12-2012

Development and Validation of A Process Focused Measure of Childhood Depression

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Development and Validation of A Process Focused Measure of Childhood Depression

by

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A Dissertation submitted in partial satisfaction of
the requirements for the degree
Doctor of Philosophy in Clinical Psychology

December 2012

Each person whose signature appears below certifies that this dissertation in his/her opinion is adequate, in scope and quality, as a dissertation for the degree Doctor of Philosophy.

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ACKNOWLEDGMENTS

I would like to express my deepest gratitude to my committee chair, Dr. Todd Burley, whose wisdom, passion and commitment helped make this study possible. Thank you for being the inspiration for this study, for your kindness every step of the way and for always believing in me. I consider myself fortunate for having the opportunity to work with you and learn from you. I would also like to thank Drs. Zaytsev, Krishnamurthy and Vermeersch for serving on my committee and for their advice and direction. A special thank you to all my mentors whom I have worked with directly and learned from immensely throughout my graduate school training including: Drs. Kiti Freier, Laura Seibert, Liyona Khoury, Elizabeth Willen, Bonnie Levin, Neena Malik, Oren Boxer, Renee Folsom, Frank Andrews, Kim Freeman, and Ludmila Zaytzev.

To my amazing friends, I'm so grateful for your friendship and so blessed to have you in my life. Thank you for always being there for me. To my cousins, I appreciate you so much. Most of all, to my family, I can never thank you enough for your unconditional love and support. Thank you for supporting me and allowing me to feel my dreams were attainable. To my parents, Haik and Ofik, who immigrated to this country 24 years ago, you arrived with a dream that your children would grow up with opportunities not afforded to you in your childhood. My ability to pursue this doctorate degree is a tribute to your dream and the sacrifices you have made. I love you more than I can ever say or show.

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ABSTRACT OF THE DISSERTATION

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Loma Linda University, December 2012
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The purpose of this research was to develop a measure of childhood depression and test its psychometric properties with depressed and non-depressed children. First, an overview of our current understanding of childhood depression and the measures used in assessment is reviewed. Following, the problems with our diagnostic classification are presented, providing justification for the development of a new measure for childhood depression. A bottom-up approach is used in this study to develop a theory driven measure for identifying depression in children which focuses on the process. Thus, varying from the primarily symptom based assessment tools that are currently used in psychology. Gestalt theory is explored to understand the depressive process and items were comprised which are less face valid and present scenarios that may describe how a depressed child functions in his or her environment. The newly created measure, Depression Process Scale- Children (DPS-C), was administered to depressed and non-depressed children. For comparative analysis and validation, additional measures were also administered which include the Children's Depression Inventory-2 (CDI-2) and the Behavioral Assessment System for Children- Second Edition (BASC-2). An exploratory factor analysis was conducted, revealing three factors with thirteen items for the DPS-C.

Next, the validity of the new measure was investigated by determining the scales convergence with the CDI-2 and parent report of the BASC-2. Correlational analysis revealed strong positive correlations between the DPS-C and specific subscales of the BASC-2 (Depression and Withdrawal). The DPS-C did not have strong correlations with the CDI 2 and other subscales of the BASC-2, revealing the convergent and discriminant validity of the measure. Logistic regression analysis revealed the DPS-C total score, Scale 1 and Scale 3 were significant predictors of depression. Additionally, the DPS-C remained a significant predictor of depression after accounting for the variance explained by the CDI 2. Findings suggest the DPS-C is likely tapping into a unique aspect of depression not accounted for by symptom-based measures. Overall, this study demonstrated that a theory driven measure of childhood depression is able to differentiate between depressed and non-depressed children as well as increase the understanding of depression in children beyond DSM symptomatology.

CHAPTER ONE

INTRODUCTION

The Diagnostic and Statistical Manual of Mental Disorders (DSM) is published by the American Psychiatric Association and is meant to provide a common language and standard criteria for the classification of mental disorders. For decades since the mental health profession started using the DSM, it has influenced professionals' thinking about the meaning of disorders. A list of symptoms has come to define the understanding of mental illness and guides how treatment is provided and who is treated. This approach of labeling individuals and making inferences for treatment from such labeling can be problematic for a number of reasons. Scholars have agreed that psychiatry now adheres to the medical model, which advocates consistent application of modern medical thinking and methods (Black, 2005) and in which psychopathology is considered to represent "the manifestations of disturbed function within a part of the body" (Guze, 1992). Psychology has adopted this medical model and the DSM is the most important tool used to diagnose mental illness and guide treatment for both children and adults.

Current Understanding of Depression in Children

Over the years, interest in the study of child psychopathology has increased dramatically because of a growing realization that childhood depression affects children in a variety of ways. Childhood depression has lifelong consequences and costs both for children and for society (Mash & Wolfe, 2008). Some of the more recent understanding of childhood depression acknowledges that depression affects a number of areas of functioning in children, including their moods, behaviors, changes in attitude, thinking,

and physical condition (Mash & Wolfe, 2008). Other emotions that accompany a depressive mood in children are feelings of guilt, shame, and oversensitivity to criticism. Recent studies investigating the most salient aspects of depression in children have suggested that low self-esteem is the most strongly related construct (Sowislo & Orth, 2012).

For children, depression can also be characterized by irritability rather than depressed mood, whereas depressed mood is required for a diagnosis of depression in adults. Children with depression can be extremely argumentative, moody, and tearful. Anger, which has been shown to increase risk of suicide, is a common symptom associated with the agitated states of depression. Agitation occurs in about 35 percent of children with depression (Ang & Huan, 2010). Furthermore, one of the strongest risk factors for suicide in youth is depression (Shaffer & Pfeffer, 2001), and suicide is the third leading cause of death in the United States for adolescents, accounting for 11% of the deaths. As many as 27% of children with depression (Stark et al., 1991) and 60% of adolescents with depression (Wetzler, Asnis, Hyman, & Virtue, 1996) have serious suicidal ideations. The field of psychology is now moving toward developmentally informed multifactorial models that more accurately reflect the complexity, heterogeneity, and dimensionality of depressive disorders. Inability to self-regulate seems to be common in depressive and related disorders (Goldman, 2012). Although professionals now agree that depression in children occurs, several controversies remain regarding its clinical signs and the best approaches for assessment and diagnosis. Areas of agreement include, first, the understanding that identification of depression in childhood should occur as early as possible to allow for early intervention. Second, given the

heterogeneous presentation of depressive symptoms across different age groups, an empirically based developmental approach to diagnosis is necessary (D'Angelo & Augenstein, 2012).

After decades of controversy about whether children experience depression, the diagnosis was finally accepted for children in 1980 by its inclusion in the DSM-III. However, identifying childhood depression has generally been viewed as being similar to identifying adult depression, including having similar symptomatology (Nelson & Politano, 1990). In fact, the current DSM (DSM-IV-TR) does not differentiate between childhood and adult depression. In the last 2 decades, more research has been conducted specifically on childhood depression; however, previously, much of the knowledge about child psychopathology was based on theory and research on adult disorders. Similarly, the assessment tools currently used have been derived from adult measures. For example, one of the first measures of childhood depression was based on an adult measure. The Beck Depression Inventory, developed in 1967, was the starting point for a self-report measure that would be appropriate for children (Kovacs, 2003). Since its development, various screening measures, following a similar model, have been developed to guide clinicians in making appropriate decisions in diagnosis and treatment. However, the accuracy and effectiveness of measures that help psychologists diagnose children have come into question (Barret, 1991). One of the problems with using the current measures in diagnoses is the poor specificity at the high end of the scales. Children who report elevated symptoms often do not meet diagnostic criteria for the disorder (Kessler, Avenevoli, & Merikangas, 2001). Additionally, in terms of the use of self-report measures to diagnose depression in children and adolescents, one study found that two

commonly used measures (Children's Depression Inventory and Depression Self-Rating Scales) misclassified 25% of children in depressed and controlled samples (Fundudis, 1991). In conclusion, there is no disagreement concerning the relevance and prevalence of depression in children; however, better understanding of what such depression looks like is needed.

Prevalence

The importance of addressing childhood depression, it's presentation and diagnosis is important given it's high prevalence rate. The prevalence rate for major depressive disorder (MDD) for children aged 4–18 is 2–8% (Mash & Wolfe, 2008). Studies for depression in the general population are more specific, reporting a base rate of depression at 8% (Hawthorne et al., 2008). The variation in rates for childhood depression is largely dependent on the age group evaluated in the study. Specifically, in school-aged children, the prevalence rate for MDD is less than 1%, yet for adolescents, the prevalence rate increases to 8% (Mash & Barkley, 2002; Birmaher et al., 1996). In 2010 the National Institute of Mental Health (NIMH) estimated that as many as 11.2% of persons 13-18 years old are affected with depressive disorder. Of those, 3% have experienced a seriously debilitating depressive state (Merikangas et al., 2010). Children and adolescents who experience early onset of depression are more likely to experience recurrences and are more likely to experience severe depression as adults (Kessler, Chiu, Demler, & Walters, 2005). Given the high prevalence for childhood depression, it is warranted to review the measures clinicians currently used to aid in diagnosis.

Review of Current Measures

Self-Report Measures

Widely varying measures have been developed in pursuit of a reliable and objective assessment of children's emotional states. Self-report rating scales are commonly used as relatively speedy screening tools for diagnosis and as tools in nonresearch settings to assess response to treatment (Maust et al., 2012). Although self-report measures are not meant to be used independently of clinical evaluation for diagnosis, they provide an indication of the severity of symptoms over a specific time. When someone scores above a given cut-off point, that person can be more thoroughly evaluated for a depressive disorder diagnosis (Lipsky, 2002). Several self-report measures are intended to assess depression in children or have subscales for depression. The Children's Depression Inventory (CDI); the Achenbach scales; the Behavioral Assessment System for Children, 2nd Edition (BASC-2); and the Children's Depression Rating Scale Revised (CDRS-R) are reviewed below as some of the most commonly used measures. However, many other self-report measures for depression in children include the following: Children's Depression Scale (1992), Depression Self-Rating Scale (1987), Reynolds Adolescent Depression Scale (1986), Reynolds Child Depression Scale (1989), Multiscore Depression Inventory for Children (1996), Depression Adjective Checklist (1983), Preschool Symptoms Self-Report (1990), Children's Attributional Style Questionnaire (1988), Hopelessness Scale for Children (1986), Children's Negative Cognitive Error Questionnaire (1986), Loneliness Questionnaire (1985), Inventory of Suicide Orientation-30 (1994), and various others.

Children's Depression Inventory

The Children's Depression Inventory 2 (CDI 2) was published by Multi-Health Systems (MHS) and evolved from the original CDI, developed by Kovacs in 1977 and formally published by MHS in 1992. The original measure was developed in response to the need for direct assessment concerning children's mental health (Kovacs, 1992) and is the most widely cited and clinically used measure of childhood depression. Used to assess depressive symptoms in children and adolescents 7–17 years old, the CDI was designed to measure quantitatively the following symptoms of depression: mood disturbances; capacity for enjoyment; depressed self-evaluation; disturbances in behavior toward other people; and vegetative symptoms, including fatigue, oversleeping, having difficulty with activities requiring effort, and other symptoms of passivity or inactivity. The subscales on the CDI include Negative Mood, Interpersonal Problems, Ineffectiveness, Anhedonia, and Negative Self-Esteem. The summed raw scores are then computed as T-scores based on normative samples divided by age and gender (Kovacs, 1992). The summed items give a total score, with higher scores indicating more depressive symptomatology.

CDI 2 retained many of the essential features of the original version. The primary change in the second version was the construction of different subscales. The CDI 2 has two main subscales: Emotional Problems and Functional Problems. The Emotional Problems subscale is subdivided into Negative Mood/Physical Symptoms and Negative Self-Esteem. The Functional Problems subscale is subdivided into Ineffectiveness and Interpersonal Problems (Bae, 2012). Some of the changes were associated with a shift in the clinical thinking about sleep patterns and age-relevant depressive symptoms of

dysfunction in concentration. CDI 2 includes items written at a low reading level, designed for youth to respond easily to the scales with three choices per item. The measure offers clinicians auxiliary information for clinical diagnosis and therapy and can be used as screening to identify what proportion of children need subsequent evaluation and support (Bae, 2012).

Achenbach

The Achenbach scales include the Child Behavior Checklist (CBCL), which is completed by parents; the Teachers Report Form (TRF), completed by a teacher; and the Youth Self Report (YSR), completed by the child. The CBCL has 118 items that, according to Achenbach (1991), will "provide an empirical foundation for identifying syndromes from which to construct a taxonomy of childhood disorders" (p. 31). Thus, Achenbach clearly indicated the intent was not to diagnose but rather to provide the tools with which the practitioner can diagnose. CBCL scale items are rated on a 3-point Likert-style scale of *not true*, *often true*, and *very true*. The practitioner converts the scores into a T-score (M =50; SD = 10). T-scores above 65 indicate the child is in the at-risk range for problems. The CBCL can be completed by parents or guardians who can read at the 5th-grade level or above (Achenbach & McConaughy, 1987). The CBCL is intended to assess the presence of symptomatology that may be representative of attention problems, somatic complaints, anxious/depressed modality, withdrawnness, social problems, thought problems, aggressive behavior, and delinquent behaviors. The behaviors are then determined to be internalizing (self-directed) or externalizing (directed

outwardly). The total behavior problem scale that results provides the practitioner with an overall measure of global psychopathology.

Achenbach established norms for the CBCL for individuals between 4 and 18 years of age. The norms were developed by comparing clinical and non-clinical samples. The samples were developed to cross all age, gender, ethnicity, and socioeconomic statuses. Achenbach's test manual (1991) indicated that the CBCL has good reliability and validity with intraclass correlations reported at above .90. Test and re-test reliability of competence scales was reported at .87 and of problem scales at .89 (Achenbach, 1991). Intraparent reliability reflected a mean reliability of .74–.75 for the competence scales and .65–.75 for the problem scales. The internalizing and externalizing scales had a positive correlation of mean Pearson $r = .54$. Achenbach suggested that some children are generally internalizing while others are generally externalizing (Achenbach, 1991). The correlations, however, indicate that the two scales are not mutually exclusive.

