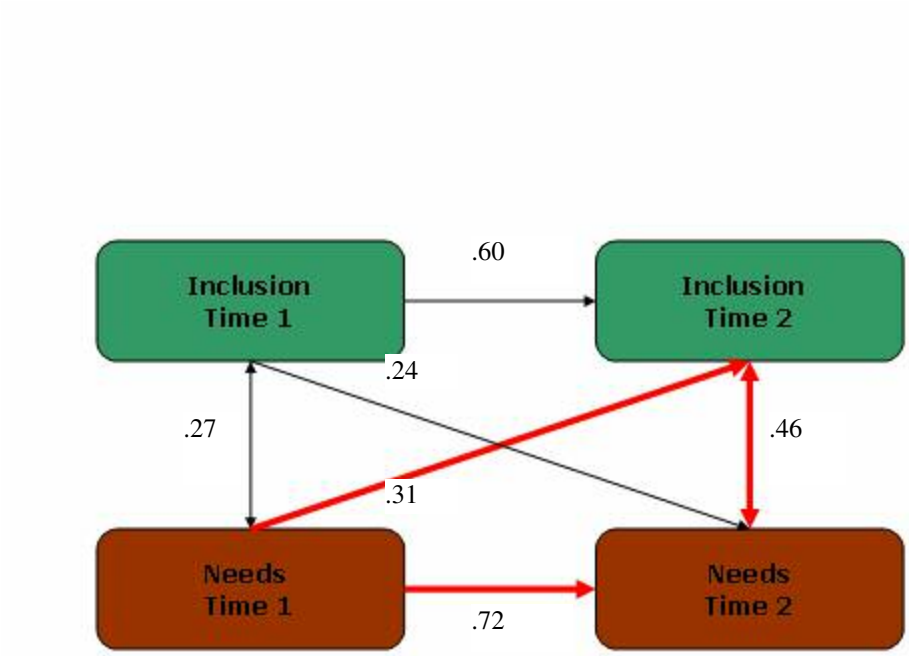


Figure 19. Obtained pattern of correlations: Inclusion strength item & aggregate needs



References

Achenbach, T. M., McConaughy, S. H., & Howell, C. T. Child/adolescent behavioral and emotional problems: Implications of cross-informant correlations for situational specificity. *Psychological Bulletin, 101,* 213-232.

Ainsworth, J. W. (2002). Why does it take a village? The mediation of neighborhood effects on educational achievement. *Social Forces, 81,* 117-152.

Allison, S., Perlesz, A., & Pote, H. (2002). Manualising systemic family therapy: The Leeds Manual. *Australian & New Zealand Journal of Family Therapy, 23,* 153-158.

Allison, S., Stacey, K., Dadds, V., Roeger, L., Wood, A., & Martin, G. (2003). What the family brings: Gathering evidence for strengths-based work. *Journal of Family Therapy, 25,* 263-284.

Anderson, R. L., Lyons, J. S., Giles, D. M., Price, J. A., & Estles, G. (2003). Examining the reliability of the Child and Adolescent Needs and Strengths-Mental Health (CANS MH) Scale. *Journal of Child and Family Studies, 12,* 279-289.

Armistead, L., Forehand, R., Beach, S. R. H., & Brody, G. H. (1995). Predicting interpersonal competence in young adulthood: The roles of family, self, and peer systems during adolescence. *Journal of Child & Family Studies, 4,* 445-460.

Beardslee, W. R., Versage, E. M., Wright, E. J., & Salt, P. (1997). Examination of preventive interventions for families with depression: Evidence of change. *Development & Psychopathology, 9,* 109-130.

Bess, Scarcella, Jantz, Russell, & Geen. (2002). *The cost of protecting vulnerable*

children III: What factors affect states' fiscal decision? Washington, DC: The Urban Institute.

Bickman, L., Lambert, E. W., Andrade, A. R., & Penaloza, R. V. (2000). The Fort Bragg continuum of care for children and adolescents: mental health outcomes over 5 years. *Journal of Consulting and Clinical Psychology, 68*, 710-716.

Bjoerkman, T., Hansson, L., & Sandlund, M. (2002). Outcome of case management based on the strengths model compared to standard care. A randomized controlled trial. *Social Psychiatry & Psychiatric Epidemiology, 37,* 147-152.

Boyle, M. H., & Lipman, E. L. (2002). Do places matter? Socioeconomic disadvantage and behavioral problems of children in Canada. *Journal of Consulting & Clinical Psychology, 70,* 378-389.

Brady, S. S., & Matthews, K. A. (2006). Effects of media violence on health-related outcomes among young men. *Archives of Pediatrics & Adolescent Medicine, 160,* 341-347.

Brambring, M., Loesel, F., & Skowronek, H. (1990). Children at risk: Assessment, longitudinal research, and intervention. *Prevention and Intervention in Childhood and Adolescence Book Series.*

Brown, T. L., Parks, G. S., Zimmerman, R. S., & Phillips, C. M. (2001). The role of religion in predicting adolescent alcohol use and problem drinking. *Journal of Studies on Alcohol, 62,* 696-705.

Burns, B. J., & Hoagwood, K. (2002). *Community treatment for youth: Evidence-based interventions for severe emotional and behavioral disorders.* New York: Oxford.

Catalano, R. F., Berglund, M. L., Ryan, J. A. M., Lonczak, H. S., & Hawkins, J. D. (2002). Positive youth development in the United States: Research findings on evaluations of positive youth development programs. *Prevention and Treatment, 5,* NP.

