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Development of the Level of Stability Index for Children (LSIC): Determining Indicators of Emotional and Behavioral Stability of Children

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THE FLORIDA STATE UNIVERSITY

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DEVELOPMENT OF THE LEVEL OF STABILITY INDEX FOR
CHILDREN (LSIC): DETERMINING INDICATORS OF EMOTIONAL AND BEHAVIORAL
STABILITY OF CHILDREN

By

Jacquelyn Denise McMillan

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*To my husband (Damon C. McMillan, Sr.), for his unconditional love and
to our Son (D. Cooper McMillan, Jr.), for the motivation to never quit.
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ABSTRACT

Providing services for abused and neglected children has been very difficult to do systematically or consistently due to the problems children bring with them to care. Several studies have even alluded to the possibility of the return of the orphanage to assist in providing services to the plethora of children remaining in or entering care (Gelles, 1996; Golden, 1997; LeVine & Sallee, 1999). The child welfare system consists of children in foster care, kinship care (children being cared for by non-parental relatives) (Bonecutter & Gleeson, 1997; LeVine & Sallee, 1999) and various residential care settings. Children in these out-of-home care facilities often experience multiple placements and varied degrees of service provision. This can be devastating to a child already struggling to piece together a life subjected to abuse and neglect by his or her immediate family. Children in the normal population of school-aged children are often overlooked as well even though they may manifest many signs and symptoms of serious childhood conditions such as depression, suicidal ideation, anger, and aggressive tendencies.

Research with this population has been hindered by the lack of standardized assessment instruments that address the emotional and behavioral problems of these vulnerable children. Past research has focused on the perceptions of parents, teachers, child welfare workers and other adults who work with children in care. Few self-report instruments have been developed focusing on emotional and behavioral stability of children. Measures that can gauge the child's view of his or her situation may be useful clinical tools as well as points of departure for policies related to children in care. The purpose of this proposal is to introduce and validate such an instrument: the Level of Stability Index for Children.

CHAPTER 1: HISTORY AND BACKGROUND

To gain a fuller appreciation of the present state of the child welfare system requires some grasp of its origins and evolution. This will provide the backdrop from which major developments and historical shifts can be gleaned to help explain instability in the lives of children who reside in out-of-home care placements. A more thorough history of the child welfare system can be found elsewhere (Ashby, 1997; Axinn & Levin, 1997; Karger & Stoesz, 1998; LeVine & Sallee, 1999).

Child Welfare in the 17th and 18th Centuries

"What to do about the children?" has been a question that has haunted America's child welfare system for centuries. Children have been viewed as miniature adults, as derelicts in need of institutionalization, and as delinquents needing guidance through legal indentureship, apprenticeship, or imprisonment (Axinn & Levin, 1997). Childhood was not recognized as a distinct period of growth and development until the 17th century (LeVine & Sallee, 1999).

Prior to and during colonial times, the English Poor Laws provided a set of guidelines as to the care of children and others in need (Karger & Stoesz, 1998). The state or province in which the child lived decided the direction of the lives of poor children whose parents had died or had abandoned them. Apprenticeship was the primary provision given to needy children in order that they might learn a trade as well as obtain educational and religious training. Auctioning children for indentured servitude was also a common practice (Axinn & Levin, 1997). Many abuses occurred during this period and children were often left with no stable home if their caregiver(s) abandoned them. These state-authorized practices of placing children in out-of-home care and of paying for their care were the forerunners of the present child welfare services provided to children who cannot remain at home.

Child Welfare in the 19th Century

As colonialism gave way to industrialism, so too outdoor relief turned inward. In the late 18th century, the first public orphanage in the United States was established (Ashby, 1997). By 1851, there were over seventy-five children's institutions including asylums, orphan asylums, houses of refuge and reformatories for delinquent children (Ashby, 1997; Axinn & Levin, 1997; Karger & Stoesz, 1998). These congregate institutions gained notoriety due to their strict, militaristic discipline and training of children. It was believed that the removal of all parental contact and intense rehabilitation could transform potentially delinquent children into morally chaste and intellectually sound future citizens (Ashby, 1997).

This crisply painted picture of institutional care faded with the realities of living in an orphanage. Overcrowding, lack of sufficient funds, arduous work tasks, and harsh disciplinary practices were some of the reasons for the collapse of institutional care for children. These horrid living conditions both in American and abroad, brought about emotionally charged depictions of children in care ; both in fiction and nonfiction (Axinn & Levin, 1997; Dickens, 1982). Even with such harsh conditions, white children still fared better than African American or Native American youth. African American children had been included in the almshouses, but were intentionally excluded from most of the orphanages established prior to the Civil War (Billingsley & Giovannoni, 1972). Abandonment of newborns reached epic proportions in the inner cities, which also left many children with special needs in the care of the states.

In 1853, Charles Loring Brace recognized that a new system of childcare was required to meet the needs of the thousands of children without stable families. The Children's Aid Society of New York was an outgrowth of his efforts. Brace's goal in establishing the organization was to "secure adequate and proper shelter for dependent children" (Axinn & Levin, 1997, p. 57). The origins of the current system of out-of-home care can be traced to Brace's efforts (McDonald, Allen, Westerfelt, & Piliavin, 1996). Children from large, urban communities in the eastern United States were transferred or "placed out" to the west. For more than twenty years, the Children's Aid Society of New York sent children to the rural west. Fears abounded that children living in poverty in the inner cities were destined for a life of crime, violence, and prostitution. A romantic notion of rural life emerged sending "orphan trains" west to what was

believed to be a quieter, more peaceful country farm life (Ashby, 1997; Axinn & Levin, 1997; Karger & Stoesz, 1998; McDonald, et al., 1996).

Although well intentioned, Brace faced harsh criticism for not recognizing or safeguarding against the hazards of placing children in out-of-home care. Few follow-up studies or investigations were done to determine if children were truly leading more stable and productive lives after being placed-out. After harsh criticism about child imprisonment in the West, Brace initiated a series of outcome studies. These outcome studies indicated that the placing-out movement was largely successful. These studies however, have been criticized for not meeting methodological rigor or objectivity of good research. The dilemma of determining the best interests of the child remained (Goldstein, Freud, & Solnit, 1973).

Child Welfare in the 20th Century

Four centuries of childcare practices continue to be shrouded in debate as to what is best for the child who must be removed from his or her home due to dependency, abuse or neglect. Brace believed that a total elimination of parental contact was beneficial to the poor children who had been negatively influenced by the inept guidance of their biological parents (Ashby, 1997). Birtwell of the Boston Children's Aid Society believed quite the opposite. In 1886, the Birtwell Approach was pioneered. It focused on family involvement in saving children. This approach was affirmed in the First White House Conference on Children in 1909 (McDonald, et al.1996). Family foster homes were emphasized over placement in institutional care. Childcare workers were encouraged to make every attempt to keep children at home or to make their out-of-home experience as close to "home life" as possible.

A number of innovative programs showed great promise in keeping families together and finding stable placement for children. Research studies were conducted to determine their relative merit in the child saving era. *Children in Need of Parents* by Maas and Engler (1959) identified the "foster care drift" in which children continue to float in care without established plans for permanent placement. The researchers also investigated the placement experiences of children in foster care.

Another major research study on children in care was conducted in the late 1960s (Fanshel, 1971). This five-year longitudinal study examined foster care as a “phenomenon”. The researchers analyzed the exit of children from care to determine the relationship between discharge and child stability. The study focused on status changes and changes in the personal and social adjustment of the children as their two major outcomes (Fanshel, 1971; Fanshel & Shinn, 1978). Over 600 children entering care in New York City were tracked for five years. Along with discharge outcomes, information on the children’s developmental histories, psychological profiles, school performance, and child behavior characteristics was collected.

Of the 624 children in foster care, 56% had been discharged after five years, mostly to their homes. Over 36% percent remained in care for five years, while nearly 5% of children were adopted. Approximately three percent of children were transferred to another state. In 12% of the cases, children were returned home due to changes in the family’s and/or child’s capacity to accept placement. The researchers suggested that it would be important not to rule out the possibilities of children returning home or being adopted.

In 1966, James Casey and Joseph Reid established the Casey Family Program. This program sought to improve out-of-home care for those children who were not or could not be adopted or reunified with their biological parents. Later, Fanshel, Finch, and Grundy (1989) provide an investigation into the lives of those adults once served by the Casey Family Program. Results were favorable towards the use of “quality planned long term foster care for children and youth” (Fanshel, et al., 1989, p. 392) as a permanent plan. Children who had been severely deprived and suffered great instability remained in care until emancipation. These children avoided the uncertainty of multiple foster care placements. This was one of the greatest successes reported by the project. Most of the children destined to reach adulthood without being returned to their families could live in one stable foster care setting even when they present great difficulties.

Lindsey (1994a) reported the findings of three highly successful demonstration projects of the 1970s; the Comprehensive Emergency Services System (CES), the Alameda project, and the Oregon project. These projects demonstrated the capacity of the child welfare system to successfully assess child and family needs and provide effective permanency planning strategies for keeping children in or returning children to permanent homes. Lindsey (1994a) presents these

examples to argue that the child welfare system has the capacity to develop the "technology to permit a substantial reduction of the number of children in foster care placements (p. 64)".

The CES system: The CES system study used a before and after quasi-experimental design, with non-random sampling. It was comprised of four interventive units that provided children and families with (1) 24 hour, 7 day a week emergency intake to coordinate services and provision of care; (2) emergency caretaker service in cases where parents were absent due to an emergency; (3) twenty-four hour, emergency homemaker service when extended home care was needed; and (4) emergency foster homes in situations where maintaining the child in the home was not possible. The project provided a means by which children could remain in their homes or be returned as quickly as possible in order to avoid the undue stress of living apart from loved ones.

The CES system's objectives were accomplished with great success (Burt, 1976; Burt & Balyeat, 1977). Neglect and dependency petitions dropped from 602 to 226 after the CES program had been in effect for two years. Over the course of the study, the number of children removed from their homes and placed in care declined by nearly 50% (from 353 to 174). Children placed in residential care also decreased from 262 to 35. There was a remarkable decrease in the number of children under six entering care (from 180 to 0).

The Alameda project: This project was designed to increase the continuity of care for children in foster care by allowing biological parents to take part in the decision making process (Firestone-Seghi, 1979). Pairs of social workers, trained by the researchers, were provided for each family in the study. One social worker worked directly with the child and the foster family and the other worker assisted the biological family. The sample included 428 children. At the end of the second year of the project, 60% of the experimental group of children were restored to their homes. The majority of those children in the control group remained in long term foster care (57%). Fifteen percent of the experimental group children were adopted, 4% placed with a guardian, and 21% remained in long term foster care.

The Oregon project: This project was conducted to determine the barriers to planning for children in foster care. Likely candidates for long term foster care placement were identified through a screening procedure designed by the researchers (Emlen, Lahti, Downs, McKay, & Downs, 1977). The identified children were provided with a permanent placement plan to assist in returning them to their homes or placing them in a permanent setting. Project social workers

were provided a training manual and materials. Training focused on determining the rules and procedures that would best equip social workers to find permanent homes for children. Social workers were encouraged to emphasize to the biological parents that concerted efforts must be made on their part in order for the child to be returned home.

The biological family was given a time limit of a year to obtain the needed services for reunification. Termination of parental rights, mandated by the *Adoption Assistance and Child Welfare Act* to free unplaced children for adoption, was also stressed to the biological families. The social workers were cautioned not to use termination as a threat, although it could be enforced. Social workers were to emphasize that termination was an option if within a year the home was still unsuitable for the child to return. Termination of parental rights was a major factor in the success of the project. From the 2, 283 children in foster care in 1973, 509 were selected to participate in the Oregon project. In 1976, 72% of permanent plans were implemented for these selected children. Fifty-two percent of children were freed for adoption and 27% were restored to their own homes.

The Seattle Homebuilders Program was established in 1974 as a model for home-based family preservation services. Intensive family preservation services (IFPS), such as Homebuilders, support the view that families benefit from very brief interventions. These programs showed great promise in providing permanency in the lives of children who were candidates for out-of-home care (Forsythe, 1992). IFPS are “short-term, intensive, crisis intervention services delivered in a family’s home” (p. 41).

Characteristics of the program included services delivered in the client’s home (e.g., childcare, in-home parenting skills training, and homemaker services), intensive casework service (5-20 hours per week), and small caseloads. Scheduling of services was highly flexible, with workers available 24 hours, 7 days a week. These short term services lasted only 4 to 6 weeks. The program attested to the benefits of intensive services over a short time period, for children and families at risk. As Forsythe (1992) indicated, “the safety success has been virtually 100 percent” (p. 43).

Despite the success of programs and projects designed to meet the needs of America’s most vulnerable citizens, minority children continue to be over-represented in out-of-home care. African-American children are the most predominant ethnic group in foster care (Billingsley & Giovannoni, 1972; Everett, Chipungu, & Leashore, 1997; Rosner & Markowitz, 1993).

Native American children have had increasingly high placement rates as well. In 1978, the Indian Welfare Act (IWA) [PL 95-608] was enacted to deal with just such a problem. The IWA gave more authority to tribal courts in determining the placement of community children (McDonald, et al, 1996). These children often remain on the foster care rolls until they are old enough to live on their own (Barth, Courtney, Berrick, & Albert, 1994; Billingsley & Giovannoni, 1972). Siegel (1991) indicates that some children and families vary considerably in areas relating to family structure, child-rearing and help-seeking behavior, making it difficult for social workers to apply the knowledge they obtain about ethnic diversity. Subsequently, many minority children remain in care longer and lead more unstable lives due to the difficulties in assessing their culturally-specific needs and the challenges of finding permanent homes for them.

Permanency Planning

The *Adoption Assistance and Child Welfare Act (AACWA)* [P. L. 96-272] was passed by the United States Congress in 1980 (Avery, 1998; Lindsey, 1994b). This is one of the most far-reaching and controversial pieces of federal child welfare legislation enacted. The act promotes permanency planning of all children (regardless of race or other child characteristics) removed from their homes and placed in foster care. It calls for more concentrated efforts to keep families together, to restore children to their biological parents, or to terminate parental rights in order that children may be adopted. The act encourages home-based placement prevention services (e.g., Homebuilders); mandates ongoing reporting to monitor children in care and plan for their exits from care; limits the extent of placement in nonpermanent out-of-home care placements and; describes specific protection for parents of children in out-of-home care. The goals of permanency planning are to reduce the number of children in foster care and increase the frequency and speed of children returned home or adopted (Anderson, 1997; Child Welfare League of America, 1992; Stein & Rzepnicki, 1984; Emlen, Lahti, Downs, McKay & Downs, 1977; Pike, Downs, Emlen, Downs & Case, 1977; Zuckerman, 1983).

Opponents of the permanency planning initiatives argue that some children are hard to place (Thoburn, 1990) and therefore, these children face the dilemma of foster care drift (Fanshel & Shinn, 1978) regardless of efforts to permanently place them. Recommendations are not as forthcoming for these children who have been in care for a long time. Adoption is seldom considered an achievable permanency goal.

Gelles (1996) further argues that a strict adherence to permanency planning often has deleterious effects on the lives of vulnerable children left in the care of abusive parents and guardians. He states that “[on] a day to day basis, workers still play Russian roulette with the lives of children, uncritically applying family preservation interventions until some glaring sign that a child is at risk emerges – and often well beyond that point” (pp. 128-129).

Child welfare policy makers, foster care administrators, and social work professionals must recognize that permanency planning goals such as adoption or return home may not be possible for some children. Alternatives such as long term foster care (Barth, 1997; Fein, Maluccio, & Kluger, 1990; Schmidt-Tieszen, & McDonald, 1998) or independent living programs (Scannapieco, 1996; Westat, 1986) may need to be provided for children still in care despite permanency planning efforts. It is also imperative to focus research on examining the stability of the child’s life following placement. Successful placement goes beyond finding a permanent home for children. The stability of the child’s life and the child’s adjustment to the placement must be examined as well.

Social Work Practice and Research in Child Welfare

When children can no longer remain at home, the child welfare system must take action to procure a new permanent home for the child, provide an environment where the child can live, provide services until their home is more suitable, or provide a residents for hard-to-place children until they become adults (Edwards, 1961; Pardeck, 1984; Rest & Watson, 1984). Children with emotional or behavioral problems need special care that may not be possible in a single family foster home. Residential group homes and residential treatment facilities are utilized for the most challenging children in care. Residential care often called “specialized”, “treatment”, therapeutic” or “professional foster care” has been established for these children

(Staff & Fein, 1995). Many in the child welfare system agree that “children entering out-of-home care now are more disturbed than in times past” (Dore, 1999, p. 7). Reports have indicated that as many as eight (8) million children in America are in need of treatment for emotional or behavioral disturbances (Julian, Julian, Mastrine, Wessa, & Atkinson, 1992). Although most children enter the child welfare system after being removed from an abusive home, many of these children have social, behavioral, and emotional problems as well (Kupsinel & Dubsky, 1999).

Schneiderman, Connors, Fribourg, Gries, and Gonzales (1998) report that children with higher levels of emotional, behavioral, and developmental disturbance also can be expected to make use of more mental health services. Lyons, et al. (1998) cautions that there must be a plan for services in which the mental health needs of children in residential care match the services being provided to them. Instability in the lives of children in out-of-home care is never very cut and dry. Internal factors (mental and/or behavioral disturbances) and external factors (abuse, neglect, or abandonment) can lead to higher levels of instability in the lives of children in out-of-home care (Fein, Davies, & Knight, 1979; Rutter & O'Connor, 1999). It is crucial that child care workers and child welfare professionals provide the appropriate care and service to meet the physical and emotional needs of children in duress. The social work profession can take an active role in providing knowledge through research to assist in securing effective services and interventions for children in care. Models and theories can be helpful in guiding these knowledge building exercises. Theoretical perspectives on stability of children in care are the topics to be discussed next.

CHAPTER 2: LITERATURE REVIEW

Research addressing emotional and behavioral stability of children in care must be grounded in a theoretical perspective that helps to explain the antecedents and precursors of childhood problems. Early attachment interactions and early environmental interactions affect child stability through reciprocal transactions between the child and others. Attachment theory and ecological theory are useful in explicating the complex variables involved in the resulting emotion and behavior of the child. Literature related to these theoretical perspectives will be examined prior to a review of the research on stability of children in care.

Attachment Theory

Bowlby's (1973, 1979, 1980, 1982) pioneering work on the childhood effects of loss and separation and Ainsworth's research on mother-infant attachment (Crittendon, 2000) have resulted in what we now call Attachment Theory. In its original conceptualization, "the attachment system is activated when infants experience distress, and the goal of attachment response is to maintain proximity to a nurturing adult, who is expected to help the infant to manage the distress and to promote a sense of well-being and security" (McKulincer & Florian, 1998, p. 144). Healthy attachments are formed early, include parents, grandparents, siblings and others who play a significant role in a child's life, and remain salient throughout the life span (Payne, 1997; Pistole & Watkins, 1995). Shealy (1995) summarizes this point in his research on children removed from their home due to neglect, abuse or exploitation. Deep attachments are said to be resistant to change because they are person specific. When adequate intervention is not implemented, "the repercussions of severed emotional bonds are likely to be experienced for many years" (p. 577).

About 25% of children placed in out-of-home care will experience placement discontinuity due to emotional and behavioral problems. These children experience "little sense of permanence or emotional attachment" (Stone & Stone, 1983, p. 11). Children in care often go through an emotional struggle similar to bereavement (Bowlby, 1982; McKulincer & Florian,

1998). This emotional situation is made more challenging as the child must adjust to new surroundings and a new but presumably temporary living situation.

As children develop, stability is contingent upon the continuity of relationships (attachments) and environmental influences in their lives (Crittenden & Claussen, 2000; Grigsby, 1993; Schneider, 1991). Children must perceive the presence and availability of attachment figures to meet their needs. The earlier the child perceives this security, the greater the possibilities of emotional and behavioral stability (Chisolm, 2000; McMillen, 1992).

When these influences are disrupted due to loss, abuse or neglect of the caregiver, children may manifest signs of depression and suicidal ideation (Dozier, Stovall, & Albus, 1999), anger, aggressive tendencies and other conduct problems (Cassidy & Shaver, 1999; Dozier, et al., 1999; Greenberg, 1999, Rholes, Simpson, & Stevens, 1998). Major depression in children has been associated with permanent loss of the mother (or primary attachment figure). On the other hand, depression with symptoms of anger and aggression is related most often to separation rather than loss. These aggressive tendencies have been traced all the way back to problematic attachment relationships in infancy (Greenberg, 1999; Lyons-Ruth, 1996). Research even supports the notion that abused/maltreated children will manifest increasingly maladaptive functioning as they develop in direct association with the past distortions in their relationships with their caregivers (Adam, Keller & West, 1995; Cicchetti & Toth, 1995).

In Bowlby's (1982) research on stability and change in patterns of attachment, he has observed that:

- deprivation and disadvantage have major damaging effects on children's development and later life;
- the caregiver is the major influence on attachment;
- identity of the caregiver is not as important as the quality of care the child receives; and
- attachment grows with the child and resists modification as the child matures or the more the child attaches (Bowlby, 1973; 1980; Payne, 1997).

Healthy attachments with more permanent parental figures can help to prevent emotional instability. The child is allowed to heal from detachment wounds resulting from removal and separation from their primary attachment figures (e.g., biological parents). Basic attachment patterns can be found in every culture and has been shown to have adaptive value cross-

culturally. "Attachment theory may therefore claim cross-cultural validity" (Ijzendoorn & Sagi, 1999, p. 731).

Ecological Theory

An ecological model can be used to assess mental health (psychosocial) difficulties in children by taking into consideration children's environments as interacting variables (including neurobiological, emotional, familial, and sociocultural factors) (Guterman & Blythe, 1986; Hess & Howard, 1981; Whittaker, 1978). Germain and Gitterman (1996) are recognized for bringing an ecological perspective to social work (Grigsby, 1993). Individuals and families are understood within the context of their environment (Germain & Gitterman, 1980; 1986; Trickett, 1997). In Bronfenbrenner's (1979) ecology of human development, a developing person "is viewed not merely as a tabula rasa on which the environment makes its impact, but as a growing, dynamic entity that progressively moves into and restructures the milieu in which it resides" (p. 21). There is reciprocity between the person and his or her environment. This refers to the active, dynamic individual who acts on an environment that is acting back on the individual. In the ecological theory, behavior is a function of the continuous interplay of persons and the environment (Bronfenbrenner, 1979; Whittaker, Schinke, & Gilchrist, 1986).

Human beings are born with adaptive capacities but must have the appropriate environmental conditions to achieve adaptation. Moreover, it has been said that people search for environments that fit their character needs or promote continuance of their emotional and behavioral difficulties. This feedback is interactional and individual functioning is affected by environmental changes (Germain, 1973; Moos, 1973). When a child's environmental changes lead to frustration, this frustration may instigate internal emotions (depression, suicidal ideation, or internalized anger) or it may instigate external responses such as aggression and anger towards others (Averill, 1982).

In this life model, problems are defined as consequences of maladaptive interactions among elements of the ecosystem. These elements typically include transactions involving settings, organizations, and significant others in the individual's life (Germain, 1996; Payne, 1997). The approach is concerned with changing transactions that may cause harm to identity

and self-esteem, ego development, human relatedness, social functioning and realization of potential.

Emotional and behavioral disorders may be best understood in terms of the interactions between a child and the environment (Blom, Lininger, & Charlesworth, 1987). Blom et al. (1987) indicate that emotional and behavioral problems in children result from a "mismatch" of child and environment.

This mismatch in the life of a child produces stressful situations that arise from:

- (1) life transitions: developmental changes, changes in role or a restructuring of life space (e.g., puberty);
- (2) environmental pressures: harsh and unresponsive organizations or unequal opportunities (e.g., unreported abuse or neglect in an out-of-home care setting); and
- (3) interpersonal processes: exploitation, inconsistent expectations (e.g., broken promises within the child welfare system as it relates to goals and/or permanency) (Payne, 1997, p.145)

Although counteracting the effects of maladaptive transactions may take time, more adaptive transactions within a child's environment will invariably lead to increased stability.

The development of the Level of Stability Index for Children (LSIC) utilizes the ecological and attachment perspectives as the guiding theoretical framework. In the LSIC, emotional and behavioral stability are examined in four (4) interrelated domains. Although the referenced theories do not directly suggest these domains, they do provide context for establishing their relevance in the assessment of children's functioning. Using both perspectives integrates the contributions of nature and nurture by focusing not only on the interpersonal factors that influence stability (e.g., perceived relationship to attachment figure) but also those environmental stressors (ecological) that influence emotion and behavior and subsequently may contribute to instability.

Research on Children in Out-of-Home Care

Findings of the Third National Incidence Study of Child Abuse and Neglect (NIS-3) indicate that an estimated 1,553,800 children in America were abused and neglected (using the Harm Standard) in 1993 (U. S. Department of Health and Human Services [HHS], 1996). Over 900,000 children nationwide, were estimated to be victims of maltreatment in 1998 (U. S.

Department of Health and Human Services, 1998). Fifty-three percent of these maltreated children also suffered neglect, physical abuse (22.7%), and sexual abuse (11.5%). Thousands of these abused and neglected children are provided services within the child welfare system annually through out-of-home care. An estimated 144, 000 children are placed in foster care alone. Children in care face an unstable existence as a result of internal and external forces that impede proper growth and functioning (Clark, Prange, Lee, Boyd, McDonald, & Stewart, 1994).

Although research has established an association between childhood incidence of abuse and mental health problems in adulthood (Dozier, Stovall, & Albus, 1999; Greenberg, 1999), some may argue that many adults with a history of abuse function well and lead relatively stable lives (Bates, English, & Kouidou-Giles, 1997). It is important to recognize that each individual has a set of coping mechanisms that drive if not determine how that individual will function and/or cope under certain circumstances. It is obvious from the numerous research findings that many children have difficulties coping with the trauma of abuse or sadness of loss due to separation from families and home. This may be multiplied by the emotional, physical or behavioral challenges the child has to cope with as well. The child's situation becomes almost unbearable. Research on out-of-home placement identifies variables that affect the emotional and behavioral stability of children. These various studies focus on three components out-of-home placement: (a) characteristics of children in care; (b) risk factors associated with placement of children in out-of-home care; and (c) mental health of children who enter out-of-home care.

Characteristics of Children in Out-Of-Home Care

There are many differing opinions about the kind of treatment abused and neglected children would benefit from the most. Researchers in the field of child welfare may vary considerably in their treatment orientation, however they have reached consensus about the characteristics of children in out-of-home care. Children placed in residential care (group homes or treatment facilities) present the most challenges to child welfare system professionals and administrators. In a study by Kupsinel and Dubsky (1999), those children who were behaviorally impaired and in out-of-home care were typically: "Male, who entered out-of-home care as a young adolescence, had a longer experience in out-of-home care, in a county away from his home, and left the system at an older age than those children with no known handicaps" (p. 307).

Julian, et al. (1992) examined the service usage patterns of 25 children in a regional mental health agency. Of the 25 participants, 23 had a history of attempted suicide; 13 had a

history of school problems; 5 had been involved in prostitution; 12 had a history of running away from home; 17 had abused alcohol or drugs and 21 indicated that they had been victims of sexual abuse (all 16 females and half the males). These children may come from all walks of life yet still have characteristics that distinguish them from children in the general population.

Bauer (1993) delineates some consistent patterns among children in out-of-home placement:

- children in care may spend an extended period of time with little or no contact or information about their biological families;
- these children may experience a series of placements, and feel that life is unpredictable and that they have no control over their life circumstances;
- children in care may demonstrate challenging behaviors and educational underachievement;
- children in care may need help in coping with separation and loss;
- they have problems in making connections and attachments;
- these children may have been perinatally exposed to drugs and alcohol, and/or experienced the chaotic lifestyle of families engaging in substance abuse (pp. 134-140).

Bauer's (1993) assumptions continue to be supported by research on child well-being (Altshuler, 1998; Wilson & Conroy, 1999) and child stability while in care (Staff & Fein, 1995).

Risk Factors and Out-of-Home Care

Many factors affect the likelihood of a child being placed outside of the home. Parent functioning, cooperation and the state of the parent/child relationship may influence the decision to remove a child (Altshuler, 1998; Jones, 1993). A past history of abuse is another reason for removal. Other parent indicators include medical or psychological problems, environmental stress, job instability, and a lifestyle in conflict with parenting (Berrick, Barth, & Needell, 1994; Jones, 1998; Potocky & McDonald, 1996; Tam & Ho, 1996).