Crijnen, Achenbach, and Verhulst (1997, 1999) investigated social problems, withdrawal, and attention-seeking and aggression-related problems that can present quite differently in children of different ages and cultures. Actions committed by a child in one culture can mean something completely different in another culture. This fact adds an additional layer of complexity for any practitioner attempting to diagnose a child from a different national or sociological background from most other children in the professional's practice. In 1997, Crijnen et al. investigated CBCL syndrome constructs in terms of "total problem scores and broadband groupings of externalizing and internalizing problems" (Crijnen et al. 1999, p. 569). In 1999, Crijnen et al. studied

CBCL syndrome constructs in the contexts of problems reported by parents of children in multiple cultures.

The purpose of Crijnen et al. (1997, 1999) was to compare how parents of children in 12 different cultures reported behaviors. The children's ages ranged from 6–17 years, with 13,697 children involved in the study. Nine cultures were studied for children aged 6–17, and 12 cultures were studied for children aged 6–11. The children aged 6–17 comprised the study group, and the children aged 6–11 comprised the comparison group. The results of the 1997 study indicated that most scores resulted in what might be termed an *omnicultural composite*. In 1999, the authors continued their study and determined that results were consistent across cultures but not across syndromes (Crijnen et al., 1999). The study also determined that girls and boys score differently on some types of complaints, a finding that was, again, consistent across all cultures.

The CBCL form was investigated for children from "general population samples in Australia, Belgium, China, Germany, Greece, Israel, Jamaica, the Netherlands, Puerto Rico, Sweden, Thailand, and the United States" (Crijnen et al., 1999, p. 569). The studies indicated that some tendencies extended across all cultures. Total problems and externalizing problems tended to decrease with the age of the child. Internalizing problems tended to increase. Boys scored higher than girls on total problem scores and tended to externalize, whereas girls internalized. In addition, eight of the syndromes showed cultural effects (Crijnen et al., 1999). The authors concluded that there were three possible reasons for the variation: (a) parents from different cultures have different points at which they report certain types of problems, (b) the rates of problems might

really differ between cultures, and (c) problems in language translation might cause parents to focus on different problem areas. Each of the possibilities represents a significant weakness in the validity of the test.

In their most liberal interpretation, Crijnen et al. (1999) suggested that interpreting the results of Achenbach scales is subjective at best. In the hands of less experienced therapists or evaluators, interpretation of the results becomes an "if-then" analysis. Given the large numbers of pediatricians and family practitioners who perform initial evaluations and referrals, this is a significant shortcoming. In addition, Conrad and Hammen (1989) reported that mothers who were depressed perceived their children to have more maladjustment and commented more on the maladjustments than did mothers who were not depressed. The implication for parent-completed scales is clear: parental psychopathology can affect parents' ability to report objectively on their children's behaviors. De Los Reyes, Goodman, Kliewer, and Reid-Quiñones (2008) reported that psychopathology in the maternal or female component of the mother/female-caregiver and child dyad could result in distorted reports of particular characteristics in the child. However, they also determined that the presence of depressive symptoms in the child could also affect the ability of the child to self-report or the reports that the child gave (De Los Reyes et al., 2008). Again, this finding reflects the possibility of a serious defect in the concepts that guide the Achenbach scales.

The Achenbach scales have a built-in depression measure. Questions are asked about fear, feelings of worthlessness, guilt, feelings of nervousness, worry, and suicidal thoughts. The Achenbach scales should not be used for diagnostic purposes because they do not include a "pure" depression subscale (Achenbach, 1991). Depression items are

combined with anxiety on the measure. However, the primary purpose of the Achenbach scales is not to assess for depression but to identify a variety of behavioral problems that can be indicative of various diagnoses.

Behavioral Assessment System for Children, 2nd Edition

The BASC-2 includes teacher, parent, and self-rating forms. The BASC-2 is a questionnaire that measures children's self-perceptions based on certain emotional connotations. It is commonly used to determine internalized problems. The BASC-2 is frequently used to determine which children and adolescents may have emotional or behavioral disorders that have yet to be diagnosed. The measure includes scales for various areas of concern for children, including hyperactivity, aggression, conduct problems, anxiety, somatization, attention problems, learning problems, atypicality, withdrawal, and depression. A depressed sample tends to produce some of the most significantly elevated scores across all subscales (Reynolds & Kamphaus, 1992), thus indicating that the measure may be capable of detecting general behavioral problems but may not be sensitive in identifying depression.

A multidimensional approach to assessment, the BASC-2 is intended to measure behavior and self-perceptions of children and adolescents and, in so doing, to determine the quality of the relationship the child has with his or her parents, as well as his or her self-esteem. It is also intended to measure the degree to which the child self-internalizes (Bolme-Lake, 2007). No gender differences exist concerning internalized problems for this measure. However, the research indicated that the "degree of reported internalizing problems was related to parent relationships and self-esteem" (Bolme-Lake, 2007).

Children and adolescents who reported having poor parent-child relationships and self-esteem generally reported more problems internalizing than did those with typical or average levels of self-esteem. This finding is important for several reasons, primarily because youth and children who have problems with externalizing are more likely to receive assistance (Wu et al., 1999). Wu et al. determined that students who exhibited symptoms of depression were far less likely to receive help than students who were disruptive. However, students who reported symptoms of depression were more likely to request help or believe they needed help than students who were disruptive. These findings led Wu et al. to conclude the following:

> The findings highlight the need for more effective ways to identify and refer depressed children to mental health professionals, the importance of improving school-based services to meet children's needs, and the necessity to better educate parents and teachers regarding the identification of psychiatric disorders, especially depression.

Furthermore, Bergeron et al. (2008) reported variances among teachers who used the BASC-2. Dependability coefficients were less consistent when the rater, the instrument, and the occasion of evaluation were addressed simultaneously. In addition, Individual differences among students seemed to affect variance among subscores (Bergeron et al., 2008). Bergeron et al. also noted that the possibility of test results being valid and reliable in the short term but inaccurate over the long term. This situation could occur for a number of reasons, including variability of teacher or parental responses and variance based on the actions of students prior to and during testing. Children simply adapt and change over time. Thus, a test that is accurate at one point may not be accurate 3 months later.

De Los Reyes and Kazdin (2005) postulated that the differences between raters on the BASC-2 might be attributable to the differences in the way raters perceive behaviors as deviant or not and their perceptions' effects on recalled memories. However, alternate explanations have been offered in research. Bergeron et al., (2008) suggested that if the differences were due to differences in interpretations of behaviors, then it is likely that the differences would occur even when teacher-aide combinations, parental combinations, or teacher-parent combinations had observed the same incidents. One suggested avenue for future research would be to have a teacher and a parent observe an incident at the same time but from different vantage points. The teacher and parent (or teacher and aide or two parents) would be asked to fill out the paperwork later. Research has been conducted to determine whether the classroom setting (regular as opposed to special education) would affect results. They also questioned whether the results would be different if populations that had been referred for assistance were compared to populations that had not been referred (Bergeron et al., 2008). Each of these questions poses a valid criticism of this evaluation method.

Children's Depression Rating Scale–Revised

The CDRS-R was designed for use with pediatric populations over 6 years of age. Observers provide ratings for child behaviors in the areas of psychomotor symptoms and affective, somatic, and cognitive areas. Observers rate severity of symptoms using a scale of 1–7 for 14 items and a scale of 1–5 on three items. A raw score ranges from 17 to 113. The rating commonly takes 30–40 minutes when the scale is administered by an experienced investigator (Jain et al., 2007). The scale is reported to have high internal

consistency (.85) and good reliability between intraraters (.92). However, when reliability was tested between informants, for example parent and child, the reliability fell to .38 (Mokros, Poznanski, Grossman, & Freeman, 1987). Single-item correlations ranged from a low of .28 for impaired schoolwork to .78 for depressed feelings. Jain et al. reported a clear indication that children diagnosed as clinically depressed scored significantly higher on the CDRS-R than did students who had not been diagnosed with depression.

Some of the disadvantages associated with the scale include the extensive length of time it takes to administer the measure (15–35 minutes). Jain et al. (2007) reported time it takes to administer and correlate, combined with a general lack of sensitivity to detect change over time as shortcomings. Change is less common in pre-adolescents and takes more time to develop. In teenagers, however, change can be more rapid, possibly making the CDRS-R a less desirable tool for diagnosing depressive issues in adolescents. Furthermore, Snaith (1993) noted that depression rating scales have been adopted with relatively little investigation of their content. Snaith suggested that different scales appear to be better for assessing different modalities. Some scales, for instance, assess depression fairly well while others tend to assess anxiety better. Thus, to develop consistently good measures, more research must be focused on their development, application, and use.

Projective Measures

Projective measures are based on unstructured tests with ambiguous stimuli. The stimuli are deliberately ambiguous to engage the individual into providing textual

responses that the practitioner can then interpret (Levenson, 2005). The person is asked to project his or her normal thoughts onto images presented in a series of illustrations. These tests should not be used with cognitively impaired individuals because such persons cannot properly express their interpretation of the illustrations. Individuals who have difficulty with executive functions or who have attention-deficit issues, language problems, or sequencing disconnections also should not be evaluated using this general form of testing. Projective measures are used to evaluate for depressive themes, which are used by clinicians with other forms of assessment to understand children's emotional adjustment. An overview is provided for several of the most common projective measures, including the Roberts-2, Rorschach, House-Tree-Person, and Draw a Person in the Rain.

Roberts-2

The second version of the Roberts Apperception Test for children is used to assess children between the ages of 6 and 18. It is used to measure the child's adaptive social perception, which is a development measure, and adaptive social perception, a clinical measure. The second edition incorporated normative data adapted or updated since the first edition. The test was also modified to be more appropriate for multi-cultural use, with Caucasian, Hispanic, and African American versions. The Roberts-2 set is comprised of 16 picture cards. The administrator of the test shows each card to the child being tested and asks the child to describe what is happening in the picture on the card. The administrator must record what the child says verbatim. When the child has completed a narration for each of the cards (typically taking 30-40 minutes), the assessor

uses the materials from the Roberts-2 to decode and score the narrations. The norms for the assessment were based on 1,000 children and adolescents chosen to represent various geographic regions, ethnicities, genders, and parent education levels.

The Roberts-2 has scales designed to evaluate the child from a holistic perspective. The scales consider problem identification skills, including those of recognition, description, clarification, definition, and explanation. It evaluates emotions of anxiety, aggression, depression, and rejection. In addition, the child's ability to access specific resources is considered, including how the child gets support for himself or herself, how he or she feels, and his or her ability level of self-advocacy. Furthermore, the limits the child sets, the support he or she feels is received from others, and how much he or she relies on others are considered. Finally, unresolved, nonadaptive, maladaptive, or unrealistic outcomes are addressed, along with unusual or atypical responses to the materials and unusual resolutions of problems.

Reynolds and Kamphaus (2004) noted serious problems with the Roberts-2, indicating the original standardization sample was too small to be representative. Moreover, the revised testing materials provided little additional information on scoring, standardizations, or norms, and little technical information was provided on the test. The Roberts-2 has been used successfully in a variety of applications, possibly because practitioners have developed their own scoring methods. Reynolds and Kamphaus also asserted that the research cited in support of the Roberts-2 has been produced largely in dissertations, which may not have the best scientific bases.

Rorschach

Hermann Rorschach's Psychodiagnostik was translated from German to English in 1942 and became one of the most commonly used personality measures in the United States for over half a century (Camara, Nathan, & Puente, 2000). Prior to the early 1980s, no single Rorschach administration and scoring system was universally favored. However, following the publication of the Rorschach Comprehensive System (CS; Exner, 1974), over 96% of clinicians who administered the measure and coded and interpreted the test used the CS as their primary system (Meyer, Hsiao, Viglione, Mihura, & Abraham, 2012). All Rorschach systems use the same set of 10 inkblot stimuli, originally designed, pilot tested, and refined by Hermann Rorschach in 1921. Five inkblots are shades of black and gray, two inkblots are black and red, and three inkblots are colorful. Examinees' responses concerning what the inkblots may represent are recorded during the initial administration; then, responses are queried for specific details, such as texture and depth. Examinees can give one or more responses per inkblot; however, the CS requires at least one response per blot and a minimum of 14 responses. Psychologists use the test to examine for thought disorders, personality characteristics, and emotional functioning.

Specific variables the Rorschach assesses for include the following. Controls and situational stress variables assess coping style and mental ability while affective features variables assess affective style (e.g., emotional impulsivity or reactivity). Interpersonal perception variables assess representations of other people and expectations for interpersonal relationships (e.g., cooperative or aggressive), whereas self-perception variables assess how a person views himself or herself (e.g., narcissistic tendencies).

Furthermore, information processing variables assess the complexity and sophistication of the mental operations involved when taking in information (e.g., ability to sustain cognitive effort), and cognitive mediation variables assess the conventionality of perception (e.g., reality testing in psychosis) while ideation variables assess the quality, organization, coherence, and style of a person's thinking (e.g., thought disturbance, passive as opposed to active; Mihura, Meyer, Dumitrascu, & Bombel, 2012).

The age range for taking the Rorschach covers the lifespan, beginning as young as 5 years of age. However, various perspectives have been expressed concerning its validity for very young children. Leichtman (1996) suggested that children's responses "differ in kind from normal Rorschach responses and they lead to doubts that the same modes of thinking underlie their formulation" (p. 19). Three basic stages until their responses can be interpreted using standard scoring for adults. Furthermore, Leichtman called the first stage *pervasive perseveration*, which occurs around 2 years old. During this phase, children give the same answer to each card and possibly provide unique responses to some cards. At 3 years of age, the confabulatory phase, the external properties of the blot are used in the response. As the child transitions from this stage, he or she produces answers that explain a portion of the blot but still do not bear much resemblance to the rest of the blot. The final stage of Leichtman's sequence occurs around the age of 7, when the child is "able to give a varied number of responses to the inkblots, identify their location precisely, and answer questions in ways that permit them to be scored with a reasonable degree of assurance" (p. 61).

Concerning the assessment of depression using the Rorschach, Exner's initial Depression Index (DEPI; Exner, 1983) was developed to aid clinical decision making by

providing a cutoff for subjects identified as chronically depressed or prone to frequent experiences of depression. This scale has been revised to identify individuals likely to be depressed. However, Exner suggested that elevated scores on this scale may indicate affective disorders, and other diagnoses may be assigned in place of depression, depending on the presenting symptoms and history (Exner, 1990). Several researchers have criticized the use of the Rorschach for detecting depression in children and adolescents because of results on the DEPI scale being unrelated to other measures of depression in children. Furthermore, studies have shown that the cutoff values for the depression scale failed to predict successfully the depression criterion measures (Ball, Archer, Gordon, & French, 1991).