Chaney, J. M., Mullins, L. L., Wagner, J. L., Hommel, K. A., Page, M. C., & Doppler, M. J. (2004). A longitudinal examination of causal attributions and depression sympomatology in rheumatoid arthritis. *Rehabilitation Psychology, 49,* 126-133.

Clausen, J. M., Landsverk, J., Granger, W., Chadwick, D., & Litrownik, A. (1998). Mental health problems of children in foster care. *Journal of Child and Family Studies, 7,* 283-296.

Compas, B. E., Hinden, B. R., & Gerhardt, C. A. (1995). Adolescent development: Pathways and processes of risk and resilience. *Annual Reviews Psychology, 46*, 265-293.

Conger, R. D., Cui, M., Bryant, C. M., & Elder, G. H. Jr. (2000). Competence in early adult romantic relationships: A developmental perspective on family influences. *Journal of Personality & Social Psychology, 79,* 224-237.

Cook, T. D., & Campbell, D. T. (1979). *Quasi-experimentation: Design and analysis issues for field settings.* Chicago, IL: Rand McNally.

Cooley-Quille, M. R., Turner, S. M., & Beidel, D. C. Emotional impact of children's exposure to community violence: A preliminary study. *Journal of the American Academy of Child & Adolescent Psychiatry, 34,*1362-1368.

Csikszentmihalyi, M., Rathunde, K., & Whalen, S. (1993). *Talented teenagers: The roots*

of success and failure. Cambridge, England: Cambridge University Press.

DeAngelis, T. (2004). Taking action for children's mental health. *Monitor on Psychology, 35,* 38-41.

Dilley, J. B., Weiner, D., Martinovich, Z., & Lyons, J.S. (2004). *The validity of the Child and Adolescent Needs and Strengths (CANS).* Manuscript submitted for publication.

Donovan, J. E., Jessor, R., & Costa, F. M. (1991). Adolescent health behavior and conventionality-unconventionality: An extension of problem-behavior theory. *Health Psychology, 10,* 52-61.

Dowling, E. M., Gestsdottir, S., Anderson, P. M., von Eye, A., & Lerner, R. M. (2003). Spirituality, religiosity, and thriving among adolescents: Identification and confirmation of factor structures. *Applied Developmental Science, 7,* 253-260.

Duchnowski, A. J., Kutash, K., & Freidman, R. M. (2002). Community-based interventions in a System of Care and outcomes framework. In Burns, B. J., & Hoagwood, K. (Eds.), *Community treatment for youth: Evidence-based interventions for severe emotional and behavioral disorders* (pp. 16-38). New York: Oxford.

Dumont, M., & Provost, M. A. (1999). Resilience in adolescents: Protective role of social support, coping strategies, self-esteem, and social activities on experiences of stress and depression. *Journal of Youth & Adolescence, 28*, 343-363.

Early, T. J. (2001). Measures for practice with families from a strengths perspective. *Families in Society, 82,* 225-232.

Elias, M. (2005, June 29). There's a recipe for resilience. *USA Today*, NP.

Epstein, M. H. (1999). The development and validation of a Scale to Assess the Emotional and Behavioral Strengths of Children and Adolescents. *Remedial and Special Education, 20,* 258-262.

Eron, L. D., Huesmann, I. R., Lefkowitz, M. M, & Walder, L. O. (1972). Does television violence cause aggression? *American Psychologist, 27,* 253-263.

Ezop, S. J. (2002). Religious and spiritual coping in children with chronic illness. *Dissertation Abstracts International, 63,* 5-B, 2580.

Fishbein, M., & Ajzen, I. (1975). *Belief, attitude, intention and behavior.* Reading, MA: Addison-Wesley.

Flay, B. R. (2002). Positive youth development requires comprehensive health promotion programs. *American Journal of Health Behavior, 26,* 407-424.

Fredrickson, B. L., & Losada, M. (2005). Positive affect and the complex dynamics of human flourishing. *American Psychologist, 60,* 678-686.

Freedman, B. J., Donahoe, C., Rosenthal, L., Schlundt, D. G., & McFall, R. M. (1978). A social behavioral analysis of skill deficits in delinquent and nondelinquent adolescent boys. *Journal of Consulting and Clinical Psychology*, *46*, 1448-1462.

Garmezy, N. (1985). Stress-resistant children: The search for protective factors. In J. Stevenson (Ed.), *Recent research in developmental psychopathology. Journal of Child Psychology and Psychiatry Book Supplement No. 4* (pp. 213-233). Oxford, England: Pergamon Press.

Gilgun, J. F. (2004). The 4-D: Strengths-based assessment instruments for youth, their

families, and communities. *Journal of Human Behavior in the Social Environment, 10,* 51-73.

Gillham, J. E., Reivich, K., & Shatte, A. (2002). Positive youth development, prevention, and positive psychology: Commentary on "Positive youth development in the United States." *Prevention & Treatment, 5,* NP.

Hart, D., Hofmann, V., Edelstein, W., & Keller, M. (1997). The relation of childhood personality types to adolescent behavior and development: A longitudinal study of Icelandic children. *Developmental Psychology, 33,* 195-205.

Harter, S. (1990). Self and identity development. In: Feldman, S.S., & Elliott, G.R. (Eds.),

At the threshold: The developing adolescent (pp. 352-87). Cambridge: Harvard University Press.

Hemingway, E. (1952). *The Old Man and the Sea.* New York: Charles Scribner's Sons.

Herman-Stahl, M., & Petersen, A. C. (1996). The protective role of coping and social resources for depressive symptoms among young adolescents. *Journal of Youth and Adolescence, 25,* 733-754.

Hodges, K. (1997) *CAFAS manual for training coordinators, clinical administrators, and data managers.* Ann Arbor, MI: Kay Hodges.