Children who are delinquent (Chamberlain, 1990; Jonson-Reid & Barth, 2000) or have mental health difficulties are also among the children served by the child welfare system (Courtney, 1995b; Courtney, 1998; Petr, 1994; Rosen, 1999; Schmidt-Tieszen & McDonald, 1998; Schneiderman, Connors, Fibourg, Gries, & Gonzales, 1998). The likelihood of removal increases if the parent is single or the child is under the age of six (Jones, 1993; Lindsey, 1992; Whittaker, Tripodi, & Grasso, 1993). In cases where the parent is not the perpetrator, children are removed when the parent has not protected the child from harm (Benedict & White, 1991;

Jones, 1993). Poverty and race continue to place children at highest risk for out-of-home placement (Barth, 1997; Courtney, Barth, Berrick, Brooks, Needell, & Park, 1996; Fanshel & Shinn, 1978; Garland & Besinger, 1997; Goerge, 1990; Jenkins, Diamond, Flanzraich, Gibson, Hendricks, & Marshood, 1983; Lindsey, 1992; McMurtry & Lie, 1992). For these children and others like them, out-of-home care is not a "temporary arrangement" (Olsen, 1982).

Explanations for the continued prevalence of minorities in care vary throughout the literature. Researchers indicate that minority families may have fewer resources available to them, may be more dysfunctional, or may be perceived as more dysfunctional by those in the child welfare system who are involved in permanency planning (Courtney, et al., 1996; Jenkins, et al., 1983; McMurtry & Lie, 1992).

Van Hook (1994) conducted a content analysis of agency records to assess the placement patterns for rural (N=91) versus urban youth (N=328). She found that emotional problems of children and parents contributed to placement. Ungovernable behavior was a major reason for placement of rural youth (rural =23.9%/ urban = 14.6%). Overall family problems were also a significant reason for placement of rural youth (44%) versus urban youth (39%).

Avery (1999) found that 74.5% of a sample of 77 children in New York City's child welfare system awaiting adoption were among the longest waiting children, primarily because of a medical or psychiatric condition. Children with mental disabilities and learning disabilities combined were among those children with significant delays in permanent placement. The majority of children sampled had at least one disability (88%). Along with medical conditions, the child's emotional and behavioral problems were cited as obstacles to placement.

The high rates of return to out-of-home care are not surprising considering the numerous risk factors that hinder permanency for the most needy children. More instability in placement of children is associated with increased probability of reentry to care once a child is permanently placed (Albers, Reilly & Rittner, 1993; Courtney, Piliavin & Wright, 1997; Iglehart, 1993). Out-of-home placement is frequently a revolving door for children and families who have not received the necessary interventions/services to assist in coping with the internal and external challenges prevalent in the child's biological home.

Mental Health of Children in Out-of-Home Care

Researchers continue to assert that children with mental health difficulties have a higher probability of being placed in a setting outside of their biological families (for this paper, mental

health difficulties mainly focus on non-psychotic emotional and behavioral difficulties). Children in out-of-home placements have been characterized as outwardly impulsive, tough and aggressive, while privately their fears, hopelessness, depression and doubts are revealed. The aggression and anger that such children display is often contributed to environmental stressors that require a defensive approach in order for the youth to survive. Many of these children have been reared in multiple placements within the child welfare system and have no sense of family or attachment to significant others (Rosen, 1999).

Children and youth often enter care with complex problems both individual (physical, developmental, and psychological) and environmental (social factors such as family discord, poverty, etc.). They are frequently reared in the most dysfunctional families where they have experienced neglect, sexual and/or physical abuse, exposure to drugs, and abandonment. For many of these children, out-of-home placement is not an option, it is a necessity in order to return them to a more adaptable state of functioning and stability (Bates, English, & Kouidou-Giles, 1997; Petr, 1994).

When these early life experiences are compounded with the multiple losses caused by temporary or permanent separations from biological parents, neighborhoods, and cultural ties due to out-of-home placement, the predictable negative impact on the child's mental health can be profound" (Schneiderman, Connors, Fribourg, Gries, & Gonzales, 1998, p. 32).

Iglehart (1993) assessed out-of-home care adjustment of 152 randomly selected youths in an exploratory study of adolescents in foster care. Responses of caretakers were used to define and determine maladjustment in the sample of youth in care. Older age ($B=.677$; $F=8.323$; $p=.005$; $r^2=.06$), type of placement ($B=2.509$; $F=3.427$; $p=.066$; $r^2=.12$) and length of stay ($B=.037$; $F=2.679$; $p=.104$; $r^2=.14$) in current placement were significantly related to maladjustment.

Kupsinel and Dubsky (1999), using data collected by the Nebraska Foster Care Review Board, studied behavioral impairments in children in out-of-home care. Children with behavioral impairments ($N=131$) were compared to children with no known handicaps ($N=557$). It was found that 57.7% of children with behavioral problems entered care earlier than non-handicapped children (31.6%) and exited care later (62.3%) than children with no handicaps (37.3%). Behavioral impairment was the strongest predictor of length of stay in out-of-home care ($\chi^2=58.78$; $df=12$; $p=.000$).

Lyons, Libman-Mintzer, Kisiel, and Shallcross (1998) compared 333 low and high risk children in residential care to determine which children were actually in need of the treatment based services provided and which children were being provided unnecessary mental health services. Based upon the child's level of risk, 83% of the children met the criteria for a diagnosis in at least one of five mental health categories: (1) emotional disturbance; (2) conduct disturbance; (3) neuropsychiatric disturbance; (4) oppositional behavior; and (5) impulsivity. Children determined to need residential treatment had more emotional difficulties (60%) than children not needing residential services (33%). The high prevalence of disorders among children in out-of-home placement subsequently leads to more frequent use of mental health services (Schneiderman, et al., 1998).

The studies reviewed above point to a prevalence of emotional and behavioral problems among children in out-of-home care. The residential options available to children who can no longer remain in the care of their biological parents are limited. Living arrangements for children who manifest emotional and behavioral difficulties may be even further limited. Some attachment theorists have even suggested that children in care exhibit higher levels of emotional and behavioral difficulties than children not in care who have similar backgrounds (Rutter & O'Connor, 1999). Further research on the mental health of children in care including assessment, intervention, and outcomes may help to identify those children in need of the most immediate treatment while in out-of-home care.

These previous sections have provided a foundation upon which the LSIC can be developed. The historical background was provided to focus the reader's attention on the issues and problems that children have faced over the years while in the child welfare system. The inadequacies and disparities within the system were also discussed. A theoretical focus assisted in providing the "matrix for the formulation of the questions and hypotheses that guide systematic inquiry" (Fortune & Reid, 1999, p. 53). Both attachment theory and ecological theory assist in the organization of knowledge about the internal and external processes that affect levels of stability in children. A theoretical framework is useful in guiding a further search of the literature which was conducted to explicate the contemporary child welfare issues which affect children in out-of-home care. The next section will focus on measurement in child welfare research. Klein and Bloom's (1994) categorization system will be used to conduct a "state-of-the-art" review of relevant research in child welfare.

Measurement in Child Welfare Research

From the research review above it should be apparent that there is a need for more thorough and accurate assessment of children's mental health needs during the initial assessment process and beyond. Use of standardized measures that have confirmed reliability and validity in assessing mental health problems are highly recommended. The studies previously cited made use mainly of secondary data abstracted from case records completed by investigators, workers, and parents/caretakers. Including self-report measures in child assessment packages can provide valuable information that is seldom tapped during initial assessment of needs and problems of children in care. Researchers have only recently begun to explore the contributions children can make to the assessment process as well as to permanency planning (Johnson, Yoken, & Voss, 1995; Wilson & Conroy, 1999).

Assessment instruments, scales, and survey questionnaires are all a part of the technology developed, tested and utilized by an applied social science. Scales and other assessment instruments can guide workers and practitioners in making improved intervention decisions on behalf of children in care. One major assumption from the literature is that finding a permanent placement for a child enhances stability and well-being of the child. Staff and Fein (1995) found that long term foster care at Casey Family Services led to greater stability for children (N=109) who were adopted (35%); reunified with their biological families (17%); or remained in one long term placement (21%). This study and others like it show that out-of-home care can be of benefit to some children. The key is to assess accurately what type of placement is most conducive to the well being and stability of the child.

Emotional and behavioral problems of youth are of great concern to workers and practitioners alike due to the complex interplay of family, child, and bureaucratic conflict that may be involved in assessing and treating childhood emotional and behavioral problems. Ideally, an instrument that can be used to determine a child's level of stability, at the time of placement and at continuous intervals throughout the child's stay in care, would provide a great tool for use in permanency planning, if appropriately conceptualized and measured (Altshuler & Gleeson, 1999).

Categorization and Critique of Literature

Klein and Bloom (1994) conducted a content analysis of major social work journals and conference proceedings for the past 120 years. Their analysis of social work related literature revealed that an applied social science would contain the components of empiricism, technology, conceptualization, valuation and commentary in published articles for each topic within the applied social science field. If social work is to be considered an applied social science, these components should be found to some degree in each topic addressed in social work related journals (e.g., child welfare; advocacy; mental health, etc.). Klein and Bloom (1994) point out that they “believe that all five components have a legitimate place in the thinking- feeling- acting complex that is applied social science” (p. 430). These five components are defined below:

Empirical. Empirical articles have planned actions of observation and measurement of social events, whether they take place in a laboratory, a clinic, or a community setting. There are three subtypes of empirical manuscripts.

Primary Quantitative: collection of data using standardized empirical methods (e.g., descriptive research, and multivariate analysis).

Secondary Quantitative: secondary data; obtaining information from already existing data (e.g., case files, electronic databases).

Primary Qualitative: case studies; community case illustrations (primary or secondary data analysis) and ethnographic methods.

Technological. Technological articles amplify empirical contacts through a wide array of devices (computers), procedures, or social arrangements. Methods of intervention, standardized scales, and statistical methods are included.

Conceptual. This refers to a mode of thinking that moves from observation to abstraction. Articles are generally called "theoretical papers" where individual concepts may be summarized or new ones presented.

Valuation. Valuation articles are suggestive in nature. They refer to the expression of preferences regarding the ends and means of action in the course of empirical, technological, or conceptual activities. The presentation of values in these articles may be direct (e.g., as the focus of the discussion) or indirect as in a suggestion for child welfare reform.

Commentary. Statements that describe, critique, or comment on empirical, technological, conceptual, or valuation activities are considered commentary. Commentary is useful in stimulating interest in social issues and suggesting ways to investigate human nature.

Using Klein and Bloom's (1994) categorization system as a guide, social work articles from the past two decades were reviewed. Articles were placed in specified categories on the basis of their main foci (See Table 2.1). This varies slightly from Klein and Bloom's (1994) original content analysis that categorized data by single focus, multi-focus, or minor focus, however this delineation may have been necessary to review 120 years of data.

Twenty years of research and commentary may border on being “dated”, however this timeframe was chosen to capitalize on the changing face of child welfare services that began in the 1980s and has continued into the new millennium. In this span of time, new child welfare policies have been enacted (Barth & Berry, 1987), new child centered assessment tools were developed (Miller & Kamboukos, 2000), and new child welfare research was conducted and reviewed (Courtney, Barth, Berrick, Brooks, Needell, & Park, 1996; Jones 1993; Rzepnicki, 1987). Articles focusing on children welfare issues (e.g., permanency planning; out of home care, etc.) were included in the analysis. All articles were examined for content and cited in various portions of this paper.

Contents of each article in this critique were examined to determine the main focus. Categorization clues were obtained by reviewing the abstracts of the articles, by examining introductory statements that described the purposes of the articles, and by reading the articles to determine overall content and pertinent issues addressed. The total number of articles for each category has been displayed in percentages (see Figure 2.1).

Articles were taken from social work and related journals including: *Assessment*; *Child and Adolescent Social Work Journal*; *Children and Youth Services Review*; *Child Welfare*; *Journal of Consulting and Clinical Psychology*; *Journal of Child Psychology and Psychiatry*; *Journal of Multicultural Social Work*; *Journal of Psychoeducational Assessment*; *Psychological Assessment*; *Social Service Review*; and *Social Work*.

This critique is provided to bring credence to a social work knowledge building enterprise that utilizes all five components in order to inform social work practice (the applied component) and conduct social work research (the science component) on topics relevant to the

field. Below is an overview of the methodological components necessary to develop measurement instruments for research and assessment within an applied social science.

Table 2.1: Five Components of an Applied Social Science
ARTICLES RELATED TO EMPIRICISM
Albers, E., Reilly, T., & Rittner, B. (1993); Altshuler, S. (1998); Avery, R. J. (1999); Barth, R. P. (1997); Bates, B. C., English, D. J., & Kouidou-Giles, S. (1997); Benedict, M. & White, R. (1991); Berrick, J., Barth, R. P., & Needell, B. (1994); Berrick, J. D., Frasch, K., & Fox, A. (2000); Blom, S. D., Lininger, R. S., & Charlesworth, W. K. (1987); Chamberlain, P. (1990); Clark, H. B., Prange, M. E., Lee, B., Boyd, L. A., McDonald, B. A., & Stewart, E. S. (1994); Courtney, M. (1995b); Courtney, M. (1998); Courtney, M., Barth, R., Berrick, J., Brooks, D., Needell, B., & Park, L. (1996); Courtney, M. E., Piliavin, I., & Wright, B. R. E. (1997); Fanshel, D., Finch, S. J., & Grundy, J. F. (1989); Fein, Maluccio, & Kluger (1990); Garland, A. & Besinger, B. (1997); Goerge, R. M. (1990); Iglehart, A. P. (1993); Jenkins, S., Diamond, B., Flanzraich, M., Gibson, J., & Marshood, N. (1983); Johnson, P. R., Yoken, C., & Voss, R. (1995); Jones, L. (1993a); Jonson-Reid, M., & Barth, R. P. (2000); Julian, D. A., Julian, T. W., Mastrine, B. J., Wessa, P., & Atkinson, E. (1992); Kupsinel, M. M., & Dubsky, D. D. (1999); Lindsey, D. (1992); Lyons, J. S., Libman-Mintzer, L. N., Kisiel, C. L., & Shallcross, H., (1998); Lyons-Ruth, K. (1996); McMurtry, S. & Lie, G. (1992); Olsen, L. J. (1982); Pardeck, J. T. (1984); Petr, C. G. (1994); Potocky, M. & McDonald, T. (1996); Rest, E. R., & Watson, K. W. (1984); Rzepnicki, T. L. (1987); Schmidt-Tieszue & McDonald (1998); Schneiderman, M., Connors, M. M., Fribourg, A., Gries, L., & Gonzales, M. (1998); Staff, I., & Fein, E. (1995); Stone, N. & Stone, S. (1983); Tam, T. S. K., & Ho, M. K. W. (1996); Van Hook, M. (1994); Whittaker, J. K., & Pfeiffer, S. I. (1994); Whittaker, J. K., Tripodi, T., & Grasso, A. J. (1993); Wilson, L., & Conroy, J. (1999)
ARTICLES RELATED TO VALUATION
Altshuler, S. J., & Gleeson, J. P. (1999); Anderson, G. R. (1997); Bonecutter, F. & Gleeson, J. (1997); Forsythe, P. (1992); Rosen, M. (1999); Siegel, L. (1994)
ARTICLES RELATED TO TECHNOLOGY
Abell, N. (2001); Birleson, P. (1981); Comrey, A. L. (1988); Costello, E. J., & Angold, A. (1988); Craighead, W. E., Craighead, L. W., Smucker, M. R., & Iardi, S. S. (1998); Jacobs, G. A., Phelps, M., & Rohrs, B. (1989); Kazdin, A. E., French, N. H., Unis, A. S., Esveldt-Dawson, K., & Sherick, R. B. (1983); Levitt, J. L., & Reid, W. J. (1981); Musante, L., Treiber, F. A., Davis, H. C., Waller, J. L., & Thompson, W. O. (1999); Newcomer, P. L., Barenbaum, E., & Pearson, N. (1995); Orbach, I., Milstein, I., Har-Even, D., Apter, A., Tiano, S., & Elizur, A. (1994); Reynolds, W. M. (1986); Scannapieco, M. (1996); Springer, D., Abell, N., & Hudson, W. W. (2002); Springer, D., Abell, N., & Nugent, W. R. (2002); Stiffman, A. R., Orme, J. G., Evans, D. A., Feldman, R. A., & Keeney, P. A. (1984); Swaffer, T., & Epps, K. (1999)
ARTICLES RELATED TO COMMENTARY
Bauer, A. M. (1993); Jones, L. (1993b); Rosner, D. & Markowitz, G. (1993); Shealy, C. N. (1995)
ARTICLES RELATED TO CONCEPTUALIZATION
Dore, M. (1990); Guterman, N., & Blythe, B. (1986); Hess, P., & Howard, T. (1981); Pistole, M. & Watkins, C. (1995); Schneider, E. (1991); Trickett, E. (1997); Whittaker, J., Schinke, S., & Gilchrist, L. (1986)

Components of an Applied Social Science

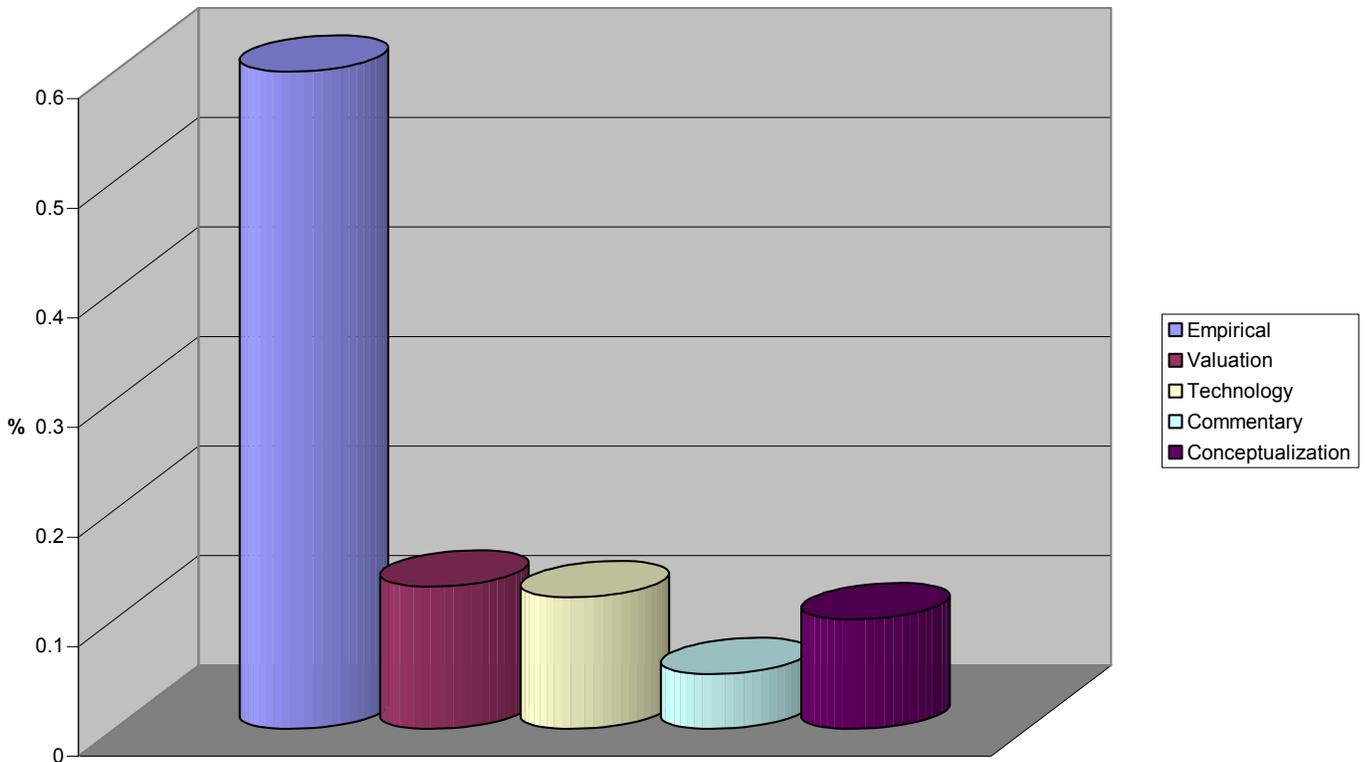


Figure 2.1: Percentage of Articles by Category

Methodological Overview

Numerous authors have presented formal models and guidelines for scale development. DeVellis (1991) provides one set of guidelines for the proper application of theoretical knowledge in scale development that includes (1) clearly determining what is to be measured; (2) generating an item pool for the instrument; (3) determining the format to be used in administering the instrument; (4) recruiting experts to review the items to confirm their appropriateness for the measure; (5) determining validation items or other instruments to include;

(6) administering the new items, and any validation items that have been included, to a sample from a specified population; (7) analyzing the data collected during sampling; and (8) revising the scale to determine if more items must be added or if items can be deleted to strengthen the instrument.

A comparable set of instructions is provided by Nunnally and Bernstein (1994) for the development of the different types of measurement instruments. In the task of construct validation, Nunnally and Bernstein (1994) indicate that three aspects of the process must be considered: (1) specifying the domain of relevant variables; (2) determining the extent to which observables measure the same or different things; and (3) doing relevant research to determine if the properties of the measure are consistent with the substantive theory. It is the use of the measure that is most important in the validation process, not the instrument itself (Nunnally & Bernstein, 1994). The initial steps in this process, must not be taken lightly when attempting to develop a new measurement instrument for use with children (or any other vulnerable population). The degree of specificity in deciding upon constructs to measure can make the difference in how future clients are perceived and in the kinds of interventions and treatments that will be implemented (Fortune & Reid, 1999).

The most recent undertaking to provide guidelines for scale development is found in a two part series specifically designed for use in developing rapid assessment instruments (Springer, Abell, & Hudson, 2002; Springer, Abell, & Nugent, 2002). In these volumes, two primary components, conceptual design and psychometric validation, are outlined with subcategories focusing on tasks involved in the development of a new RAI. A number of tasks are involved in each component. It is upon these guidelines that this methodological section will be based.

Conceptual Design

Conceptual design focuses upon the preliminary work that must be performed prior to the validation and subsequent standardization of an instrument. This component includes identifying and defining the construct(s) of interest; selecting the format for the RAI; creating the items to coincide with the RAI constructs; and obtaining expert opinion as to the appropriateness of selected items.

The goal of identification and definition of constructs is to be completely sure of what it is that you would like to measure and for whom the measure is to be created. DeVellis (1991)

indicates that in order to gain clarity as to what will be measured "one should not overlook the importance of being well-grounded in the substantive theories related to the phenomenon to be measured " (p.51). Theory can help to explain how a new or redefined construct relates to phenomena already in existence. For example, attachment theory may assist the LSIC developer in recognizing that children in care exhibit higher rates of emotional and behavioral disturbance due to variations in attachment relationships. Constructs focused on emotional and behavioral disturbance in the LSIC are specified below:

Constructs Related to Emotional Stability

- Depression - this construct is defined by diagnostic criteria and symptoms outline in the DSM-IV (American Psychiatric Association, 1994). Depression includes diminished interest in pleasurable activities, significant weight loss or gain, insomnia/hypersomnia, low energy or fatigue, poor concentration, or feelings of hopelessness.
- Suicidal ideation - this is indicated by a child's thoughts, ideas and intentions of harming or killing self (suicide).
- Anger – this is defined by criteria established in the literature on anger (Biaggio & Maiuro, 1985; Jacobs, Phelps, & Rohrs, 1989; Spielberger, Jacobs, Russell, & Crane, 1983; Spielberger & Butcher, 1985) and as outlined in *the Dictionary of Behavioral Science* (Wolman, 1989). Refers to an emotional state consisting of feelings that vary in intensity, ranging from low intensity reactions such as mild irritation to high intensity reactions such as fury, hostility and rage. Verbal/nonverbal responses include use of profanity; clenched fists; yelling; screaming; pounding, etc. Anger also includes increased emotional states and autonomic nervous system arousal as evidenced by physiological responses (facial grimaces; tightened body and face muscles).

Depression and suicide are two inter-related constructs. Often children who are depressed will also have feelings of hopelessness, worthlessness, and recurrent suicidal ideation. Severe cases of depression may even lead to suicide attempts (American Psychiatric Association, 1994). Anger is a separate construct that also converges with emotional stability. Anger in children often occurs in response to threatening or fearful situations in which the child is placed or continues to face. As mentioned previously, anger in children is related to separation of the child from their primary attachment figure (Cassidy & Shaver, 1999).

Stone and Stone (1983) contend that emotional attachment is a very healthy and vital part of child well being and sense of stability. Keeping families together is the goal of such programs as Homebuilders (Forsythe, 1992) because they recognize the association between child well being and family unity. When a child is removed from his/her home, the separation leads to instability. Social attachment theory postulates that children who have lost the sense of permanence in their lives often exhibit deficits in mental health, including feelings of depression, anger, and hopelessness (Bowlby, 1982). When controlled and used constructively, anger can be a useful emotional reaction to disturbing situations. Anger that is destructive and dysfunctional can lead to harmful, aggressive actions that may harm the child and others' in the child's immediate environment (Cassidy & Shaver, 1999).

Constructs Related to Behavioral Stability

- Aggressive tendencies - This is any verbal or physical act that the child engages in that is intended to threaten or result in harm to someone; or intent to harm someone.

Aggression is an essential element related to behavioral stability. Aggressive children often react to perceived hostility in others. When a child feels threatened, he or she may exhibit signs of aggression by becoming disruptive, having temper tantrums, or refusing to adhere to requests commands. Identifying these tendencies in children and adolescents is essential in assessing those child characteristics that may be harmful.

Once the overall constructs have been established, the developer decides on the format for the new RAI. There are a number of scaling techniques to choose from including Thurstone scaling, Guttman scaling, Likert scales, and Semantic differential. Thurstone scaling is a technique for creating indicators of variables that have a clear intensity structure among them. Guttman scaling is another scaling technique that uses the empirical intensity structure among several indicators of a given variable. One very popular method uses the Likert-type format which is based on use of standardized response categories. In semantic differential scaling, item responses are provided in choices between two opposite positions (e.g., true versus false). Deciding upon format may appear simplistic in that one can just choose a scaling technique and then focus on selecting items, yet the two steps must be taken into consideration simultaneously to ensure that the format matches the wording of items (Babbie, 1998; Fortune & Reid, 1999; Marlow, 1998).

When considering items that relate to your construct or constructs, these questions may be

useful in guiding their development: Do the items reflect the purpose of the scale? For example, an item that asks the subject how often they get sleepy during the day, in order to capture the construct of emotional stability, is not appropriate as the only indicator of depressive symptomatology due to the fact that daytime fatigue is a symptom for many conditions including job stress and pregnancy. Has the developer exhausted the pool of items that may exist in the universe of items that may be available to capture the constructs being tested? Any scale development guidebook will profess that the larger the item pool, the better. The items can even be redundant to a certain extent because the developer wants more initial items than is possible to use in the final scale (DeVellis, 1991; Fortune & Reid, 1999).

Scale developers should avoid items that are very long or ambiguous. The scale should be very straightforward and self-explanatory so that directions and items will not have to be re-interpreted by the subjects. The reading level is most important when attempting to work with a heterogeneous sample. Unless the developer is administering the tool to rocket scientists, reading level should be as simplistic as possible. This is most useful advice when attempting to create a self-report rapid assessment instrument to be given to children (DeVellis, 1991; Springer, Hudson, & Abell, 2002).

Experts may be other researchers interested in the same population or problem to be measured or they may be administrators, practitioners and clinicians who work directly with clients for whom the RAI is to be developed. The more intimate a potential expert is to the subjects for whom the scale is created, the more useful the information they provide is likely to be. Although it is beneficial to include the opinion of experienced researchers and clinicians in scale development but the final format and structure of the scale must ultimately be the responsibility of the developer (DeVellis, 1991; Springer, Abell, & Hudson, 2002).

Psychometric Validation

Psychometric validation includes decisions related to analysis and interpretation of the strengths and weaknesses in the newly developed measure. This includes attention to procedures used to establish reliability and validity of the measure, the design of the study, the procedures for collecting data by administering the measurement package to a selected sample, and analyzing the data once it has been collected.

When developing a new RAI, careful attention should be given to issues of reliability and validity. Reliability refers to the instruments ability to measure the same variable at various times

and reach similar conclusions. Validity refers to the instruments ability to measure what it is designed and intended to measure. A measure, however can be reliable without being valid (i.e., consistently measuring something it was *not* intending to measure). On the other hand, a measure that is valid will also measure what it is supposed to measure on different occasions (Babbie, 1998).