House- Tree-Person

In 1948, the House-Tree-Person assessment was developed by John Buck. It was re-evaluated and revised in 1969. In House-Tree-Person, the child is given a crayon and asked to draw a house, a tree, and a person in three separate drawings. The assessor then asks the child a series of questions about the drawings, making note of the responses and evaluating the drawings based on a set criterion. However, because evaluation of drawings is largely subjective, it can be difficult for the administrator to interpret the test. In some versions of the test, two sets of drawings are produced. In the full form of the test, 150 minutes or more can be taken on assessment. Over a third of the practicing child psychologists today continue to use the House-Tree-Person assessment despite the statements the assertion by Buck (2004) that the tests had no substantial validity.

Adams (1972) suggested that having a strong grasp of the concepts behind graphic arts would give assessors an advantage when using testing that required the individual to draw a figure. As Adams stated:

> The nature of the analysis can be better appreciated by noting the structural features that are taken into account e.g. background, exact size, detailing, symmetry, degree of completion, midline emphasis, reinforcement, perspective, proportions, theme, shading, placement on page, and erasures. The content of the drawing is also considered e.g., the individual parts of body, clothing, accessories, expression and posture. (p. 496)

The interpretive concepts checklist that accompanies the House-Tree-Person guidelines provides clues as to what items the assessor is to address. The clinician is given interpretive concepts as general guidelines only and is advised that any interpretation should be supported by "clinical experience and knowledge of the H-T-P Manual and other published material" (Buck, 1964). The directions for the assessor state that unusual characteristics of the drawings should be considered in combination with the patient's presenting history and presenting problems. It seems clear that Buck (1964) did not intend this test be used to render a firm diagnosis but rather as a guideline for the assessor to gain insight into the mind and functionality of the patient being assessed.

The Interpretive Concepts Checklist indicates to the practitioner possible unusual facets of drawings or possible problem drawings. However, the comments also serve to remind the researcher that drawings are open to interpretation. For example, the comments for the drawing of the person are as follows:

___ Detail to image/symmetry

___ Excessive symmetry; rigidity, brittleness

___ Asymmetry: physical awkwardness, gender confusion

___ Distortions

___ Obvious: psychosis, organicity, normal children under stress

___ Moderate: anxiety

In the sample from the Interpretive Concepts Checklist above, the wide possibility of interpretation is evident; a distortion of the drawing could be indicative of psychosis, or it could indicate a normal child under stress. This leeway in interpretation may also make the measure less valuable as a tool. However, Buck suggested that this particular assessment tool be used as a way to help the client relax and warm up for other tests. It is a projective test, not a test for diagnosis. Nevertheless, the drawings can be analyzed according to information collected and developed into eight categories. The assessor considers the work in terms of general observations, perspective, proportion, detailing, presentation of nonessential details, presentation of irrelevant details, line quality, and use of color (Buck, 1964).

The individual who administers the test should be prepared for a bifurcated approach to analysis. First, the content is analyzed, along with the quality of the drawings and the depth of the materials presented in the drawings. Second, the emotional directions the artwork may suggest are considered. The test administrator should have a bachelor's degree because some aspects of the drawings should be analyzed to determine an underlying mental status. Because every individual's drawings are unique, norms and standardized data are not available. The integrative concepts checklist, combined with the post-drawing inquiry, provides insight into the mindset of the individual being assessed. Buck also indicated that other interpretative materials may be of help in understanding the drawings (Buck, 1964).

In general the House-Tree-Person assessment is extremely subjective. The test indicates, for instance, that rose-pink is an acceptable color for skin tones, leading one to wonder whether children who are brown and use tan to color the person would be considered disturbed according to the guidance for interpreting the test. The test materials indicate that use of "bizarre blends" of color indicates a severe disturbance in the child (Buck, 1964). One is left to wonder whether a child who is trying to use black and purple to replicate the color blend of plums in a tree is severely disturbed. Under the criteria established for this assessment, most modern artists and designers are severely disturbed. To establish confidence in the validity of this measure, empirical scoring systems would have to be developed and norms established.

Draw a Person in the Rain

Draw a Person in the Rain (DAPR) is another adaptation of the general class of projective tests. This assessment is extremely simple to administer, and no age limit is noted. The DAPR was adapted from Machover's (1948) Draw a Person assessment. The purpose of the DAPR is to determine whether an individual is under stress, what support system that person may have, and how he or she is coping. The test is simple to administer, requiring nothing more than a blank sheet of standard sized paper and two number 2 pencils with erasers. The assessor asks the respondent to draw a picture of a person in the rain. There is no set questioning about the work; there is no set time limit. The drawing is evaluated strictly on its appearance. The test administrator determines whether the figure has on a raincoat, boots, umbrella, or other protective gear and decides whether the individual seems to feel "exposed" or perhaps is failing to cope with stress.

The stress itself is reflected in how much rain is illustrated in the picture (Verinis, Lichtenberg, & Henrich, 1974). The same weaknesses in other projective tests are present in this one. no standardization, no validity, no reliability, and no norms. In addition, this particular assessment is conducted strictly with number 2 lead pencils; there is no color. The lack of color limits the range of observations that might otherwise be possible in this assessment. Perhaps the greatest strength of the DAPR is that it provides an excellent way for the therapist to put the subject at ease and facilitate other discussions.

MMPI-A

In addition to the self-report and projective measures discussed above, another commonly used measure to assess mood disturbances in adolescents is the Minnesota Multiphasic Personality Inventory-Adolescent (MMPI-A). Although a questionnaire, the measure is less face valid in that the reader cannot be certain of which items are screening for depression. The measure is commonly used; however, problems exist with its use in diagnosis. Ping (2004) suggested that many of the current tests and assessments on the market today have a weakness of validity, providing the following definitions of *validity*:

> content or face validity (how well items match their conceptual definition), criterion validity (measure correspondence with other known valid and reliable measures of the same construct), and construct validity (measure correspondences with other constructs are consistent with theoretically derived predictions). (p. 130)

The MMPI-A Depression scale is one of the scales to which Ping referred in his description of tests with weak validity. The MMPI-A is an adaptation of the original MMPI, which was developed in 1939 and designated for use with adults. The MMPI was so widely in use with adolescents that the developer adapted it for use with adolescents

and issued it as MMPI-A. Subsequently, the MMPI-2 was developed in 1989 for a new adult population. Eventually, this form was adapted for use with adolescents and issued as the MMPI-A in 1992 (Butcher et al., 1992).

The MMPI-A has 478 items, although a short form is available with 350 items. The original MMPI scales had to be redeveloped for use with adolescents because the norms were established with adult participants rather than adolescents. The developed scales had been analyzed using the conceptualization of adult psychiatric problems (Butcher & Pope, 2006). In addition, no norms had been developed for use with adolescents, despite its being extensively used with the adolescent population, particularly in the juvenile justice system.

In revising the MMPI to be normed for adolescents, a sample population of adolescents was developed, and the forms were revised. In the MMPI-A, items were developed that would accommodate concerns of adolescents rather than of adults. The newly revised MMPI-A contained questions relating to school, influence of friends and peer groupings, eating problems, and parents (Butcher & Pope, 2006). The original MMPI had explored how adults being felt and acted when they were young. These items specific to childhood actions (as remembered by adults) were changed from past tense and incorporated into the MMPI-A as current items. The sample population on which to base the youth norms was selected from the western states of California and Washington, the midwestern states of Minnesota and Ohio, and the eastern states of North Carolina, Virginia, Pennsylvania, and New York (Butcher & Pope, 2006).

The MMIP-A has eight clinical scales, including two validity scales and additional supplemental scales. The depression content scale was broken into four

additional scales for dysphoria (five items), self-depreciation (five items), lack of drive (seven items), and suicidal ideation (four items). According to Butcher and Pope (2006), the scales were too short to provide a stable scoring system, but they provide practitioners with a way to determine what might be influencing elevated scores on the main content scale. Scores for adolescents on the MMPI are considered significant in the 60–64 T-score range, which is somewhat lower than the adult range. The developers suggested that this range is accurate enough to provide personality descriptors for the practitioner.

The disadvantages of the MMPI-A include the need to match scoring to the individual's ethnic background and the fact that little real validity or reliability have been established for the test. Although some of the scales have been standardized for reliability and validity, others have not. In addition, the MMPI-A may not be suitable for individuals under age 14 or those who may have difficulty reading, either for reasons of education or vision (Hersen, Hilsenroth, & Segal, 2003). Respondents must be able to read at a standard 7th-grade level. According to Hersen et al. (2003), the test should not be administered to anyone who reads below the 5th-grade level or who has an IQ under 70. In addition, individuals with short attention spans or ADHD may not be able to complete the survey because of its length and complexity.

Review of Measures

In conclusion, several measures have been discussed to gain a perspective of the types of measures used to evaluate children's behavioral and emotional functioning. The Children's Depression Index (CDI) is a face valid measure and can often underestimate level of actual depression felt by the child. This weakness may account for Kazdin

(1989b) finding that only 31.6% of children with MDD had scores above the cutoff for clinical level of depression on the CDI. Similar problems were also noted in the updated version of the measure, which did not consistently differentiate depressed children from non-depressed children. Furthermore, some young children may not truly understand how they feel, so they may not respond in a manner suitable for evaluating with the CDI. The CDI also may not differentiate between children with depression from other clinical subgroups, such as those with anxiety. However, this trend occurred with other tests that were studied (Kazdin, 1990; Kovacs, 1992).

Achenbach's CBCL was not developed to diagnose but rather to focus the therapist's attention on items and to be used as a tool with which diagnosis could be made. The CBCL can be completed by parents or guardians, but researchers have reported a weakness in that cultural issues might not be accurately interpreted depending on how the parents viewed social problems, withdrawal, and attention-seeking and aggression-related problems. Thus, interpreting the results of the Achenbach scales is subjective at best. Therapists must be experienced to use this system to best advantage. However, currently, many intake workers and pediatricians use the system for intake and analysis. In addition, the reporter's mental health status can have a significant effect on the outcome.

The BASC-2 was developed to measure the degree to which a child self-internalizes (Bolme-Lake, 2007). Research has indicated, however, that children and adolescents who reported having poor parent-child relationships and low self-esteem generally reported more problems internalizing than did those with typical or average levels of self-esteem, making it more likely that the wrong group of children was receiving educational and psychiatric assistance (Wu et al., 1999). Wu et al. noted

receiving mental health assistance is essential, but currently, the children who ask for such help are actually less likely to get help than children who do not ask.

The CDRS-R has a weakness in that suicidal thoughts in this scale are poorly coordinated with depressive issues, contrary to most tests currently in use. Other drawbacks to the measure include the length of time it takes to administer the scale and correlate the responses (Jain et al., 2007). Bergeron et al. (2008) reported that it is possible for test results to be valid and reliable in the short term but inaccurate over the long term. Differences in ratings on this assessment can also occur because of differences in interpretation of behaviors that might be considered deviant by various participants.

Concerning the less face-valid and projective measures, Ping (2004) suggested that many of the current tests and assessments on the market show weak validity. First, the MMPI-A Depression scale is one to which Ping referred. According to Butcher and Pope (2006), the scales are too short to provide a stable scoring system. Other disadvantages to the MMPI-A include the need to match scoring to the individual's ethnic background and the fact that validity and reliability have not been established. In addition, the Roberts-2 appears to have serious problems. Revised testing materials provided do not give more information on scoring, standardizations, or norms. Little technical information has been provided on the test. For example, although widely used, the Roberts-2 has not been well studied. Furthermore, the House-Tree-Person test is popular, but even the developer asserted that the tests had no construct validity (Buck, 2004). In general, the House-Tree-Person assessment is extremely subjective. Under the criteria established for this measure, most modern artists and designers would be

considered severely disturbed. To establish confidence in the validity of this measure, empirical scoring systems will need to be developed and norms established. Finally, Draw a Person in the Rain has the same weaknesses that other projective measures have: no standardization, no validity, no reliability, and no norms.

The Diagnostic Problem

Researchers have noted various reasons that current diagnostic approach is problematic. One problem with the current system is the significant number of coexisting conditions associated with physical illness. For example, anxiety and depression commonly present with symptoms typically associated with such medical conditions as fatigue, headaches, muscle and joint pain, impaired concentration, difficulties with memory, sleep disturbances, shortness of breath, and gastrointestinal problems (Conradi, Ormel, & Jonge, 2012; Hyams, 1998). In fact, longitudinal data indicate that sleep problems and lack of energy are some of the longest lasting difficulties associated with depression (Coradi et al., 2012). Because of the broad range of potential human pathology, the result of complex interactions between numerous diseases and diverse biologic processes, diagnosis of distinct clinical entities is difficult (Cooper, 2004). Individuals who share a DSM diagnosis have a subset of symptoms in common drawn from a larger list of symptoms. Critics have raised concerns about lumping together different groups of people based on behavioral evidence alone when important differences exist between individuals, even observable ones. In the real world, there is a continuum from normal presentation to complete pathology, which is impairing for the individual.

Another problem with the symptom-based approach is that people experience their symptoms differently from one another; therefore, even an objective method of trying to address symptoms is still subjective to the individual. When reporting specific somatic symptoms, numerous factors can affect a person's response to bodily sensations, including family and societal expectations (Eisenberg, 1980; Wisdom, 2007), the beliefs and attitudes of patients and their physicians (Cope, 1994), the influence of prior diagnoses and diagnostic labels (Bennett, 1996), media reports, secondary gain, and concurrent health problems (Chen, 1986). Furthermore, little is known about the basic nature of symptoms, For example, what distinguishes normal fatigue from a pathologic condition and how these experiences are used to derive to specific diagnostic criteria have not been established (Hyams, 1998). Finally, an important concept concerning this diagnostic system is predictive validity. The conventional view of diseases is considered successful in organizing prediction and control because predictive categories track the causal structure in the world that accounts for the shared nature of the different instances (Fulford et al., 2006). However, the diagnostic system, it can be argued, is not scientific and is not tied to any theory.