Hubble, M., Duncan, B., & Miller, S. (Eds.) (1999). *The heart and soul of change: What works in therapy.* Washington, DC: American Psychological Association.

Hunter, J. P., & Csikzentmihalyi, M. (2002). The positive psychology of interested adolescents. *Journal of Youth & Adolescence, 32,* 27-35.

Jessor, R., Turbin, M. S., & Costa, F. M. (1998). Protective factors in adolescent health behavior. *Journal of Personality and Social Psychology, 75,* 788-800.

Jessor, R., Van Den Bos, J., Vanderryn, J., Costa, F. M., & Turbin, M. S. (1995). Protective factors in adolescent problem behavior: Moderator effects and developmental change. *Developmental Psychology, 31,* 923-933.

Joint Commission on Mental Health of Children. (1969). *Crisis in child mental health: Challenge for the 1970's.* New York: Harper & Row.

Karlgaard, R. (2005, April 11). Real-world advice for the young. *Forbes*, *41,* 4-5.

Kaufman, J., & Zigler, E. (1987). Do abused children become abusive parents? *American Journal of Orthopsychiatry, 57,* 186-192.

Kelley, T. M. (2003). Health realization: A principle-based psychology of positive youth development. *Child & Youth Care Forum, 32,* 47-72.

Kenny, D. (1975). Cross-lagged panel correlation: A test for spuriousness. *Psychological Bulletin, 82,* 887-903.

Kenny, D. (1979). *Correlation and causality.* New York: John Wiley & Sons.

Kenny, D., & Harackiewicz, J. (1979). Cross-lagged panel correlation: Practice and promise. *Journal of Applied Psychology, 64,* 372-379.

Knitzer, J. (1982). *Unclaimed children: The failure of public responsibility to children and adolescents in need of mental health services.* Washington, DC: The Children's Defense Fund.

Larson, R. W. (2000). Toward a psychology of positive youth development. *American Psychologist, 55,* 170-183.

Legislative Analyst's Office of California (2002). *Review of foster family agency (FFA) rates.* Retrieved November 9, 2002, from www.lao.ca.gov.

Lehner, R. K. (2004). The role of strengths in behavioral healthcare for individuals with severe mental illness (Doctoral dissertation, Northwestern University, 2004). *Dissertation Abstracts International, 65,* 2634.

Leon, S. C., Uziel-Miller, N. D., Lyons, J. S., & Tracy, P. (1998). Psychiatric hospital utilization of children and adolescents in state custody. *Journal of the American Academy of Child and Adolescent Psychiatry, 38,* 305-310.

Lindemann, C. M. (2001). Integrative strength- and pathology-based assessment of children and adolescents. *Dissertation Abstracts International, 61,* 2-B, 6711.

Locascio, J. J. (1982). The cross-lagged correlation technique: Reconsideration in terms of exploratory utility, assumption specification and robustness. *Educational and Psychological Measurement, 42,* 1023-1036.

Lubinski, D. & Benbow, C. P. (2000). States of excellence. *American Psychologist, 55,* 137-150.

Lyons, J. S. (2004). *Redressing the emperor: Improving our children's public mental health system.* Westport, CT: Praeger Publishers.

Lyons, J. S., Howard, K. I., O'Mahoney, M. T., & Lish, J. D. (1997). *The measurement and management of clinical outcomes in mental health.* New York: John Wiley & Sons, Inc.

Lyons, J. S., Kisiel, C. L., Dulcan, M., Chesler, P., & Cohen, R. (1997). Crisis assessment

and psychiatric hospitalization of children and adolescents in state custody. *Journal of Child and Family Studies, 6,* 311-320.

Lyons, J. S., Lee, M. E., Carpinello, S., Rosenberg, L., Zuber, M. P., Fazio, M. L., & McIntyre, J. C. (2001). *Assessing the needs and strengths of children and adolescents in a state public mental health service system.* Unpublished manuscript, Northwestern University.

Lyons, J. S., Mintzer, L. L., Kisiel, C. L., & Shallcross, H. (1998). Understanding the mental health needs of children and adolescents in residential treatment. *Professional Psychology: Research and Practice, 29,* 582-587.

Lyons, J. S., & Schaefer, K. (2000). Mental health and dangerousness: Characteristics and outcomes of children and adolescents in residential placements. *Journal of Child & Family Studies, 9,* 67-73.

Lyons, J. S., Uziel-Miller, N. D., Reyes, F., & Sokol, P. T. (2000). Strengths of children and adolescents in residential settings: Prevalence and associations with psychopathology and discharge placement. *Journal of the American Academy of Child and Adolescent Psychiatry, 39,* 176-181.

Lyons, J. S., Weiner, D. A., & Lyons, M. (2004) Measurement as communication in outcomes management: the Child and Adolescent Needs and Strengths. In M. Maruish (Ed.), *The use of psychological testing for treatment planning and outcome assessment.* (3rd ed.)Vol. 2. Mahwah, NJ: Erlbaum.

Malecki, C. K., & Elliot, S. N. (2002). Children's social behaviors as predictors of academic achievement: A longitudinal analysis. *School Psychology Quarterly, 17*,

1-23.

Marx, L., Benoit, M., & Kamradt, B. (2003). Foster children in the child welfare system. In A. J. Pumeriega, & N.C. Winters (Eds.), *The handbook of child and adolescent systems of care*, (pp. 332-352). San Francisco: Jossey-Bass.

Mason, W. A., & Windle, M. (2002). A longitudinal study of the effects of religiosity on adolescent alcohol use and alcohol-related problems. *Journal of Adolescent Research, 17,* 346-363.