Reliability. There are several procedures used to establish reliability. Test-retest reliability involves administering an instrument repeatedly to determine if similar results are obtained over time. When results of the test-retest method are high this is an indication that the measuring instrument is stable or consistent over time. Random changes are less probable when results from repeated administrations of the instrument remain the same, albeit some small changes in scores are expected over time. One problem related to the test-retest method of determining reliability is the influence and learning that occurs when administering the same instrument on more than one occasion to the same subjects (Bloom, Fischer, & Orme, 1995; Spector, 1981; Williams, Unrau, & Grinnell, 1998). Subjects may be influenced to answer the same or in a different manner on subsequent administrations regardless of actual changes in their attitudes or behaviors. They may have remembered the answers previously recorded and merely repeat similar answers in retest situations. Subjects may also have learned how they are expected to behave or what attitudes they are expected to have and will answer accordingly. If an instrument can be strongly influenced by subject memory or repetition, this method of determining reliability is not recommended (Marlow, 1998).

Split-half reliability divides the instrument into two halves to be compared for similarities of results. This method is used to determine the degree of homogeneity of a measuring instrument. In this case, a single item pool is divided into two subsets that are as equivalent as possible. If respondents obtain similar scores on the two halves then the measure is shown to be internally consistent. Homogeneity refers to the internal consistency or inter-item reliability of an instrument (DeVellis, 1991; Fortune & Reid, 1999; Williams, Unrau, & Grinnell, 1998). One major problem with the split half method is in making sure that both halves of the instrument are truly equivalent. Computing a coefficient of equivalence such as Cronbach's alpha (to be discussed below) has provided a way to randomly assign items to halves in the measuring instrument thereby assisting in creating equivalence in the two halves of the instrument (Marlow, 1998).

Alternate forms reliability uses two equivalent forms of the same test to be given to the same people. This technique creates two entirely separate instruments with items that are similar in that they ask the same questions but in differing ways. The alternate forms must contain equivalent questions to be fair to all subjects. Developers attempting to use this approach must take into consideration the time and expense of creating two equal tests. Other problems are similar to those found in using the test-retest method (Marlow, 1998; Williams, Unrau, & Grinnell, 1998).

With Cronbach's alpha or coefficient alpha, each item is compared to all the other items in the scale using statistical procedures. Coefficient alpha is another method of determining the internal consistency of a measuring instrument and provides more information about homogeneity than less powerful reliability methods. Alpha is defined as proportion of total variance found in a scale that may be attributed to a common source; the true score of the variable underlying a set of items. Given a set of items, alpha is the average inter-item correlation. The extent to which the instrument measures the concept or concepts it intends to measure is accomplished if the coefficient alpha shows high equivalence (Bloom, Fischer, & Orme, 1995; DeVellis, 1991; Marlow, 1998; Monette, Sullivan, & DeJong, 1998). In this method and other coefficients of reliability, .00 indicates no equivalence and 1.00 indicates perfect equivalence among all items. A strong correlation, (above .80) is an indication that the instrument is stable over time (Fischer & Corcoran, 1994; Fortune & Reid, 1999).

Although an acceptable level of reliability generally depends on the instruments ultimate purpose, acceptable estimates may be based on those delineated by scale development researchers (DeVellis, 1991; Hudson, 1982; Springer, Abell, & Nugent, 2002). With continued advances in recent RAI development (and consequent improvement in measurement characteristics across the field), Springer, Abell, & Hudson (2002) have recommended the following guidelines for determining acceptable reliability coefficients:

- < .70 = Unacceptable
- .70-.79 = Undesirable
- .80-.84 = Minimally acceptable
- .85-.89 = Respectable
- .90-.95 = Very Good
- >.95 = Excellent

Standard Error of Measurement (SEM). Examining the amount of error in an instrument can also provide a direct estimate of reliability. The Standard Error of Measurement (SEM) is an estimate of the standard deviation of error. Nunnally and Bernstein (1994) provide a technical discussion of SEM, which is computed as:

$$SEM = \sigma_o \sqrt{(1 - r_{tt})}$$

where

σ_o = standard deviation of the observed scores, and

r_{tt} = coefficient alpha

This establishes a probable zone in which individual true scores may lie. SEM can be calculated with reliability coefficients from internal consistency data (Newcomer, Barenbaum, & Bryant, 1994; Springer, Abell, & Hudson, 2002). SEM has an advantage over other approaches in that its value is not influenced by differences in the standard deviation and variance from sample to sample (Hudson, 1982). Although there are no established rules for the range of scores in which a given tool's SEM should fall, it is well established that the smaller the SEM, the more confident one can be in the instrument's results. The most recent attempt to specify criteria indicates that the SEM should be approximately five percent (or less) of the range of possible scores (Hudson, 1982; Newcomer, Barenbaum, & Bryant, 1994; Springer, Abell, & Hudson, 2002). Springer, et al. (2002) recommend that scale developers compute the SEM prior to making final conclusions about the reliability of a measuring instrument.

Validity. Several approaches are used to determine the validity of a measuring instrument. These techniques are described below.

Face validity has been used interchangeably with content validity in some research texts while others clearly specify that they are two separate methods. Face validity refers to the subjective determination that an instrument measures what it intends to measure. In examining this method, the developer wants to determine if a logical relationship exists between the variables under study and the measuring instrument to be used to capture them (Bloom, et al., 1995; Monette, et al., 1998).

Content validity can be considered an extension of face validity in that it refers to the extent to which a specific set of items represents the instrument. The developer wants to know if

the items are relevant to the concept to be measured. This is also a subjective determination yet can be more useful than face validity. Results may be based upon opinions of experts chosen to examine the items on the basis of their familiarity and experience as related to the content of the instrument (Williams, et al., 1998).

Construct validity focuses on the conceptual relationships between the measuring instrument and other variables hypothesized theoretically. Convergent construct validity is determined by the correlations between the instrument and theoretically related variables. An ideal way to establish construct validity is to identify other variables that have a hypothesized relationship to the new instrument. Thus, two separate, valid instruments that capture similar concepts should correlate highly with each other, positively or negatively (Springer, Abell, & Hudson, 2002).

Discriminant construct validity provides evidence that concepts captured in an instrument should not correlate with concepts that are not theoretically related. In this case, two similar instruments should not correlate highly with each other if they capture different concepts (Babbie, 1998; Fortune & Reid, 1999).

Criterion-related validity utilizes a specified external criterion to establish validity. There are two categories of criterion-related validity: predictive and concurrent validity. Concurrent validity is used to determine present or current attitudes and behaviors. Two types of concurrent validity include known-instruments and known groups validity. Predictive validity is used to determine future events (Babbie, 1998; Monette, et al., 1998; Williams, et al., 1998). The exactness required in establishing criterion-related validity necessitates caution on the part of the instrument developer. Rather than accepting an approximate relationship as in construct validity, criterion-related validity seeks to ensure that the two measures capture the exact same concept. The reader is referred to the two part series on creating rapid assessment instruments for a more in-depth discussion of the potential risks (Springer, Abell, & Hudson, 2002; Springer, Abell, & Nugent, 2002).

Factorial validity can be assessed through exploratory or confirmatory factor analysis. Exploratory factor analysis (EFA) is used when very little empirical literature exists as related to the constructs of interest, the number of factors to be determined is unknown, the factors are uncorrelated, or the variables are free to load on all of the factors. EFA assumes that the researcher did not have any preconceived theoretical notions concerning the factor structure of

the new instrument, otherwise the researcher may want to just “confirm” the factor structure rather than explore it (Springer, Hudson, & Abell, 2002).

Confirmatory Factor Analysis (CFA) should be strongly considered if a scale developer already has a hypothesis concerning factor structure and relationships between items. Often the domain sampling model (Nunnally & Bernstein, 1994) is used to generate items that reflect the operational definitions of constructs in a measuring instrument. When this model is employed, CFA can provide confirmation that the number of factors underlying the items is in correspondence to the number the developer expected. The CFA may be used to support the precise item groupings that the developer intended when creating items for the scale (DeVellis, 1991). The multiple group method and structural equation modeling are two procedures that can be used to conduct a confirmatory factor analysis (Nunnally & Bernstein, 1994; Springer, Abell, & Hudson, 2002; Springer, Abell, & Nugent, 2002). CFA is used to confirm a structure already predicted as opposed to determining a previously unknown structure.

In determining what is "good" validity, the developer should recognize that validity coefficients are often much smaller than reliability coefficients (Hudson, 1982; pp. 93-94). The upper limit of the validity coefficient is obtained from the square root of an instruments' reliability, however this theoretical upper limit is seldom obtained in practice.

Design

The design of a scale validation study requires focus on sampling, data collection procedures, data analysis and interpretation of results.

In a perfect research world, a researcher would ideally choose a randomly selected sample from a carefully specified and representative population. When choosing an appropriate sample for study, the developer must take into consideration not only the population from which the sample will be generated but also the place or setting where the study will take place, and the problems or issues that will be addressed by the study. Heterogeneity in the sample will help to ensure that scores for subjects will represent the entire range of scores that are possible within the population as a whole. Subjects should vary along dimensions of gender, ethnicity, culture, socioeconomic status, and geographical location. To acquire such a diverse sample is often difficult to do with clinical samples (Springer, Hudson, & Abell, 2002). The approach to choosing a sample can be generated through probability or nonprobability sampling.

In social work research, sampling involves selecting a population (e.g., all children in

out-of-home care), establishing a sampling frame (e.g., a list of all current children in an out-of-home care facility), and specifying a sample (selected children from facility) from which certain attributes will be studied. Nonprobability sampling involves selecting subjects such that the researcher cannot determine the probability of subjects in the sampling frame being selected. There are four common types of nonprobability sampling techniques: (1) accidental/convenience sampling (the selected sample is generated by using any subjects available for study); (2) snowball sampling (sample subjects already chosen provide information to the researcher about other possible subjects to choose for the sample); (3) quota sampling [the sample is first categorized by certain specified characteristics or criteria (e.g., age range; race; gender) then subjects are selected by using anyone who is available and that meet the specified criteria]; (4) purposive/judgmental sampling (sample is selected deliberately on the basis of specified characteristics of the study). It is also called judgmental sampling because the researcher uses his or her own discretion in determining which subjects will be most useful or representative for study purposes (Babbie, 1998; Fortune & Reid, 1999).

Probability sampling enhances the capacity for generalization of study findings because the researcher can specify the likelihood of including each subject in the population as a part of the study sample. More representative samples are possible using this sampling approach. There are a number of different strategies that can be used to obtain a probability sample: (1) simple random sampling (subjects in a population are assigned numbers, a set of random numbers is generated, and subjects for a sample are chosen by random selection); (2) systematic sampling (sample is selected from every n th subject in the total listing from the sampling frame; for example, every seventh student is chosen from a listing of all 12th grade students in a high school) (3) cluster sampling (involves a number of stages in which groups of subjects are initially sampled then a sample is chosen from these sub-groupings; for example, a sample of high schools may be chosen, then obtain a list of 12th grade students from all the selected high schools, then draw samples of 12th grade students from each high school). Both simple random sampling and cluster sampling approaches can be stratified. This involves grouping subjects into homogeneous groups (strata) before drawing a sample to improve the representativeness of the sample to be studied (Babbie, 1998; Fortune & Reid, 1999).

The criterion established within classical measurement theory requires that developers sample at least ten subjects per item. This helps to increase the power of the statistical tests that

must be conducted. Springer et al. (2002) note that the most important considerations are (1) relevance to the target problem; (2) sufficient sample size; and (3) random selection of subjects, respectively. Developers should also be prepared to justify any unmet considerations.

A measurement researcher will also want to determine the factor analytic techniques to use prior to collecting data. Generally speaking, factor analysis assists the researcher in the empirical establishment of the number of constructs (or factors) underlying a set of items. Factor analysis answers the questions: How do item responses cluster together? Which items cluster together with respect to specific factors? And how many factors are necessary to explain the relationships among the scale items? Factor analysis serves at least three purposes: (a) to help determine the number of factors underlying a set of items, (b) to help explain variation among the factors, and (c) to provide meaning to the factor structure that may account for the variation among the total set of items (DeVellis, 1991). The two techniques used in factor analysis, exploratory and confirmatory have been discussed earlier.

Technology Review

Determining the level of stability of a child is essential to the completion of permanency planning. During this difficult period in the child's life, being removed from the home can be a crisis, even when there has been abuse (Parad & Parad, 1990; Liles & O'Brien, 1990). Children often go through a myriad of emotions including anger, frustration, confusion, and depression (Barth, 1990). The child experiences various levels of emotional and behavioral challenges as a result of exposure to an abusive situation. Constructs related to emotional and behavioral factors must be thoroughly explored in order to determine if the child is stable enough to thrive in out-of-home care. The following is a critique of those measures that have been previously developed and may be theoretically related to the constructs of the LSIC.

The technology component of an applied social science refers to the methods social workers use for interventions or the procedures used to develop intervention tools. One specific set of technological tools that has gained recognition in the social work field is the Rapid Assessment Instrument (RAI). RAIs were first described in the early 1980s and are now used to assess a wide range of social problems (Levitt & Reid, 1981; Hudson, 1982; Springer, Abell, & Hudson, 2002; Springer, Abell, & Nugent, 2002). RAIs are beneficial in that they are:

- short and quickly completed (usually only 1-to-2 pages)
- easily administered
- written in straightforward language
- easily scored and interpreted

Review of Measurement Instruments

Once a child's level of stability is determined, social work professionals may then be better equipped to place children in the most appropriate settings and provide the most effective interventions. This could also help to identify those children who are in need of further assessment and/or observation. The standardization of assessment procedures could help to provide equality of services across cultures, ages and gender.

These additional scales may be useful for construct validation of this new measure. Criteria for choosing measures to review included:

1. rapid assessment instruments
2. measures with constructs related to depression, suicide, anger and aggression
3. self-report instruments (administered to or read directly to subjects)
4. measures for use with child and adolescent populations
5. measures with adequate psychometric properties
6. instruments written in English

This criteria were established in order to match the reviewed measures with the proposed structure of the LSIC. Berrick, Frasch, & Fox (2000) indicate that acquiring the perspectives of children in care is one of the most important challenges in child welfare today. These perspectives can be tapped to a great degree by self-report measures such as the LSIC and others that will be reviewed below. Specifically, the topics discussed will relate to construct identification and definition, scale item format and structure, norming, test reliability, and validity (see Table 2.3).

Construct identification and definition. The theoretical perspectives previously discussed provide a basis for the relationship between items generated in the measurement instruments and the definitions given for emotional and behavioral indicators. In addition, much of the research and discussion in social work literature has supported concepts relevant to emotional instability and behavioral problems in children. The measurement instruments in this review (see Table 2.2) can be divided into two major types: emotional and behavioral. Of the

two, emotional measurement instruments are most prevalent. However, this may be due to several reasons: the behavioral scales are frequently completed by others who can observe the child's behavior rather than self-report of the child, behavioral rating scales are often lengthier due to the wide range of behavioral indicators possible, and behavioral measures may be less of a priority to develop because of the ease with which observable behaviors can be reported. Emotional states and tendencies (e.g., suicidal ideation or depressed mood) may be more difficult to determine at a glance.

The Behavior Rating Index for Children (BRIC; Stiffman, et al., 1984) measures children's problems. The items included in the BRIC are derived from a number of sources including established behavioral inventories (e.g., the Child Behavior Checklist) and the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV; American Psychiatric Association, 1994) Classification System for Children. Five of the measures listed in Table 2 directly address depressive symptomatology.

The Children's Depression Inventory (CDI; Craighead, et al., 1998), the Depression and Anxiety in Youth Scale (DAY; Newcomer, et al., 1995), the Depression Self-Rating Scale (DSRS; Birlleson, 1981), and the Short Mood and Feelings Questionnaire (SMFQ; Costello & Angold, 1988) contribute all or part of their definitions directly to criteria found in the DSM-IV. The SMFQ also included symptoms not found in the DSM-IV (loneliness and feeling unloved). The Reynolds Adolescent Depression Scale (RADS) makes it known that it is not derived from DSM-IV diagnostic criteria (Miller & Kamboukos, 2000; Reynolds, 1986). And it is purported to be the only instrument designed specifically to measure depressive symptoms in adolescents.

Other emotional constructs associated with depression are hopelessness and suicidal tendencies. The Hopelessness Scale for Children (HSC; Kazdin, et al., 1983) is said to be an important instrument to use with suicidal children. The HSC defines hopelessness as negative expectations towards the future and self. The Multi-Attitude Suicide Tendency Scale (MAST; Orbach, et al., 1994) defines suicide conceptually as related to repulsion or attraction to life and death. Orbach, et al. (1994) note that a child's attitude about life and death can determine actual tendencies toward or against suicide.

Assessing anger in children and adolescents appears to be a relatively new practice. As such, very few instruments are available to capture the characteristics that reflect anger in childhood (Jacobs, et al., 1989; Musante, 1999; Novaco, 1994; Spielberger, 1988; Swaffer &

Epps, 1999). Two anger scales met the criteria for a rapid assessment, self-report measure. These two instruments complete the list of measures of emotional constructs, the Pediatric Anger Expression Scale (PAES; Jacobs, et al., 1989) and the State-Trait Anger Expression Inventory (STAXI-2; Swaffer & Epps, 1999). The PAES defines anger in terms of Anger In (AI-anger suppressed or directed inward), Anger Out (AO-anger expressed outward), Anger Control (AC-a focus on maintaining control of anger reactions), and Anger Reflection (AR-focus on cognitive resolution of stimulus event conflict or frustration rather than focus on impulsivity). These concepts have been the focus of research in behavioral medicine due to the associations between anger expression and physiological disorders (e.g., Coronary heart disease and high blood pressure). Jacobs, et al. (1989) indicate that children most likely to experience negative emotions will also openly express anger more often.

The STAXI-2 is a multi-dimensional scale that defines anger as an emotional state ranging in intensity from mild irritation to rage or hostility. Two domains of anger are included in the STAXI-2 (state-trait anger and the mode of anger expression). State anger involves the anger that is experienced at the present time and trait anger involves a general tendency to experience angry emotions. Separate from state-trait anger is the anger expression domain which focuses on the transmittal of anger outwardly (toward the environment and those in it) or inwardly (anger toward self or anger controlled within).

These constructs have been chosen because of their importance in assessing emotional and behavioral stability in children. To date, the Diagnostic and Statistical Manual of Mental Disorders (DSM-IVTR) provides the most comprehensive definition of depressive and suicidal symptomatology. Definitions of anger found in the PAES (Jacobs, et al., 1989) and the STAXI-2 (Spielberger, 1988) were strongly influenced by the work of Spielberger (1988) who examined anger and aggression mainly in adult populations. A few studies have been conducted to assess anger and aggression in children and have found that instruments previously used in adult populations can be useful as measures of anger and aggression in children (Musante, Treiber, Davis, Waller, & Thompson, 1999; Swaffer & Epps, 1999).

Both theory and research indicate that children who exhibit higher levels of depressive symptomatology, suicidality, and anger have more emotional problems. Very frequently these problems are manifested in their behaviors. In an ongoing assessment process, social workers need to determine if any actions or tendencies are harmful to the child or to those the child will

come in contact with on a daily basis. This is crucial in out-of-home care for children. The assessment tool that can accurately detect dimensions of these constructs would be an indispensable resource to those working with children in care.

Item format and structure. Format for scale development includes a number of components or tasks that must be completed to create the new scale structure. Developers must determine the age of the subjects who will be administered the tool, the reading level, the dimensionality, and the scale length (Springer, Abell, & Hudson, 2002). Those instruments designed for younger children had a lower reading level or had to be read directly to the child. The MAST and the RADS had a fifth-grade reading level making them less suitable for younger children or children with learning disabilities.

The DSRS (Birlson, 1981) is specifically designed for use with children 7 - 13 years of age. The terminology used may be outdated and age-specific. Such wording as "tummy aches" and "can hardly stand it" (Fischer & Corcoran, 1994, p. 465) may not be common terms used by all children in that age range. Double-barreled questions such as "Tomorrow seems unclear and confusing to me" or "I don't have good luck and there's no reason to think I will when I grow up" (Fischer & Corcoran, 1994, p. 479) complicate the items in the HSC and should be avoided (DeVellis, 1991). In this case, the child must first believe that he or she can have good or bad luck (one response of true or false) and then must also choose whether this belief will also span his or her adult life as well (another response of true or false); all in one item. The three choice response categories also limit its strength in determining reliability. Similarly, the HSC (Kazdin, et al., 1983) only uses a true-false dichotomy for its 17-item instrument. The more responses an instrument provides, the more opportunity there is to enhance reliability. Yet, this may be less pragmatic if subjects (e.g., children) have more difficulty choosing responses if there are too many choices (Springer, Abell, & Hudson, 2002).

The BRIC included three items that are omitted from the final scoring because they are not problem-oriented, which makes it a ten item scale when scored. The BRIC, CDI, DSRS, HSC, MAST, RADS all focus on one main construct that may be divided along several subscales. The DAYS has two main constructs related to Major depressive disorder and Overanxious disorder. Both anger scales address anger expression as well as the dyadic components of state-trait anger. The DAYS and SMFQ have child and parent versions of the instrument, with DAYS also have a teacher rating scale.

In order to be considered for review, all scales had to meet the criteria for a rapid assessment instrument (RAI). The scale length for all ten scales met the criteria for being short in length, easy to administer and used with child and adolescent populations. Scales that have fewer items may be most useful for administering to children (Birlleson, 1981; Kazdin, French, Unis, Esveldt-Dawson, & Sherick, 1983; Stiffman, Orme, Evans, Feldman, & Keeney, 1984). Children who are in distress (as in the case of children removed from their homes) are seldom capable of paying attention for a long time. Longer scales that address multiple issues are more difficult to complete by children. This makes the structure of the BRIC, HSC, and DSRS scales ideal in that they have less than 20 items in a one-page format that can easily be administered with clear yet minimal directions.

These scales, however are limited by their unidimensionality, terminology and age of subjects. Although the BRIC purports to capture a wide range of behaviors, the scale is limited to those observable behaviors that can be recorded by those in the child's environment (which includes the child). Emotional states relating to symptoms, moods, and feelings are needed to capture not only those dimensions of personality detectable by external observation but also what cannot be seen but is strongly felt by the child. In the case of child self-report it will always be necessary to include others' observations, yet more and more researchers are emphasizing the importance of obtaining the child's perspective as well (Berrick, Frasch, & Fox, 2000).

Standardization Procedures

The requirements of a highly standardized scale include a standard method for administering the instrument, an objective scoring system, and consistency in interpretation of item scores (Newcomer, Barenbaum, & Bryant, 1994). All measures listed in Table 2.2 were administered directly to subjects in each study and are scored according to the response continuum used (e.g., 5-point Likert scale). As previously noted, a few of the scales had more than one form to be rated by the child, parent or teacher (Costello & Angold, 1988; Newcomer, et al., 1995; Stiffman, et al., 1984). The MAST is the only scale not standardized using children in the United States (Orbach, et al., 1994). The representativeness of the MAST is questionable due to the use of Israeli students in all phases of the standardization process. Normative samples ranged from seventeen clinically depressed patients for the DSRS to over 2,700 children and adolescents in the CDI study.

Table 2.2: Review of Measurement Instruments

<i>Measure</i>	<i>Reference</i>	<i>Constructs Assessed</i>	<i>Format Used</i>	<i>Sample/Age</i>
Behavior Rating Index for Children (BRIC)	Stiffman, Orme, Evans, Feldman, & Keeney, 1984	Behavioral problems	13 item; self-administered (may be administered to child, parent or other person familiar with behavior)	Children of all ages
Child Depression Inventory (CDI)	Craighead, Craighead, Smucker, & Ilardi, 1998	Depressive symptomatology; fear anxiety, attributional style and social competence	27 item; self-report	Children 8-14 years of age
Depression and Anxiety in Youth Scale (DAYS)	Newcomer, Barenbaum, & Pearson, 1995	Major depressive disorder and overanxious disorder	28 item; self-report; Student Scale (Scale S); Parent Rating (Scale P); and Teacher Rating (Scale T)	Children 6-18 years of age
Depression Self-Rating Scale (DSRS)	Birleson, 1981	Depression, mood, affect, physiological and somatic complaints	18 item; self-report	Children 7-13 years of age
Hopelessness Scale for Children (HSC)	Kazdin, French, Unis, Esveldt-Dawson, & Sherick, 1983	Concepts related to hopelessness; loss of control; depression	17 item; self – report (may be read to child); Second grade reading level	Children 5-13 years of age
Multi-Attitude Suicide Tendency Scale (MAST)	Orbach, Milstein, Har-Even, Apter, Tiano, & Elizur, 1994	Defines concepts as they related to attraction to life (AL); attraction to death (AD); repulsion to life (RL); and repulsion to death (RD)	30 item; self-report	Adolescents 15-18 years of age
Pediatric Anger Expression Scale (PAES)	Jacobs, Phelps, & Rohrs, 1989	Anger in, Anger out, Anger Control , and Anger Reflection	10 item; self-report	Children 7-13 years of age
Reynolds Adolescent Depression Scale (RADs)	Reynolds, 1986	Depressive symptomatology including cognitive, motoric-vegetative, somatic, and interpersonal symptoms	30 item; self-report	Adolescents 12-18 years of age
Short Mood and Feelings Questionnaire (SMFQ)	Costello & Angold, 1988	Depressive symptoms and symptoms of tiredness, restlessness, and poor concentration	13-item; self-report	Children and adolescents 8-16 years of age
State-Trait Anger Expression Inventory (STAXI-2)	Swaffer & Epps, 1999	State anger (intensity of angry feelings at time of testing); Trait anger (propensity to experience anger)	44 item; self-report	Adolescents

Reliability. The consistency with which an instrument measures the phenomenon in question is considered its reliability. In order to achieve a stable assessment of target constructs, a measure must be sufficiently reliable. Measurement instruments reviewed in Table 2.2 show promising results as related to internal consistency and stability.

The BRIC showed more consistency when used with adult samples (Cronbach's alpha=.80-.86) versus child self-reports (.60-.70) and more stability with adults (.71-.89). This is noteworthy because as a self-report measure, BRIC is less reliable than when others' with knowledge of child behaviors are reporting. For the SMFQ, stability decreased over time with twelve month reliability coefficients ranging from (.28-.48). This is in contrast to the STAXI-2 (test-retest=.62-.81) and the DAYS (test-retest=.79) which had less variance over time.

Table 2.3: Reliability and Correlation Coefficients

<i>Measure</i>	<i>Reliability</i>	<i>Validity</i>
BRIC	Fair to good internal consistency: Adults (.80-.86); Children (.60-.70); Fair inter-rater (.51); Test-retest for children (.50); Stable with adults (.71-.89)	Good concurrent between children and parents (.65, $p < .001$); BRIC with CBC (.76, $p < .001$)
CDI	Fair to good internal consistency (.71-.89)	Concurrent with RADS, HAM-D, CAS, RCMAS, CASQ
DAYS	Depression (.84); Anxiety (.78); Total Scale S (.89); Good test-retest (.79) for Scale S	Construct and content validity; Moderate criterion-related (.53) with CDS, CMAS, and RADS (>.70 for each); Able to differentiate students with LD/CD from ND
DSRS	Fair internal consistency estimated by split-half reliability coefficient (.86); Split-half (.70)	Good concurrent validity with CDI (.81); Good known groups validity
HSC	Fair internal consistency (.71); Split-half (.70)	Good concurrent and known groups validity
MAST	Good internal consistency RL/AD (.76); AL/RD (.83)	Good concurrent validity; Fair known groups validity
PAES	Alpha coefficients for AI, AO, & AC (0.77, 0.77, & 0.67, respectively); Item remainder correlations (.37-.62)	AO correlated positively with other measures of state and trait anxiety and anger.
RADS	Internal consistency (.90-.96); Test-retest at 6 weeks ($r^2=0.64$); 3 months ($r^2=0.62$); 12 months ($r^2=0.40$)	Content validity of item content with symptoms - coefficients (.40-.70) for 25 of 30 items; Criterion-related validity with HAM-D (.83, $p < .001$); .68 to .76 ($p < .0001$)

Table 2.3 -continued: Reliability and Correlation Coefficients

SMFQ	High internal reliability (Cronbach's alpha =.87); Intraclass correlation coefficient at 1 week (.75); 12month stability coefficients (0.28-0.48)	SMFQ correlates with CDI ($r^2=0.45$) & NIMH-DISC($r^2=0.42$); SMFQ-C and SMFQ-P correlate with each other ($r^2=0.09$)
STAXI-2	Strong internal consistency and test-retest reliability for all six scales (Cronbach's alphas ranged from 0.70 to 0.93); Test-retest correlations ranged from 0.62 to 0.81 for all scales except S-Anger	Strong correlations with other anger and hostility measures for all six scales.