A third problem with the symptom-based approach is that the criteria used to diagnose a disorder very often are actually outcomes or side effects of the disorder. They indicate little about the development, process, and maintenance of any particular disorder. Even in medicine, establishing a widely accepted diagnostic criteria for symptom-based conditions such as chronic pain can be difficult (Hyams, 1998). In fact, conditions related to chronic fatigue have long been debated and redefined in research because of the lack of a tangible way to assess for the condition other than listing symptoms, such as

feeling tired or not being active throughout the day. For example, what was called *neurasthenia* over 100 years ago evolved to be considered chronic fatigue syndrome in 1988 (Brown, 2006).

The current diagnostic approach shows a general lack of concern for etiology. Each diagnosis in the DSM is supposed to represent malfunction in some mental, physical, or behavioral trait, yet the diagnosis itself is made without regard for what the underlying malfunction might be. Symptoms and signs are conflated with no consideration of etiology. At least in medicine, when diagnosis is made concerning medical symptoms, there is a known factor for the cause of the condition, so general conclusions can be drawn concerning treatment for that condition. In psychology, the use of the DSM can completely separate the diagnosis from its etiology, which is often more important than the symptoms themselves when considering possible treatment. Although derived from the medical model, this symptom-based approach is far from identifying the underlying reality of disease as a genuine psychological or biological process; thus, it has been called the minimal interpretation of the medical model (Murphy, 2010).

Although research has identified problems with the current symptom-based approach to psychological diagnosis, assessments in the field have not adopted this information to improve identification of disorders. Assessments that help clinicians diagnose depression are consistent with the DSM list of symptoms and do not address the processes that can cause a person to have depression. This situation is more alarming for children because the face-valid measures primarily used with children are not always valid approaches to understanding children's feelings. Research has shown that children have a tendency to develop an internal dialogue based on what their parents say and often

respond to self-reported items in a manner that would please their parents and caretakers. In addition, because of fear of being ostracized, children can hold back their true feelings on self-report measures. With children, often the biggest problem in assessing pathology using self-report measures is that they lack insight into their own problems. Therefore, items that directly question whether the child feels tired or sad can exclude those children who are not in touch with their sensations and perceptions. Even when children are facing physical pain, it is not unlikely for them to report symptoms different from what is observed (Beyer, McGrath, & Berde, 1990). Some children will report that they are happy even in very dire situations while continuing to have nightmares and perform poorly in school because of emotional distress.

Gestalt Theory

Gestalt theory is a holistic perspective that emphasizes that the whole is different from the sum of the parts. Lewin's field theory has been described as the pillar of gestalt therapy (O'Neill & Gaffney, 2008), emphasizing that all individuals exist in an environment that is in relation to others. Lewin (1952) stated that "the totality of coexisting facts which are conceived of as mutually interdependent" comprise the individual's life field (p. 240). In addition, field theory is grounded in phenomenological observation and places behavior as a function of the person and the present field. Furthermore, the existential perspective suggests that every individual in the world shares the world with every other resident so that all the ways that they share contribute to meaning and value in the lives not only of the individual but of everyone he or she touches. This perspective is one of the guiding tenets of gestalt because the therapist

must realize that he or she is part of the client's world and must taken into account his or her effect on the client simply by existing and interacting with him or her (Plummer, 1997). In general, no individual can be understood without first understanding the issues that surround him or her (Applebaum, 2012). With this model, understanding pathology would require awareness beyond an individual's specific symptoms. It would require the understanding of how the individual functions in his or her world. Therefore, assessment of the current psychological state should take into consideration how one is relating to his or her environment.

Every individual has needs that guide his or her perception of the surrounding world. In gestalt theory, needs are based in the individual and arise based on the person's biological processes. Burley (2003) suggested they are organized in a manner similar to the hierarchy of needs described by Maslow (1970). Needs organize the perception of the field, and human activity is understood as interactive and partly a reaction to the perceived conditions of the field, so there is a constant dynamic interrelatedness of the elements of the field (Levine, 2012). As people continuously scan the environment for input, which may or may not be familiar to them, they are more likely to attend to stimuli that are unfamiliar or that may alert them to some danger. The principles of gestalt theory can be best described as "the needs and interests of the individual in his or her context will determine what is central to that person's awareness and will guide that person's cognitive/affective and physical behavior to resolution for that need or interest so that the need driven figure ceases to be central in the person's awareness" (Burley, 2003).

Yontef and Simkin (1993) stated that the major pillar of gestalt therapy is awareness: "The goal is for clients to become aware of what they are doing, how they are doing it, and how they can change themselves, and at the same time, to learn to accept and value themselves" (Yontef & Simkin, 1993). The client is taught to value what is rather than what would be, could be, or should be (Yontef & Simkin, 1993). Gestalt therapy is built on the central idea that it is only possible to know one's self against the background of one's relationship with his or her environment (Latner, 2000). It focuses on what is happening, what is being done, thought, and felt at the present moment. The direct experience is more telling than an indirect or secondary interpretation of an experience. For example, direct experience can be considered one's present experience in a room. In contrast, indirect experiences measured in assessment are symptoms, which may or may not meet diagnostic criteria (i.e., inability to sleep, loss of appetite, excessive crying). Being aware of these direct experiences requires awareness of one's sensory perceptions (seeing, hearing, smelling, etc.) and the processing of these perceptions provides the ground work for interpretation (Brownell, 2010). The holism of gestalt theory refers to the organization of sensory experience (Levine, 2012). It is through sensory experiences that humans experience themselves and make contact with the world.

The areas of assessment and treatment appear to be divided. Such established theories as gestalt tend to avoid diagnosis and assessment, so assessment is often not based in theory. Closing this gap could lead to increased precision in diagnosis and better outcomes for treatment. However, in gestalt theory, the very concept of assessment could create a dilemma (Joyce & Sills, 2006). The idea of diagnosis can run counter to many of the fundamental principles of gestalt practice because it implies a sense of structure in

that a "person is fixed and static and can be evaluated at a distance" (Joyce & Sills, 2006, p. 57). Although a relevant point, this should not create a division in the field of assessment and treatment. In terms of gestalt principles, diagnosis is most useful if it remains descriptive, phenomenological, and flexible, rather than simply defining and naming. A definition of *diagnosis* within existential theory would be to say that it is a dynamic description of a fixed gestalt in the life of the client, which has become static. The fixed gestalt is described as a "description of creative adjustment made, at some time, to previous life circumstances, which has become habitual and inappropriate in the present" (Joyce & Sills, 2006, p. 60).

If therapists make diagnoses that are DSM-IV categories, then the purpose of gestalt becomes confused. To make the diagnosis, the therapist must separate the client's symptoms from its etiology. Because gestalt is a plan to put the individual together and to consider the patient holistically, these two goals can be seen as mutually exclusive. However, if researchers focus only on validating what has already been validated instead of finding new ways to measure constructs, the science of psychology will lack important grounded theories to drive its practice.

Gestalt Theory on Depression

Although depression is not extensively defined in literature related to gestalt theory, the defining principles of the theory have important implications for the process of how one reaches a depressed state. Because figure formation and resolution form the basic phenomenological unit in gestalt theory (Burley, 1981), when a need is present, depressed individuals have a difficult time creating its form and are unable to follow the

need through to its resolution. *Procedural memory* has consistently been defined as the kind of memory that is not held in awareness yet it is there to guide behavior when situations arise that are similar to previously encountered and mastered situations (Burley & Freier, 2004). What is in the person's awareness at any given moment is based on biologically rooted needs or interests, which polarize the field into figure and ground. There is an initial awareness of the need (figure formation), followed by figure sharpening (the need becomes more clear to the individual). At this point, the individual scans his or her environment for the most appropriate means of finding a resolution for the figure (Burley & Freier, 2001). The resolution from this process is stored into memory of how a need was met if, in fact, it was met. Although this process is generally a smooth one—needs are brought to awareness and resolutions for these needs are found—, at times, the process is interrupted and a resolution is not made, creating a problem within the individual. This situation is interpreted as psychopathology in gestalt theory.

Gestalt theory posits that the depressed individual is one who has unsatisfied needs. According to this theory, all individuals have needs, and their well-being springs from the ability to recognize their needs and satisfy them. Thus, if an individual is unable to satisfy their needs or is blocked from that development, it may cause a disruption in the system. Perls, Hefferline, and Goodman (1990) asserted that humans are creative, with a creative self. Symptoms are created to divert the individual from having contact with others. Thus, someone who is depressed lacks self-confidence and ability to establish and maintain relationships with others. This explanation is more process driven in terms of understanding what may lead to depression. Depressed individuals believe

that there is no use to doing anything because they are helpless and things are hopeless (Burley, 2012). Procedural memory plays a role here in that it automatizes the hopeless response. Needs go unmet, and at some point, the individual stops recognizing his or her needs because there is no point in having that level of awareness. Therefore, when faced with situations that could be distressing or cause discomfort, learned helplessness causes one not to have a reaction (need), allowing things to be just as they are. This state of unawareness may have served a purpose at one time in the person's life. For example, a child with an unresponsive mother may have learned not to have a need to be held or comforted. As an adult, this individual now does not feel the need of physical comfort from others. Similarly, depression may have once fulfilled a need; however, the depression is limiting and can prevent growth (Burley, 2012). The original pain that created the depression served a need. As such, it was a creative solution to the individual's problems. However, it gradually became a suppressed or depressive adjustment. It can also be argued that depression is an unfulfilled need and chronic depression is a result of ongoing needs that are ignored.

A process-descriptive approach has been suggested for understanding psychological diagnosis (Burley, 2012). The gestalt formation resolution process defines *depression* as a needing disorder in which needs are not adequately noticed or acted upon and are developed as an outcome (Burley, 2012). The ethological principles regarding the process of depression include negative interjects, learned helplessness, hopelessness, and procedural memory. The process can explain how depression is formed, knowledge that can be very helpful in treatment because it will help explain how a set of symptoms

is developed. Lacking this depth of understanding concerning how symptoms develop is a weakness of most depression measures and an area to be explored in research.

Gestalt Theory Applied to Children

Although literature addressing the implications of using gestalt theory with children is limited, gestalt therapists use many of the same principles of general gestalt theory when working with children. The salient principles are pertinent in work with children, such as awareness and experience, the use of the senses and body, and the sense of self. Experiments with children in sessions are often conducted with play-based interventions (Stadler, 2009). It has been suggested therapists meet the child at his or her level in terms of how abstract or concrete the child is able to be in session and adjust interventions accordingly (Oaklander, 1997). Although theory has indicated the best approaches for interacting with children, some of these techniques have not been verified as entirely evidence based. Similarly, assessment tools have not evolved beyond assessing DSM symptomatology to incorporate theory. However, given that the goal of this study is to bridge this gap by creating a measure based on theory, many of the techniques used in gestalt will be used in creating items to capture the process of what depression is like for a child.

Humans' contact with the world through their senses (sight, sound, touch, taste, and smell) is a key element in gestalt therapy for both adults and children. As Oaklander (1995) suggested, experience is more important than awareness to children. At some point in adulthood, people lose full awareness of their senses by over-thinking and analyzing. "We come to operate in life almost as if our senses, bodies, and emotions

don't exist—as if we are nothing but giant heads, thinking, analyzing, judging, figuring things out, admonishing, remembering, fantasizing, mind-reading, fortune telling, censoring" (Oaklander, 1988, p. 109). Children are generally viewed as being better at being connected to their senses, but in cases of trauma, children can also be cut off from their senses. Therefore, intervention in gestalt therapy focuses on reconnecting children to their sensory experience by heightening their sensory functions through such activities as playing with clay. To apply this concept of the sensory experience in establishing a measure, focus should be on the child's experiences rather than on his or her awareness of his or her emotional state. For example, questions regarding specific situations the child has experienced should be asked rather than general questions. According to Kirchner (2000), the goal of gestalt is to assist the client in restoring (or discovering) his or her own natural ability to self-regulate as an organism and to have successful and fulfilling contact with others (environmental others), as well as with disowned aspects of one's self (internal others).

In addition to sensory input, affective states can influence cognitive processes, which is explained by a phenomenon referred to as *cognitive bias* (Gotlib & Joormann, 2010). Information is attended to, interpreted, and recalled in a way that certain emotional valence or meanings are favored during the processing of that information (Richter, 2012). Processing input from one's environment has been shown to be very relevant for depression (Mathews & MacLeod, 2005), and it can continue to maintain the disorder (Beck, 1976). Learned helplessness is used to describe how a living organism learns to behave helplessly, during which time it fails to respond even when opportunities are present for it to help itself by avoiding unpleasant circumstances or by gaining

positive rewards. Clinical depression is believed to result from a perceived absence of control over the outcome of a situation (Seligman, 1975).

In the classical experiments on learned helplessness, an animal is repeatedly exposed to an adverse stimulus it cannot escape. Eventually, the animal stops trying to avoid the adverse stimuli and behaves as though it is helpless to change the situation. The next step in the experiment is that the animal is presented with an escape option; however, the learned helpless state prevents the animal from displaying any action to prevent further pain. The coping mechanism used by animals in these experiments was to be stoic and put up with the discomfort of the adverse stimuli. Similarly, depression is theoretically understood as a state of helplessness in which the individual does not feel that he or she can have an effect on his or her environment by changing outcomes of events. The gestalt theory of depression takes this perspective one step further in understanding that, if depressed individuals give up trying to have an effect on their environment, at some point they may become unaware of what the adverse conditions are. Withdrawal, as a symptom of depression, has been described in children as a means of survival: "So the child who is withdrawn has perhaps needed to retreat from a world which is too painful" (Oaklander, 1988, p. 231). At one point, the child learned that withdrawing was something he or she had to do, and although the circumstances may be different, he or she is continuing a learned behavior.

Along with helplessness, the idea of hopelessness is also described in literature when discussing depression. There is a strong agreement that hopelessness plays a major role in depression; however, attempts to understand and measure hopelessness have lagged behind, with little research focusing on understanding its use in evaluation of

depression (Lewis et al., 2011). Levine (2007) defined hopelessness as an embittered, dark state that can lead to feelings of emptiness and despair. In addition, some writers have conceptualized hopelessness as the absence of hope while others view hopelessness and hope as distinct constructs. Hope is typically conceptualized as an optimistic outlook on the future, whereas hopelessness represents an attachment to goals or aspirations that have been lost (Lewis et al., 2011). However, these definitions have rarely informed measure development.