Masten, A. S. (2001). Ordinary magic: Resilience processes in development. *American Psychologist, 56,* 227-238.

Masten, A. S., & Coatsworth, J. D. (1998). The development of competence in favorable and unfavorable environments: Lessons from research on successful children. *American Psychologist, 53*, 205-220.

Miller, D. S., & Miller, T. Q. (1998). A test of socieoeconomic status as a predictior of initial marijuana use. *Addictive Behaviors, 22*, 479-489.

Mills, L. G., Friend, C., Conroy, K., Fleck-Henderson, A., Krug, S., Magen, R. H., Thomas, R. L., & Truddeau, J. H. Child protection and domestic violence: Training, practice, and policy issues. *Children & Youth Services Review, 22,* 315-332.

Oswald, D. P., Cohen, R., Best, A. M., Jenson, C. E., & Lyons, J. S. (2001). Child strengths and the level of care for children with emotional and behavioral disorders. *Journal of Emotional and Behavioral Disorders, 9,* 192-199.

Pears, K. C., & Capaldi, D. M. (2001). Intergenerational transmission of abuse: A two-

generational prospective of an at-risk sample. *Child Abuse & Neglect, 25,* 1439-1461.

Pobanz, M. S. (2001). Using protective factors to enhance the prediction of negative short-term outcomes of first-time juvenile offenders. *Dissertation Abstracts International, 62,* 5-A, 1948.

Pumariega, A. J., & Winters, N. C. (2003). *The handbook of child and adolescent systems of care.* San Francisco: Jossey-Bass.

Rae-Grant, N., Thomas, B. H., Offord, D. R., & Boyle, M. H. (1989). Risk, protective factors, and the prevalence of behavioral and emotional disorders in children and adolescents. *Journal of the American Academy of Child & Adolescent Psychiatry, 28,* 262-268.

Rautkis, M. B., Hdalio, J., & Lyons, J. S. (2001). *The Child and Adolescent Needs and Strengths: Validity and applications in a community setting.* Paper presented to the Louis de al Parte Florida Mental Health Institute Annual convention, March, Tampa, FL.

Resnick, M. D. (2000). From the editorial board: Resilience and protective factors in the lives of adolescents. *Journal of Adolescent Health,* 27, 1-2.

Robertson, L. M. (2001). The mechanism of resiliency in children at-risk for school failure: Types of protective factors and profiles of youths. *Dissertation Abstracts International, 61,* 8-A, 3062.

Rogosa, D. (1980). A critique of cross-lagged correlation. *Psychological Bulletin, 88,* 245-258.

Rutter, M. (1999). Resilience concepts and findings: Implications for family therapy. *Journal of Family Therapy, 21,* 119-144.

Rydell, A., Berlin, L., & Bohlin, G. (2003). Emotionality, emotion regulation, and adaptation among 5- to 8-year-old children. *Emotion, 3,* 30-47.

Schiefele, U., & Csikszentmihalyi, M. (1995). Motivation and ability as factors in mathematics experience and achievement. *Journal for Research in Mathematics Education, 26*, 163-181.

Seligman, M. E. P., & Csikszentmihalyi, M. (2000). Positive psychology: An introduction. *American Psychologist, 55,* 5-14.

Seligman, M. E. P., Steen, T. A., Park, N., & Peterson, C. (2005). Positive psychology progress: Empirical validation of interventions. *American Psychologist, 60,* 410-421.

Shillinglaw, R. D. (1999). Protective factors among adolescents from violent families: Why are some youth exposed to child abuse and/or interparental violence less than others? *Dissertation Abstracts International, 59*, 7-B, 3714.

Smokowski, P. R., Reynolds, A. J., & Bezruczko, N. (2000). Resilience and protective factors in adolescence: An autobiographical perspective from disadvantaged youth. *Journal of School Psychology, 37,* 425-448.

Spitzberg, B. H., & Cupach, W. R. (1988). *Handbook of interpersonal competence research.* New York: Springer-Verlag.

Stacey, K., Allison, S., Dadds, V., Roeger, L., Wood, A., & Martin, G. (2001). Maintainin the gains after brief therapy: parents' descriptions of what worked in

the year after therapy. *Australian & New Zealand Journal of Family Therapy, 22,* 181-188.

Stacey, K., Allison, S., Dadds, V., Roeger, L., Wood, A., & Martin, G. (2002). The relationship between change and satisfaction: parents' experiences in a child and adolescent mental health service. *Australian & New Zealand Journal of Family Therapy, 23,* 79-89.

Stroul, B. A., & Friedman, R. M. (1986). *A system of care for seriously emotionally disturbed children and youth.* Washington, DC: CASSP Technical Assistance Center, Georgetown University Child Development Center.

U.S. department of Health and Human Services. (2003). *The AFCARS report: Preliminary Fiscal Year 2001 estimates as of March 2003.* Retrieved October 18, 2003, from www.acf.hhs.gov.

Vance J. E., Bowen, N. K., Fernandez, G, & Thompson, S. (2002). Risk and protective factors as predictors of outcome in adolescents with psychiatric disorder and aggression. *Journal of the American Academy of Child and Adolescent Psychiatry, 41,* 36-43.

Voegler, M. E. (2000). Risk and protective factors associated with social resilience in homeless youth. *Dissertation Abstracts International, 61,* 4-B, 2228.

Voydanoff, P., & Donnelly, B. W. (1999). Risk and protective factors for psychological adjustment and grades among adolescents. *Journal of Family Issues, 20,* 328-349.