Standard Error of Measurement (SEM). One note must be made concerning the standard error of measurement (SEM); SEM is not uniformly reported in the technological articles listed in Table 2.2 and Table 2.3, although they may be found in the manuals for individual measurement tools (Newcomer, Barenbaum, & Bryant, 1994; Reynolds, 1987). It appears that this information has increased in importance along with other reliability and validity estimates in psychometric reports. Springer, Abell, & Hudson (2002) recommend calculating and reporting SEM along with other estimations of variance.

Validity. Validity refers the degree to which a scale measures what it is designed to measure. This is most frequently determined by comparing the instrument to similar measurement tools or to characteristics specified in the sample. Results extracted from the various technological articles reviewed showed that all measures (see Table 2.2) had fair to good validity estimates in some areas. The PAES (Jacobs, et al., 1989) reported low validity coefficients (female range -.43 to .49/male range -.58 to .52) when examining correlations between factor scores of the PAES and self-ratings, peer ratings, and teacher ratings. The highest correlations were found with trait anger (females .71/ males .74). As indicated in Table 2.3, the RADS and DSRS had particularly high concurrent validity with previously established measures.

Discussion

Family and child issues lead us to ponder many researchable questions but often we bypass the step in the research process that calls for theoretical assertions; the step that leads to the derivation of theoretical hypotheses. These hypotheses can be developed on the basis of

existing theory (ex. A theory of child stability in long term foster care predicated upon social attachment theory). One gap in the literature is the practiced use of theory in research activities.

In an ongoing debate as to the relevance of theory in social work research and practice, Thyer (2001) points out that theory is often not used in social work research activities because it may not be necessary for the type of research conducted in social work practice. He goes on to say that we should only expect theoretical "contributions of dissertations that test and expand theory and not expect theoretical contributions when a given study does not directly aim to test and expand theory (p. 22)".

In his fallibilistic response, Gomory (2001) argues that not only should we continue to test theories using more sophisticated methodologies (e.g., use of randomized controlled trials) but we should abandon those theories that do not pass rigorous empirical scrutiny. Gomory (2001) encourages social work students and researchers to look for new alternatives to those theories that must be abandoned, pointing out that this process of theory falsification will in turn benefit the social worker as well as the clients served. Testing theoretically relevant hypotheses may help to fill the gaps in the child welfare literature.

Reliability and validity are of primary importance in developing rapid assessment instruments such as the LSIC. Although measures reviewed in this critique warrant some merit, reliability standards depend a great deal on the decisions to be made about individuals under study. More serious problems demand more stringent standards (Springer, Abell, & Nugent, 2002).

Inclusion of more representative samples of children would also help to bring clarity to the variables that predict successful intervention with children. Those psychometric studies that were most encouraging used large, representative samples (Craighead, et al., 1998; Reynolds, 1986; Stiffman, et al., 1984) to compensate for limitations of the design. This helps to ensure that the study has adequate power for statistical tests, such as factor analysis. As previously noted, adequate sample sizes for instrument development studies consist of ten (10) or more subjects per item in the original item pool (Nunnally & Bernstein, 1994; Springer, Abell, & Hudson, 2002). Sampling concerns can be prioritized by their (1) relevance to the target problem; (2) adequacy of sample size; and (3) random selection of subjects, respectively (Springer, Abell, & Hudson, 2002). When these priorities cannot be met, the researcher must be prepared to compensate for those areas that are weakest and to explain any failure to meet these criteria.

There also appears to be a dearth of information related to multidimensional self-rating scales that can capture both emotions and behaviors of children in a single instrument. The Level of Stability Index for Children is designed to capture those constructs that are most important when assessing children's emotional state and behavioral tendencies that can cause harm to others (anger and aggression) or to the child (depression and suicidal tendencies). A comprehensive assessment package will contain information from all sources available to report on the child's needs, including the child's perspective:

With a half million children residing in out-of-home care in the United States, researchers should continue to include their perspective. Children can be important informants in our developing understanding of child welfare outcomes, yet Festinger's 1983 book title, *"No One Ever Asked Us"* continues to hold true today. The current challenge to child welfare investigators is to devise and refine techniques for gaining access to children in care and incorporating their perspectives into the research enterprise with deliberation and utmost care (Berrick, Frasch, & Fox, 2000, p. 127).

This "utmost care" referred to in the quote above should be extended to all children, as our most precious and most vulnerable citizens. Thus, the following research to develop a rapid assessment instrument will focus on meeting the challenge of refining the approach to discovering what is happening in the minds of our most vulnerable citizens whether they are in the school system or clinical treatment.

CHAPTER 3: METHODOLOGY

This study was conducted to develop and validate the Level of Stability Index for Children (LSIC), for use in research and clinical practice with children. The measure has been developed according to the criteria previously established and described for a rapid assessment instrument (RAI). Thus, it is intended to be a brief, self-report measure that is easily administered. This 34-item scale (see Appendix A) is to be used in all analyses for this study and has been modified from a previous 32-item version of the LSIC. LSIC item 1 - LSIC item 10 relate to Depression; Suicidal Ideation is indicated by LSIC 11 - LSIC 17; LSIC 18 - LSIC 25 are related to Anger; and LSIC 26 - LSIC 34 relate to Aggression. These domains have been mentioned repeatedly in discussion with experts in the field of child welfare and from a review of relevant literature.

The LSIC is a multi-dimensional, self-report scale that utilizes a 7-point Likert-type response set ranging from (1) none of the time to (7) all of the time. The initial, pre-validation form of the LSIC scored 92.8% on reading ease and on the Flesch-Kincaid, the grade level was at 1.8. The scale was designed for use with children 7-18 years of age.

The LSIC psychometric study has been conducted with 426 children and adolescents, with the majority of the sample directly from school populations. The original proposal was to use clinical settings, however this was not possible and, in consultation with my supervisory committee, alternative research sites were obtained. As a result of these changes, other revisions to the Human Subjects Application as well as the actual data collection procedures were necessary. These revisions will be specified in this first section of Chapter 3.

Prospectus Revisions

On September 30, 2002, a supervisory committee meeting was called to discuss the problems with data collection that had been a hindrance to obtaining the desired sample. A number of revisions were discussed and approved by the supervisory committee in order to maximize the potential for more subjects. Revisions to the LSIC protocol had to also be approved by the Florida State University Human Subjects Committee of the Institutional Review Board (IRB). These changes included:

- Inclusion of three schools (Nims Middle School, Rickards High School, and Florida State University School) and one program (Boys' Choir of Tallahassee) to the study.
- Additional information included in the Parental Consent Forms giving permission to provide incentives for students who return consent forms.
- Revisions to the Demographic Information sheet of the LSIC measurement package:
 1. "Ethnicity" added to the race item.
 2. Siblings living in the home added.
 3. Parents/guardians in the home added.
 4. Reference boxes for data collection methods.
 - a. Incentives used or not used.
 - b. Individual (one-on-one) assessments.
 - c. Group assessments.

The version of the data collection appearing in Appendix A reflects these changes.

Sampling Procedures

This study utilized purposive sampling wherein subjects were obtained from five research sites where agreement was reached to conduct the study. Purposive sampling, in which each subject is sought on the basis of his or her match to the primary characteristics desired for the study (children between ages 7-18 years of age), does not result in a representative sample from the larger population. This limits generalizability of the present findings, yet was deemed sufficient for purposes of this initial validation.

Parents were provided a cover letter (See Appendix D) indicating deadlines for returned consents. School teachers and other research contacts agreed that deadlines should not be very long, thus each site was given approximately ten days to have parents complete consent forms and return them to the investigator. For the Boys' Choir, Nims and Rickards, children were given the consent forms to take home, get signed, and returned to their instructors. For FSUS, consent forms were mailed to parents ten days prior to the deadline per school policy for research. FSUS forms were returned to the school administrator. Arrangements were made for the investigator to retrieve completed consent forms. Deadlines were established for the return of consent forms in order to expedite the assessment process. Once all parental consent forms were obtained,

arrangements were made at each research site to designate a time, date, and location for data collection.

Children who agreed to participate in this study needed to have a consent form signed by their parents and also needed to give assent prior to taking the assessment. Children were to check "assent" on the first page of the LSIC measurement package if they were willing to continue participation (Appendix A). The goal for participation was to recruit ten (10) children for each item in the original LSIC item pool. This indicates that for a 34 item RAI, 340 or more subjects were sought to conduct the study.

Steps that had to be completed in the sampling process included:

1. Obtaining Florida State University IRB approval
2. Obtaining research approval from research sites
 - Clinical Director approval for daniel, Inc.
 - Leon County School Board approval for Nims Middle School and Rickards High School.
 - Choral Director approval for Boys' Choir of Tallahassee.
 - Research Director approval for Florida State University School (FSUS).
3. Contacting research sites to arrange for dissemination of parental consent forms.
4. Specifying which subjects to assess for each research site (7-18 year olds).
5. Disseminating parental consent forms to parents of target sample (See Appendix A).
 - Parental consent forms were added to admissions forms at daniel, Inc.
 - Nims and Rickards subjects were given consent forms to take home and return.
 - Parental consent forms were given to Director of Boys' Choir to disseminate.
 - Parental consent forms were mailed to parents of target sample at FSUS.

Incentives were added to school consent forms for use in programs where there was a low initial return rate for parental consent. Only Nims Middle School required the use of incentives (school supplies for each participant) to obtain more consent forms. After the initial deadline had passed, only five consent forms had been returned. This return rate was very low (only 3% of potential Nims sample), as contrasted with rates of approximately 35% to 72% returns. . Decorative pencils with character erasers (approximate cost of 10 cents per subject) were distributed to subjects upon return of consent forms.

Data Collection Procedures

Assessment locations at each research site included:

1. Cottage lounges and kitchens at Daniel, Inc.
2. The media center and classrooms at Nims Middle School.
3. One classroom at Rickards High School (one all day assessment).
4. The rehearsal room for the Boys' Choir of Tallahassee.
5. The cafeteria for the Florida State University School.

On assessment day, a list of eligible students was given to the research contact person and children were assembled in groups for testing (with the exception of two children at Daniel who were administered the assessments individually per subject request). At all sites, child assent was requested prior to the reading of instructions. Children were to check "willing" or "unwilling" as indication that they agreed or did not agree to participate in the study. Instructions for each scale were read aloud and an example of how to answer was given. For example: "If one of your sentences read "I like pizza" and you would eat pizza everyday, which LSIC response choice would you choose? "All of the time" - number 7". Children were allowed to respond verbally to this question in order to ensure that they were listening to the example. The investigator also pointed out to each group of subjects that the CDI was formatted differently and that for each of the 27 questions, the subject had to choose one of three choices. Further instructions included reminding the subjects to complete their own work, information about confidentiality, and discussion of type of questions that could not be answered in order to avoid biasing the subjects (i.e., questions pertaining to definitions of terms such as "hopeless" could bias responses).

Variations in assessment procedures by research site included:

- Daniel - assessed small groups of 3-4 subjects at each visit (2 subjects were assessed individually per subject request for assistance) in the cottage kitchen and lounge area.
- Nims - groups of 25-30 students in the media center and classrooms at each visit.
- Rickards - all students assessed during their regular class time in one teacher's classroom. Class sizes ranged from 20 to 25 students per class. Assessments were completed in one day designated for the study.
- Boys' choir - the entire group was assessed on one day and at one time designated for the study.

- FSUS - two days were allotted for assessment; one day for approximately 75 students and another for approximately 130 students. Administrators were recruited as assistants to maintain the assessment atmosphere for these larger groups. Research questions were answered by the investigator although assistants were allowed to answer simple questions related to the instructions that were read aloud. No formal training given to assistants.

Criteria were not established to assess reading ability; however, the investigator depended upon the instructors and administrators to indicate any subjects with difficulties. Reading difficulties were only recognized by the investigator in one instance, at Daniel. The subject's package was not used in analyses because the subject was not able to comprehend the content of items. All other subjects completing the assessments were assumed to be competent to complete the assessments.

Assessments took approximately 20-25 minutes. Thirty minutes for those needing more time to complete the battery of tests. The measurement package consisted of the following information (see Appendix A for sample forms):

1. Consent forms for participation (required by the university and research sites);
2. Demographic information for children; including geographic location, age, gender, race, school grade, etc.;
3. Level of Stability Index for Children (LSIC);
4. The Child Depression Inventory (Kovacs, 1992);
5. The Pediatric Anger Expression Scale (Jacobs, et al., 1989); and
6. The State-Trait Anger Expression Inventory (Spielberger, 1988).

The consent forms included information pertaining to the child's anonymity and confidentiality of any information provided. No identifying names were placed on the instruments but a list of the children participating (along with consent and assent forms) has been kept in a separate secure location in order to keep track of those children who had already participated and to avoid duplication.

After each session, instruments were examined to ensure all pages had been completed. A more thorough examination of content was conducted during the coding of information and items. Prior to data analysis, demographic information and items on each scale were coded for data entry. Missing information was coded with a "9" and those measurement packages were

retained for analyses. For interval level data, the actual number was the code. For example, age was coded in whole numbers (A 12 year old child received an "age" code of "12"). Nominal level data received numerical codes. For example, gender was coded "1" for males and "2" for females. The data coding process was useful for closer examination of each package to determine usability in subsequent analyses. This closer inspection confirmed that all cases (N=426) could be retained.

Data Analysis

All data analyses were conducted using the SPSS (9.0 for Windows)[®] program (SPSS, 1999) and Lisrel 8[®] (Joreskog, Sorbom, du Toit, & du Toit, 1999). The SPSS program provides a comprehensive system for data analysis including descriptive statistics, assessment of reliability, and factor analysis. Descriptive statistics provided a profile of the final sample including information pertaining to the percentage of children of each age range, race and gender. Lisrel 8[®] allows the researcher to fit and test models to summary statistics. In the present study, this statistical software will be useful in testing the LSIC model fit for confirmatory factor analysis in Structural Equation Modeling.

The research question for this study is "Can a multidimensional, self-report, rapid assessment instrument be developed to reliably capture the constructs of depression, suicidal ideation, anger and depression in children and adolescents with evidence for validity?"

To ascertain face and content validity, an initial pool of items was constructed and distributed to a focus group (See Appendix B) consisting of teachers, counselors, and therapists of children with emotional and behavioral problems. This panel of experts provided ratings of each item as a means of determining content validity before administering the scale to the sample of children.

Estimates of the test's reliability will be examined using (1) internal consistency; and (2) standard error of measurement (SEM). Internal consistency reliability estimates are computed using Cronbach's coefficient alpha (α). In the domain sampling model (Nunnally & Bernstein, 1994), coefficient alpha (which is an average of all possible split halves), provides the statistical rigor that makes it the most appropriate estimate of internal consistency for rapid assessment

instruments such as the LSIC (Cronbach, 1951; Levitt & Reid, 1981; Reynolds, 1987). Low α is an indication that the measurement instrument is not long enough (does not include enough items) or the items have very little in common (Nunnally & Bernstein, 1994).

The Standard Error of Measurement (SEM) estimates the amount of error that is present in an individual's test score due to variability in standard error values and it provides a zone within which individual true scores may lie. SEM is calculated using reliability coefficients. Smaller estimates provide more confidence in the instrument's results. Acceptable estimates should be five percent (5%) or below the range of possible scores (Hudson, 1982; Newcomer, Barenbaum, & Bryant, 1994; Springer, Abell, & Hudson, 2002; Springer, Abell, & Nugent, 2002).

Three types of validity (content, criterion related and construct) are considered to ascertain the degree to which the LSIC measures the constructs specified by the developer. Content validity is generally built into an instrument during its development and involves the use of empirical literature and theory to inform item development. When applied to the LSIC, content validity focuses on whether the items of the multi-dimensional scale are representative of emotional factors (depression, suicide, and anger) and behavioral factors (aggressive tendencies).

Confirmatory factor analysis (CFA) was computed to determine factorial validity. This approach is used when item development involves an hypothesized factor structure (Nunnally & Bernstein, 1994). The multiple groups method and structural equation modeling have been used to determine the LSIC's factor structure. CFA was performed on the total item set for the LSIC. It is used as a means of determining the presence of the intended subscale structure. The multiple groups method is useful when the developer has a preconceived notion about which items would load onto what factors (Nunnally & Bernstein, 1994). As specified previously, item correlations for validity are lower than those for reliability coefficients. Thus, items falling around .60 are moderately high (Springer, Abell, & Nugent, 2002). The structural equation modeling approach compares model fit to model statistics and considers the correlation of error covariances to respecify the model; a consideration not feasible in classical measurement theory.

Convergent construct validity was tested using validated measures having similar characteristics. In addition to completing the LSIC, the sample of children will also complete the Child Depression Inventory (CDI; Kovacs, 1992), the State -Trait Anger Expression Inventory (STAXI-2; Spielberger, 1988), and the Pediatric Anger Expression Scale (PAES; Jacobs, Phelps and Rohrs, 1989). Correlation coefficients pertaining to construct validity will be reported. The

CDI has items relating to depression and suicidal ideation. The STAXI-2 and PAES include items associated with anger and aggressive tendencies (called Anger In and Anger Out in both measures).

Construct validity will be determined by testing two sets of assumptions. Convergent construct validity is evident when the scales that are designed to measure emotional and behavioral constructs are shown to correlate with theoretically related variables. Discriminant construct validity is reflected when LSIC scores do not correlate with variables that are theoretically unrelated (Hudson, 1982; Abell, 2001). Further hypothesized relationships include:

1. The LSIC scales are designed to measure the related constructs of depression, suicide, anger and aggression as previously defined.
2. Performance on the LSIC scales should be positively correlated with scores on the PAES, STAXI-2, and CDI. Items related to depression and suicide should correlate positively with items on the CDI. Anger and aggression items of the LSIC should correlate positively with items on the PAES (for children) and the STAXI-2 (for adolescents) which confirms convergent validity.
3. For discriminant validity, subscale scores should not be related to the variables of race, age, and gender of the child in the sample. Research indicates that depression, suicide, anger, and aggression are relatively similar for males and females regardless of age or race. Thus, scores on the LSIC subscales should not correlate highly with these variables in either direction (Frost, & Averill, 1982; Kovacs, 1992; Spielberger, 1999).

CHAPTER 4: RESULTS

The present study began with only one approved research site. Four new sites were included to maximize the number of children assessed in the sample. The initial site, daniel, Inc., was the only clinical group included. Samples of school children were obtained from Leon County Schools, a research school for children in Kindergarten to 12th grade (Florida State University School, also called Florida High), and a social work based outreach program for boys (The Boys' Choir). Data was analyzed for 426 children.

Agreements were made with administrators at each site to conduct the present study. In this agreement estimations of the potential number of subjects available were made and consent forms were duplicated in accordance with these numbers. Table 4.1a provides information about the potential number of subjects for each research location and the actual number of subjects who had returned consent forms, indicating eligibility for the study. Included in this group are the unusable returns. The potential sample includes those subjects whose parents were sent requests for consent. The sample of returns includes those subjects whose parents replied in the affirmative and who gave their own assent for participation.

Table 4.1a: Return Rates by Research Site

	<i>Potential Sample</i>	<i>Total Returns</i>
<i>Boys' choir</i>	150	76
<i>Daniel, Inc.</i>	Unspecified	22
<i>Florida high</i>	680	239
<i>Nims middle</i>	155	61
<i>Rickards high</i>	100	72
<u>TOTAL</u>	<u>1085</u>	<u>448</u>

Five assessments at daniel were not used in the analyses. Three completed assessments were not used because of refusal by the subjects' guardian ad litem to allow testing. One assessment at daniel could not be completed because of the child's lack of comprehension.

Another assessment at daniel was not completed because the child was unwilling to assent. Because the number of consent requests actually distributed at daniel could not be determined (due to incomplete clerical tracking of admissions during the data collection period), returns from daniel were not included in the response rate calculations for this study. The twenty-two usable returns from daniel were, however added to the total sample for subsequent analyses.

For FSUS, thirty-two (32) subjects were not available on assessment days. One subject returned a parent consent form which indicated that the parent did not want the child to participate. Two subjects were absent at Nims and one parent indicated refusal to allow participation on the consent form. Four students were absent on the day of assessment at Rickards.

Table 4.1b summarizes the sample of subjects who returned completed parent consents, gave assent on the dates for assessments, and whose data was determined to be usable for the analyses in this study. Six hundred eighty parents of Florida High students were contacted and almost half the sample was generated from this school. The usable response rate for the total sample was determined to be 41%.

Table 4.1b: Study Sample by Research Site

		Research Sites			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	boys' choir	76	17.8	17.8	17.8
	daniel, inc.	17	4.0	4.0	21.8
	florida state school	206	48.4	48.4	70.2
	nims middle school	58	13.6	13.6	83.8
	rickards high school	68	16.0	16.0	99.8
	9.00 ^a	1	.2	.2	100.0
	Total	426	100.0	100.0	

a. Research site not recorded

Demographics

Over 84% of the study sample lived in the Tallahassee area (Leon county) yet five counties were represented in the sample (see Table 4.2), including Duval, Gadsden, Jefferson, and Wakulla counties.

Table 4.2: Response Rates by County

		County of Residence			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	duval county	17	4.0	4.1	4.1
	gadsden county	22	5.2	5.3	9.5
	leon county	359	84.3	87.1	96.6
	jefferson county	11	2.6	2.7	99.3
	wakulla county	3	.7	.7	100.0
	Total	412	96.7	100.0	
Missing	9.00	14	3.3		
Total		426	100.0		

Children ranged from seven (7) to eighteen (18) years of age. The average age was thirteen (13) years for subjects ($M=13.4$; $SD= 2.1$). There were nearly 10% more males ($N=229$) than females ($N=187$) in the sample. Approximately fifty (50%) percent of the study sample consisted of blacks (African Americans). Gender and race (Table 4.3) may have been skewed as a result of the impact of the Boys' Choir, a group in which the majority of male participants are African American.

Table 4.3: Race/Ethnicity

		Race/Ethnicity			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	white	156	36.6	38.1	38.1
	black	214	50.2	52.3	90.5
	hispanic	13	3.1	3.2	93.6
	asian	8	1.9	2.0	95.6
	other	18	4.2	4.4	100.0
	Total	409	96.0	100.0	
Missing	9.00	17	4.0		
Total		426	100.0		

Table 4.4 displays the distribution of students across school grades. School grade ranged from first grade to twelfth grade. The smallest percentage of students were in the first grade (.5%) while the majority middle school with the largest percentage from sixth grade (18.3%).

Table 4.4: Grade in School

		Grade in School			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	2	.5	.5	.5
	2.00	3	.7	.8	1.3
	3.00	5	1.2	1.3	2.5
	4.00	8	1.9	2.0	4.5
	5.00	40	9.4	10.0	14.5
	6.00	78	18.3	19.5	34.1
	7.00	70	16.4	17.5	51.6
	8.00	77	18.1	19.3	70.9
	9.00	11	2.6	2.8	73.7
	10.00	53	12.4	13.3	87.0
	11.00	39	9.2	9.8	96.7
	12.00	13	3.1	3.3	100.0
	Total	399	93.7	100.0	
Missing	99.00	27	6.3		
Total		426	100.0		

For household composition, most subjects reporting this information indicated that they lived either with both (45%) or one (30%) parent. The remainder of the sample lived with either a combination of parents and stepparents or other adult in the home.

Table 4.5: Household Composition

	<i>Frequency</i>	<i>Percent</i>	<i>Valid Percent</i>	<i>Cumulative Percent</i>
<i>Both Parents</i>	193	45.3	47.0	47.0
<i>One Parent</i>	126	29.6	30.7	77.6
<i>One Parent with a Stepparent</i>	57	13.4	13.9	91.5
<i>Other Relative</i>	18	4.2	4.4	95.9
<i>Non-Relative</i>	17	4.0	4.1	100.0
<i>Total</i>	411	96.5	100.0	
<i>Missing (9.00)</i>	15	3.5		
<i>Total</i>	426	100.0		

For children responding to the question about siblings living at home with them, 394 reported having zero (0) to seven (7) brothers ($M=.7995$; $SD= .9533$). Three hundred ninety-one subjects reported having between zero (0) to seven (7) sisters (mean = $.8772$; $SD= .9715$).

Replacing Missing Values

"Good design dictates minimizing the impact of missing data" (Nunnally & Bernstein, 1994, p. 36). There are many ways to address the problem of missing data. Three generally acceptable approaches to compensating for missing values include:

(1) pairwise deletion in which items (observations) are only deleted when they cannot be used. This approach is a liberal one in which less data is lost due to missing values;

(2) listwise deletion is a more conservative approach in that the entire case containing missing values is deleted from the analysis. This approach is useful when you have large percentages of missing values; and (3) mean replacement in which an estimate is provided to replace the missing data (DeVellis, 1991).

Taking these three approaches into consideration, the larger the percentage of missing values, the more conservative should be the approach. Nunnally and Bernstein (1994) indicate that if the amount of missing data is large, results ascertained from using any of these approaches should be interpreted cautiously because these methods may not satisfactorily handle large proportions of missing observations.

Procedures for determining the approach to use for missing values began with cleaning of the raw data. After all input had been logged in the SPSS program, data was then "cleaned" by the investigator and investigative assistant. This procedure included the LSIC instrument as well as the PAES, STAXI-2-2, and CDI. Data was cleaned using the random selection approach. A die was thrown to determine the case number to begin with (case #3 and case #7), and then every tenth case was examined for errors. All incorrect entries were corrected upon discovery. Missing values remained very low for the PAES (0%-2.6%) , STAXI-2-2 (.8% - 3.8%), and CDI (0% - 2.6%). Frequencies were then analyzed for each of the 426 cases entered to determine percentage of missing values for the LSIC (See Table 4.6a). The percentage of missing values for LSIC item responses was low for all but one LSIC item (LSIC 29). The range of missing values were from 1 (.2%) to 9 (2.1%) cases missing.

Mean replacement was the method of choice because it was found that the percentage of missing values for most cases was low. Table 4.6a indicates that LSIC 29 is the only case with a large number of values missing.

The best explanation for the large number of missing values of LSIC 29 is administration error. Twenty-nine Nims middle school students received measurement packages that were copied incorrectly. Number 29 on the LSIC was not included in their instrument package. This error was not discovered until all instruments were completed and returned, thus the children could not be identified.

Table 4.6a: LSIC Items - Missing Values

<i>LSIC Items</i>	<i>Valid (Missing)</i>	<i>Percentage</i>
<i>LSIC 1, 8, 11, 13</i>	424 (2)	0.5%
<i>LSIC 2, 3, 4, 5, 6, 9, 10, 14, 15, 18, 19, 20, 21</i>	422 (4)	0.9%
<i>LSIC 7</i>	420 (6)	1.4%
<i>LSIC 12</i>	417 (9)	2.1%
<i>LSIC 16, 17</i>	418 (8)	1.9%
<i>LSIC 22</i>	421 (5)	1.2%
<i>LSIC 23, 24</i>	419 (7)	1.6%
<i>LSIC 29**</i>	395 (31)**	7.3%**
<i>LSIC 30</i>	423 (3)	1.7%
<i>LSIC 28, 31, 32, 33, 34</i>	425 (1)	0.2%

Mean differences were examined by comparing the mean for the Nims subgroup to the total sample mean. Once it was determined that there was not a significant difference in means, the total sample mean was also compared to the mean of the group with and without the small clinical sample (subgroup from daniel, Inc.). Table 4.6b specifies the means and standard deviations for the Nims and daniel subgroups and the total sample with and without daniel included.

Table 4.6b: Mean Responses for LSIC Item 29 Prior to Replacement of Missing Values

<i>Group/ subgroup</i>	<i>N of Cases</i>	<i>Mean</i>	<i>Std. Deviation</i>
Nims	29	1.72	1.51
daniel	17	2.82	2.16
total without daniel	378	1.71	1.34
total with daniel	395	1.76	1.40

A one-sample t-test was conducted to compare differences in raw data means between the Nims sample (test value = 1.7241) and the means of the other four groups combined. This test determined whether the Nims means were significantly different from those of the three non-clinical sites and the daniel site (clinical group). The issue at hand was whether means of Nims cases needed to be replaced with Nims means only rather than using mean replacement across all groups. The data was examined for LSIC item 29 only, in that these missing values were not based entirely on random error. The results for the four research sites (N=365) with M=1.7616; SD=1.3929 indicated that these mean differences were not statistically significant with $t(364) = .515$; $p=.607$.

Reliability of Standardized Measures

To determine the reliability of the three instruments used along with the LSIC, Cronbach's coefficient alpha was found for each global scale and subscales for the CDI, PAES, and STAXI-2 (see Table 4.7). Reliability estimates range from 0.0 to 1.0. The closer the estimate is to 1.0, the more confident one is in asserting that the measure produces a reliable set of scores (Springer, Abell, & Nugent, 2002). Criteria has been established for acceptability of reliability coefficients used with individuals. These stringent individual standards may be relaxed for a psychometric study like the one currently being examined. For example, an alpha level of .70 - .79 may be undesirable for use with individuals, but is within acceptable range for the LSIC.