Overall, gestalt theory addresses how to interact with children and provides an understanding that can be used in creating a measure. To remain true to theory, items asked of children should include assessment of the level of awareness and contact a child is making with his or her environment. As described above, depressed children are in a state of not noticing their needs by not making contact with their sensory experiences. Additionally, items should be based on the principle of learned helpless. It is believed that children who find themselves in distressing situations will feel powerless to have an effect on their circumstances that cause the distress, in a sense giving up rather than seeking to find solutions and change what is distressing. These aspects of gestalt theory and how it is applied with children were used in compiling items for a new measure for evaluating depression in children.

Other Considerations

Most play-based theories advise against using face-valid methods in childhood assessment. Children have a tendency to want to please their parents and caretakers. Therefore, they may respond in a socially desirable manner to measures that directly

query about something that they feel they may be in trouble for. Experts in the field agree that a clinician should never ask a child "What are you feeling?" but instead ask "What are you thinking?" because children will answer in terms of a feeling and will be less intimidated by the question, therefore responding more honestly (Oaklander, 1995). Face-valid measures can also create an internal thought process in which the child tries to intellectualize whether he or she is sad, scared, or so on rather than give a natural response. Intellectualizing thought processes and verbalizing emotions are especially challenging for children depending on their developmental stage. With the understanding that children need to continue to develop in order to express themselves verbally, play can be viewed as children's language and toys as their words. Ideally, scenarios would simulate real-life settings and an observer would take notes concerning the child's choices and reactions to situations. However, given study limitations and practicality, visually stimulating situations would be especially challenging and difficult to quantify. The next best solution would be creating these scenarios in a question format. Rather than asking about isolated events, items could present a scenario and assess how strongly the child identifies with it. This method removes the face-validity of the items in hopes of making the measure a better reflection of children's actual emotions. Children would not face the dilemma of how to answer because of wanting to provide a desirable response for their parents. In addition, they would not need to intellectualize a situation but rather provide natural responses to various scenarios.

The use of Likert scales for ratings is preferred rather than asking children to answer *true* or *false* or categorize an experience. Items that ask children to categorize, such as placing emotions in three categories as done on the CDI-2, break the continuity of

the experience. In addition, many of the BASC questions have *true* and *false* responses. Forcing children to choose between two choices can omit much valuable information necessary for understanding a concept as complicated as how children's describe their emotions. For example, when a child first learns to measure an abstract concept, such as responding to his or her mother's question of how much he or she loves the mother, younger children hold their hands out and demonstrate love according to a continuum in which they move their hands closer together or farther apart. This idea is easier to grasp and comes more naturally for children. It allows more free-flowing expression of internal thoughts and is a more instinctive way children communicate. When responding to questions with Likert scales, children are asked to rate the degree to which they agree with statements or the degree to which certain items apply to them. Likert-type scales can vary, having from two response options to seven. Self-report of subjective, emotional states are often used in assessing a variety of psychological content areas. In pediatric psychology, rating scales have long been used to examine factors related to adjustment and psychopathology, as well as to evaluate treatment outcomes (Chambers, 2002).

Need For a Process-Oriented Measure

As discussed, a new approach to the assessment of depression in children will be beneficial in the field of psychological assessment. Most self-reported measures of depression are related to symptoms, not to individuals' realities or the processes by which they arrived at their states. Assessing for children's emotional states specific to depression has long been an important area in psychology. As awareness of children's

depression came to the forefront, standardized measures were developed in the 1980s to assess and identify depression in children. Most measures currently used were developed over 2 decades ago, although knowledge of child pathology has changed since that time. For example, although the CDI is widely accepted as a measure for depression with sound psychometrical validity, its use to identify depression in children according to cut-off scores has not been considered successful. Several studies, including that of Matthey and Petrovski (2002), have suggested that, if the suggested cut-off scores were used in identifying depression, clinicians would miss 86% of depressed children. Thus, the CDI is better suited as a continuous measure of mood and that cut-off scores should not be used to screen for the possible presence or absence of depression in children. Similarly, a different study looking at CDI responses for children hospitalized with medical conditions found that, when comparing the medically ill group to the normative sample published in manual, the hospitalized children did not show greater levels of depressive symptoms (Babakhanyan, 2011). Perhaps evaluating for depression in a new way would lead to better understanding of the construct and lead to better detection and more targeted treatment.

The diagnostic process is built into the framework of the Western system of diagnosis. All measures for childhood depression, including the CDI, were constructed within the current diagnostic framework, which is symptom oriented. The goal of having a valid method of measuring childhood depression or any other psychological phenomenon has been to facilitate the process of description (Novell, 1986). Although description is an important precursor to understanding the causes and mechanisms of a syndrome or disorder, understanding disorder is often terminated when the description

appears to be completed. For this reason, the DSM can be viewed as a list of symptoms that state nothing about etiology and underlying reasons for presentation of the symptoms.

Rather than building on models established decades ago using the DSM symptomology for identifying depression or using purely projective measures that are subjective and difficult to score in a quantifiable manner, development of new measures is proposed. A new measure would be able to capture what projective measures attempt to capture by being less face-valid; answers could be quantified for scoring and norming purposes. As with any new system of assessment, a new measure would ideally be founded in theory and presented in a child-friendly language for self-reporting. Given that the main complaint made in this study is the lack of current understanding about how children become depressed, such as how a depressed child processes his or her environment, a new measure that is theory based would specifically address how a child functions in and perceives his or her environment. In an effort to assess depression in a new way, the new approach should avoid incorporating DSM symptomatology, the observable symptoms, (e.g., loss of appetite, change in sleep patterns) and focus on understanding how a depressed child perceives his or her situation and functions as process.

Gestalt theorists would also argue that, when looking at the current diagnostic process, nothing describes what the person does, only how the person is because of what he or she has already done. The current diagnostic system in mental health can be considered problematic because the diagnostic criteria do not describe the psychological process but are side effect or symptoms of the disorder (Burley, 2012). Many factors can cause presentation of specific symptoms. Therefore, if psychologists stop at the point of

diagnosis, they fail to provide proper treatment because they do not understand the mechanisms causing the presentation of the symptoms. Currently, much research on childhood depression is at this descriptive level (Novell, 1986). For example, researchers have attempted to distinguish the essential features of childhood depression from the associated features (Cantwell, 1982). Essential features are consistent with the DSM, such as anhedonia, whereas associate features could be behaviors and attitudes (e.g., worrying about aches and pains).

In addition to being symptom oriented, another major problem with measures such as the CDI—commonly used to assess for depression in children—is that they are extremely face valid. That is, the examiner can determine from the question what the item is examining. A measure is face valid if it obviously pertains to the meaning of the concept being measured more than to other concepts (Brewer & Hunter, 1989). For example, asking a participant to count the number of drinks he or she has consumed in the last few days would be a face-valid measure of the person's alcohol consumption. Measures of depression very clearly inquire about depressive symptoms. However, face valid, direct questions, inquiring about a child's feelings is not always the best way to reveal emotional problems if there are any. In fact, face validity has been found to be one of the weaknesses of measures like the CDI. Thus, children can under-endorse, and the measure has been found to underestimate level of severity.

Another problem with this approach is that the overlap between various psychological conditions. For example, differentiating clinically referred children with depression from other clinical subgroups, such as anxious children, is difficult (Kazdin, 1990; Kovacs, 1992). In addition, symptoms associated with PTSD, grief, anxiety, and

general feelings of sadness can all overlap, making identification of a disorder challenging (Burley, 2012). Furthermore, various symptoms can overlap with general physical illnesses. Thus, a question arises concerning whether a measure is actually identifying depression or simply providing a list of symptoms associated with depression. Another potential issue with the current measures is that self-report questionnaires, which inquire about a child's symptoms, require some level of insight that some young children may not have. Given that children may not be aware of their own struggles, lacking insight into their own emotional states, questions that ask children to define specific symptoms appear counterintuitive for this population. Given the presented information regarding the justification for the creation of a new assessment tool, a new measure that shows strong psychometric properties can change the way depression in children is viewed.

CHAPTER TWO

METHODS

Measure Development

The present study began with a thorough review of the literature on childhood depression, current measures used to assess depression in children and Gestalt theory. In addition to a literature review, a bottom-up approach for measure development was used to develop items. The bottom-up approach starts with specific observations related to an area of research (e.g. children's depression) which is derived from the population of interest (e.g. depressed and non-depressed children). The approach used in this study evolves from observations to the development of an instrument and testing hypothesis using the new instrument (Betancourt et al., 2010). The bottom-up approach compiled items from (1) conceptual understanding of Gestalt theory (2) focus group input (3) expert opinion. The bottom-up approach involves several advantages one of which is that aspects of depression relevant to a particular theory can be identified directly from multiple sources. One of the key components of the bottom-up approach is that brand new items are constructed based on theory. This approach provides valuable contextual and linguistic information that can be used for the development of items relevant to childhood depression. This method is more likely to produce psychometrically sound instruments that ensure measurement equivalence (Knight et al., 2009).

Mixed methodologies are used to implement the bottom-up approach. This study employs a mixed methods research design (Johnson & Onwuegbuzie, 2004; Sandelowski, 2002) to compile items for what is most reflective of the process of depression utilizing Gestalt theory. Johnson and Onwuegbuzie stated that mixed methods research is a third

paradigm to explain research phenomena. The aim of mixed methods research is to combine the strengths of qualitative and quantitative design in a single research study. The qualitative portion of this study includes the method in which items were compiled (focus group, expert opinion). The quantitative portion of this study is the quasi-experimental two-group design, where the measures are administered to a clinical and control group. These combined strengths are successfully employed with Gestalt theory to gather more robust insights necessary for meaningful item development and validation for a process oriented measure of depression.

This study applies conceptual constructs from grounded theory, which was developed by Barney Glaser and Anselm Strauss in the 1960's. Grounded theory is an interactive process of collecting field notes, observations, and reviewing focus group themes and concepts (Creswell, 1989) and was used as a means for understanding the data obtained during the information gathering phase of this study. Grounded theory aims to understand social realities and develop situation-specific emergent theory that is founded on the construction and interpretation of empirical material, which contain the experimental stories of informants at the center of the investigation (Junek, 2012). Grbich (2003) commented that grounded theory technique works best with small studies and when there are few studies which have explored the phenomena. The mixed methods approach used in this study has been reported to compliment grounded theory (Tashakkori & Teddlie, 2003). Grounded theory has been used with semi-structured, open ended, and close-ended interviews, as well as with observations (Dick, 2005; Sausa, 2003).

The study is to go through three phases of measure development (Betancourt et al., 2010) described below. Phase I involves the process of gathering items for the measure which was done through the three ways of information gathering including information from Gestalt theory, focus groups and expert option. In Phase II, items were compiled together to create the measure. In Phase III, the measure underwent preliminary psychometric testing on a sample of depressed children and a control sample of children without depression. An exploratory factor analysis and correlation analysis were conducted to examine the structure, reliability, predictive validity and measurement equivalence.

Phase I: Identification of Depression Consistent with Gestalt Theory

To guide this phase, children's depression is identified through use of three sources of information, which include (1) information gathered from published literature on Gestalt theory (2) a focus group and (3) expert opinion.

Gestalt theory: Depression is to be conceptualized utilizing Gestalt theory through published writing from founders of the theory as well as the use of a model of depression called Gestalt Formation Resolution Process. Described in the literature review above, items were created based on themes of hopelessness, helplessness, negative perspective on the future, and an inability to recognize own needs.

Focus group: A focus group at an annual Gestalt Therapy conference was conducted which include experts in the field of Gestalt as well as clinicians who practice from this perspective. During this phase, experts and trainees (psychologists, physicians, doctoral level therapists) were asked to define the meaning of depression related to Gestalt therapy.

A group facilitator was present which took down notes and presented the topic to the group. The group facilitator presented a series of open-ended questions for all participants in the group (developed by the research team) related to Gestalt theory's perspective on depression. These questions included the following examples: "How would you define depression?" "What does depression look like?" "How do you know a client is depressed?" "How do you know you are depressed?" The data generated from this focus group was used to create a list of common themes which were used in developing the items on the questionnaire. Key themes which emerged from review of the focus group notes revealed group comments made related to the following: hopelessness, ability to self- regulate, future perspective and planning, inability to differentiate between figure and ground, ability to be present and respond, interpretation of events, loss of contact with self and environment, inability to detect needs, external verses internal events, depression as a creative process, sense of giving up, etc. A list was made with these themes, which guided the creation of the items on the new measures. Items were written for the new scale based on Gestalt theory and referenced to the themes that emerged from the focus group.

Expert opinion: Expert opinion was sought out to collaborate and obtain ideas for items for the questionnaire that would identify depression as a process. Experts included current researchers, authors, Gestalt therapists working with children, clinicians, and trainers of Gestalt Therapy.

Items descriptive of depression as a state of hopelessness, not noticing one's needs, and not feeling like one can make an impact on their environment were identified as key concepts of depression during this phase. Item's which presented scenarios

children can relate to regarding awareness of what is going on in their environment, what their needs are at a given moment, and the impact they feel like they can make on their environment were included as items on the DPS-C. Awareness of basic needs (e.g. being thirsty or hungry), structured needs (e.g. plans for the weekend) and more general (e.g. goals) were also included on the measure. Some examples include inquiry about a child's perception of their ability to make an impact on their surroundings (e.g. Item 1, "Even if I get mad, there is nothing that I can do about the situation that has upset me"), sensory awareness (e.g. Item 18, "I don't realize when I am hungry, thirsty or tired"), and general awareness (e.g. Item 17, I usually don't know what is going on around me).

Phase II: Item Refinement

In Phase II, items constructed in Phase I items were compiled together as the Depression Process Scale for Children. A thematic content analysis framework (Walker & Avant, 2005) for data reduction was used where the experts reviewed the compiled items which conveyed unique aspects of children's presentation of hopelessness and awareness. The data generated from this phase were discussed by the research team until a consensus was reached on the different themes elicited and items compiled. The final form of the Depression Process Scale for Children was developed from an initial bank of 30 items about depression based on expert agreement on which items best capture the construct. Agreement was made on 23 items, which were true to theory and included in the final version of the DPS-C.

Phase III: Administration of Measure and Preliminary Psychometric Validation

In this phase, the created instrument was administered to depressed and non-depressed children along with already established measures of children's emotional functioning which included the CDI 2 and BASC-2 rating form for parents.