Werner, E. E., & Smith, R. S. (1982). *Vulnerable but invincible: A longitudinal study of resilient children and youth.* New York: Adams, Bannister, and Cox.

Werner, E. E., & Smith, R. S. (2001). *Journeys from childhood to midlife: Risk, resilience, and recovery.* Ithaca, NY: Cornell University Press.

Winner, E. (2000). The origins and ends of giftedness. *American Psychologist, 55,* 159-169.

Appendix A

Items Used from the Child and Adolescent Needs and Strengths (CANS) Assessment

PROBLEM PRESENTATION

Psychotic Symptoms:
This rating is used to describe symptoms of psychiatric disorders with a known neurological base. DSM-IV disorders included on this dimension are Schizophrenia and Psychotic Disorders (unipolar, bipolar, NOS). The common symptoms of these disorders include hallucinations, delusions, unusual thought processes, strange speech, and bizarre/idiosyncratic behavior.

0 This rating indicates a child with no evidence of thought disturbances. Both thought processes and content are within normal range.
1 This rating indicates a child with evidence of mild disruption in thought processes or content. The child may be somewhat tangential in speech or evidence somewhat illogical thinking (age inappropriate). This also includes children with a history of hallucinations but none currently. The category would be used for children who are below the threshold for one of the DSM IV diagnoses listed above.
2 This rating indicates a child with evidence of moderate disturbance in thought process or content. The child may be somewhat delusional or have brief intermittent hallucinations. The child's speech may be at times quite tangential or illogical. This level would be used for children who meet the diagnostic criteria for one of the disorders listed above.
3 This rating indicates a child with a severe psychotic disorder. Symptoms are dangerous to the child or others.

Attention Deficit/Impulse Control:
Symptoms of Attention Deficit and Hyperactivity Disorder and Impulse Control Disorder would be rated here. Inattention/distractibility not related to opposition would also be rated here.

0 This rating is used to indicate a child with no evidence of attention/hyperactivity problems.
1 This rating is used to indicate a child with evidence of mild problems attention/hyperactivity or impulse control problems. Child may have some difficulties staying on task for an age appropriate time period.

2 This rating is used to indicate a child with moderate attention/ hyperactivity or impulse control problems. A child who meets DSM-IV diagnostic criteria for ADHD or an impulse control disorder would be rated here.

3 This rating is used to indicate a child with severe impairment of attention or impulse control. Frequent impulsive behavior is observed or noted that carries considerable safety risk (e.g. running into the street, dangerous driving, or bike riding). A child with profound symptoms of ADHD would be rated here.

Depression/Anxiety:
Symptoms included in this dimension are depressed mood, social withdrawal, anxious mood, sleep disturbances, weight/eating disturbances, loss of motivation. This dimension can be used to rate symptoms of the following psychiatric disorders as specified in DSM-IV: Depression (unipolar, dysthymia, NOS), Bipolar, Generalized Anxiety, and Phobias.

0 This rating is given to a child with no emotional problems. No evidence of depression or anxiety.

1 This rating is given to a child with mild emotional problems. Brief duration of depression, irritability, or impairment of peer, family, or academic function that does not lead to gross avoidance behavior. This level is used to rate either a mild phobia or anxiety problem or a level of symptoms that is below the threshold for the other listed disorders.

2 This rating is given to a child with a moderate level of emotional disturbance. This could include major conversion symptoms, frequent anxiety attacks, obsessions, rituals, flashbacks, hypervigilance, depression, or school avoidance. This level is used to rate children who meet the criteria for an affective disorder listed above.

3 This rating is given to a child with a severe level of emotional disturbance. This would include a child who stays at home or in bed all day due to anxiety or depression or one whose emotional symptoms prevent any participation in school, friendship groups, or family life. More severe forms of anxiety or depressive diagnoses would be coded here. This level is used to indicate an extreme case of one of the disorders listed above.

Oppositional Behavior (Compliance with Authority):
This rating is intended to capture how the child relates to authority. Oppositional behavior is different from conduct disorder in that the emphasis of the behavior is on non-compliance to authority rather than on seriously breaking social rules, norms and laws.

0 This rating indicates that the child is generally compliant.

1 This rating indicates that the child has mild problems with compliance to some rules or adult instructions.
2 This rating indicates that the child has moderate problems with compliance to rules or adult instructions. A child who meets the criteria for Oppositional Defiant Disorder in DSM-IV would be rated here.
3 This rating indicates that the child has severe problems with compliance to rules and adult instructions. A child rated at this level would be a severe case of Oppositional Defiant Disorder. They would be virtually always disobedient.

Antisocial Behavior (Compliance with Society's Rules):
These symptoms include antisocial behaviors like shoplifting, lying, vandalism, cruelty to animals, and assault. This dimension would include the symptoms of Conduct Disorder as specified in DSM-IV.

0 This rating indicates a child with no evidence of behavior disorder.
1 This rating indicates a child with a mild level of conduct problems. Some antisocial behavior in school and/or home. Problems recognizable but not notably deviant for age and sex and community. This might include occasional truancy, lying, or petty theft from family.
2 This rating indicates a child with a moderate level of conduct disorder. This could include episodes of planned aggressive or other anti-social behavior. A child rated at this level should meet the criteria for a diagnosis of Conduct Disorder.
3 This rating indicates a child with a severe Conduct Disorder. This could include frequent episodes of unprovoked, planned aggressive or other anti-social behavior.

Substance Abuse:
These symptoms include use of alcohol and illegal drugs, the misuse of prescription medications and the inhalation of any substance for recreational purposes. This rating is consistent with DSM-IV Substance-related Disorders.