Table 4.7 displays global data for the PAES, STAXI-2 and CDI. The PAES did not have subscales, thus only for the CDI and STAXI-2 subscales are displayed. The CDI global alpha is very good while STAXI-2 global is also acceptable. The PAES global alpha is too low to be acceptable.

Due to this low reliability coefficient, the PAES scores will not be included in further reliability estimates or construct validity analyses for the LSIC. Alpha levels for the STAXI-2-2 and CDI subscales were lower, partially owing to the fact that fewer items are included in the subscale analyses. This is an important issue to recognize when administering these tools to individuals. Researchers and clinicians must use caution when interpreting individual results based on subscale responses. The reliability for CDI scores is very good and the reliability for

the STAXI-2-2 scores is acceptable. The reliability for the PAES scores is unacceptable for use in this study or for use with individuals. Due to the low reliability coefficient for the PAES scores, the PAES is not included in the final analyses for construct validity of the LSIC.

Table 4.7: Reliability Coefficients for Standardized Measures

<i>Standardized Scale</i>	<i>N of Cases</i>	<i>N of Items</i>	<i>Alpha Level</i>
<u>PAES</u>	<u>154</u>	<u>15</u>	<u>0.36</u>
<u>STAXI-2</u>	<u>263</u>	<u>32</u>	<u>0.78</u>
<i>AX-OUT</i>	263	8	0.74
<i>AX-IN</i>	263	8	0.73
<i>AC-OUT</i>	263	8	0.84
<i>AC-IN</i>	263	8	0.82
<u>CDI</u>	<u>426</u>	<u>27</u>	<u>0.91</u>
<i>A</i>	426	6	0.72
<i>B</i>	426	4	0.71
<i>C</i>	426	4	0.65
<i>D</i>	426	8	0.72
<i>E</i>	426	5	0.72

The Standard Error of Measurement (SEM) estimates the standard deviation of errors of measurement. Whereas the reliability coefficient is influenced by differences in the variance of an instrument, SEM is not so influenced from one sample to the next. It is computed as

[Equation 4.1]

$$SEM = \sigma_o \sqrt{(1 - r_{tt})}$$

where, σ_o = standard deviation of the observed scores, and r_{tt} = coefficient alpha.

$$SEM_{CDI} = 8.1901 \sqrt{1 - .9074} = 2.5$$

$$SEM_{STAXI-2-2} = 14.5412 \sqrt{1 - .7780} = 6.9$$

General guidelines for the interpretation of SEM scores have been previously proposed (Hudson, 1999; Springer, Abell, & Nugent, 2002). Ideally, SEM should be no more than 5% of the range of possible scale scores. Thus an SEM estimate ≤ 2.4 would be desirable for the CDI (where scores range from 0 to 48); and an SEM estimate ≤ 3.9 would be desirable for the STAXI-2 (where scores range from 5 to 82). The CDI calculations fall close to within the desirable range but the STAXI-2 estimate slightly exceeds it. On the basis of these reliability and SEM calculations, both the CDI and the STAXI-2 were retained for subsequent LSIC analyses.

In Table 4.8, the means and standard deviations are displayed for the two instruments to be used in further construct validity analyses of the LSIC. For the LSIC study, a mean STAXI-2 score of 36.38 was found for the global Anger Expression - Index.

Table 4.8: Descriptives: Means and Standard Deviations for Standardized Measures

<i>Standardized Scale</i>	<i>N of Cases</i>	<i>Mean</i>	<i>Std. Deviation</i>
<u>STAXI-2</u>			
<i>AX-OUT</i>	262	16.34	4.83
<i>AX-IN</i>	262	16.86	5.05
<i>AC-OUT</i>	262	23.20	5.78
<i>AC-IN</i>	262	21.61	5.67
<i>AX-Index</i>	262	36.38	14.54
<u>CDI</u>			
<i>A</i>	426	2.02	2.25
<i>B</i>	426	0.78	1.33
<i>C</i>	426	1.44	1.79
<i>D</i>	426	2.91	2.80
<i>E</i>	426	1.04	1.65
<i>CDI Total</i>	426	8.19	8.21

Scores for Anger Control In and Anger Control Out were higher than those for either of the Anger Expression subscales (AX-Out and AX-In). Spielberger (1999) provides guidelines for interpreting these results. These STAXI-2 scores for all subscales are between the 25th and 75th percentile which indicates that they can be considered to fall in the normal range. Higher scores (> 10) on the CDI are indicative of more depressed symptoms (Kovacs, 1992). The mean CDI Total score was 8.1901 which lies within the normal range.

Instrument Validation Results

Several steps are involved in the validation process of a new instrument, as described in chapter 3. Results of techniques used to validate the LSIC will be discussed below, including approaches to face and content validity, reliability estimates, factorial validity and construct validity.

Face and Content Validity

The LSIC measurement package was given to a panel of five experts from various fields of study. Panelists included three social work therapists, one marriage and family counselor, and one special education instructor. These experts were asked to rate each of the thirty-two (32) original items of the LSIC for appropriate use with children. Panelists were provided conceptual definitions for depression, suicidal ideation, anger and aggression. They were given the list of items demarcated according to their intended construct. A five-point Likert type response rating was provided ranging from 1- not at all relevant (item truly did not capture the construct) to 5 - very relevant (item deemed very appropriate for construct) (See Table 4.9).

Ratings for four of the five panelists are included below. Rater three provided suggestions but did not rate the items. Very few items received a mean rating of less than 4.0 indicating that the items were considered relevant to the domains in which they were contained. For those items receiving mean ratings lower than a 4.0, each was examined to check wording and content which resulted in several changes. As a result of this feedback and other input, the LSIC was revised to eliminate ambiguity in language, to remove "double-barreled" items, and to include additional items to enhance clarity of the given domains. Five items (7, 17, 27, 28 and 31) were deleted

from the original 32 item scale and six items (1, 5, 8, 16, 17, and 32) were revised according to the recommendations of the raters.

Table 4.9: Content Validity Ratings - Panel Results

<u>RATINGS</u>						
1 – NOT AT ALL RELEVANT						
2 - A LITTLE RELEVANT						
3 - SOMEWHAT RELEVANT						
4 - QUITE A BIT RELEVANT						
5 - VERY RELEVANT						
<u>Depression</u>	RATERS:	1	2	4	5	<u>Mean</u>
1. I feel alone.		5	5	5	5	5.00
2. I feel hopeless.		5	5	5	5	5.00
3. I feel out of control.		3	2	5	5	3.75
4. I am sad.		5	5	5	5	5.00
5. I have trouble falling asleep.		5	3	5	5	4.50
6. I have a lot of energy. *		5	5	5	5	5.00
7. I am depressed.		5	5	5	5	5.00
8. I enjoy myself. *		5	4	5	5	4.75
9. I like my life. *		5	5	5	5	5.00
10. I think about the good things in my life. *		5	5	5	5	5.00
11. I think life is important. *		5	5	5	5	5.00
<hr/>						
<u>Suicidal Ideation</u>						
12. I think about hurting myself.		5	5	5	5	5.00
13. I think about killing myself.		5	5	5	5	5.00
14. I make plans to kill myself.		5	5	5	5	5.00
15. I think that all of my pain would go away if I was dead.		5	5	5	5	5.00
16. I have (or know how to get) what I need to kill myself.		5	—	5	5	5.00
<hr/>						
<u>Anger</u>						
17. I get angry if people bother me.		5	5	3	5	4.50
18. I get into trouble because of my anger.		4	5	5	5	4.75
19. I say mean things when I am angry.		5	5	3	5	4.50
20. I lose my temper.		5	5	3	5	4.50
21. Controlling my anger keeps me out of trouble. *		5	5	4	5	4.75
22. I can control my anger. *		5	5	4	5	4.75
23. I use angry words to hurt people.		5	5	4	5	4.75
24. I get angry if I don't get what I want.		5	5	4	5	4.75
<hr/>						
<u>Aggression</u>						
25. I hurt people.		5	5	5	5	5.00
26. I start fights.		5	5	5	5	5.00
27. I scare/frighten people.		5	5	3	5	4.75
28. I will fight people if they bother me.		5	5	5	5	5.00
29. I have a bad temper.		4	5	5	5	4.75
30. I say mean things.		5	5	—	5	5.00
31. If someone hits me, I hit him or her back.		5	5	1	5	4.00
32. I have used a weapon when fighting.		5	5	—	5	5.00

Six new items were included in the new version of LSIC ("I have trouble paying attention"; "I stay in a bad mood"; "I get angry about things that should not bother me"; "I get angry for no reason at all"; "I want to hurt people who bother me"; and "I feel like fighting"). Five of these items dealt with angry and aggressive tendencies. Raters indicated that these items captured what children actually would verbalize in school and clinical settings when feeling angry or aggressive.

Thirty-four (34) items resulted from these revisions (See Table 4.10). It was also recommended that the Likert-response categories increase from five-points to seven-points to give children more options for choosing an appropriate expression of their true tendencies (and to maximize the potential reliabilities of the various subscales).

Table 4.10: Revised LSIC Items

1. I feel lonely.	18. I stay in a bad mood.
2. I feel hopeless.	19. I get into trouble because of my anger.
3. I feel out of control.	20. I say mean things when I am angry.
4. I am sad.	21. I lose my temper.
5. I have trouble sleeping.	22. Controlling my anger keeps me out of trouble.*
6. I have a lot of energy.*	23. I can control my anger.*
7. I have trouble paying attention.	24. I use angry words to hurt people.
8. I enjoy being by myself.*	25. I get angry if I don't get what I want.
9. I like my life.*	26. I hurt people.
10. I think about the good things in my life.*	27. I start fights.
11. I think about hurting myself.	28. I get angry about things that should not bother me.
12. I think killing myself is a bad idea.*	29. I get angry for no reason at all.
13. I think about killing myself.	30. I want to hurt people who bother me.
14. I make plans to kill myself.	31. I have a bad temper.
15. I think all my pain would go away if I was dead.	32. I say mean things for no reason.
16. I have what I need to kill myself.	33. I feel like fighting.
17. I know how to get what I need to kill myself.	34. I have used a weapon when fighting.
*Items to be reverse coded	{See Appendix A for entire LSIC scale}

The completed, revised measurement package was piloted on five child volunteers. This pilot run helped to determine the length of time it would take children of varying ages to complete the study, to ascertain comprehension of written and verbal instructions and to discover any further changes that were needed prior to administration of the tools. Results from the pilot study indicated that children (7-12 years old) would need more time than adolescents (13-18 year

olds). Adolescents in the pilot group completed the entire battery of assessments in about fifteen (15) minutes while younger children took approximately thirty (30) minutes.

In planning data collection, research site administrators were given an approximate time of forty-five (45) minutes to one hour for assessments to accommodate the differences in completion time between the two age groups. Instructions were read to all groups of subjects in order to ensure consistency of administration to children and adolescents who may or may not have difficulty in comprehending more complex written instructions. A taped version of all instruments and instructions was available in the event that a child needed further assistance. The actual item responses of children in the pilot study were not used in the final LSIC data analyses.

Reliability (Internal Consistency)

Though several procedures can be used to determine instrument reliability, Cronbach's coefficient alpha can determine (a) the internal consistency of an interval level instrument; (b) a direct estimate of the alternate form reliability if one is available for the scale; and (c) the mean of all split-half reliabilities (Fortune & Reid, 1999; Springer, Abell, & Nugent, 2002).

Cronbach's coefficient alpha was computed for the revised LSIC global score and its four subscales. Coefficient alpha was computed as .90 for the global score. Weak items (that increase alpha if deleted) were then removed to enhance alpha levels (See Table 4.11). Coefficient alpha was then computed as 0.922 for the global score with the removal of items 6, 8, 12, and 22. These four items required reverse scoring. One can only speculate that perhaps some internal consistency was lost in the reversal process. Subjects may also have formed a pattern of responses that could have been interrupted by the change in tone of these positively worded items. Following factorial validity, using the multiple groups method, two more items were removed, resulting in further change in alpha (See Table 4.12). A more in-depth summary of multiple groups method will be addressed later in the chapter.

A global alpha of .923 resulted from the removal of LSIC 23. Further item deletions were not necessary and would only serve to decrease the alpha level for the global LSIC. The top portion of Table 4.13 displays the alpha levels for each subscale prior to the removal of troublesome items. Removal of items has the effect of decreasing the number of items for depression, suicidal ideation and anger, increasing the number of items for aggression by adding LSIC 3, and increasing alpha levels for all subscales.

Table 4.11: Reliability Analyses for LSIC (all 34 items)

	Corrected Item- Total Correlation	Alpha** if Item Deleted
LSIC1_1	.4022	.8999
LSIC2_1	.4401	.8996
LSIC3_1	.5640	.8976
LSIC4_1	.3950	.9000
LSIC5_1	.3510	.9007
LSIC6_1	-.0266	.9070**
LSIC7_1	.4720	.8988
LSIC8_1	-.0409	.9095**
LSIC9_1	.4886	.8985
LSIC10_1	.3580	.9006
LSIC11_1	.4656	.8994
LSIC12_1	.1589	.9043**
LSIC13_1	.5803	.8987
LSIC14_1	.4677	.9001
LSIC15_1	.4722	.8988
LSIC16_1	.4641	.8989
LSIC17_1	.5179	.8980
LSIC18_1	.5458	.8979
LSIC19_1	.5966	.8965
LSIC20_1	.6202	.8959
LSIC21_1	.6184	.8960
LSIC22_1	.1363	.9052**
LSIC23_1	.3669	.9009
LSIC24_1	.6341	.8959
LSIC25_1	.4487	.8992
LSIC26_1	.5781	.8976
LSIC27_1	.5287	.8987
LSIC28_1	.5919	.8967
LSIC29_1	.5110	.8985
LSIC30_1	.6143	.8963
LSIC31_1	.6414	.8956
LSIC32_1	.6198	.8970
LSIC33_1	.5600	.8974
LSIC34_1	.4178	.8998

N of Cases = 426.0 N of Items = 34 *Alpha = .902*

****Items marked for deletion**

Table 4.12: Reliability Analyses for LSIC (30 items)

	Corrected Item- Total Correlation	Alpha if Item Deleted
LSIC1_1	.4039	.9206
LSIC2_1	.4561	.9201
LSIC3_1	.5845	.9183
LSIC4_1	.4046	.9206
LSIC5_1	.3582	.9215
LSIC7_1	.4835	.9197
LSIC9_1	.4376	.9203
LSIC10_1	.2978	.9224
LSIC11_1	.4545	.9201
LSIC13_1	.5786	.9194
LSIC14_1	.4631	.9205
LSIC15_1	.4861	.9196
LSIC16_1	.4808	.9198
LSIC17_1	.5362	.9192
LSIC18_1	.5753	.9185
LSIC19_1	.6202	.9176
LSIC20_1	.6508	.9170
LSIC21_1	.6506	.9170
LSIC23_1	.3246	.9227**
LSIC24_1	.6437	.9172
LSIC25_1	.4663	.9200
LSIC26_1	.5889	.9184
LSIC27_1	.5362	.9193
LSIC28_1	.6109	.9178
LSIC29_1	.5064	.9194
LSIC30_1	.6190	.9176
LSIC31_1	.6689	.9167
LSIC32_1	.6323	.9179
LSIC33_1	.5892	.9181
LSIC34_1	.4188	.9205

N of Cases = 426.0 N of Items = 30

Alpha = .922

****Items marked for deletion**

Table 4.13: LSIC Subscale Reliabilities

<i>LSIC Subscales</i>	<i>N of Cases</i>	<i>N of Items</i>	<i>Alpha Level</i>
Depression	426	10	0.67
Suicidal Ideation	426	7	0.73
Anger	426	8	0.77
Aggression	426	9	0.86
<i>Subscales after Items Removed</i>	<i>N of Cases</i>	<i>N of Items</i>	<i>Alpha Level</i>
Depression	426	7	0.74
Suicidal Ideation	426	6	0.78
Anger	426	6	0.83
Aggression	426	10	0.87

Due to the wide age variations among subjects, Cronbach's coefficient alpha was also computed for the LSIC global and subscales for ages 7 - 12 years and separate computations for ages 13 and up (Table 4.14). This resulted in the following:

Table 4.14: LSIC Reliability Coefficients Based on Age

<i>LSIC Subscales & Global</i>	<i>7-12 years of age</i>	<i>13 - 18 years of age</i>
<i>Depression</i>	.72	.76
<i>Suicide</i>	.79	.77
<i>Anger</i>	.85	.83
<i>Aggression</i>	.88	.87
<i>Global</i>	.93	.92

The results of this age-specific analysis lead to the question of whether two separate, alternative forms are needed in order to appropriately assess children within their age group. From the results, it appears that alpha levels are relatively comparable for both age groups in the three subscales and the global scale. The Depression subscale has the lowest Cronbach's alpha coefficients for both the 7-12 year olds (alpha = 0.72) and the 13-18 year olds (0.76), but coefficients are still within the acceptable range. Differences in this subscale are not high enough to warrant separate instruments.

Psychometric researchers have recommended also computing the standard error of measurement (SEM) coefficients for global and subscale scores of a measuring instrument. The SEM has previously been computed for the CDI and STAXI-2-2 [See Equation 4.1]. For the LSIC, five percent (5%) of the range of scores is 0.30 (for total scores ranging from 1 to 7).

SEMs were computed for the LSIC global and subscale scores on the full sample as follows:

$$SEM_{dep} = 0.9643\sqrt{1-.7427} = 0.49$$

$$SEM_{suic} = 1.0098\sqrt{1-.7757} = 0.48$$

$$SEM_{ang} = 1.3599\sqrt{1-.8337} = 0.55$$

$$SEM_{agg} = 1.0367\sqrt{1-.8687} = 0.38$$

$$SEM_{total} = 0.9073\sqrt{1-.9227} = 0.25$$

The set of scores for an instrument are reliable if the instrument has a very small SEM (Scale reliability is augmented by reports of SEM, which provide a gauge of the degree to which observed scores on any given scale reflect the probable true score for particular respondents.) By the general guideline established ($\leq 5\%$ of the range of possible scale scores), a SEM less than or equal to 0.3 would be adequate for the LSIC, meaning, for instance, that if a respondent's global LSIC observed score was 3.5, there would be a 68% probability that his or her observed score was no less than 3.2, and no greater than 3.8. The observed SEM appears to meet that criterion for the global scale scores but not for the subscales.

Factorial Validity: Multiple Groups Method

The multiple groups method is a confirmatory approach to establishing factorial validity (Nunnally & Bernstein, 1994). The multiple groups method was computed on the full sample with the original 34 item pool to test the confirmatory hypothesis that subscales on depression, suicidal ideation, anger, and aggression could be uniquely identified. Analysis of CFA data was also conducted to determine whether LSIC items identified for removal in reliability analyses would also be identified here.

Item correlations were examined for all 34 items to determine if they loaded well with their respective domains. This method utilizes a matrix to examine the association between scale items and the factors into which they purport to belong. For confirmatory factor analysis, the researcher would like to "confirm" that those items intended to load on a particular domain, do in fact correlate highly with the given factor. High item correlations (> 0.60) would indicate significant factor loadings whereas low item correlations (< 0.60) indicated poor loadings. First, items are examined row by row to determine if they load higher on their domain than any other. As can be seen in Table 4.15, LSIC 6 and LSIC 8 had very low correlations with their domain, depression. It was also noted that LSIC 3 ("I feel out of control")* loaded more strongly on Aggression than Depression. This item was retained for further analysis. Items with low loadings were marked with a double asterisk (**) for deletion (See Table 4.15).

Table 4.15: Correlation Matrix for Depression (LSIC 1 - LSIC 10)

		<i>Dep</i>	<i>Sui</i>	<i>Ang</i>	<i>Agg</i>	<i>Tot</i>
<u>SMEAN(LSIC1)</u>	Pearson Correlation:	.594	.594	.282	.264	.443
	Sig. (2-tailed)	.000	.000	.000	.000	.000
<u>SMEAN(LSIC2)</u>	Pearson Correlation:	.582	.349	.330	.292	.475
	Sig. (2-tailed)	.000	.000	.000	.000	.000
<u>SMEAN(LSIC3)</u>	Pearson Correlation:	.495*	.421	.479	.528*	.600
	Sig. (2-tailed)	.000	.000	.000	.000	.000
<u>SMEAN(LSIC4)</u>	Pearson Correlation:	.630	.289	.311	.204	.438
	Sig. (2-tailed)	.000	.000	.000	.000	.000
<u>SMEAN(LSIC5)</u>	Pearson Correlation:	.524	.195	.284	.292	.404
	Sig. (2-tailed)	.000	.000	.000	.000	.000

Table 4.15 - continued: Correlation Matrix for Depression (LSIC 1 - LSIC 10)

		<i>Dep</i>	<i>Sui</i>	<i>Ang</i>	<i>Agg</i>	<i>Tot</i>
<u>SMEAN(LSIC6)</u>	Pearson Correlation:	.273**	-.027	-.031	-.079	.037
	Sig. (2-tailed)	.000	.573	.530	.102	.442
<u>SMEAN(LSIC7)</u>	Pearson Correlation:	.514	.341	.389	.427	.520
	Sig. (2-tailed)	.000	.000	.000	.000	.000
<u>SMEAN(LSIC8)</u>	Pearson Correlation:	.316**	-.035	-.057	-.081	.039
	Sig. (2-tailed)	.000	.476	.243	.096	.419
<u>SMEAN(LSIC9)</u>	Pearson Correlation:	.701	.420	.348	.291	.534
	Sig. (2-tailed)	.000	.000	.000	.000	.000
<u>SMEAN(LSIC10)</u>	Pearson Correlation:	.601	.282	.276	.191	.411
	Sig. (2-tailed)	.000	.000	.000	.000	.000

In Table 4.16, the Suicidal Ideation domain had one item marked for deletion (LSIC 12).

Table 4.16: Correlation Matrix for Suicidal Ideation (LSIC 11- LSIC 17)

		<i>Dep</i>	<i>Sui</i>	<i>Ang</i>	<i>Agg</i>	<i>Tot</i>
<u>SMEAN(LSIC11)</u>	Pearson Correlation:	.442	.659	.275	.317	.498
	Sig. (2-tailed)	.000	.000	.000	.000	.000
<u>SMEAN(LSIC12)</u>	Pearson Correlation:	.150	.431**	.107	.110	.225
	Sig. (2-tailed):	.002	.000	.028	.023	.000
<u>SMEAN(LSIC13)</u>	Pearson Correlation:	.395	.726	.405	.483	.603
	Sig. (2-tailed)	.000	.000	.000	.000	.000
<u>SMEAN(LSIC14)</u>	Pearson Correlation:	.357	.597	.313	.374	.491
	Sig. (2-tailed)	.000	.000	.000	.000	.000
<u>SMEAN(LSIC15)</u>	Pearson Correlation:	.382	.643	.326	.379	.515
	Sig. (2-tailed)	.000	.000	.000	.000	.000
<u>SMEAN(LSIC16)</u>	Pearson Correlation:	.215	.734	.353	.432	.515
	Sig. (2-tailed)	.000	.000	.000	.000	.000
<u>SMEAN(LSIC17)</u>	Pearson Correlation:	.312	.749	.414	.446	.574
	Sig. (2-tailed)	.000	.000	.000	.000	.000

In Table 4.17, the anger domain had two items marked for deletion (LSIC 22 and LSIC 23).

Table 4.17: Correlation Matrix for Anger (LSIC 18- LSIC 25)

		<i>Dep</i>	<i>Sui</i>	<i>Ang</i>	<i>Agg</i>	<i>Tot</i>
<u>SMEAN(LSIC18)</u>	Pearson Correlation:	.393	.379	.592	.484	.583
	Sig. (2-tailed)	.000	.000	.000	.000	.000
<u>SMEAN(LSIC19)</u>	Pearson Correlation:	.305	.371	.740	.587	.641
	Sig. (2-tailed)	.000	.000	.000	.000	.000
<u>SMEAN(LSIC20)</u>	Pearson Correlation:	.345	.369	.771	.595	.666
	Sig. (2-tailed)	.000	.000	.000	.000	.000
<u>SMEAN(LSIC21)</u>	Pearson Correlation:	.282	.358	.791	.627	.662
	Sig. (2-tailed)	.000	.000	.000	.000	.000
<u>SMEAN(LSIC22)</u>	Pearson Correlation:	.194	.064	.306**	.082	.208
	Sig. (2-tailed)	.000	.184	.000	.092	.000
<u>SMEAN(LSIC23)</u>	Pearson Correlation:	.294	.194	.561	.290	.429
	Sig. (2-tailed)	.000	.000	.000	.000	.000
<u>SMEAN(LSIC24)</u>	Pearson Correlation:	.353	.412	.687	.661	.673
	Sig. (2-tailed)	.000	.000	.000	.000	.000
<u>SMEAN(LSIC25)</u>	Pearson Correlation:	.249	.274	.541	.494	.500
	Sig. (2-tailed)	.000	.000	.000	.000	.000

Table 4.18 displays nine LSIC items, which had strong correlations with the aggression domain. All nine aggression items were retained and, based on the data in Table 4.15, LSIC 3 was re-computed to load on the aggression domain as well, resulting in ten aggression items.

Table 4.18: Correlation Matrix for Aggression (LSIC 26- LSIC 34)

		<i>Dep</i>	<i>Sui</i>	<i>Ang</i>	<i>Agg</i>	<i>Tot</i>
<u>SMEAN(LSIC26)</u>	Pearson Correlation:	.247	.427	.553	.696	.611
	Sig. (2-tailed)	.000	.000	.000	.000	.000
<u>SMEAN(LSIC27)</u>	Pearson Correlation:	.274	.345	.484	.648	.558
	Sig. (2-tailed):	.000	.000	.000	.000	.000
<u>SMEAN(LSIC28)</u>	Pearson Correlation:	.373	.336	.554	.712	.633
	Sig. (2-tailed)	.000	.000	.000	.000	.000

Table 4.18 - continued: Correlation Matrix for Aggression (LSIC 26- LSIC 34)

		<i>Dep</i>	<i>Sui</i>	<i>Ang</i>	<i>Agg</i>	<i>Tot</i>
<u>SMEAN(LSIC29)</u>	Pearson Correlation:	.387	.283	.442	.602	.547
	Sig. (2-tailed)	.000	.000	.000	.000	.000
<u>SMEAN(LSIC30)</u>	Pearson Correlation:	.314	.426	.572	.744	.654
	Sig. (2-tailed)	.000	.000	.000	.000	.000
<u>SMEAN(LSIC31)</u>	Pearson Correlation:	.306	.429	.679	.726	.683
	Sig. (2-tailed)	.000	.000	.000	.000	.000
<u>SMEAN(LSIC32)</u>	Pearson Correlation:	.364	.432	.519	.738	.651
	Sig. (2-tailed)	.000	.000	.000	.000	.000
<u>SMEAN(LSIC33)</u>	Pearson Correlation:	.234	.416	.477	.760	.600
	Sig. (2-tailed)	.000	.000	.000	.000	.000
<u>SMEAN(LSIC34)</u>	Pearson Correlation:	.131	.310	.392	.594	.457
	Sig. (2-tailed)	.007	.000	.000	.000	.000

Table 4.19 displays the domains and the items that were retained for each. Along with ten items for the Aggression subscale, seven items each were retained for Depression, Suicidal Ideation, and Anger subscales. Further examination of the column data would determine if any items from other domains would load more strongly than intended items of a given domain.

Table 4.19: Correlation Matrix for LSIC - Iteration 3

<i>Item</i>	<i>Depression</i>	<i>Suicidal Ideation</i>	<i>Anger</i>	<i>Aggression</i>
Depression				
1	.660	.325	.297	.273
2	.654	.368	.323	.332
4	.691	.315	.330	.228
5	.575	.214	.294	.308
7	.566	.358	.397	.445
9	.701	.383	.282	.299
10	.600	.244	.157	.195
Suicidal Ideation				
11	.453	.643	.289	.338
13	.429	.703	.410	.496
14	.362	.599	.295	.402
15	.408	.683	.360	.394
16	.234	.790	.381	.435
17	.346	.802	.446	.451

Table 4.19 - continued: Correlation Matrix for LSIC - Iteration 3

<i>Item</i>	<i>Depression</i>	<i>Suicidal Ideation</i>	<i>Anger</i>	<i>Aggression</i>
Anger				
18	.409	.426	.649	.504
19	.329	.393	.769	.593
20	.377	.398	.842	.599
21	.336	.380	.818	.632
24	.352	.440	.729	.664
25	.297	.279	.607	.486
Aggression				
3	.439	.440	.493	.626
26	.245	.437	.585	.693
27	.279	.363	.483	.647
28	.407	.357	.581	.708
29	.362	.291	.440	.604
30	.343	.409	.575	.732
31	.355	.435	.694	.730
32	.374	.452	.542	.732
33	.265	.459	.517	.745
34	.117	.315	.375	.583

Column data inspection consists of finding the lowest acceptable factor loading for each domain, then examining other domains within the same column to determine if any other items are loading higher for a given domain than those items intended for that domain. Table 4.20 displays the mean subscale correlations and factor loadings for the LSIC subscales. For each factor in Table 4.20, mean subscale correlations are strongest for intended items in each subscale. For the Depression subscale, a mean intended item-total correlation of .635 is clearly distinguishable from unintended means of .315, .297, and .297. For the Suicidal Ideation subscale, a mean intended correlation of .703 contrasts with unintended means of .372, .364, and .419.