Measures

Depression Process Scale- Children. Developed based on the Gestalt theory of depression, the DPS-C is a self-report measure that consists of 23 items. Responses are measured on a four-point Likert scale ranging from: 1- Very False, 2-False, 3-True, and 4- Very True. DPS-C is for children from seven to 17 years of age and is estimated to take 10 to 15 minutes to complete. Items are in language appropriate for children in the intended age range and scenarios which children can relate to. The DPS-C is based on Gestalt theory in understanding the process of depression, which differs substantially from the current measure due to its focus away from DSM symptomatology. Questions ask about child's belief on how strongly they can impact their environment and their inability to recognize own needs.

Children's Depression Inventory 2 (CDI 2)**.** The CDI 2 is a 28 item self-reported measure assessing for depressive symptoms experienced in the past 2 weeks. Each item consists of three statements where the child is asked to select the statement that best describes his or her feelings. The CDI-2 yields a Total Score, two scale scores (Emotional Problems and Functional Problems), and four subscale scores (Negative Mood/Physical

Symptoms, Negative Self-Esteem, Interpersonal Problems, and Ineffectiveness). The measure takes approximately 10 to 15 minutes to complete.

Behavior Assessment System for Children-Second Edition (BASC-2). BASC- 2 parent report comes in 2 forms including the Parent Report Scales-Child (PRS-C, ages 6-11) and Parent Report Scales- Adolescents (PRS-A, ages 12-21). The PRS-C consists of 160 items and the PRS-A consists of 150 items. BASC-2 consists of 16 subscales, with give composite scales and takes approximately 20 to 30 minutes to complete. Domains assessed by the BASC-2 include psychological issues related to aggression, hyperactivity, conduct problems, anxiety, depression, school problems along with other areas of concern. Item response format includes True/False and Likert four point scale 0 (never), 1 (sometimes), 2 (often) and 3 (almost always). This instrument is a face valid self-report questionnaire filled out by a parent, which consists of questions related to how well the child is functioning in his/her environment. The scales indicate the child's functioning with externalizing and internalizing problems and adaptive skills.

Demographic Form. Parents completed a demographic form which consisted of 13 items inquiring about household income, place of birth for parent and child, education level of parent, city of residence, and ethnic background. Items also queried about any known medical and psychological diagnosis for the child.

Procedure

Participants were consented by research assistants and signed a written consent form. All children who participated in the study completed the newly created measure, DPS-C, as well as the already established measure for childhood depression, CDI 2. If

there were any limitations to the child's ability to read or comprehend the items on the questionnaires, the measure was verbally administered. Additionally, parent's completed a demographic form and the BASC-2 to further assess the child's behavioral and emotional functioning. Clinical psychology doctoral students who were supervised by a licensed psychologist administered and scored all measures. All participants were entered into a drawing for four tickets to Disneyland. A participant was randomly selected from the consent forms pool was contacted by phone to inform of prize. Tickets were mailed out to the winning family.

Participants in the control group (non-depressed sample) were recruited from a local business establishment. The business establishment is a full service hair salon in Los Angeles County, which provides service to a diverse population in the community including wide range of cultural and socioeconomic backgrounds. They provide services for men and women in a large shopping center plaza. Customers of the business establishment were given information about the study and asked if they were interested in participating. Recruiting times were mostly on the weekends with a high traffic flow in the shopping plaza, when research assistants were available to consent and administer questionnaires. Majority of participants were long-time customers of the business establishment and highly motivated to participate due to their prior positive relationship with the establishment. In order to be in the control group, participants had to be between seven and 17 years old, present with a parent or caretaker willing to complete the caretaker questionnaires and consent, as well as capable of reading and writing in English. Inclusion criteria for the control group also included those children who did not have a psychological diagnosis as well as parents/caregivers were not concerned about

depression for the child. If a parent/caretaker reported concerns for depression for the child or indicated that the child was diagnosed with depression, they were included in the depressed group.

The depressed group was recruited from several locations including the Loma Linda University Behavioral Medicine Center (BMC), Behavioral Health Institute (BHI) and recruited via posted advertisements. The advertisements were posted in Los Angeles County in order to obtain a more diverse population.

The Behavioral Medicine Center provides mental health and chemical dependency care for children, adolescents and their families. They provide multi-level care including inpatient, partial hospitalization, intensive outpatient, and outpatient services. Recruitment at the Behavioral Medicine Center was attempted from two main programs which included the Children Partial and Intensive Outpatient Programs. The programs are designed for children experiencing mental health problems including depression as well as other conditions. Recruitment from the BMC involved research assistants meeting with research coordinators at the institution, attending research committee meetings, as well as meeting with treating clinicians to inform them of the study. Recruitment involved research assistants being present at allocated time slots during the time parents attend the parent education group or are in the waiting area. In the waiting area of the BMC, after families completed checking in, they were approached by research assistants to inform them about the study. Interested families were consented and completed questionnaires in the waiting area. Another way research assistants attempted to recruit participants from the BMC involved approaching parents during visiting hours for the inpatient units.

The Behavioral Health Institute's clinical services include in a variety of outpatient therapeutic services for children and adolescents presenting with various mental health needs some of which include depression, anxiety, eating disorders, trauma, etc. During staff meetings, research assistants presented the study and requested clinicians to discuss the study with patients they were treating who met the inclusion criteria (7-17 years of age who were diagnosed with depression). Once a family was identified, research assistants were prepared to return to the clinic to administer the questionnaires.

Within a large shopping plaza in Los Angeles, several advertisements were posted requesting participation for the depressed sample. Families with a child who was diagnosed with depression or parents who had concern for depression for their child were requested to participate. The advertisements were posted inside the same business establishment where the control sample was obtained, as well as at various other locations within the shopping plaza. Phone numbers for research assistants were provided for interested families. Additionally, assistants were present on-location, within visible distance from the posted advertisements for interested participants to complete the questionnaires on site. If a family was interested during times a research assistant was not present, they were provided with contact information for research assistants and returned at a later time to participate in the study.

CHAPTER THREE

RESULTS

Descriptive Analysis

Based on the recommendation that the number of participants for factor analysis should be five times the number of variables (Bryant, 1995), a measure with approximately 20 items should have at least 100 participants. The final sample included 168 participants of which 109 were identified in the non-depressed group, 58 in the depressed group and data was missing for one. Identification in the depressed group was based on parent's report of concern for depression in their child. Parents were asked to indicate if their child was demonstrating depressive symptoms. Therefore, although referenced as "depressed" group throughout this measure, it is only suggested that those children in the depressed group exhibit some depressive symptomatology rather than a confirmed diagnosis. Although an effort was made to collect data from various settings, majority of the participants for the control group were recruited from a business establishment and for the depressed group, were gathered from posted advertisement within Los Angeles County. Of the 168-sample size, 164 were recruited within Los Angeles Country (97%). Table 1 displays the descriptive characteristics of the sample.

Of the total sample, 89 were male (53%) and 79 were female (47%). Majority of the caregivers who consented and completed the questionnaires were the biological mother of the child (76.2%) and a smaller portion were biological fathers (17.3%). Majority of the respondents were married (79.2%). The sample consisted of a diverse population with 36.9% Caucasian (n=62), 23.8% Asian (n=40), 22.6% Hispanic (n=38), 7.1% Native American/ Pacific Islander (n=12), 3.6% Arab/ Middle Eastern (n=6), 3%

American Indian (n=5), and 3% of other or mixed racial backgrounds (n=5). Socioeconomic status also varied with 29.8% who reported an annual household income within the $30,000-59,990 range (n=50), 20.2% with above $90,000 (n=34), 15.5% within $60,000-$89,999 range (n=26), 14.9% below $29,000, and data missing for 33 participants who chose not to disclose their annual household income. Majority of the adult respondents, 39.9%, had a Bachelor's degree (n=67). The educational status of the adults respondents for the remainder of the participants include: 28% completed some college (n=47), 11.9% completed high school (n=20), 9.5% had a Master's degree (n=16), 9% did not complete high school (n=15), and data was missing for one participant. Regarding place of residence, majority of the participants resided in Los Angeles County (93.5%, n=157).

Table 1

Participant Characteristics for Depressed and non-Depressed Group

	Non-depressed n=110	Depressed n=58	Total n=168
Child's Age			
Mean (sd)	12.99 (3.16)	12.24 (3.24)	12.73 (3.20)
Child's Gender			
Female	51 (46.4%)	28 (48.3%)	79 (47.0%)
Male	59 (53.6%)	30 (51.7%)	89 (53.0%)
Reporter's Relationship to Child			
Mother	80 (72.7%)	48 (82.8%)	128 (76.2%)
Father	19 (17.3%)	10 (17.2%)	29 (17.3%)
Legal Guardian	2 (1.8)	0	2 (1.2%)
Other	6 (5.5%)	0	6 (3.6%)
Missing	3 (2.7%)	0	3 (1.8%)
Marital Status			
Married	90 (81.8%)	43 (74.1%)	133 (79.2%)
Widowed	0	1 (1.7%)	1 (.6%)
Divorced	7 (6.4%)	9 (15.5%)	16 (9.5%)
Separated	7 (6.4%)	4 (6.9%)	11 (6.5%
Never Married	4 (3.6%)	1 (1.7%)	5 (3.0%)
Missing	2 (1.8%)	-	2 (1.2%)
Household Income			
<$29,999	18 (16.4%)	7 (12.1%)	25 (14.9%)
$30,000-$59,999	24 (21.8%)	26 (44.8%)	50 (29.8%)
$60,000-$89,999	18 (16.4%)	8 (13.8%)	26 (15.5%)
>$90,000	20 (18.2%)	14 (24.1%)	34 (20.2%)
Missing	30 (27.3%)	3 (5.2%)	33 (19.6%)
*Caregiver's Education Level			
No Schooling Completed	0	1 (1.7%)	1 (.6%)
8th grade level	0	0	14 (8.3%)
High School, No Diploma	8 (7.3%)	6 (10.3%)	20 (11.9%)
High School Diploma/GED	10 (9.1%)	10 (17.2%)	47 (28.0%)
Some College	28 (25.5%)	19 (32.8%)	67 (39.9%)
Bachelor's Degree	52 (47.3%)	15 (25.9%)	16 (9.5%)
Master's Degree	10 (9.1%)	6 (10.3%)	2 (1.2%)
Doctorate Degree	1 (.9%)	1 (1.7%)	2 (1.2%)
Missing	1 (.9%)	0	1 (.6%)

Racial/Ethnic Background			
White	39 (35.5%)	23 (39.7%)	62 (36.9%)
Asian	29 (26.4%)	11 (19.0%)	40 (23.8%)
Hispanic/Latino	20 (18.2%)	18 (31.0%)	38 (22.6%)
Arab	6 (5.5%)	0	6 (3.6%)
American Indian/Alaskan Native	3 (2.7%)	2 (3.4%)	5 (3.0%)
Native Hawaiian/Pacific Islander	8 (7.3%)	4 (6.9%)	12 (7.1%)
Other	5 (4.5%)	0	5 (3.0%)
**Country Caregiver Born In			
US	34 (30.9%)	38 (65.5%)	72 (42.9%)
Other	76 (69.1%)	20 (34.5%)	96 (57.1%)
Country Child Was Born In			
US	86 (78.2%)	51 (87.9%)	137 (81.5%)
Other	24 (21.8%)	7 (12.1%)	31 (18.5%)
Reside			
LA County	103 (93.6%)	54 (93.1%)	157 (93.5%)
Other	7 (6.4%)	4 (6.9%)	11 (6.5%)

*p <.001, **p <.05

Chi-Square tests of independence were calculated comparing the descriptive variables amongst the depressed and non-depressed groups in order to evaluate if there was any significant differences between the groups. Descriptive variables such as education level and respondent's relationship to the child, were collapsed into two groups for chi-square analysis. Chi-Square analysis comparing education level of the caregiver for depressed and non-depressed groups yielded a significant interaction, X^2 (1) = 3.625, p=.05. Caregivers with an education below college level were more likely to report concerns for child's depression (48.6%) then caregivers with an education level of college or beyond (31.6%). Additionally, Chi-Square analysis was significant when comparing immigration status of the caregiver (born in the United States or not) for the depressed and non-depressed groups X^2 (1) = 19.238, p <.001. Caregivers born in the US were more likely to identify depressive symptoms for the child (53.5%) then those not born in the US (20.8%). Results of the other Chi-square analyses were not significant,

suggesting the two groups are not differently distributed on the remaining categorical demographic variables (income, gender, caregiver's relationship to child, marital status, and immigration status of the child. Results of the independent sample t-test that was conducted to evaluate group differences with regard to age was also not significant.

Data Screening and Initial Reliability

Data was first screened for missing data and outliers. No outliers were found utilizing Mahlanobis distances. Univariate linearity and normality were analyzed by creating a scatterplot matrix. The elliptical shapes indicate normality and linearity. Given that the DPS-C's goal is to assess depression in a way that has not been done before with other measures, careful consideration was made on what to do with missing data. Although generally mean imputations are acceptable in research, mean imputation were initially was not used for missing items during the Exploratory Factor Analysis (EFA) phase of the study. Missing items were left out of the EFA analysis in an effort to not make predictions and to evaluate the loading precisely. In total only 8 items were left blank of the non-depressed/normative sample (n=110). Mean imputation was used for the remainder of analysis following EFA. This approach was taken in order to not negatively skew the data when a total DPS-C score was required in the analysis of comparing groups. Analysis of the reliability of the entire scale with 23 items revealed a Cronbach's Alpha of .819 for the non-depressed sample, .875 for the depressed sample and .940 for the whole sample. Reliability analysis for all items across all three datasets revealed that Items 12, 16, 17, and 21 decreased the overall reliability of the scale. Statistical analysis revealed that if those items were deleted, Cronbach's Alpha for the measure improved.

Given these recommendations, these four items were not included in the analysis. Closer look at the deleted items revealed the question content was least specific to themes of depression and too broad. Specifically, item 12 states, “I always know how to get what I want.” This could be read in reference to a variety of factors, nonspecific to a theme of depression. Similarly, item 17 “I usually don’t know what is going on around me (what others are doing and saying)” is very broad. The other two items removed from the scale (item 16 and 21) are the only items on the scale which are not first person statements (Item 16: When someone gets angry they have the power to change things; Item 21: Grownups care so much about what kids think). The way the items were worded is a likely reason for their problematic reliability. Children are able to respond more accurately to “I” statements due to the ability to take own perspective more readily then an external view. Such general scenarios are removed from the child’s own personal experience and do not capture the construct as well as the other items on the scale do. Once the items were removed, reliability analysis revealed Cronbach’s Alpha of .830 for the nondepressed group, .914 for the depressed group and .963 for the total sample.