0 This rating is for a child who has no substance use difficulties at the present time. If the person is in recovery for greater than 1 year, they should be coded here, although this is unlikely for a child or adolescent.
1 This rating is for a child with mild substance use problems that might occasionally present problems of living for the person (intoxication, loss of money, reduced school performance, parental concern). This rating would be used for someone early in recovery (less than 1 year) who is currently abstinent for at least 30 days.

2 This rating is for a child with a moderate substance abuse problem that both requires treatment and interacts with and exacerbates the psychiatric illness.

Substance abuse problems consistently interfere with the ability to function optimally but do not completely preclude functioning in an unstructured setting.

3 This rating is for a child with a severe substance dependence condition that presents a significant complication to the coordination of care (e.g. need for detoxification) of the individual.

Adjustment to Trauma:
This rating covers the reactions of children and adolescents to any of a variety of traumatic experiences from child abuse and neglect to forced separation from family. This dimension covers both adjustment disorders and post traumatic stress disorder from DSM-IV.

0 Child has not experienced any trauma or has adjusted well to significant traumatic experiences. If the child is separated from parents, he/she has adjusted to this separation.

1 Child has some mild adjustment problems to separation from parent(s) or other caregivers or as a result of earlier abuse. Child may be somewhat distrustful or unwilling to talk about parent(s) or other caregivers.

2 Child has marked adjustment problems associated either with separation from parent(s) or other caregivers or with prior abuse. Child may have nightmares or other notable symptoms of adjustment difficulties.

3 Child has post-traumatic stress difficulties as a result of either separation from parent(s), multiple other caregivers, or prior abuse. Symptoms may include intrusive thoughts, hypervigilance, constant anxiety, and other common symptoms of PostTraumatic Stress Disorder (PTSD).

Attachment (Use Only for Children Less than 6 Years Old):
This dimension should be rated within the context of the child's significant parental relationships.

0 No evidence of attachment problems. Parent-child relationship is characterized by satisfaction of needs, child's development of a sense of security and trust.

1 Mild problems with attachment. This could involve either mild problems with separation or mild problems of detachment.

2 Moderate problems with attachment. Child is having problems with attachment that require intervention. A child who meets the criteria for an Attachment Disorder in DSM-IV would be rated here. Children with developmental delays may experience challenges with attachment and would be rated here.

3 Severe problems with attachment. A child who is unable to separate or a child who appears to have severe problems with forming or maintaining relationships with caregivers would be rated here.

Problem Modifiers

Situational Consistency of Problems:
This rating captures the variation in problem presentation across different situations and environments in the child/youth's life (e.g., home, and school)

0 Problems generally occur in only one environment and/or situation.
1 Problems occur in multiple settings and/or situations but tend to be most severe in a single setting.
2 Problems occur in many settings and/or situations but there is variability in the severity of the problems with the child/youth doing better in some circumstances than in others.
3 Problems occur consistently in all situations.

Temporal Consistency of Problems:
This rating captures the duration of mental health problems experienced by the child or youth. Include both problems (i.e., symptoms) and risk behaviors in this rating.

0 Problems have begun in the past six months after the occurrence of a specific stressful event.
1 Problems began more than six months but less than two years ago or problems have begun in the past six months in the absence of any specific stressful event.
2 Problems began more than two years ago but individual has had at least one period of more than one month where he/she has been relatively symptom free.
3 Problems began more than two years ago and the individual has remained fairly consistently symptomatic over this period of time.

RISK BEHAVIORS

Danger to Self:
This rating describes both suicidal and significant self-injurious behavior. A rating of 2 or 3 would indicate the need for a safety plan.

0 Child has no evidence or history of suicidal or self-injurious behaviors.
1 History of suicidal or self-injurious behaviors but no self-injurious behavior during the past 30 days.

2 Recent, (last 30 days) but not acute (today) suicidal ideation or gesture. Self-injurious in the past 30 days (including today) without suicidal ideation or intent.
3 Current suicidal ideation and intent in the past 24 hours.

Danger to Others:

This rating includes actual and threatened violence. Imagined violence, when extreme, may be rated here. A rating of 2 or 3 would indicate the need for a safety plan.

0 Child has no evidence or history of aggressive behaviors or significant verbal aggression towards others (including people and animals).
1 History of aggressive behavior or verbal aggression towards others but no aggression during the past 30 days. History of fire setting (not in past year) would be rated here.
2 Occasional or moderate level of aggression towards others including aggression during the past 30 days or more recent verbal aggression.
3 Frequent or dangerous (significant harm) level of aggression to others. Any fire setting within the past year would be rated here. Child or youth is an immediate risk to others.

Runaway:
In general, to classify as a runaway or elopement, the child is gone overnight or very late into the night. Impulsive behavior that represents an immediate threat to personal safety would also be rated here.

0 This rating is for a child with no history of running away and no ideation involving escaping from the present living situation.
1 This rating is for a child with no recent history or running away but who has expressed ideation about escaping present living situation or treatment. Child may have threatened running away on one or more occasions or have a history (lifetime) of running away but not in the past year.
2 This rating is for a child who has run away from home once or run away from one treatment setting within the past year. Also rated here is a child who has run away to home (parental or relative) in the past year.
3 This rating is for a child who has (1) run away from home and/or treatment settings within the last 7 days or (2) run away from home and/or treatment setting twice or more overnight during the past 30 days. Destination is not a return to home of parent or relative.

Sexually Abusive Behavior:
Sexually abusive behavior includes both aggressive sexual behavior and sexual behavior in which the child or adolescent takes advantage of a younger or less powerful child through seduction, coercion, or force.