The Anger and Aggression subscales also have stronger mean intended item-total correlations although not as distinct. For the Anger subscale, the mean intended correlation of .736 contrasts with unintended mean of .580 for the Aggression domain, .350 for items intended for Depression and .386 for items intended for Suicidal Ideation. Distinctions are not as clear for the Aggression subscale, with a mean intended correlation of .680 contrasted with .529 for items intended for Anger, .319 for items intended for Depression, and .396 for items intended for Suicidal Ideation.

Table 4.20: Confirmatory Factorial Validity Coefficients

<i>Item</i>	<i>Depression</i>	<i>Suicidal Ideation</i>	<i>Anger</i>	<i>Aggression</i>
Depression				
1	.660	.325	.297	.273
2	.654	.368	.323	.332
4	.691	.315	.330	.228
5	.575	.214	.294	.308
7	.566[^]	.358	.397	.445
9	.701	.383	.282	.299
10	.600	.244	.157	.195
<i>Means</i>	<i>.635</i>	<i>.315</i>	<i>.297</i>	<i>.297</i>
Suicidal Ideation				
11	.453	.643	.289	.338
13	.429	.703	.410	.496
14	.362	.599[^]	.295	.402
15	.408	.683	.360	.394
16	.234	.790	.381	.435
17	.346	.802	.446	.451
<i>Means</i>	<i>.372</i>	<i>.703</i>	<i>.364</i>	<i>.419</i>
Anger				
18	.409	.426	.649	.504
19	.329	.393	.769	.593+
20	.377	.398	.842	.599+
21	.336	.380	.818	.632+
24	.352	.440	.729	.664+
25	.297	.279	.607[^]	.486
<i>Means</i>	<i>.350</i>	<i>.386</i>	<i>.736</i>	<i>.580</i>
Aggression				
3	.439	.440	.493	.626
26	.245	.437	.585	.693
27	.279	.363	.483	.647
28	.407	.357	.581	.708
29	.362	.291	.440	.604
30	.343	.409	.575	.732
31	.355	.435	.694+	.730
32	.374	.452	.542	.732
33	.265	.459	.517	.745
34	.117	.315	.375	.583[^]
<i>Means</i>	<i>.319</i>	<i>.396</i>	<i>.529</i>	<i>.680</i>

NOTE: All correlations significant at the 0.01 level (2-tailed).

[^]Lowest intended subscale items.

+Items with stronger loadings on unintended factors.

Individual item-total correlations in Column 1 and Column 2 reveal that intended Depression and Suicidal Ideation items correlate highest with their respective subscales. The lowest item for Depression (LSIC 7) still loads more strongly on the Depression subscale than loadings for any other domain. Similarly, LSIC item 14 of the Suicidal Ideation subscale has a

stronger item correlation on its intended subscale than it does in any other domain above and below it. Column 3 reveals that one intended Aggression item (LSIC 31) correlates more strongly with the Anger subscale than the lowest item (LSIC 25) intended for Anger. Four intended Anger items (LSIC 19, 20, 21, and 24) correlate more strongly with the Aggression subscale than the lowest item (LSIC 34) intended for Aggression.

Referring back to LSIC items (Table 4.10) gives some insight as to these variations in column data. Item content suggests that having a bad temper (LSIC 31) is more indicative of angry tendencies than aggressive tendencies. Also, getting into trouble (LSIC 19), saying mean things (LSIC 20), losing one's temper (LSIC 21), or using angry words when angry (LSIC 24) are not clearly distinguished as angry tendencies by the subjects in this study.

Once the analysis using the multiple groups method was completed, reliability analyses were again computed to determine change in alpha. Global alpha increased marginally with the removal of five items total and the movement of one item to a different subscale (LSIC 3 to Aggression). These changes made a positive impact on global scores and three of the subscales. LSIC scores are calculated by summing the total for all responses then finding the mean score by dividing the sum total by the total number of items on the LSIC. For example, using the 29 item total scale, an individual sum total of 116 (divided by 29 items) would yield an LSIC score of 4. Higher scores are indicative of less stability and more harmful tendencies.

Means and standard deviations have been computed for the total sample (Table 4.21) and for the sample separated by ages 7-12 years and ages 13-18 years (Table 4.22).

Table 4.21: Means and Standard Deviations (Total sample global and subscales)

	<i>N</i>	<i>Mean</i>	<i>Standard Deviation</i>
<i>Depression</i>	426	2.30	0.96
<i>Suicidal Ideation</i>	426	1.59	1.01
<i>Anger</i>	426	2.85	1.36
<i>Aggression</i>	426	1.95	1.04
<i>LSIC Global (Total)</i>	426	2.13	0.91

The means for all subscales range from 1.59 to 2.85 (Table 4.22). The smallest ordered mean is closest to 2 (*Very rarely*), and the largest mean (2.85) is closest to 3 (*A little of the time*).

Table 4.22: Group Means and Standard Deviations (Age specific)

	<i>Age (in years)</i>	<i>N</i>	<i>Mean</i>	<i>Standard Deviation</i>
<i>Depression</i>	7-12	154	2.45	1.01
	13-18	263	2.21	0.93
<i>Suicidal Ideation</i>	7-12	154	1.58	1.00
	13-18	263	1.59	1.02
<i>Anger</i>	7-12	154	2.84	1.44
	13-18	263	2.84	1.32
<i>Aggression</i>	7-12	154	2.06	1.12
	13-18	263	1.89	0.99
<i>LSIC Global (Total)</i>	7-12	154	2.19	0.98
	13-18	263	2.09	0.87

Tendencies towards Suicidal Ideation and Aggression were less frequent; while tendencies towards Aggression and Depression were reportedly more frequent. The standard deviations are fairly constant, from 0.91 to 1.36. Similar results are displayed for both children and adolescents (Table 4.22), with younger children yielding slightly higher mean scores on Suicidal Ideation, Anger, and Aggression. All of the results indicate that subjects were within normal range for emotional and behavioral stability. This is not unrealistic considering that the majority of children in the sample were taken from non-clinical settings in the population. A t-test analysis comparing the two age groups (7-12 years and 13-18 years) disclosed that Depression was the only independent variable found to be significant $t(415) = -2.43, p < .05$.

The resulting twenty-nine item scale (Figure 4.1) contains seven items for Depression, six for Suicidal Ideation, and six for Anger. Ten items, including the former Depression item ("I feel out of control"), are included in the Aggression subscale. Items re-numbered for the twenty-

nine item scale in Figure 4.1 will not coincide with item numbering displayed in the present analyses (refer to Table 4.10).

INSTRUCTIONS: *These questions are to help us learn how you are doing. There are no right or wrong answers, so just answer them honestly the best that you can. Please answer each question by circling the appropriate number that best fits how you usually feel (1=none of the time; 2=Very rarely; 3=A little of the time; 4=Some of the time; 5=A good part of the time; 6=Most of the time; 7=All of the time). By answering these questions, you are saying it is okay for us to use your answers in our work (without telling your name). You may stop answering these questions at any time if you feel the need to do so.*

1. I feel lonely.	1	2	3	4	5	6	7
2. I feel hopeless.	1	2	3	4	5	6	7
3. I am sad.	1	2	3	4	5	6	7
4. I have trouble sleeping.	1	2	3	4	5	6	7
5. I have trouble paying attention.	1	2	3	4	5	6	7
6. I like my life. *	1	2	3	4	5	6	7
7. I think about the good things in my life.	1	2	3	4	5	6	7
8. I think about hurting myself.	1	2	3	4	5	6	7
9. I think about killing myself.	1	2	3	4	5	6	7
10. I make plans to kill myself.	1	2	3	4	5	6	7
11. I think all my pain would go away if I was dead.	1	2	3	4	5	6	7
12. I have what I need to kill myself.	1	2	3	4	5	6	7
13. I know how to get what I need to kill myself.	1	2	3	4	5	6	7
14. I stay in a bad mood.	1	2	3	4	5	6	7
15. I get into trouble because of my anger.	1	2	3	4	5	6	7
16. I say mean things when I am angry.	1	2	3	4	5	6	7
17. I lose my temper.	1	2	3	4	5	6	7
18. I use angry words to hurt people.	1	2	3	4	5	6	7
19. I get angry if I don't get what I want.	1	2	3	4	5	6	7
20. I feel out of control.	1	2	3	4	5	6	7
21. I hurt people.	1	2	3	4	5	6	7
22. I start fights.	1	2	3	4	5	6	7
23. I get angry about things that should not bother me.	1	2	3	4	5	6	7
24. I get angry for no reason at all.	1	2	3	4	5	6	7
25. I want to hurt people who bother me.	1	2	3	4	5	6	7
26. I have a bad temper.	1	2	3	4	5	6	7
27. I say mean things for no reason.	1	2	3	4	5	6	7
28. I feel like fighting.	1	2	3	4	5	6	7
29. I have used a weapon when fighting.	1	2	3	4	5	6	7

LSIC Subscales: Depression (LSIC 1- 7); Suicidal Ideation (LSIC 8-13); Anger (LSIC 14-19); Aggression (LSIC 15-29)

Figure 4.1: Level of Stability Index for Children

Structural Equation Modeling

Structural Equation Modeling utilizes path diagrams to explore or confirm factor structure for covariance matrices. This is a sophisticated approach to confirming the structure of potential measures and involves special software such as Lisrel[®] (Joreskog, Sorbom, du Toit, & du Toit, 1999). Schumacker and Lomax (1996, p.63) apply five steps to the structural equation model (henceforth called the Confirmatory Factor Analysis (CFA) Model):

- Model specification - based on theory and empirical research, the researcher proposes (specifies) relationships between the observed measures (e.g., items on a scale) and the independent variables (i.e., underlying factors).
- Identification - the researcher must determine if there is sufficient evidence to ascertain if the number of parameters to be estimated is less than, equal to, or more than the number of variances and covariances. An "under-identified model" is one in which the estimable parameters are more than the data points, thus the model is misspecified (Byrne, 1998).
- Estimation - Statistical programs offer many parameter estimation choices. Lisrel 8 utilizes several methods including instrumental variables (IV), two-stage least squares (TSLS), unweighted least squares (ULS), generalized least squares (GLS), maximum likelihood (ML), weighted least squares (WLS), and diagonally weighted least squares (DWLS) (Joreskog, et al., 1999). Selection of a particular method should be based upon the specific research study purposes.
- Testing fit- this step involves the interpretation of model fit. Alternative models may need to be computed if estimation indices indicate misspecification.
- Respecification- Model fit indices may be interpreted as "poor fit". Parameter estimation procedures may be performed in iterative fashion in order to produce the most appropriate and adequate model fit.

Model Specification

Figure 4.1 illustrates the CFA model of emotional and behavioral stability. This path diagram was generated from the LSIC covariance matrix. The relationships shown in this measurement model were specified a priori. The ellipses indicate that there are four latent independent variables in the model; and thirty-four (34) indicator or observed variables depicted

by rectangles. For depression, indicator variables are LSIC 1 through LSIC 10; for suicide, LSIC 11 through LSIC 17; for anger, LSIC 18 through LSIC 25; and for aggression LSIC 26 through LSIC 34. Error terms are depicted to the left of the indicator variables and to the right of the latent variables.

Identification

Each indicator variable is a function of the latent independent variable plus error.

Therefore the following equations are specified:

LSIC 1 - LSIC 10 = function of depression + error

LSIC 11 - LSIC 17 = function of suicide + error

LSIC 18 - LSIC 25 = function of anger + error

LSIC 26 - LSIC 34 = function of aggression + error

Estimation

Maximum likelihood (ML) estimation is the default method in Lisrel 8. ML estimation output includes standardized factor loadings. The one-way arrow leading from the latent variables to the observed variables displays the validity coefficients. This indicates the coefficient for each latent variable (e.g., depression) predicting responses to each observed variable or LSIC item (e.g., LSIC 1).

Testing Fit

The initial model fit can be examined by comparing model fit statistics to goodness of fit (GOF) criteria (Table 4.23). The indices to be examined to gauge level of model fit include the chi-square estimates, the root mean square error of approximation (RMSEA), the goodness of fit index (GFI) and the comparative fit index (CFI). These fit indices are assessed subjectively to determine acceptable fit. The only GOF criteria to have an associated statistical test of significance is χ^2 (Schumacker & Lomax, 1996).

Chi-Square (χ^2). A nonsignificant χ^2 value with associated degrees of freedom is indicative of good data-to-model fit. The researcher would like to avoid a significant χ^2 value with its relative degrees of freedom because significance indicates that the two matrices differ. Larger sample sizes (> 200) will yield a more significant probability level than smaller samples.

Table 4.23: Goodness of Fit Criteria

<i>GOF criteria</i>	<i>Acceptable Level</i>	<i>Interpretation</i>
Chi-square*	Nonsignificant χ^2 value (Desired Outcome)	<i>Compares obtained χ^2 value with tabled value for given df.</i>
RMSEA	<.05	<i>Value <.05 reflects good model fit; value from .05 - .08 reasonable fit; value from .08 - .10 mediocre fit; value >.10 poor fit.</i>
GFI/CFI	0 (no fit) to 1 (perfect fit).	<i>Value close to .90 reflects good fit.</i>

Table adapted from Byrne (1998); Schumacker & Lomax (1996, p. 121).

Root Mean Square Error of Approximation (RMSEA). This statistic is considered to be one of the most informative of the GOF criteria in CFA modeling. Given unknown but optimally chosen parameter values, RMSEA seeks to answer the question of how well the model would fit the potentially available population covariance matrix. "This discrepancy, as measured by the RMSEA, is expressed per degree of freedom, thus making it sensitive to the number of estimated parameters in the model" (Byrne, 1998, p. 112).

Goodness-of-Fit Index (GFI). The GFI measures the amount of variance and covariance in the observed matrix that is predicted by the reproduced matrix. It is "based on a ratio of the sum of the squared differences between the observed and reproduced matrices to the observed variances, thus allowing for scale" (Schumacker & Lomax, 1996, p. 125).

Comparative Fit Index (CFI). A new GOF measure to determine the improvement in noncentrality in going from a restricted model to a full model. Below are the goodness-of-fit statistics for the initial LSIC model and the initial CFA path diagram (Figure 4.2).

$$\begin{aligned}
 \text{Chi-square (df)} &= 2228.13 (521) \\
 \text{RMSEA} &= 0.09 \\
 \text{GFI} &= 0.75 \text{ (AGFI=0.72)}
 \end{aligned}$$

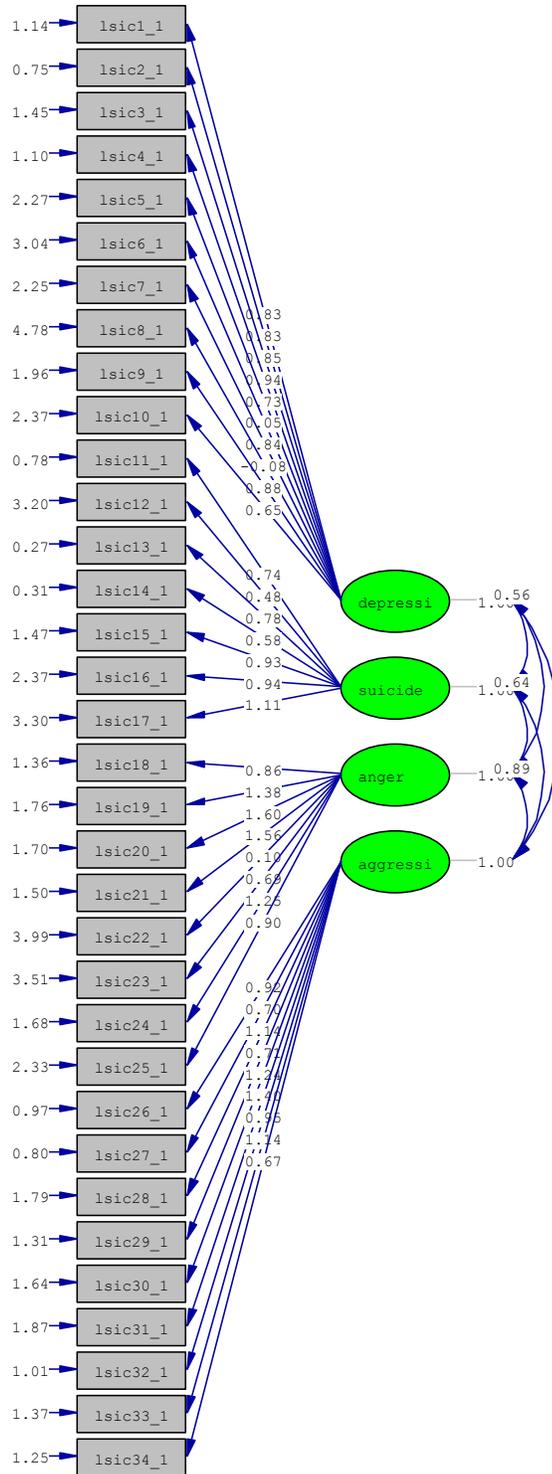
$$CFI = 0.91$$

Using the criteria in Table 4.26, we can deduce that the LSIC model has been "under-identified" and must be respecified. A small χ^2 value indicates a good fit, whereas a large χ^2 value is reflective of a misfit or "bad" fit (Byrne, 1998). Respecification will require examining modification indices to identify those parameters that can be added or removed to improve fit.

Respecification

Respecification, or the process of determining which parameters to add to or subtract from the model, can be conducted only after examining fit indices that suggest which paths to add. These indices also provide an estimate of the decrease in χ^2 for each additional path. Another fit index provides an estimate of the decrease in χ^2 with the addition of suggested error covariances. These two modification indices have been examined in an iterative process to appropriately fit the LSIC model. This consisted of the four independent latent variables (depression, suicide, anger, and aggression) shown in elliptical form to the right of the diagram. The path coefficients are shown by arrows pointing from the latent variables to the observed variables (depicted to the left in rectangles). The error variances are to the left of the observed variables (LSIC items).

To increase model fit, items having low validity coefficients were marked for deletion. As indicated in Figure 4.2, standardized factor loadings were low enough to warrant removal for 6 (.048), 8 (.080), 12 (.482), and 22 (.105). Lsic 23 did not meet this criteria for removal, but was removed due to poor performance in previous reliability and validity analyses. Modification indices were also examined to determine the decrease in chi-square if (1) paths from suggested LSIC items were added to specified latent variables, and if (2) error covariances of suggested LSIC items were made to correlate with other specified LSIC items.



Chi-Square=0.00, df=0, P-value=0.00000, RMSEA=0.000

Figure 4.2: Structural Equation Modeling - Initial Path Diagram

Independent latent variables have paths connecting to other LSIC items and the correlations of several error covariances during the respecification phase.

LSIC - CFA path modifications. Modification indices suggested several paths from items to variables in order to increase model fit. Four suggestions coincided with the previous (multiple groups) factorial analyses: LSIC 31 (an Aggression item) to Anger subscale; LSIC 20 & 24 (Anger items) to Aggression subscale; and LSIC 3 (Depression item) to Aggression subscale. These suggested paths were compared to the output from Table 4.20 to determine if these paths would be acceptable. Although LSIC 31, LSIC 20, and LSIC 24 had strong loadings on the suggested domains (0.69; 0.60; and 0.66), the magnitude of change was not large enough to warrant a move. These overlaps are indication of less than perfect correlation structure, which can be expected when measuring closely linked concepts such as anger and aggression.

LSIC 3 was moved to Aggression subscale. This modification was selected in that it coincided with compelling evidence from the reliability estimates and multiple groups method in factorial validity. Further path modifications were not practical or theoretically feasible.

Correlated error covariances. Once the suggested paths were examined, error covariances that were consistent with the hypothesized subscale structure were included in the respecified model. Table 4.24 below reports the within subscale covariances:

Table 4.24: Correlated Error Covariances

<i>For Depression subscale:</i>	
LSIC 2 and LSIC 1; LSIC 4 and LSIC 1; and LSIC 4 and LSIC 2, and LSIC 10 and LSIC 9	
<i>For Suicidal Ideation subscale:</i>	
LSIC 13 and LSIC 11; LSIC 14 and LSIC 13; LSIC 15 and LSIC 14	
<i>For Anger subscale:</i>	
LSIC 17 and LSIC 16; LSIC 19 and LSIC 18; LSIC 21 and LSIC 19; LSIC 21 and LSIC 20; and LSIC 24 and LSIC 18	
<i>For Aggression subscale:</i>	
LSIC 27 and LSIC 26; LSIC 29 and LSIC 28; LSIC 31 and LSIC 26; LSIC 31 and LSIC 27; LSIC 31 and LSIC 29; LSIC 33 and LSIC 30	

These alterations resulted in the following changes in goodness-of-fit statistics:

$$\begin{aligned}
 \text{Chi-square (df)} &= 928.045 (353) \\
 \text{RMSEA} &= 0.063
 \end{aligned}$$

GFI = **0.868 (AGFI= 0.837)**
CFI = **0.896**

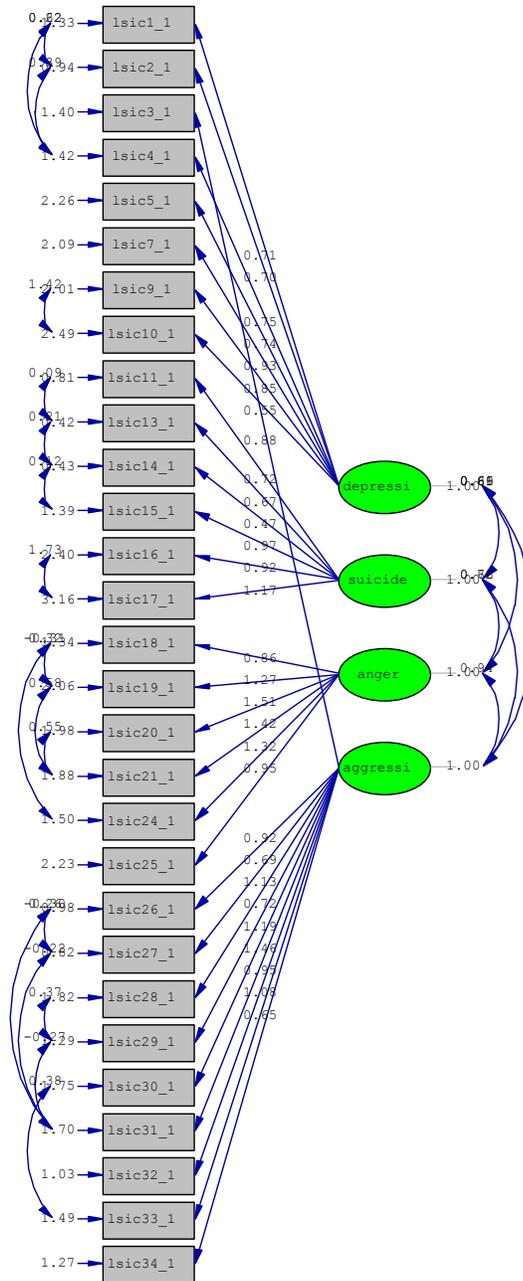


Figure 4.3: Structural Equation Modeling - Final Path Diagram

The χ^2 / df ratio decreased from 2.76 to 2.63 with these changes. The LSIC model indicates a better model fit although χ^2 with its associated degrees of freedom is still significant. As indicated earlier, this issue of significance may result from having a larger sample size (> 200).

Construct Validity

Construct validity is one of many validity approaches in which evidence is collected to support the psychometric claim that scale scores actually are representative of the domains conceptualized in a measurement instrument (Nunnally & Bernstein, 1994). There are two subtypes to be examined: (1) convergent construct validity determines whether the construct under examination correlates as expected with theoretically relevant variables. (Springer, Abell, & Hudson, 2002); and (2) discriminant construct validity similarly seeks to examine whether theoretically unrelated variables, that are not expected to have an association with the construct under examination, do not correlate with the scores for the new instrument.

Convergent construct validity

Results of convergent construct validity are compared in Tables 4.25a and 4.25b. The former includes household composition indicators (number of brothers and sisters; and parents/caregivers living in the home). The latter computes the correlations without these indicators. As indicated in Table 4.25a, number of brothers as a factor influencing a child's emotional state had insignificant findings. Number of sisters however appeared to have a weak positive correlation in one subscale, Anger. Parental indicators were not significant for any of the LSIC subscales or global. . Mean r^2 statistics showed weak evidence of convergent construct validity.

Discriminant construct validity

Discriminant variables were relatively insignificant as anticipated with only "gender" correlating with two LSIC domains. Gender had a weak negative correlation with suicide ($r = -.13 / r^2 = .02$) and aggression ($r = -.14 / r^2 = .02$), indicating that scores in these domains were influenced to some degree by gender differences. This finding is contrary to the hypothesis of no gender effects, which was discussed previously. Considering the insignificant findings overall, the effect sizes across discriminant variables were shown to be trivial.

Table 4.25a: Level of Stability Subscale Construct Validities

	<u>Depression</u>		<u>Suicide</u>		<u>Anger</u>		<u>Aggression</u>	
	r	r ²	r	r ²	r	r ²	r	r ²
<i>Convergent variables</i>								
CDI	.682**	.47	.500**	.25	.505**	.26	.556**	.31
STAXI-2	.443**	.20	.394**	.16	.654**	.43	.645**	.42
Brothers	-.044	.00	-.014	.00	-.029	.00	-.029	.00
Sisters	.065	.00	.003	.00	.141**	.02	.059	.00
Parents/Guardian	.171**	.03	.151**	.02	.173**	.03	.156**	.02
Mean	.14		.09		.15		.15	
<i>Discriminant variables</i>								
Age	-.124	.02	.030	.00	.052	.00	-.036	.00
Race	-.050	.00	.010	.00	-.026	.00	-.031	.00
Gender	.070	.00	-.128**	.02	-.078	.01	-.136**	.02
Mean	.00		.00		.00		.00	

*p ≤ .05. **p ≤ .01.

Table 4.25b displays correlations between each LSIC subscale and convergent variables without household composition indicators. Factor content and structure has been shown to vary for each subscale, however hypothesized relationships indicate the shared foundation of each subscale in the level of stability of children from factor to factor. Thus, for convergent validity, Depression and Suicidal Ideation were proposed to correlate positively with a child's range of depressive symptoms (CDI). Likewise, Angry and Aggressive tendencies were proposed to correlate positively with expressions and control of anger and aggression (STAXI-2).

Table 4.25b: Level of Stability Subscale Construct Validities

	<u>Depression</u>		<u>Suicide</u>		<u>Anger</u>		<u>Aggression</u>	
	r	r ²	r	r ²	r	r ²	r	r ²
<i>Convergent variables</i>								
CDI	.682**	.47	.500**	.25	.505**	.26	.556**	.31
STAXI-2	.443*	.20	.394**	.16	.654**	.43	.645**	.42
Mean	.34		.21		.35		.37	
<i>Discriminant variables</i>								
Age	-.124	.02	.030	.00	.052	.00	-.036	.00
Race	-.050	.00	.010	.00	-.026	.00	-.031	.00
Gender	.070	.00	-.128**	.02	-.078	.01	-.136**	.02
Mean	.00		.00		.00		.00	

*p ≤ .05. **p ≤ .01.

As hypothesized, depressive symptoms were most significant for the Depression subscale ($r=.68$; $r^2=.47$), although the CDI demonstrated a strong relationship across all LSIC domains. Anger expression and control also had a strong positive association with Angry ($r=.65$; $r^2=.43$) and Aggressive tendencies ($r=.66$; $r^2=.42$). Mean r^2 statistics are also produced giving acceptable evidence of convergent construct validity.

One issue to be addressed further is the apparent overlap among the subscales of the LSIC. This overlap has been shown in the validation analyses above and in Table 4.26.