Exploratory Factor Analysis

In order to assess construct validity, internal consistency and the underlying structure of the DPS-C, an exploratory factor analysis (EFA) was performed on one half of the sample using SPSS. In order to establish normative data for the DPS-C, EFA was conducted on the non-depressed sample to create normative data for the new measure. Principle axis factoring (PAF) was used to calculate eigenvalues and determine the number of factors to extract using the multiple approaches. A multiple approach to data

reduction, rather than use of single criteria (e.g., scree test, eigenvalues >1, cumulative percent of variance extracted, etc.), has been suggested to be the best practice in EFA research (Costello & Osborne, 2005). An oblique promax rotation of the extracted factors was utilized to achieve the simplest structure. Inter-item correlations and Cronbach's alpha were examined to calculate internal consistency estimates of reliability.

Nineteen items were entered into the initial EFA. While the scree plot did not demonstrate a clear break in the number of factors, analysis of the plots suggest at least six factor solution (Figure 1). Additionally, initial EFA indicated up to six possible factors with eigenvalues greater than 1 (Table 2). A conservative approach was initially taken for factor extraction. If fewer then the appropriate number of factors are initially extracted, the factors may include large amount of errors due to important variables going unnoticed. The Salient Loading criterion adds 50% to what is suggested by eigenvalue criteria, leading to the decision to initially extract nine factors.

Table 3 shows the pattern matrix for the nine-factor extraction of the 19 items. The strength of the items loading on each factor was examined. Using this criterion, further EFA's were conducted extracting fewer factors, one by one, in order to determine which model best fit the data. Factors with minimum of three items loadings greater than .3 or two items loading greater than .50 were retained. Consistent with the principles of salient loadings criteria, items which did not demonstrate a minimum range of .13 from the factor it loaded the highest on and other factors were removed from the model. For example, when extracting four factors, Item 2 was cross loading within .13 for factor one and two. Therefore, Item 2 was removed from the model for the next re-factoring (Table 4 demonstrates this step). Re-factoring continued until there were no cross

loadings within .13 margin. With this method, a three-factor model was the most appropriate fit for 13 items retained in the final extraction (Table 5).

Table 2

Eigenvalues of Components

Component	Total	% of Variance	Cumulative %
1	5.118	26.935	26.935
2	1.763	9.279	36.215
3	1.502	7.905	44.120
4	1.206	6.348	50.467
5	1.105	5.816	56.283
6	1.029	5.416	61.699
7	.969	5.102	66.801
8	.842	4.433	71.234
9	.798	4.199	75.433
10	.755	3.973	79.405
11	.644	3.387	82.792
12	.626	3.293	86.086
13	.578	3.044	89.129
14	.471	2.479	91.608
15	.449	2.365	93.973
16	.364	1.916	95.889
17	.312	1.641	97.530
18	.280	1.473	99.003
19	.189	.997	100.000

Table 3

Nine factor Extraction Matrix

	1	2	3	4	5	6	7	8	9
DPS-C Item 7	.926	.292	-.368	.102	-.132	.038	.083	-.075	.033
DPS-C Item 6	.729	-.188	.228	-.014	.132	-.135	.176	-.241	.063
DPS-C Item 13	.532	-.081	.043	-.074	.310	.033	-.061	.306	-.002
DPS-C Item 5	.319	.127	.284	-.109	-.048	-.259	.023	.202	.248
DPS-C Item 1	-.016	.931	-.114	-.026	-.030	.082	.275	.047	-.066
DPS-C Item 4	.191	.679	.104	-.002	-.159	-.050	-.183	.082	-.003
DPS-C Item 9	-.048	.350	.202	.042	.340	.073	-.306	.105	.075
DPS-C Item 19	-.325	-.051	.874	.002	-.142	.078	-.203	.130	.137
DPS-C Item 20	.210	-.045	.773	-.023	-.225	.122	.255	.149	-.126
DPS-C Item 11	.151	.424	.475	.037	.136	.048	-.140	-.277	-.156
DPS-C Item 18	.083	-.071	.142	.882	.003	.267	.008	-.202	.013
DPS-C Item 8	-.125	.236	-.200	.715	-.002	-.173	.085	.067	.135
DPS-C Item 2	.298	-.228	-.078	.601	-.080	.013	-.271	.271	-.123
DPS-C Item 23	.024	-.090	-.279	-.013	1.065	.039	.117	.018	-.024
DPS-C Item 10	-.092	.063	.230	.178	.073	.899	.206	.114	.097
DPS-C Item 22	-.131	.011	.242	.397	.098	-.563	.202	.039	-.070
DPS-C Item 14	.141	.090	-.076	-.005	.092	.127	.901	.219	.052
DPS-C Item 3	-.132	.078	.172	-.053	.026	.095	.252	.922	-.095
DPS-C Item 15	.087	-.082	.042	.048	-.022	.130	.066	-.118	.974

Table 4

Structure Matrix with Promax Rotation

	1	2	3	4
DPS-C Item 13	.802	.199	.474	.113
DPS-C Item 6	.732	.198	.197	.240
DPS-C Item 23	.640	-.087	.215	-.040
DPS-C Item 7	.598	.371	.199	.187
DPS-C Item 2	.480	.475	.359	-.186
DPS-C Item 8	.086	.778	.259	.073
DPS-C Item 22	.216	.770	.191	.094
DPS-C Item 18	.390	.521	.387	.183
DPS-C Item 1	.032	.502	.364	.433
DPS-C Item 9	.477	.298	.796	.061
DPS-C Item 11	.503	.333	.706	.236
DPS-C Item 4	.282	.520	.668	.152
DPS-C Item 19	.092	.168	.599	.288
DPS-C Item 14	.117	.260	-.278	.699
DPS-C Item 20	.404	.321	.373	.595
DPS-C Item 10	.157	-.189	.300	.558
DPS-C Item 15	.019	.030	.163	.416

Table 5

Structure Matrix with Promax Rotation for Final Model

	1	2	3
DPS-C Item 13	.835	-.028	-.020
DPS-C Item 23	.796	-.288	-.264
DPS-C Item 9	.681	.222	-.193
DPS-C Item 6	.640	-.103	.119
DPS-C Item 11	.566	.232	.108
DPS-C Item 7	.379	.144	.246
DPS-C Item 8	-.146	.872	-.011
DPS-C Item 22	.030	.845	-.206
DPS-C Item 18	.179	.480	.233
DPS-C Item 10	.108	-.320	.750
DPS-C Item 14	-.246	.020	.628
DPS-C Item 20	.218	.205	.523
DPS-C Item 15	-.067	.003	.481

Table 6

Variance for three-Component Solution

	Initial Eigenvalues			Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.624	27.874	27.874	3.624	27.874	27.874
2	1.555	11.965	39.839	1.555	11.965	39.839
3	1.370	10.541	50.380	1.370	10.541	50.380
4	1.050	8.079	58.460			
5	.942	7.244	65.704			
6	.882	6.786	72.490			
7	.791	6.082	78.572			
8	.708	5.450	84.022			
9	.580	4.464	88.486			
10	.515	3.963	92.450			
11	.417	3.206	95.656			
12	.315	2.420	98.076			
13	.250	1.924	100.000			

Extraction Method: Principal Component Analysis.

From the original 23 items on the measure, 13 were retained with six items on the first factor, three on the second factor and four on the third factor. Factor names were applied on the basis of item content and themes as it applied to Gestalt theory.

Factor 1 is considered Scale 1 of the DPS-C. Key themes on this scale include "finding a way" to impact an external event (Item 6 and Item 7), future perspective (Item 9 & Item 13), perspective of how other's view self (Item 11), and perspective of the environment (Item 23). These items were evaluated to have an external component of forces occurring outside of one's self such as the future, environment and other people. Scale 1 was labeled *Awareness of External Factors*. Factor 2 is considered Scale 2 of the

DPS-C. Key themes on this scale include awareness of the physical experience of hunger/thirst (Item 18), ways of navigating in space (Item 22), and awareness of how others behave (Item 8). Scale 2 was labeled *Helplessness/Hopelessness* given that the items appear to reflect the depth of depression or concept of giving up. Factor 3 is considered Scale 3 of the DPS-C and its key themes include knowledge of needs (Item 10), ability to make decisions for own needs (Item 14), awareness of use of coping skills (Item 3), and having plans to meet needs (Item 20). Subsequently, the third scale was labeled *Awareness of Personal Needs*. Refer to Appendix A for retained items and scales.

DPS-C Reliability Following EFA

Cronbach's Alpha was then used to estimate the reliability of the three scales. Factor one, Awareness of External Factors explained 27.87% of the variance (Cronbach's =. 75). Factor two, Awareness of Experience, explained 11.97% of the variance (Cronbach's =. 66). The third factor, Awareness of Personal Needs explained 10.54% of the variance (Cronbach's = .50). Together, the factor structure accounted for 50.38% of the total variance. The Cronbach's alpha coefficient for internal consistency for the entire measure was .75, which suggests the measure meets criteria for reliability for measure development.

Identifying Construct: Concurrent and Discriminative Validity

A primary goal of the analysis was to establish a new way of assessing depression based upon a theoretical model of depression as process rather than the outcome or symptoms of depression. Although a measure was developed, successfully administered to a total of 168 children, and internal consistency was demonstrated, its construct

validity required further analyses. In order to understand construct, the measure was included in a correlation analysis with the BASC-2 and CDI 2 subscales. Given that the goal of this measure was to assess for depression in a new way, convergent validity with the CDI 2 was not particularly the goal of this step of the analysis. Rather, exploration of how the DPS-C total and subscale scores compare with the CDI 2 and the parent report BASC-2 questionnaire was explored. Partial correlation, measuring the degree of association between two variables when the effects on them of a third variable are removed was conducted for the correlational analysis. Parent's immigration status and education level were controlled for in the correlation analysis given the significant variations of those variables between the depressed and non-depressed groups. Correlations less than .3 were considered weak, .3 to .7 were considered moderate and correlations greater than .7 were considered strong.

Correlational analysis of DPS-C and BASC-2 behavioral scales yielded a strong positive correlation between DPS-C Scale 1 Awareness of External Factors and the Depression subscale on the BASC-2, r (159) =. 714, p <. 001. There was also a strong positive correlation between DPS-C Scale 3, Awareness of Personal Needs, and the Depression subscale on the BASC-2, r (159) = .727, p <. 001. Likewise, the DPS-C total had a strong positive correlation with the Depression subscale on the BASC-2, r (159) = .763, p <. 001. Additionally, the DPS-C total had a strong positive correlation with the Withdrawal subscale on the BASC-2, r (159) = .714, p <. 001. These strong correlations are a salient part of this study, given that the DPS-C did not demonstrate a strong correlation with any other scales on the BASC-2, providing strong evidence for construct validity. The correlations of the DPS-C and the BASC-2 scales are included in Table 7.

Correlational analysis of the DPS-C and CDI 2 scales reveal no strong correlations between the two measures (Refer to Table 8).

Given that the goal of developing the DPS-C was to evaluate depression in children in a way not captured by the CDI, it is appropriate and desired that the measures are not correlated. This provides evidence for the new measure's ability in evaluating a construct differently from the CDI. Majority of measure development relies on the constructs of the measures developed prior to establishing validity. However, continued rationalization of measure development in that manner limits what we can measure because it restricts the consideration of alternate conceptualizations.

Table 7

Pearson Correlation Matrix: DPS-C with BASC- 2 Behavioral Symptoms Scales

	DPS-C Scale 1	DPS-C Scale 2	DPS-C Scale 3	DPS-C Total	Hyper-activity	Aggression	Conduct Problems	Extern. Problems	Anxiety	Depression	Somatization	Intern. Problems	Atypicality	Withdrawal	Attention Problems
DPS-C Scale 1	–														
DPS-C Scale 2	.791	–													
DPS-C Scale 3	.799	.753	–												
DPS-C Total	.955	.902	.911	–											
Hyperactivity	.375	.383	.335	.394	–										
Aggression	.479	.470	.461	.508	.727	–									
Conduct Problems	.424	.395	.382	.436	.424	.712	–								
Externalizing Problems	.453	.442	.432	.476	.876	.901	.920	–							
Anxiety	.533	.484	.566	.571	.511	.552	.553	.589	–						
Depression	.714	.678	.727	.763	.606	.665	.668	.706	.702	–					
Somatization	.264	.266	.291	.294	.510	.452	.532	.561	.559	.598	–				
Internalizing Problems	.459	.435	.490	.497	.623	.642	.675	.728	.826	.809	.840	–			
Atypicality	.286	.285	.274	.304	.580	.557	.597	.653	.600	.568	.572	.693	–		
Withdrawal	.671	.638	.671	.714	.573	.602	.654	.672	.619	.786	.520	.688	.503	–	
Attention Problems	.489	.479	.429	.506	.703	.732	.679	.763	.475	.609	.334	.559	.531	.592	–
BSI	.514	.504	.512	.550	.781	.816	.812	.894	.648	.781	.609	.803	.723	.778	.778

Table 8

Pearson Correlation Matrix: DPS-C with CDI 2

	DPS-C Scale 1	DPS-C Scale 2	DPS-C Scale 3	DPS-C Total	Negative Mood	Negative Self-Esteem	Ineffectiv-eness	Interpersonal Problems	Emotional problems	Functional Problems
DPS-C Scale 1	–									
DPS-C Scale 2	.790	–								
DPS-C Scale 3	.787	.746	–							
DPS-C Total	.954	.901	.905	–						
Negative Mood	.177	.170	.134	.176	–					
Negative Self-Esteem	.551	.543	.457	.564	.462	–				
Ineffectiveness	.103	.193	.045	.119	.556	.471	–			
Interpersonal Problems	.335	.412	.322	.380	.439	.537	.487	–		
Emotional Problems	.401	.397	.335	.412	.879	.817	.597	.556	–	
Functional Problems	.226	.317	.171	.254	.605	.585	.932	.747	.685	–
Total T-score	.341	.388	.271	.360	.803	.740	.811	.709	.907	.898

Predictive Validity

Logistic regression analysis was used to test the theoretical relevance of the DPS-C and its scales in predicting depression. The predictive validity of the DPS-C total score as well as the three scales was examined separately in their ability to predict group membership (depressed or non-depressed). The first model evaluated the DPS-C's total score's ability in predicting those in the depressed from non-depressed groups after accounting for parent's education level and immigration status. Regression results indicated that while controlling for caregiver's education level and immigration status, the DPS-C total score was a significant predictor of depression. The model was statistically reliable in distinguishing between the two groups, Wald $X^2(3) = 140.335$, $p < .001$; accurately predicting 94% of the cases. Regression coefficients are presented in Table 9.