0 No evidence of problems with sexual behavior in the past year.
1 Mild problems of sexually abusive behavior. For example, occasional inappropriate sexual behavior or language.

2 Moderate problems with sexually abusive behavior, For example, frequent inappropriate sexual behavior. Frequent disrobing would be rated here only if it was sexually provocative. Frequent inappropriate touching would be rated here.
3 Severe problems with sexually abusive behavior. This would include the rape or sexual abuse of another person involving sexual penetration.

Social Behavior:
This rating refers to how a child behaves in public or social settings and should reflect problematic social behaviors (socially unacceptable behavior for the culture and community in which he/she lives) that put the child at some risk (e.g. not excessive shyness).

0 Child shows no evidence of problematic social behaviors.
1 Mild level of problematic social behaviors. This might include occasionally inappropriate social behavior. Infrequent inappropriate comments to strangers or unusual behavior in social settings might be included at this level.
2 Moderate level of problematic social behaviors. Frequent cursing in public would be rated at this level. Social behavior is causing problems in the child's life.
3 Severe level of problematic social behaviors. This would be indicated by frequent seriously inappropriate social behavior such as threatening strangers. Social behaviors are sufficiently severe that they place the child at risk.

Crime/Delinquency:
This rating includes both criminal behavior and status offenses that may result from child or youth failing to follow required behavioral standards (e.g. truancy). Sexual offenses should be included as criminal behavior.

0 Child shows no evidence or has no history of criminal or delinquent behavior.
1 History of criminal or delinquent behavior but none in the past 30 days. Status offenses in the past 30 days would be rated here.
2 Moderate level of criminal activity including a high likelihood of crimes committed in the past 30 days. Examples would include vandalism, shoplifting, etc.

3 Serious level of criminal or delinquent activity in the past 30 days. Examples would include car theft, residential burglary, gang involvement, etc.

FUNCTIONING

Intellectual/Developmental:
This rating describes the child's cognitive/intellectual functioning.

0 Child's intellectual functioning appears to be in normal range. There is no reason to believe that the child has any problems with intellectual functioning.
1 Low IQ or learning disability (IQ between 70 and 85) or mild developmental delay.
2 Mild to moderate mental retardation (IQ between 50 and 69) or significant developmental delay.
3 Severe or profound mental retardation (less than 50) or pervasive developmental delay.

Physical/Medical:
This rating describes both health problems and chronic/acute physical conditions.

0 Child appears physically healthy. There is no reason to believe that the child has any medical or physical problems.
1 Mild or well-managed physical or medical problems. This might include well-managed chronic conditions like juvenile diabetes or asthma.
2 Chronic physical or moderate medical problems.
3 Severe, life threatening physical or medical problems.

Family Functioning:
The definition of family should be from the perspective of the child or youth (i.e., who does the child consider to be family). The family can include all biological relatives with who the child or youth remains in some contact with and individuals with relationship ties to these relatives. Family functioning should be rated independently of the problems experienced by the child.

0 Family appears to be functioning adequately. There is no evidence of problems in the family.
1 Mild to moderate level of family problems including marital difficulties, problems with siblings.

2 Significant level of family problems including frequent arguments, difficult separation and/or divorce or siblings with significant mental health, developmental or juvenile justice problems.
3 Profound level of family disruption including significant parental substance abuse, criminality, or domestic violence.

School Achievement:
This rating describes the child or adolescent's academic performance in school.

0 Child is doing well in school.
1 Child is doing adequately in school, although some problem with achievement exists.

2 Child is having moderate problems with school achievement. He/she may be failing some subjects.
3 Child is having severe achievement problems. He/she may be failing most subjects or is more than one year behind same age peers in school achievement.

School Behavior:
This item describes the behavior of the child or youth in school. A rating of 3 would indicate a child who is still having problems after special efforts have been made, i.e., problems in a special education class.

0 No evidence of behavior problems at school. Child is behaving well.
1 Mild problems with school behavioral problems.
2 Child is having moderate behavioral difficulties at school. He/she is disruptive and may receive sanctions including suspensions.
3 Child is having severe problems with behavior in school. He/she is frequently or severely disruptive. School placement may be in jeopardy due to behavior.

School Attendance:
This item describes the child or adolescents pattern of coming to and stay at school for each required school day.

0 No evidence of attendance problems. Child attends regularly.
1 Child has some problems attending school, although he/she generally goes to school. Or, he/she may have had moderate to severe problems in the past six months but has been attending school regularly in the past month.
2 Child is having problems with school attendance. He/she is missing at least one out of every 7 (14%) school days on average.
3 Child is generally truant or refusing to go to school.

Sexual Development:
This rating describes issues around sexual development including developmentally inappropriate sexual behavior and problematic sexual behavior.

0 Child shows no evidence of problems with sexual behavior or development in the past year.
1 Mild problems of sexual development. For example, occasional inappropriate sexual behavior or language. Some mild forms of sexual behavior might be rated here.
2 Moderate to serious problems of sexual development. For example, frequent inappropriate sexual behavior, including public disrobing or multiple older sexual partners.

3 Severe problems of sexual development. Prostitution, sexual aggression, exhibitionism, voyeurism, or other severe problems would be rated here.

STRENGTHS

Family:
Family refers to all biological or adoptive relatives with whom the child or youth remains in contact along with other individuals in relationships with these relatives.

0 Significant family strengths. This level indicates a family with much love and mutual respect for each other. Family members are central in each other's lives. Child is fully included in family activities.
1 Moderate level of family strengths. This level indicates a loving family with generally good communication and ability to enjoy each other's company. There may be some problems between family members. Child is generally included.
2 Mild level of family strengths. Family is able to communicate and participate in each other's lives; however, family members may not be able to provide significant emotional or concrete support for each other. Child is often not included in family activities.
3 This level indicates a child with no known family strengths. Child is not included in normal family activities.