Table 4.26: Intercorrelations Among LSIC Subscales

	<u><i>Depression</i></u>		<u><i>Suicidal Ideation</i></u>		<u><i>Anger</i></u>		<u><i>Aggression</i></u>	
	<i>r</i>	<i>r</i> ²	<i>r</i>	<i>r</i> ²	<i>r</i>	<i>r</i> ²	<i>r</i>	<i>r</i> ²
<i>Depression</i>	1.00	1.00						
<i>Suicidal Ideation</i>	0.50	0.25	1.00	1.00				
<i>Anger</i>	0.49	0.24	0.52	0.27	1.00	1.00		
<i>Aggression</i>	0.49	0.24	0.58	0.34	0.79	0.62	1.00	1.00

This table displays the intercorrelations among subscale scores for the LSIC indicating the extent to which the subscales are related. All four subscales have highly significant intercorrelations with the highest interrelationship evident between Anger and Aggression ($r=0.79$; $r^2=0.62$). Few if any researchers would argue for mutual exclusivity in an instrument that is intended to detect self harm and harm to others utilizing concepts related to the subscales of the LSIC. Thus, through the results of this and previous analyses, the LSIC has shown evidence of reliability and validity.

CHAPTER 5: DISCUSSION AND CONCLUSIONS

This study of the psychometric properties of the Level of Stability Index for Children has been a fruitful endeavor, filled with challenges but also with promise. The LSIC is designed to be a self-report, rapid assessment instrument that clinicians, teachers and others functioning in the service of children can use to assess child stability in the face of risk factors for self-destructive behaviors or harmful tendencies toward others. This chapter will be used to summarize findings from the techniques employed to analyze the data and to generate conclusions about the instrument's usefulness in social work practice, policy and future research.

Summary of Primary Results

Several types of statistical analyses were performed to test the psychometric properties of the LSIC. Table 5.1 shows the different analytical procedures used in this study. The "Action" column indicates the revisions that were completed in response to statistical output. Only those revisions that enhanced the psychometric properties of the LSIC were undertaken. Reliability and factorial validity analyses were used to examine the LSIC data. The multiple groups method and structural equation modeling are two techniques that can be used to test confirmatory factorial validity. The "Results" column indicates the change or improvement to the LSIC as a result of these actions. Chapter 4 provided a detailed account of these results. A summary of these changes is to follow.

Face and Content Validity

Expert ratings were especially helpful in providing the checks and balances on item content and utility. Panelists were aware of current child language and dialogue which were essential for creating an RAI that was written in the dialect of a child. In order to ascertain the most accurate and appropriate information, children must feel comfortable that they have been understood.

Table 5.1: Revisions to the LSIC Based on Analysis

<i>Type of Analysis</i>	<i>Action</i>	<i>Result</i>
Reliability	Removal of items 6, 8, 12, 22 from Revised LSIC	<p>Original Global Alpha = .902 Depression = .674 Suicidal Ideation = .730 Anger = .774 Aggression = .861</p> <p>Resulting Global Alpha = .922 Depression = .743 Suicidal Ideation = .776 Anger = .813 Aggression = .861</p> <p>LSIC with 30 items (Table 4.12)</p>
Factorial Validity: Multiple Groups Method	Removal of LSIC item 23 LSIC item 3 moved to Aggression domain	<p>Global Alpha = 0.924 Depression = .743 Suicidal Ideation = .776 Anger = .834 Aggression = .869</p> <p>LSIC with 29 items.</p>
Structural Equation Modeling: Confirmatory	Removal of 6, 8, 12, 22, & 23 Path from LSIC 3 to Aggression Error covariances within subscales correlated	<p>Original $\chi^2(df) = 2228.130 (521)$ $\chi^2/(df) = 4.28$</p> <p>Resulting $\chi^2(df) = 928.045 (353)$ $\chi^2/(df) = 2.63$</p> <p>Original RMSEA = .092 Resulting RMSEA = .063</p> <p>Original GFI = .751 Resulting GFI = .868</p> <p>Original CFI = .907 Resulting CFI = .896</p>

Ratings from panelists were very helpful in determining problematic items needing removal or change, however written comments provided great suggestions on issues of language bias and ambiguity which could not be captured within a mere rating of an item. Written comments suggested numerous revisions to Anger and Aggression items that appear to have made a considerable difference in the strength of these domains.

What appeared to be most helpful overall for content validity was simplicity. Simpler terms were used to prevent the inevitable questions of meaning and definition. As a result of panelist's suggestions related to simplicity, LSIC items were easily understood and few questions were asked about how to define words or the meaning of items. Readability statistics indicated that children with a 1.9 grade level could easily comprehend the items and instructions for the LSIC.

Reliability

Cronbach's coefficient alpha for the initial LSIC was .902. With the removal of four items, the level improved to .922. Although these were small changes, the removal of these items was more beneficial to the LSIC than their retention. Standard error of measurement estimates were elevated for the LSIC. Absolute standards for interpreting SEM estimates have not been established, however a SEM should be approximately 5% or less of the range of possible scale scores. The LSIC global estimate was within the suggested range (at .25) indicating global internal consistency. The subscale scores, however did not meet the suggested standards for SEM estimates.

Factorial Validity

Multiple groups method. The multiple group method of factorial validity is a powerful tool for capturing the relationships between and within subscales of an instrument. When used in conjunction with reliability analysis results, it was evident that those items removed previously to increase Cronbach's coefficient alpha, were also problematic when retained in factorial validity analyses. Two items were therefore removed to improve factor loadings for Depression (LSIC 10) and Anger (LSIC 23). Furthermore, LSIC 3 loaded more strongly on Aggression, than on its intended domain - Depression - and was moved to reflect this relationship. A Cronbach's coefficient alpha of .924 resulted for the 28-item final version of the scale.

Structural equation modeling. Confirmatory factor analysis, in structural equation modeling, is used to compute parameter estimates. This approach is used to test the

hypothesized theoretical measurement model. In structural equation modeling, relationships among factors are represented in a path diagram where observed variables (LSIC items) uniquely define specified factors. In classical measurement theory, error terms are assumed to be uncorrelated (Nunnally & Bernstein, 1994). One unique contribution of structural equation modeling is that it has the capacity to take into consideration correlated error covariances.

CFA confirmed the factor structure of the LSIC. The initial run was performed with the 34-item scale in order to determine the degree to which the LSIC model was misspecified. This also re-confirmed that problematic items were an issue for this approach as well. The model fit improved with the removal of the six items previously flagged by reliability estimates and the multiple groups method. LSIC 3 also performed as expected with its suggested path to Aggression. Those error covariances that were consistent with the hypothesized subscale structure were also incorporated in the model respecification.. Conventional ideals indicate that the acceptable level for χ^2 /df ratio is less than 2 (<2.0). Other suggested criteria for estimates have been specified in chapter 4 (Table 4.23). LSIC estimates for confirmatory factor analysis in structural equation modeling fall short of the ideal standards for the χ^2 , RMSEA, and GFI statistics. The CFI at .966 meets these standards.

Methods of analysis used to test the psychometric properties of the LSIC provide substantial evidence in support of the four subscale domains as distinct factors. The four domains continued to have acceptable alpha levels across techniques. In the multiple groups method, LSIC item responses indicated strong loadings of items on their intended domains. And for structural equation modeling, hypothesized relationships were strong in the direction of intended variables correlating with their uniquely defined factors. To increase model fit, only one intended path indicated the need for a change in relationship (LSIC 3), however this was not surprising in that the item loaded more strongly on the Aggression domain in the previous factor analysis using the multiple groups method. Relationships help up similarly in both age groups examined.

The greatest challenge in providing evidence for the LSIC subscales as distinct factors is the strong inter-relationship of domains, especially Anger and Aggression. These two factors had a strong degree of overlap in multiple groups method as well as in structural equation modeling. The strength of this overlap in multiple groups method was not greater than the strength of the within factor relationships. For structural equation modeling, there was also overlap in relation to the many suggested paths and error covariances. Only one path was changed (LSIC 3) from

Depression to Aggression subscale. Error terms were only made to covary within their given domains. These re-specification suggestions were the only substantively meaningful changes using confirmatory factor analysis in the structural equation modeling approach.

Examining mean differences among respondents also provides evidence that supports the use of the LSIC with children ages 7 - 18 years of age. Younger children will need more guidance but the evidence points to very similar results for the total scale as well as subscales. One significant difference was found in the Depression domain, which may need to be re-examined for reliability and validity to ensure its utility for both age groups.

Convergent and Discriminant Construct Validity

For psychometric studies such as this one, construct validity is generally tested by comparing correlations of scale domains with similar domains found in standardized instruments. For convergent validity, Depression and Suicidal Ideation were proposed to correlate positively with depressive symptomology (CDI), and Anger and Aggression with anger expression and anger control indicators (STAXI-2). Household composition, which requested information as to whom the child was presently living with in terms of parents or other caregivers, was intended to correlate positively with LSIC subscale scores but the ordinal level data obtained was insufficient to capture the desired information. Results for number of siblings in the home were also not significant for any of the LSIC subscales.

The correlations observed between subscales are evidence that the domains of the LSIC are not totally separate and mutually exclusive concepts. For other scales attempting to isolate conceptually unique factors this would be a problem, however it would be unrealistic to assume that a factor such as Depression would have no association with Suicidal Ideation or that aggressive tendencies are totally unrelated to Anger. Thus, although not ideal, the data analyses for the LSIC simply confirm that these variables are separate but closely tied entities (Table 5.1).

Scoring and Interpreting the LSIC

The LSIC is designed to assess school-aged children (7-18 years of age). Reading statistics for the instrument and its instructions were generated using Microsoft word processing software. The desired language level was achieved for the LSIC. Statistics indicated a Flesch-Reading Ease statistic of 93.2% and Flesch-Kincaid Grade Level of 1.9. There were no passive

sentences. These statistics indicate that the scale is easy to read for most children, although it may be a challenge for some first graders. One recommendation is to read instructions to all children to ensure comprehension for all grade levels (1st - 12th grades).

The 28-item LSIC can be scored easily by summing responses then dividing responses by the total number of items completed to obtain a global mean score for the individual. Scores range from 1.0 to 7.0. Higher scores indicate elevated levels of instability. High scoring subjects exhibit higher tendencies toward harmful emotions and behaviors in terms of depressive symptoms, suicidal ideation, anger, and aggression. LSIC item 6 is the only item requiring reverse scoring. Subscale scores can be obtained in much the same way. Depression has seven (7) items, Suicidal Ideation and Anger have six items each, and Aggression has ten (10) items. These subscale scores will also range from 1.0 to 7.0 once the average is computed by summing responses and dividing by the number of items (in the 29 item scale) for the subscale (Ex. for Aggression - raw score of 102/ 29 yields a score of 3.5).

Limitations of the Study

Several limitations of the study must be addressed as they relate to sampling procedures, data collection, and statistical analyses. In any research endeavor there will be limitations that must be addressed in order to fully appreciate both sides of the quantitative coin (the good and the challenging).

Sampling Procedures

Larger sample sizes and more representative samples that can be generalized to a larger population are most helpful. This is especially helpful in situations where the researcher desires to develop rapid assessment instruments that require a large enough sample to account for the number of items within the instrument. The LSIC developer initially desired to use a clinical sample for this psychometric study. Not only was Daniel, Inc. contacted for this purpose, but a number of other agencies were also contacted to request permission to assess children in mental health settings. The alternative approach, contacting schools and other programs, resulted in a large sample that met the criteria for developing a rapid assessment instrument but may have introduced other limitations. The shift from an intended clinical sample to one with a more heterogeneous student population (including a male choral group, the Boys' Choir) may have

introduced the possibility of sampling bias. Respondents from general student populations are better functioning than children in clinical treatment, which may account for the low scores observed on the LSIC in the present sample (low scores indicating more stability).

Another limitation to sampling involves institutional, parental and subject constraints. For example, twenty-one assessments were completed at daniel but only seventeen were included in the analysis. With consent of parents and subject assent, three assessments were completed but were not permitted to be used in the analysis because the guardian of the children refused to consent. In that these children were in a care facility, legal sanctions had to be respected. One subject from daniel gave assent for assessment but was unable to comprehend the items even when the information was read aloud by the investigator. This assessment was not deemed appropriate for the analysis. Many parents also refused to give consent to allow their child to participate. One student reported that her mother was concerned about the legal repercussions of completing an assessment requesting such personal information.

Data Collection Procedures

As indicated above, daniel, Inc. was the only clinical setting included in the LSIC sample. A limited number of assessments were completed at this research site (contributing only 4% to the entire sample). After considerable attempts to obtain clinical groups for the study, an acceptable number of assessments were completed using school aged children within the Leon County School system. Data collection with school children was limited in that they were not a clinical group. Other data collection limitations were on the part of the researcher. The most glaring limitation was including incomplete measurement packages. This presented an elevated percentage of missing values for one particular LSIC item. The item was examined further to determine the degree to which this would be problematic in analysis. Apparently, the problem was corrected with enough expedition to defer the need for item elimination. This magnitude of error can be costly to error sensitive psychometric studies if not rectified immediately.

Statistical Analyses

The elevated missing values for LSIC 29 could have presented an issue in that cases missing this item were not isolated for mean replacement of cases within the Nims sample only. A one sample t-test indicated that the difference in means between this group when compared to the other groups combined was not statistically significant. This is a lesson in how data collection procedures are integrally tied to analysis. Researchers and others employed to collect

data must understand the importance of appropriate and consistent collection protocol in order to obtain accurate analyses. Mean replacement was used to correct for missing values. This procedure was chosen after taking into consideration the possibility of confounding effects of the Nims subgroup (research site where the largest percentage of values were missing) and the daniel subgroup (clinical group in study). It was found that the difference in means with and without the daniel subgroup was not significant.

Scales selected for construct validation performed in the direction expected with STAXI-2 correlating positively with Anger and Aggression factors and CDI correlating positively with Depression and Suicidal Ideation. Using one tool to conceptualize two factors may introduce unintended overlap that could be avoided if each of the four LSIC factors could be tested for convergence with separate indicators. Thus, four reliable, valid, standardized, self-report, rapid assessment instruments that captured depressive tendencies, suicidal ideation, anger, and aggressive tendencies, respectively, in children would be needed. The gargantuan task of finding instruments that meet these requirements led the LSIC developer to accept a small degree of overlap in favor of using available standardized measures.

In achieving a more representative sample, researchers and clinicians must unite in efforts to assess these harmful tendencies in children and adolescents. The next section will address the implications of developing rapid assessment instruments to social work practice and policy along with recommendations for future research.

Implications for Social Work

Implications for Social Work Practice

Awareness, identification, and intervention are three implications for use of the LSIC in social work practice. Parents, teachers, social workers and other child welfare practitioners need to become aware of the mental health issues plaguing our youth today. These problems children manifest are real and must be taken seriously, rather than just perceived as a ploy for children to get attention. Many children have lost their lives trying to get a bit of attention. Research and assessment tools such as the LSIC can shed light on the complexities of children's mental health issues by bringing into focus the reality and prevalence of such challenges in a child's life.

Providing families and child care providers with the necessary information to make informed decisions about the appropriate interventions for children and adolescents.

Awareness leads to identification. One positive characteristic of an RAI, such as the LSIC, is the ease in which it can be used to identify childhood problems and risky tendencies. Social work practitioners and child advocates are encouraged to work towards a practice agenda that includes identifying the pervasive mental health problems facing their young clients. Results from assessments using the LSIC should be used along with family and school reports to identify children in need of mental health services. Interventions and treatment must be made available for all children presenting with difficulties.

The LSIC can be included in a clinical measurement package for counseling, supervision, and treatment of children's mental health problems. The most effective treatment protocol will include ongoing assessment as an integral part of the counseling and supervision provided children in need.

Initially, the LSIC was developed to assess the emotional and behavioral needs of children within the child welfare system. When these children can no longer remain at home, it becomes the responsibility of the system to find new permanent homes for them. This process of providing a suitable, permanent environment for children in care is often hampered by the endless red tape and pervasive inadequacy of the child welfare assessment process. The LSIC is designed such that it can be used at numerous entry points within the child welfare system. One point of entry is the initial placement assessment. Children manifesting signs of harmful tendencies will need further diagnostic assessment and intervention prior to placement. Once a child is moved from home to home (a common practice in the foster care system), the child will need re-assessment prior to replacement. This tool can help to identify candidates for enhanced interventions such that children can move towards permanency more immediately rather than being left behind to grow up in an impermanent and unstable child welfare system.

Although children who have had disruptions in their household composition due to abuse, neglect or other crises or loss do tend to have more mental health issues, children in non-clinical environments often present with mental health issues as well. In this 21st century, we are bombarded by the news of school violence, murder and mayhem among our youth. Professionals working with children in clinical and non-clinical settings must work diligently to find ways to identify those children at risk for harmful tendencies towards themselves and towards others.

Incorporating rapid assessment instruments into practice with children is an efficient, cost-effective way to provide quantitative evidence for clinical treatments and interventions.

Implications for Social Work Policy

Within the decision making process, practice creates policy. To support the needs of troubled children and youth, assessment research can contribute to policy development. Increased use of illicit drugs, violent child abuse, youth violence and suicide are all indicators of significant and changing social problems. Social workers must stay informed about these and other patterns of social change in order to assess their impact on children's lives and stability. Children often desire a forum in which they can express their concerns about contemporary social issues however face-to-face communication is often limited. Self-report RAIs such as the LSIC can provide them a "voice" in which children can address these tendencies toward self-harm or harm to others. This information not only informs practice for intervention, but also can inform policy for prevention and long term intervention protocol.

Recommendations for Future Research

In the "Report of the Surgeon General's Conference on Children's Mental Health: A National Action Agenda" (1999), Dr. David Satcher (former Surgeon General) outlined a blueprint for improving mental health services for the young. The report further elaborates on the role of educating child welfare practitioners as to proper identification of potential mental health risks. Improving the identification and assessment of mental health needs in children is an integral part of any research agenda. This national goal must be adopted as well in social work practice, policy and research.

One recommendation for further research is to obtain access to more representative clinical samples of children. Specifically, children who manifest tendencies towards self-harm or harm to others are a risk to themselves and those around them. Over the past decade, there has been an alarming increase in the amount of in-school violence among our youth. Although many children may be aggressive without ever presenting signs of difficulty, continuing research in this area using self-report measures may capture tendencies that have otherwise gone undetected.

A child cannot be researched or treated in isolation of his or her environment however a clearer view of the extent of these harmful tendencies can be attained with further clinically

based research. An emerging research area for consideration is "evidence-based" practice. "Business as usual" is no longer the acceptable modality. Practitioners and researchers must integrate approaches and techniques that can be disseminated and that can encourage duplication.

It is also recommended that further research include testing of the psychometric properties of the LSIC; the Depression domain in particular. This may be accomplished by retracing the procedural steps for this study. A panel of clinical experts can be a great resource in providing feedback as to what items to further include or eliminate from the LSIC. A sample of children can be obtained to collect data for analysis. Analytical techniques such as those employed for this study would be useful in determining whether changes to the Depression or other LSIC domains can increase LSIC global and subscale reliability and validity. Further study may also consider assessing behavioral correlates to enhance understanding of construct and criterion validity, and including more in-depth information about ethnicity and socioeconomic status.

Results reported in this volume demonstrate that the Level of Stability Index for Children is a promising new tool in the assessment of harmful tendencies in children. Given these challenges, limitations and recommendations, with further enhancement of psychometrics, the LSIC can be employed as a most useful tool in children's mental health services.

APPENDIX A: Human Subjects Application and Instrumentation

FLORIDA STATE UNIVERSITY *Application No.:*
Human Subjects Application
to the INSTITUTIONAL REVIEW BOARD
for RESEARCH INVOLVING HUMAN SUBJECTS

The Federal Government and University policy require that the use of human subjects in research be monitored by the Institutional Review Board (IRB). **The following information must be provided** when humans are used in research studies, whether internally funded, extramurally funded or unfunded. Research in which humans are used may not be performed in the absence of IRB approval.

PLEASE COMPLETE AND SUBMIT PAGES 1 AND 2 plus YOUR ANSWERS TO THE QUESTIONS (on page 3) IN TYPEWRITTEN FORM TO: HUMAN SUBJECTS COMMITTEE, Mail Code 2763, or

.....
.....

2035 E. Paul Dirac Drive, Box 15
100 Sliger Bldg., Innovation Park
Tallahassee, FL 32310

Researcher: Jacquelyn D. McMillan **Date:** May 25, 2001

Project Title: Development of the Level of Stability Index for Children (LSIC): Determining Indicators of Emotional and Behavioral Stability in Children in Care

Project Period (starting/ending dates): June 1, 2001/ June 1, 2002

Position in University (faculty, etc.) If student, please indicate FSU Faculty Advisor:
Ph. D. Student (Advisor: Neil Abell, Ph. D.)

Department: School of Social Work

Telephone: 850-644-3235 **E-Mail Address:** jdk6495@garnet.acns.fsu.edu
(where you can be reached in case of a problem with your application)

Mailing Address (where your approval will be mailed):
Florida State University, School of Social Work, Tallahassee, FL 32306-2570

Project is (please check one): **dissertation** **teaching** **thesis** **other**

Project is: **unfunded** **funded** (if funded, please complete the following):

Funding Agency (actual/potential): 1. _____ 2. _____

Contract/Grant No. (if applicable): _____

FOR EVALUATION OF YOUR PROJECT, PLEASE CHECK THE FOLLOWING WHICH APPLY:

Mentally or Physically Challenged Subjects
 Children or Minor Subjects (under 18 years old)

Subjects studied at FSU
 Subjects studied at non-FSU location(s)

- Prisoners, Parolees or Incarcerated Subjects
- Filming Video or Audio Recording of Subjects
- Questionnaires or Survey(s) to be administered
- Review of Data Banks, Archives or Medical Records
- Subjects' major language is not English
- Involves Deception (if yes, fully describe at Question No. 7)
- Exclusion of Women or Children Subjects (must explain why they are being excluded)

- Students as Subjects
- Employees as Subjects
- Pregnant Subjects
- Fetal, placental or surgical pathology tissue(s)
- Involves Blood Samples (fingerpricks/venipuncture, etc.)
- Subjects to be paid

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(rev. 11-99)

Human Subjects Application

Survey Techniques: Check applicable category if the only involvement of human subjects will be in one or more of the following categories:

- _____ Research on normal educational practices in commonly accepted educational settings
- _____ Research involving educational tests (cognitive, diagnostic, aptitude, achievement)
- ___√___ Research involving survey or interview procedures (*if checked, please see below*)
- _____ Research involving the collection or study of existing data, documents, records, specimens

If research involves use of survey or interview procedures to be performed, indicate:

1. *Responses will be recorded in such a manner that human subjects cannot be identified, by persons other than the researcher, either directly or through identifiers linked to the subjects.*
 ___√___ yes ___ no

2. *Would subject's responses, if they became known outside the research, reasonably place the subject at risk of criminal or civil liability or be damaging to the subject's financial standing or employability.*
 ___ yes ___√___ no

3. *The research deals with sensitive aspects of the subject's own behavior, such as illegal conduct, drug use, sexual behavior, or use of alcohol.*
 ___ yes ___√___ no

Does Research Involve Greater Than Minimal Risk to Human Subjects? _____ Yes ___√___ No
(If yes, explain in full at Question No. 2)

"Minimal Risk" means that the risks of harm anticipated in the proposed research are not greater, considering probability and magnitude, than those ordinarily encountered in daily life or during the performance of routine physical or psychological examinations or tests.

I HAVE READ THE FLORIDA STATE LETTER OF ASSURANCE FOR THE PROTECTION OF HUMAN SUBJECTS IN RESEARCH AND AGREE TO ABIDE BY IT. I ALSO AGREE TO REPORT ANY SIGNIFICANT AND RELEVANT CHANGES IN PROCEDURES AND INSTRUMENTS AS THEY RELATE TO SUBJECTS TO THE CHAIR, HUMAN SUBJECTS COMMITTEE, OFFICE OF RESEARCH.

RESEARCHER (signature)

(Date)

FSU FACULTY ADVISOR (signature)

(Date)

(Application will not be processed without Advisor's signature)

Page 2

(rev. 11-99)

Human Subjects Application

Questions

FOR RESEARCH INVOLVING HUMAN SUBJECTS

USE ADDITIONAL SHEETS FOR ANSWERING THE FOLLOWING QUESTIONS

PLEASE SUBMIT YOUR ANSWERS IN TYPEWRITTEN FORM

1. GIVE A COMPLETE DESCRIPTION OF YOUR RESEARCH PROCEDURES AS THEY RELATE TO THE USE OF HUMAN SUBJECTS.

The purpose of this study is to collect data for psychometric analysis of a new measure. This study is part of a doctoral research dissertation in which the doctoral candidate (Jacquelyn D. McMillan, MSW) will conduct research at Daniel, a child service agency. No funding has been obtained for this project.

The attached Level of Stability Index for Children (LSIC) is designed to provide the child welfare system with a Rapid Assessment Instrument (RAI) for use with children ages 7 through 17 who are in care or in need of child welfare services. Daniel operates four residential programs and two early delinquency prevention programs, staffed 24 hours a day, seven days a week. These programs and services provide medical, mental health, and substance abuse evaluations for the children in care. The LSIC is designed for the purpose of determining the assessment needs of children on the basis of: (1) the child's risk of doing harm to himself or herself; (2) the child's risk of doing harm to others; and the child's likelihood of being returned to his or her home following treatment and intervention. The LSIC seeks to evaluate the child's level of emotional and behavioral stability. This relates to the child's emotional and behavioral functioning at the time of assessment.

Following "Assent" of children to participate in this study (see item 3 below), subjects will be interviewed by the research team (this author and other social work recruits) trained by the researcher in conjunction with Daniel staff. Interviews will be conducted as part of the ongoing screening and assessment process at Daniel programs. In addition to the LSIC, children will be asked a set of questions from two separate and previously validated instruments (also attached). The Child Depression Inventory and one of two anger scales, the Pediatric Anger Expression Inventory (children) or the State-Trait Anger Expression Inventory (adolescents). Demographic information (age, race, gender, etc.) will be requested as well in order to establish construct validity of the LSIC. Interviewers will be trained to emphasize to the children that their

participation is completely voluntary and that they are free to stop at any time (see interviewer script of the LSIC).

The total number of participants is estimated to be 350 children in Daniel's programs. The programs are located throughout Duval (Jacksonville, Florida) and surrounding counties. Programs include Early Delinquency Intervention and Prevention (EDIP 1, EDIP 2), Therapeutic foster care homes, group homes, residential treatment facilities, and the Sub-Acute Inpatient Psychiatric Program (SIPP).

1. HAVE THE RISKS INVOLVED BEEN MINIMIZED AND ARE THEY REASONABLE IN RELATION TO ANTICIPATED BENEFITS OF THE RESEARCH, IF ANY, TO THE SUBJECTS AND THE IMPORTANCE OF THE KNOWLEDGE THAT MAY REASONABLY BE EXPECTED TO RESULT?

WHAT PROVISIONS HAVE BEEN MADE TO INSURE THAT APPROPRIATE FACILITIES AND PROFESSIONAL ATTENTION NECESSARY FOR THE HEALTH AND SAFETY OF THE SUBJECTS ARE AVAILABLE AND WILL BE UTILIZED?

The researchers will take every precaution to ensure minimal risk to the subjects involved in the research project. Counseling services are available to children in need at Daniel, 24 hours a day. Children may discuss any feelings that may arise as a result of participation in this study. The nature of this research project will be explained to the subjects. This assessment instrument is designed to aid in the appropriate assessment and treatment of children admitted to out-of-home care services.

3. DESCRIBE PROCEDURES TO BE USED TO OBTAIN INFORMED CONSENT. (See attached sample and tips on Informed Consent attached to this application.) *Attach a copy of the informed consent you will use when submitting this application.* **ALSO, PLEASE ANSWER THE FOLLOWING:**

(A) WHO WILL BE OBTAINING INFORMED CONSENT?

Authorized agents of Daniel will obtain consent from the parents/guardians of the children prior to the administration of the measurement package.

(B) WHEN WILL THE SUBJECTS BE ASKED TO PARTICIPATE AND SIGN THE CONSENT FORM?

Children will be asked to participate in this study as an extension of Daniel's ongoing assessment and evaluation process. No consent forms will be signed by the child.

(C) IN USING CHILDREN, HOW WILL THEIR ASSENT BE OBTAINED? ("Assent" is an additional requirement. Please see attached sample regarding this procedure.)

Assent will be obtained from each child prior to their completion of the questionnaires. The interviewers will read a "script" to the child explaining the project and requesting their assent. A space will be provided on the cover sheet of the measurement package wherein the child can place a mark if they are willing to participate or if they are unwilling to participate. Those who are "unwilling" will be excused from the study without further discussion or penalty.

2. DESCRIBE HOW POTENTIAL SUBJECTS FOR THE RESEARCH PROJECT WILL BE RECRUITED.

All children currently admitted to daniel programs and services are eligible for participation. Recruitment will involve contacting all program directors to discuss the project and arrange for continuous recruitment of children as they are admitted.

3. WILL CONFIDENTIALITY OF ALL SUBJECTS BE MAINTAINED? HOW WILL THIS BE ACCOMPLISHED? PLEASE ALSO SPECIFY WHAT WILL BE DONE WITH ALL AUDIO AND/OR VISUAL RECORDINGS, IF APPLICABLE, PICTURES AND PERSONAL DOCUMENTATION OF SUBJECTS BOTH DURING AND AFTER COMPLETION OF THE RESEARCH.

Confidentiality of all subjects will be maintained by placing a subject code number on each measurement package with no other identifying notations (no names or social security numbers will be obtained). All completed and incomplete measurement packages and consent/assent forms will be transported back to Tallahassee and kept in separate, securely locked files to be maintained by the researchers. Demographic information will only be reported in aggregate form. Audio/visual equipment will not be used in this project.

6. IS THE RESEARCH AREA CONTROVERSIAL AND IS THERE A POSSIBILITY YOUR PROJECT WILL GENERATE PUBLIC CONCERN? if SO, PLEASE EXPLAIN.

This research project is not considered controversial and is not likely to lead to public concern.

7. DESCRIBE THE PROCEDURE TO BE USED FOR SUBJECT DEBRIEFING AT THE END OF THE PROJECT. IF YOU DO NOT INTEND TO PROVIDE DEBRIEFING, PLEASE EXPLAIN.

Debriefing will be conducted by the counselors who are available at daniel programs. Debriefing will include a discussion of any uncomfortable aspects of the questionnaire items and interventions or further counseling as the counselor deems necessary.

INFORMED CONSENT FORM

(Parental Consent)

I freely and voluntarily and without element of force or coercion, consent to be a participant in the research project entitled “Development of the Level of Stability Index for Children (LSIC) Rapid Assessment Instrument: Determining Indicators of Emotional and Behavioral Stability of Children in Care.”

This research is being conducted by Jacquelyn D. McMillan, MSW who is a Ph. D. student at Florida State University School of Social Work. I understand the purpose of her research project is to better understand the emotional and behavioral concerns of children in care. I understand that if I allow my child to participate in the project he or she will be asked questions about feelings of depression, ideas about suicide, angry feelings, and aggression. I understand that my child will be asked to fill out paper and pencil questionnaires but participation is totally voluntary and my child may stop participation at anytime. All answers to the questions will be kept confidential and identified by a subject code number. Names will not appear on any of the results. No individual responses will be reported. Only group findings will be reported.

I understand there is a possibility of a minimal level of risk involved if I agree to allow my child to participate in this study. He or she may experience anxiety when thinking about things that make them feel angry or depressed. If my child has had difficulties relating to suicide or aggression in the past, these feelings may resurface upon taking the questionnaires. The social work researchers and program counselors will be available to discuss any emotional discomfort experiences while participating. My child is also able to stop participation at any time he or she wishes to do so.

I understand there are benefits for participating in this research project. First, my child may become more aware of the feelings that he or she experiences thereby enabling him or her to identify and discuss them more openly. Also, my child will be providing social work and social service professionals with valuable insight into child-specific feelings and behaviors that may not be obtained by anyone else in the child's environment. This knowledge will assist them in providing more appropriate services, treatment, and intervention so that children can maintain higher levels of emotional and behavioral stability and functioning.

I understand that this consent may be withdrawn at any time without prejudice, penalty or loss of benefits to which my child is otherwise entitled. I have been given the right to ask and have answered any inquiry concerning the study and my child has the same right to do so. Questions, if any, have been answered to my satisfaction. I understand that I may contact Jacquelyn D. McMillan, Florida State University, School of Social Work, Tallahassee, FL 32306-2570, (850) 644-3235, for answers to questions about this research or my child's rights. Group results will be sent to me upon my request.

I have read and understand this consent form.

Child's Name

Parent's Name

Date

Parent's Signature

(Witness)

**INFORMED CONSENT FORM
(Parent/Guardian Consent)
~For Schools~**

I freely and voluntarily consent to participate in the study entitled “Development of the Level of Stability Index for Children (LSIC) Rapid Assessment Instrument: Determining Indicators of Emotional and Behavioral Stability.”

Jacquelyn D. McMillan, MSW, a Ph. D. student at Florida State University School of Social Work, is conducting this study. I understand that the purpose of her project is to develop better tools for assessing the emotional and behavioral concerns of children. I understand that if I allow my child to participate he or she will be asked to complete a short pencil-and-paper survey (about 15 minutes) with questions about feelings of depression, suicide, anger, and aggression. I understand that my child’s participation is totally voluntary and that he or she may stop at anytime. All answers will be completely anonymous. No names or other specific identifying information will be collected, and the researcher will have no way to connect my child's individual answers with him or her. When research summaries are written, only group results, not individual answers, will be included.

Children may experience anxiety when thinking about the feelings in the survey. If my child voluntarily tells or shows the researchers that he or she is upset, a referral will be made to school personnel for counseling or assessment and this information may be reported in accordance with the law. School counselors will be available to help should completing the survey upset any child.

I understand that being in the study can be helpful. First, my child may become more aware of his or her feelings and be able to talk about them more openly. Also, my child will be providing counselors with new ways to learn about children’s feelings so they can provide better services.

My child will be eligible for a small incentive upon return of this consent form to the school or researcher. I understand that I can change my mind about my child’s participation at any time without any negative consequences. My child will not be penalized for refusing to assent to participation and the incentive will still be given for returning the signed consent form. I have been given the right to ask and have answered any questions concerning the study and my child has the same right. Questions, if any, have been answered to my satisfaction. I understand that I may contact Jacquelyn D. McMillan, Florida State University, School of Social Work, Tallahassee, FL 32306-2570, (850) 644-3235, for answers to questions about this research or my child's rights. Group results will be sent to me upon my request. A faxed copy of this form is acceptable.

I have read and understand this consent form.

Child’s Name

Child’s Age

Parent’s Name

Parent/Guardian Signature

Date

If you have any questions about your rights as a subject/participant in this research, or if you feel you have been placed at risk, you can contact the Chair of the Human Subjects Committee, Institutional Review Board, through the Vice President for the Office of Research at (850) 644-8633.

For daniel, Inc.:

Code # _____

LSIC Level of Stability Index for Children

Check One:

_____ Willing (Child has agreed to participate in study)

_____ Unwilling (Child has not agreed to participate in study)

Please Print The Following Information (or tell it to the interviewer):

City/State of Residence (county): _____

Birthday (Month/Day/Year): _____ / _____ / _____

Gender (Male/ Female): _____

Race: _____

Last School Grade Completed: _____

Today's Date ():** _____

Length of stay (d/m/y): _____ **<in**
current placement>

Site Location (Daniel program): _____

Reason for current placement: _____

Number of times in placement: _____

Office Use Only:			
_____	<i>Self-administered</i>	_____	<i>Audiotape</i>
_____	<i>Group</i>	_____	<i>Individual</i>

For Schools:

Code # _____

LSIC Level of Stability Index for Children

Check One:

_____ Willing (Child has agreed to participate in study)

_____ Unwilling (Child has not agreed to participate in study)

Please Print The Following Information (or tell it to the interviewer):

City/State of Residence (county): _____

Age (in years): _____

Gender (Male/ Female): _____

Race/Ethnicity: _____

Siblings Living in the Home:

of Brothers _____

of Sisters _____

Parents/ Gurardians in the Home (check appropriate box):

- Both parents
- One parent
- One parent/ stepparent
- Other relative
- Non-relative

Grade In School: _____

Name of School: _____

Today's Date ():** _____

<i>Office Use Only:</i>	
_____ <i>Individual</i>	_____ <i>Audiotape</i>
_____ <i>Group</i>	_____ <i>Incentive used</i>

LEVEL OF STABILITY INDEX FOR CHILDREN
By Jacquelyn D. McMillan

INSTRUCTIONS: *These questions are to help us learn how you are doing. There are no right or wrong answers, so just answer them honestly the best that you can. Please answer each question by circling the appropriate number that best fits how you usually feel (1=none of the time; 2=Very rarely; 3=A little of the time; 4=Some of the time; 5=A good part of the time; 6=Most of the time; 7=All of the time). By answering these questions, you are saying it is okay for us to use your answers in our work (without telling your name). You may stop answering these questions at any time if you feel the need to do so.*

- | | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1. I feel lonely. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 2. I feel hopeless. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 3. I feel out of control. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 4. I am sad. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 5. I have trouble sleeping. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 6. I have a lot of energy. * | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 7. I have trouble paying attention. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 8. I enjoy being by myself. * | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 9. I like my life. * | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 10. I think about the good things in my life. * | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 11. I think about hurting myself. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 12. I think killing myself is a bad idea.* | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 13. I think about killing myself. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 14. I make plans to kill myself. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 15. I think all my pain would go away if I was dead. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 16. I have what I need to kill myself. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 17. I know how to get what I need to kill myself. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 18. I am in a bad mood. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 19. I get into trouble because of my anger. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 20. I say mean things when I am angry. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 21. I lose my temper. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 22. Controlling my anger keeps me out of trouble. * | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 23. I can control my anger. * | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 24. I use angry words to hurt people. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 25. I get angry if I don't get what I want. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 26. I hurt people. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 27. I start fights. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 28. I get angry about things that should not bother me. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 29. I get angry for no reason at all. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 30. I want to hurt people who bother me. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 31. I have a bad temper. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 32. I say mean things for no reason. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 33. I feel like fighting. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 34. I have used a weapon when fighting. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

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PEDIATRIC ANGER EXPRESSION SCALE
By G. A. Jacobs

INSTRUCTIONS: A number of statements which boys and girls use to describe themselves when they feel angry or very angry are given below. Read each statement carefully and decide if it is hardly-ever, or sometimes, or often true for you. Then for each statement, circle one of the numbers for the word which seems to describe how you feel or act when you are angry or very angry (1=Hardly ever; 2=Sometimes; 3=Often). There are no right or wrong answers. Do not spend too much time on any one statement. Remember, choose the word which seems to describe how you usually feel or act when you are angry or very angry.

<p><u>PAES Answer Key</u></p> <p>1. Hardly ever</p> <p>2. Sometimes</p> <p>3. Often</p>
--

S
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M
P
L
E

- | | | | | |
|--|--|---|---|---|
| 1. I hold my anger in. | | 1 | 2 | 3 |
| 2. I talk to someone until I feel better. | | 1 | 2 | 3 |
| 3. I do things like slam doors. | | 1 | 2 | 3 |
| 4. I keep my cool. | | 1 | 2 | 3 |
| 5. I attack whatever it is that makes me very angry. | | 1 | 2 | 3 |
| 6. I get mad inside but I don't show it. | | 1 | 2 | 3 |

CHILDREN'S DEPRESSION INVENTORY

Instructions: Kids sometimes have different feelings and ideas. These items are a list of feelings and ideas in groups. From each group of three sentences pick one sentence that describes you best for the past two weeks. After you pick a sentence from the first group, go on to the next group. There is no right or wrong answer. Just pick the sentence that best describes the way you have been recently. Put a mark like this (X) next to your answer. Put the mark in the box next to the sentence that you pick.

Item 1

- I am sad once in a while.
- I am sad many times.
- I am sad all the time.

Item 2

- Nothing will every work out for me.
- I am not sure if things will work out for me.
- Things will work out for me O. K.

Item 3

- I do most things O. K.
- I do many things wrong.
- I do everything wrong.

Item 4

- I have fun in many things.
- I have fun in some things.
- Nothing is fun at all.

Item 5

- I am bad all the time.
- I am bad many times.
- I am bad once in a while.

Item 6

- I think about bad things happening to me once in a while.
- I worry that bad things will happen to me.
- I am sure that terrible things will happen to me.

S
A
M
P
L
E

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STATE - TRAIT ANGER EXPRESSION INVENTORY

Instructions: Please rate each statement you read below by indicating how often you use the following (circle your answer in the right hand column):

STAXI-2 Answer Key	
1.	Almost Never
2.	Sometimes
3.	Often
4.	Almost Always

S
A
M
P
L
E

1. I express my anger.	1	2	3	4
2. I am angrier than I am willing to admit.	1	2	3	4
3. I control my temper.	1	2	3	4
4. I try to calm myself as soon as possible.	1	2	3	4
5. I lose my temper.	1	2	3	4
6. I do things like slam doors.	1	2	3	4

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APPENDIX B: CONTENT VALIDATION DOCUMENTS

Dear Participant:

You have been chosen due to your expertise in the area of children's mental health, treatment, and intervention. Thank you for volunteering your time and expertise to assist in the development of an instrument to enhance the assessment and treatment of children in care. This instrument is called the Level of Stability Index for Children (LSIC).

The LSIC is a rapid assessment instrument designed for use with children who manifest emotional and behavioral problems. This measure is developed to gauge the child's view of his or her situation. Items, in the form of "I" statements, have been developed to capture four constructs (depression, suicidal ideation, anger, and aggression). Your expertise is requested to ensure that these items are appropriate for the constructs in which they are contained and for the children to which they will be administered.

The enclosed information will provide you with the necessary instructions for rating the items to be included in the Level of Stability Index for Children (LSIC). Please review the enclosed instructions prior to completion of the rating questionnaire. Thank you in advance for your assistance.

Sincerely,

Jacquelyn D. McMillan, MSW

Ph. D. Candidate

EXPERT PANEL INSTRUCTIONS:

Attached is a copy of the LSIC measuring instrument including four constructs and items developed for each (A) depression items 1-11; (B) suicidal ideation items 12-16; (C) anger items 17-24; and (D) aggressive tendency items 25-32. Statements (items) have been created for children to read and each item is intended to indicate how often the child feels a certain emotion or does a certain behavior (range from 1-none of the time to 7-all of the time).

You have been chosen to provide feedback by rating each item for appropriateness in its specified category (see below for further instructions). All completed pages (including page 3) are to be returned by the most expedient method available to you. Your suggestions will be taken into consideration prior to the administration of the LSIC. Feel free to call if you have further questions (Jackie McMillan; office: 850-644-3235/home: 850-421-1123). Thank you in advance for your assistance.

PART ONE (Pages 2-5):

Please write your name and agency information on the bottom of page 3. Rate each item (pp. 4-5) to determine its appropriateness for the construct into which it is contained. A definition of each construct (as it is defined for THIS study) is provided on page 3 and a brief definition after each construct. A rating scale is provided below and on the questionnaire:

1. Not at all relevant - item whose content does not match definition of construct/domain
2. A little relevant - item whose content is only slightly relevant; questionable as to its appropriate use in the designated construct/ domain
3. Somewhat relevant - item is neutral; minimal level of acceptance
4. Quite a bit relevant - item is relevant to definition of construct
5. Very relevant - item fits best with definition of construct into which it is contained

PART TWO (Pages 6-7):

This section is **OPTIONAL** - you are not required to complete it. Please indicate in the space provided any items you have rated below a four (4).

PAGE 2

Name of panelist (include credentials):

Job Title/Agency name:

LSIC Construct Definitions

Depression (Items 1-11):

Includes diminished interest in pleasurable activities, significant weight loss or gain, insomnia/hypersomnia, low energy or fatigue, poor concentration, or feelings of hopelessness.

Suicidal Ideation (Items 12-16):

Indicated by thoughts, ideas and intentions of harming or killing oneself (suicide).

Anger (Items 17-24):

Refers to an emotional state consisting of feelings that vary in intensity ranging from low intensity reactions such as mild irritation to high intensity reactions such as fury, hostility and rage. Verbal/nonverbal responses include use of profanity; clenched fists; yelling; screaming; pounding, etc.

Aggression (Items 25-32):

Any verbal or physical act that one engages in that is intended to threaten or result in harm to someone; or intent to harm someone.

RATINGS

1 – NOT AT ALL RELEVANT
2 - A LITTLE RELEVANT
3 - SOMEWHAT RELEVANT
4 - QUITE A BIT RELEVANT
5 - VERY RELEVANT

Depression (Items 1-11):

Includes diminished interest in pleasurable activities, significant weight loss or gain, insomnia/hypersomnia, low energy or fatigue, poor concentration, or feelings of hopelessness.

- | | | | | | |
|-----------------------------------|---|---|---|---|---|
| 1. I feel alone. | 1 | 2 | 3 | 4 | 5 |
| 2. I feel hopeless. | 1 | 2 | 3 | 4 | 5 |
| 3. I feel out of control. | 1 | 2 | 3 | 4 | 5 |
| 4. I am sad. | 1 | 2 | 3 | 4 | 5 |
| 5. I have trouble falling asleep. | 1 | 2 | 3 | 4 | 5 |
| 6. I have a lot of energy. * | 1 | 2 | 3 | 4 | 5 |
| 7. I am depressed. | 1 | 2 | 3 | 4 | 5 |

- | | | | | | |
|---|---|---|---|---|---|
| 8. I enjoy myself. * | 1 | 2 | 3 | 4 | 5 |
| 9. I like my life. * | 1 | 2 | 3 | 4 | 5 |
| 10. I think about the good things in my life. * | 1 | 2 | 3 | 4 | 5 |
| 11. I think life is important. * | 1 | 2 | 3 | 4 | 5 |

Suicidal Ideation (Items 12-16):

Indicated by thoughts, ideas and intentions of harming or killing oneself (suicide).

- | | | | | | |
|--|---|---|---|---|---|
| 12. I think about hurting myself. | 1 | 2 | 3 | 4 | 5 |
| 13. I think about killing myself. | 1 | 2 | 3 | 4 | 5 |
| 14. I make plans to kill myself. | 1 | 2 | 3 | 4 | 5 |
| 15. I think that all of my pain would go away if I was dead. | 1 | 2 | 3 | 4 | 5 |
| 16. I have (or know how to get) what I need to kill myself. | 1 | 2 | 3 | 4 | 5 |

Anger (Items 17-24):

Refers to an emotional state consisting of feelings that vary in intensity, ranging from low intensity reactions such as mild irritation to high intensity reactions such as fury, hostility and rage. Verbal/nonverbal responses include use of profanity; clenched fists; yelling; screaming; pounding, etc.

- | | | | | | |
|---|---|---|---|---|---|
| 17. I get angry if people bother me. | 1 | 2 | 3 | 4 | 5 |
| 18. I get into trouble because of my anger. | 1 | 2 | 3 | 4 | 5 |
| 19. I say mean things when I am angry. | 1 | 2 | 3 | 4 | 5 |
| 20. I lose my temper. | 1 | 2 | 3 | 4 | 5 |
| 21. Controlling my anger keeps me out of trouble. * | 1 | 2 | 3 | 4 | 5 |
| 22. I can control my anger. * | 1 | 2 | 3 | 4 | 5 |
| 23. I use angry words to hurt people. | 1 | 2 | 3 | 4 | 5 |
| 24. I get angry if I don't get what I want. | 1 | 2 | 3 | 4 | 5 |

Aggression (Items 25-32): Any verbal or physical act that one engages in that is intended to threaten or result in harm to someone; or intent to harm someone.

- | | | | | | |
|--|---|---|---|---|---|
| 25. I hurt people. | 1 | 2 | 3 | 4 | 5 |
| 26. I start fights. | 1 | 2 | 3 | 4 | 5 |
| 27. I scare/frighten people. | 1 | 2 | 3 | 4 | 5 |
| 28. I will fight people if they bother me. | 1 | 2 | 3 | 4 | 5 |
| 29. I have a bad temper. | 1 | 2 | 3 | 4 | 5 |
| 30. I say mean things. | 1 | 2 | 3 | 4 | 5 |
| 31. If someone hits me, I hit him or her back. | 1 | 2 | 3 | 4 | 5 |
| 32. I have used a weapon when fighting. | 1 | 2 | 3 | 4 | 5 |

APPENDIX C: COPYRIGHT PERMISSIONS

MULTI-HEALTH SYSTEMS, INC.
Attention: Contracts & Permissions Coordinator
P. O. Box 950
North Tonawanda, NY 14120-0950

Dear Contracts & Permissions Coordinator:

I am completing a dissertation at Florida State University School of Social Work entitled, "The Level of Stability Index for Children (LSIC): Determining Indicators of Emotional and Behavioral Stability in Children." I would like your permission to reprint in my dissertation excerpts from the following:

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Gerard A. Jacobs, Ph. D.
Department of Psychology
University of South Dakota

414 East Clark Street
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October 6, 2003

Jacquelyn McMillan
720 Old Woodville Road
Crawfordville, FL 32327

Dear Ms. McMillan:

In response to your recent request, permission is hereby granted for you to include up to six (6) sample items from the State-Trait Anger Expression Inventory-2 (STAXI-2-2) in editions and future revisions of your dissertation entitled *The Level of Stability Index for Children (LSIC): Determining Indicators of Emotional and Behavioral Stability in Children*. Permission is also granted to University Microfilms International, Ann Arbor, Michigan, for the purpose of reproducing and distributing copies of your dissertation.

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DATE: _____

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APPENDIX D: INSTITUTIONAL PARTICIPATION DOCUMENTS

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Jesse Jackson, Principal
Grades K-5

Jesse Jackson, Interim Director
Eileen McDaniel, Research Director

Susan Martelli, Principal
Grades 6-12

Dear Parent(s)/Guardian:

Attached you will find information regarding a research project entitled "Development of the *Level of Stability Index* for Children: Determining Indicators of Emotional and Behavioral Stability," a study being conducted at the Florida State University School under the supervision of Dr. Neil Abell in the School of Social Work at the Florida State University, and his graduate student, Ms. Jacquelyn McMillan. The intent of this project is to validate a new instrument that will assist administrators and clinicians in focusing efforts on assessing child and adolescent tendencies related to depression, suicide, anger and aggression. In order to validate the instrument normal populations of school children need to be assessed using this measurement. This project has been approved by both the Florida State University Institutional Review Board and by the Administration of this school. Please take the time to carefully read the attached document(s), sign the parental permission form, and return it to your child's teacher or Eileen McDaniel, Research Director (Administration Building), by **Friday, January 17, 2003**.

This study is being conducted with all students in grades 5, 6, 7, 8 and 10. All assessments will remain confidential and no responses will be shared with school personnel. If you do not wish for your child to participate in the project, we ask that you indicate so on the bottom of the assent form and return the form to the school. In this way we will know you have received and reviewed the project's summary.

As a reminder, upon accepting an invitation for your child to attend the Florida State University School, you formally agreed to support the FSUS philosophy and mission of the school that emphasizes research on teaching and learning. We strongly encourage you to permit your child to participate in this study. Your child will not miss any academic class work or lessons while participating in this project. If you have any questions concerning this research project and your child's involvement in the project, please do not hesitate to either contact me (850-245-3708) or the researcher, Jacquelyn McMillan (850-421-1123).

Again, thank you for your continued interest and support of the educational programs and activities at the Florida State University School. We appreciate your active involvement in all aspects of your child's education.

Sincerely,



Eileen L. McDaniel
Research Director

Leon County Schools - REQUEST FOR RESEARCH

PRINCIPAL INVESTIGATOR:
Mrs. Jacquelyn D. McMillan, MSW

ADDRESS: Post Office Box 1481; Woodville, FL 32362 **PHONE:** 850-421-1123

SPONSOR: (Name of university, dept., area or agency affiliation)
Florida State University School of Social Work
Faculty Sponsor/Major Professor: Neil Abell, Ph. D.

SHORT TOPIC OF STUDY: (6 words or less)
Development of the Level of Stability Index for Children (LSIC)

STATEMENT OF PROBLEM OR NEED TO BE ADDRESSED:
The LSIC is designed to fill the gap in child-focused research where there are no other multi-dimensional, self-report, rapid assessment instruments that tap the constructs of depression, suicide, anger and aggression. The LSIC has the potential to be of great use in child serving agencies and settings that desire to capture those attitudes or beliefs in children that demonstrate the greatest potential harm to the child or to others.

BRIEFLY LIST MEASURES TO BE TAKEN AND INSTRUMENTS TO BE USED: (Please include copies of those instruments not in common use in the school and any available technical support information on those instruments.)
Level of Stability Index for Children (new measure to be validated)
Pediatric Anger Expression Scale (PAES-G.A. Jacobs/M. Phelps/T. Hoenie - 1987)
State-Trait Anger Expression Inventory (STAXI-2-Charles Spielberger; Psychological Assessment Resources, Inc; 16204 North Florida Avenue, Lutz, FL 33549-1979)
Children's Depression Inventory (CDI-Maria Kovacs; Multi-Health Systems, Inc.; 908 Niagara Falls Blvd., North Tonawanda, NY 14120-2060, 1-800-456-3003-1982)

BRIEFLY DESCRIBE STUDENT GROUPS PARTICIPATING IN THIS RESEARCH:

Grade Level	# of students	Relevant Characteristics
7 th	150	General Education Students
10 th	150	General Education Students

HOW ARE THE PARTICIPATING STUDENTS TO BE SELECTED: (Randomly, by homeroom, matched, etc.)
Designated teachers will volunteer to participate utilizing all periods for specified teachers.

SCHOOL INVOLVEMENT:

School Name(s)	Grade Level	Type Personnel (teachers, etc.)	Time Required	Activity Involved
Nims Middle	7	Teachers	1/2 hour per class	Assessment
Rickards High	10	Teachers	1/2 hour per	Assessment

			class	
--	--	--	-------	--

Leon County Schools - REQUEST FOR RESEARCH

PROPOSED DATE FOR START OF ON-SITE OPERATIONS: March 1, 2002

EXPECTED DATE OF TERMINATION: May 24, 2002

SCHOOL FACILITIES NEEDED: (Briefly list space, materials, equipment, etc. necessary for the proposed research-also list the purpose intended for each item listed) : Classrooms (all other equipment will be the responsibility of the principal investigator)

SIGNATURE OF PRINCIPAL INVESTIGATOR:

PRINT NAME:

Jacquelyn D. McMillan

SIGNATURE OF SPONSOR:

ENCLOSURE CHECKLIST

- 5 copies of the completed Request for Research Form
- 5 copies of a 75-100 word abstract of the research
 - 5 copies of evidence of a review of the relevant literature and previous research
- 5 copies of instruments to be used
- 5 copies of Parent/Student Permission slips, if applicable

LIST SUPPORT MATERIALS ADDED TO THE REQUEST

- Abstract of research
- Evidence of a review of relevant literature/previous research
- Measurement instruments
- Informed Consent Form (parental consent)

Questions regarding completion of this form may be answered by
Program Monitoring and Evaluation, Aquilina Howell Instructional Service Center
3955 West Pensacola Street
Tallahassee, Florida 32304
(850) 488-7007 / Fax (850) 922-5979

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BIOGRAPHICAL SKETCH

Jacquelyn Denise McMillan was born on September 23, 1968 in Miami, Florida to Claude and Molly Patricia King. She graduated from Dillard High School (Broward County) in 1986. She received her Bachelor of Science degree in Psychology at the University of Florida (BS received in 1990). McMillan worked at Shand's Hospital (Gainesville, Florida; 1990 - 1993) as a Therapy Aide for the Diabetes Project Unit; a facility specializing in the care and treatment of children and adolescents with Type I diabetes. McMillan also worked for Daniel, Inc. (improving the odds for kids) in Jacksonville, Florida (1993 - 1995). While at Daniel, clinical social workers encouraged McMillan to pursue the Master's of Social Work (MSW) degree. While in the Master's program at Florida State University School of Social Work, McMillan participated in the local chapters of the National Association of Social Workers (NASW) and the National Association of Black Social Workers (NABSW). McMillan has also been employed by Apalachee Center for Human Services, Alzheimer's Project of Tallahassee, and Capital City Youth Services (all of Tallahassee).

As a result of her academic work and service activities, McMillan received commendation as Student Social Worker of the Year (1996). She also received the Coyle and Mabel Moore Scholarship and the Patricia Vance Scholarship (1996). McMillan received her MSW in 1997. She began the doctoral degree program in fall (1997). She was awarded the Florida Education Fund (McKnight Fellowship) to continue her graduate studies (1997- 2002). In 2003, McMillan received the Dissertation Research Grant from Florida State University and the Mark DeGraff and Lula Hamilton DeGraff Scholarship from the Florida State University School of Social Work.

McMillan has been involved with youth activities and service programs of the S.E. Tenth Avenue Church of Christ (Gainesville, Florida); Northside Church of Christ (Jacksonville, Florida); and Springhill Road Church of Christ (Tallahassee, Florida). She is presently a member of the Paul Russell Road Church of Christ where she serves on a number of committees including Benevolence Committee, Nursery Project Committee, and Evangelism Committee. She is also a Sunday School instructor for middle school children and a youth leader for the UMOJA 4-H program (Cooperative Extension 4-H of Leon County). Jacquelyn Denise McMillan is married to Damon Cooper McMillan, Sr. and has one son, Cooper (Damon, Jr.).