Interpersonal:
This rating refers to the interpersonal skills of the child or youth both with peers and adults.

0 Significant interpersonal strengths. Child is seen as well liked by others and has significant ability to form and maintain positive relationships with both peers and adults. Individual has multiple close friends and is friendly with others.

1 Moderate level of interpersonal strengths. Child has formed positive interpersonal relationships with peers and/or other non-caregivers. Child may have one friend, if that friendship is a healthy ‘best friendship model.
2 Mild level of interpersonal strengths. Child has some social skills that facilitate positive relationships with peers and adults but may not have any current relationships, but has a history of making and maintaining healthy friendships with others.

3 This level indicates a child with no known interpersonal strengths. Child currently does not have any friends nor has he/she had any friends in the past. Child does not have positive relationships with adults.

Relationship Permanence:
This rating refers to the stability of significant relationships in the child or youth's life. This likely includes family members but may also include other individuals.

0 This level indicates a child who has very stable relationships. Family members, friends, and community have been stable for most of his/her life and are likely to remain so in the foreseeable future. Child is involved with both parents.
1 This level indicates a child who has had stable relationships but there is some concern about instability in the near future (one year) due to transitions, illness, or age. A child who has a stable relationship with only one parent may be rated here.
2 This level indicates a child who has had at least one stable relationship over his/her lifetime but has experienced other instability through factors such as divorce, moving, removal from home, and death.
3 This level indicates a child who does not have any stability in relationships.

Educational:
This rating refers to the strengths of the school system and may or may not reflect any specific educational skills possessed by the child or youth.

0 This level indicates a child who is in school and is involved with an educational plan that appears to exceed expectations. School works exceptionally well with family and caregivers to create a special learning environment. A child in a mainstream educational system who does not require an individual plan would be rated here.
1 This level indicates a child who is in school and has a plan that appears to be effective. School works fairly well with family and caregivers to ensure appropriate educational development.

2 This level indicates a child who is in school but has a plan that does not appear to be effective.
3 This level indicates a child who is either not in school or is in a school setting that does not further his/her education.

Vocational:
Generally this rating is reserved for adolescents and is not applicable for children 12 years and under. Computer skills would be rated here.

0 This level indicates an adolescent with vocational skills who is currently working in a natural environment.

1 This level indicates an adolescent with pre-vocational and some vocational skills but limited work experience.
2 This level indicates an adolescent with some pre-vocational skills. This also may indicate a child or youth with a clear vocational preference.
3 This level indicates an adolescent with no known or identifiable vocational or pre-vocational skills and no expression of any future vocational preferences.

Wellbeing:
This rating should be based on the psychological strengths that the child or adolescent might have developed including both the ability to enjoy positive life experiences and manage negative life experiences. This should be rated independent of the child's current level of distress.

0 This level indicates a child with exceptional psychological strengths. Both coping and savoring skills are well developed.
1 This level indicates a child with good psychological strengths. The person has solid coping skills for managing distress or solid savoring skills for enjoying pleasurable events.
2 This level indicates a child with limited psychological strengths. For example, a person with very low self-esteem would be rated here.
3 This level indicates a child with no known or identifiable psychological strengths. This may be due to intellectual impairment or serious psychiatric disorders.

Optimism:
This rating should be based on the child or adolescent's sense of him/herself in his/her own future. This is intended to rate the child’s positive future orientation.

0 Child has a strong and stable optimistic outlook on his/her life. Child is future oriented.
1 Child is generally optimistic. Child is likely able to articulate some positive future vision.
2 Child has difficulties maintaining a positive view of him/herself and his/her life. Child may vary from overly optimistic to overly pessimistic.
3 Child has difficulties seeing any positives about him/herself or his/her life.

Spiritual/Religious:
This rating should be based on the child or adolescent's and their family's involvement in spiritual or religious beliefs and activities.

0 This level indicates a child with strong moral and spiritual strengths. Child may be very involved in a religious community or may have strongly held spiritual or religious beliefs that can sustain or comfort him/her in difficult times.

1 This level indicates a child with some moral and spiritual strengths. Child may be involved in a religious community.
2 This level indicates a child with few spiritual or religious strengths. Child may have little contact with religious institutions.
3 This level indicates a child with no known spiritual or religious involvement.

Talents/Interests:
This rating should be based broadly on any talent, creative or artistic skill a child or adolescent may have including art, theatre, music, athletics, etc.

0 This level indicates a child with significant creative/artistic strengths. A child/youth who receives a significant amount of personal benefit from activities surrounding a talent would be rated here.
1 This level indicates a child with a notable talent. For example, a youth who is involved in athletics or plays a musical instrument, etc. would be rated here.
2 This level indicates a child who has expressed interest in developing a specific talent or talents even if they have not developed that talent to date.
3 This level indicates a child with no known talents, interests, or hobbies.

Inclusion:
This rating should be based on the child or adolescent's level of involvement in the cultural aspects of life in his/her community.

0 This level indicates a child with extensive and substantial, long-term ties with the community. For example, individual may be a member of a community group (e.g. Girl or Boy Scout etc.) for more than one year, may be widely accepted by neighbors, or involved in other community activities, informal networks, etc.

1 This level indicates a child with significant community ties although they may be relatively short term (e.g. past year).
2 This level indicates a child with limited ties and/or supports from the community.
3 This level indicates a child with no known ties or supports from the community.