Table 9

Logistic Regression Analysis Summary for DPS-C Total Score

Variable	*B*	*SEB*	Wald	*df*	*p*
Caregiver Education Level	-.718	.746	.926	1	.488
Caregiver Immigration Status	-1.493	.638	5.479	1	.019*
DPS-C Total Score	.262	.038	47.182	1	.001**
Constant	-5.208	1.814	8.247	1	.004*

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

The second model looked at the predictive validity of the three scales of DPS-C in predicting depressed and non-depressed children. Results concluded that after controlling

for parent's education level and immigration status, the model was a significant predictor of depression, Wald X^2 (5) = 143.362, p < .001; accurately predicting 92.8% of the cases. Regression coefficients are presented in Table 10 for this model. Results suggest that Scale 1, Awareness of External Factors, was a significant predictor after accounting for caregiver education level and immigration status (p =.006). Scale 2 of the DPS-C, Helplessness/Hopelessness, was not a significant predictor of depression after controlling for the demographic variables and Scale 1. Scale 3, Awareness of Personal Needs, was a significant predictor of depression after accounting for the demographic variables and the prior two scales. Furthermore, once accounting for all the other variables in the model including demographic variables and the scales, the total DPS-C was a significant predictor of depression, *p* =. 001.

Table 10

Logistic Regression Analysis Summary for DPS-C Scales

Variable	*B*	*SEB*	Wald	*df*	*p*
Caregiver Education Level	-.758	.773	.960	1	.327
Caregiver Immigration Status	-1.389	.655	4.495	1	.034*
DPS-C Scale 1	.326	.118	7.600	1	.006**
DPS-C Scale 2	.017	.163	.011	1	.917
DPS-C Scale 3	.421	.157	7.207	1	.007**
Constant	-6.095	2.051	8.830	1	.003**

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

Given that studies have shown the CDI is not always valid in identifying depression, logistic regression analysis was conducted on the same sample in order to

evaluate the CDI and its subscales ability in predicting depression within this sample. Results suggest that after accounting for the demographic variables, the CDI total score is also a significant predictor of depression within this sample, Wald $X^2(5) = 28.993$, $p < .001$; accurately predicting 70.1% of the cases. Table 11 demonstrates this finding.

Table 11

Logistic Regression Analysis Summary CDI Total Score in Predicting Depression

Variable	*B*	*SEB*	Wald	*df*	*p*
Caregiver Education Level	-0.784	.429	3.334	1	.068
Caregiver Immigration Status	-1.402	.362	14.996	1	.001***
CDI Total	0.056	.020	7.843	1	.005**

**$p < .01$. ***$p < .001$.

In an interest to evaluate if the DPS-C is a significant predictor of depression after accounting for the variance explained by the CDI total, another Logistical Regression was conducted where parent's education level, parental immigration status, CDI total, and DPS-C Scale 1, Scale 2, and Scale 3 were entered into the model. Results suggest that after accounting for the demographic variables and the variance explained by the CDI, Scale 1 and Scale 3 continued to be significant predictors of depression within this sample. In fact, once the DPS-C Scales were entered into the model, the CDI total was no longer a significant predictor for depression within this sample. Regression coefficients are presented in Table 12.

Table 12

Logistic Regression Analysis Summary CDI Total Score and DPS-C Scales

Variable	*B*	*SEB*	Wald	*df*	*p*
Caregiver Education Level	0-.474	.831	0.325	1	.569
Caregiver Immigration Status	-1.287	.674	3.632	1	.057
CDI Total	-0.008	.036	0.045	1	.833
DPS-C Scale 1	0.325	.120	7.278	1	.007**
DPS-C Scale 2	0.020	.167	0.014	1	.905
DPS-C Scale 3	0.426	.160	7.102	1	.008**

**$p < .01$. ***$p < .001$.

CHAPTER FOUR

DISCUSSION

The primary goal of this study was to establish a new way of assessing depression in children based on a theoretical model of depression as process rather than the outcome or symptoms of depression. As such, a new measure, the DPS-C, was constructed based on Gestalt theory's perspective on the process of depression, which differs substantially from existing measures due to its focus away from DSM symptomatology. Having needs, the recognition/awareness of those needs and taking action towards meeting the needs is defined as a core concept of the process of depression with Gestalt theory. When this process is disrupted, psychopathology arises (T. Burley, personal communication, November 2012). Depression results from repeated occurrences of unmet needs, until these desires are no longer part of child's awareness (i.e., chronic depression). The process of development of depression begins with frustration of needs leading to a sense of the fruitlessness of attending and following through on those needs or the development of helplessness, hopelessness and inaction toward the resolution of needs. Items for children's measure were developed based on a child's awareness of his or her surrounding, their needs and belief of the impact they can make on their environment. Established and commonly used measures of childhood depression, CDI 2 and BASC-2 (parent rating form), were used for understanding theoretical construct and predictive validity of the DPS-C. The study was intended to create a measure that could be used to assess depression in a new way. Thus, convergent validity with the existing measures, such as CDI 2 was not of interest. Rather, exploration of how the DPS-C total and subscale

scores compare with the CDI 2 and the parent report BASC-2 questionnaire was conducted.

The findings of this study lead to the development of a 13-item measure, the DPS-C, consisting of three factors. Factor 1 with five items was identified as Scale 1, Awareness of External Factors. Factor 2 with three items was identified as Scale 2, Helplessness/Hopelessness. Factor 3 with four items was identified as Scale 3, Awareness of Personal Needs. In addition to establishing a factor structure, the findings demonstrated the theoretical construct, internal validity and predictive validity of the DPS-C. Furthermore, the 13 item final measure met the reliability requirements. Study findings also showed the new measure to have construct and discriminative validity. Correlation analyses between the DPS-C total score, BASC-2 Clinical scales and the CDI 2 were conducted in order to explore the construct measured by the DPS-C. Results demonstrated Scale 1, Scale 3, and total DPS-C score had strong positive correlations with the Depression subscale on the BASC-2. Scale 2 is likely to tap into the aspects of the construct relevant to the awareness of experience and thus it is likely to capture a broader and/or a unique range of the construct variability than BASC-2, which is largely based on emotional connotations only. The DPS-C total score strongly correlated with the Withdrawal subscale of the BASC-2, but did not relate significantly to any of the other subscales of the measure (i.e., Hyperactivity, Aggression, Conduct Problems, Anxiety, Somatization, Atypicality, and Attention Problems). This suggests the DPS-C has convergent and discriminant validity. Analysis of the items on the Withdrawal subscale appears to tap into withdrawal of activity such as the child's engagement with activities and peers (i.e. "Refuses to join group activities", "Prefers to be alone," "Avoids other

adolescents"). In Gestalt terms, the action of reaching a resolution cannot occur as the person withdraws from attempts to engage with their ecosystem (T. Burley, personal communication, November 2012). These findings provide strong evidence for construct validity of DPS-C as a measure of depression in children.

In the process of seeking construct validity, the DPS-C did not have a strong correlation with CDI 2, suggesting that the new measure is likely to be tapping into a unique and/or broader range of construct not measured by the CDI 2. This finding in combination to the DPS-C's correlations with the Withdrawal and Depression subscales of the BASC-2 suggests that this newly created measure is successful at parceling out what is depression from other emotional states as well as identifying the construct of depression in a way different from current methods of evaluation. This is an important finding because rather than building on models previously established which utilize the DSM symptomology for identifying depression, the current study demonstrates the potential for an application of a new perspective in assessment. Although a non-symptom approach is not new to mental health treatment (i.e. Gestalt therapy, play therapy, psychoanalytic approaches, etc.), it has not till the present study been utilized as foundational theory when creating an assessment tool based upon the depression process itself. The findings in this study show that even though the constructed measure is early in its development, when validated and normed on a larger population it can serve as an invaluable diagnostic assessment tool that is a strong informant of treatment approach/plan.

Analysis also demonstrated predictive validity for the DPS-C. When comparing the two groups within this study, non-depressed group and group that parents identified

as concerned for depression, logistic regression analysis demonstrated the DPS-C total score; Scale 1 and Scale 3 were significant predictors of depression. The CDI 2 was also a significant predictor of depression, predicting accurately 74% of the cases while the DPS-C successfully predicted 94% of the cases. It was also found that after accounting for the variance explained by the CDI 2; the DPS-C was able to remain a significant predicator of depression above and beyond the variance accounted for by the CDI 2. High predictive validity of the DPS-C's ability to detect parental concern for depression is an intriguing finding. Given that the depressed sample is a nonclinical sample recruited from the general population, it is possible that the DPS-C has a unique ability in capturing the subtlety that the CDI 2 is unable to do. The DPS-C, once psychometrically validated through follow-up studies, can become a valuable tool to clinicians who work with children given its likely superior sensitivity to measures such as CDI 2. Literature suggests that most measures have difficulty with identifying the "pure" depression component in emotion. Oftentimes anxiety or other childhood concerns such as externalized behaviors are confused with depression (Kazdin, 1990). The present study was successful in creating the measure which differentiated itself from other scales on the parent report for concern regarding their child's behavioral and emotional functioning. This finding can potentially help bring the field a step closer to better understanding of how depression can be measured, involving ways other than simply targeting aspects of emotional functioning.

Measure development often relies on previously developed measures when identifying its parameters. However, when constructs such as depression continue to be rationalized in this way, as researchers we may be limiting considerations of alternate

conceptualizations. Continuous validation of what has already been established impacts the depth of the field due to the influence research has on treatment. What is considered evidence based is what is continuously validated in research. The use of symptom-based measures in research lead to their validation. Therefore, techniques focused on symptom reduction are considered more effective because they decrease elevations on the specific scales the symptoms were derived from. For example, Cognitive Behavioral Therapy (CBT) is so widely represented in research studies that it is viewed by most third party reimbursement sources as the only acceptable form of treatment for all individuals. It is common for clinicians; however, to integrate process oriented theory in their treatment approach together with or without CBT (Hayes, Strosahl, & Wilson, 1999; Neacsiu et al., 2010). There is a lack in empirical literature up-to-date at this point in time on measures that utilize process-oriented theory. Given present findings, such measures are plausible and are likely to be just as informative if not more so than the symptom based tools. Process-based measures if better represented in research, can not only provide strong alternatives to existing pull of assessment tools, but lay the foundation for empirical support for the process oriented treatment approaches as well.

The field of child assessment is in great need of a new approach for depression evaluation. Early measures of depression established decades ago were based off of on the DSM symptomatology. The measures that followed are largely the revisions of older measures. Our understanding of childhood depression in the past several decades has evolved, but the likelihood that the current measures have incorporated the up-to-date research findings is unlikely, given that they are the edited versions of preceding forms. Further limitation of many of these measures is that, with regard to childhood depression,

they are largely variations of adult depression measures. Not surprisingly, research shows that many current measures fall short of being accurate in identifying children who are depressed (Matthey & Petrovski, 2002). For example, researchers have shown concern regarding the use of measure such as the CDI in identifying depression. Up to 86 percent of clinically depressed children have been shown to not meet criteria when utilizing the CDI (Matthey & Petrovski, 2002). The CDI's lack of sensitivity has also been shown in a sample with hospitalized children who were endorsing symptoms on the measures to a lesser degree than the normative sample the measure was based on (Babakhanyan, 2011). Given the concerns regarding the CDI's ability to identify depression, it has been suggested that although the measure is psychometrically valid and reliable, it may not adequately measure the construct we intend (Bergeron et al. 2008).

The construction of a measure which evaluates an emotional state without directly enquiring about symptoms and focusing instead on how one in that emotional state may be created and function in his or her environment is strongly emphasized in this study and thus it may be especially valuable to phenomenological psychology. It was described in the literature review that Gestalt theorists believe that when looking at the current diagnostic process, there is nothing that describes what the person does, only how the person is as a result of what they have already done (Burley, 2008; Burley, 2012). The means of assessment to date are problematic in that they do not describe the psychological process but rather focus on the symptoms, i.e. the side effects of a disorder (T. Burley, personal communication). Researchers have pointed out that the empirical data on childhood depression has emerged primarily from this descriptive level of symptoms (Novell, 1986). Successful construction of a measure which addresses what a

person does rather than the symptoms they present with, is likely to significantly enhance the understanding of childhood depression beyond the descriptive level. This study supports the movement from diagnosis by symptom approach to a diagnosis by process approach.

Limitations

Although this study has various strengths and ways of contributing to the field, it also has several limitations. An apparent limitation in this study was lack of the test-retest reliability examination. It is unknown how a child would respond if they were given the measure a second time, at different time intervals. Therefore, conclusions regarding the stability of the construct the DPS-C assesses cannot be made at present. In a follow-up study, the measure should be given to the same sample of children at various time intervals in order to better understand the stability of the construct. An additional limitation of this study was that the two groups did not have equal number of participants. Specifically, the depressed group almost had half the number of participants compared to the non-depressed group. Future recommendations for establishing the validity of this measure would require a more stratified sampling approach which has two groups of equal size.

What is particularly relevant in this analysis is the manner in which the depressed and non-depressed groups were identified. The depressed and non-depressed groups were constructed depending on parents report. This can be viewed as a strength and a limitation of the study. As a strength, the DPS-C's ability in identifying parental concern for depression in their child suggests the sensitivity of the measure. The measure does not

question overt manifestations of depressed state (e.g., lack of appetite, excessive crying, sleep disturbance), rather it evaluates the process of how a child functions, is aware and makes an impact on his or her environment. As a limitation, an actual diagnosis of depression was not confirmed for children who were in the depressed group. Rather, association within that group can only suggest that the child exhibits depressive symptoms enough that a parent would be concerned about. Another limitation of the study involved concerns about diversity. Although ethnic and socioeconomic diversity was acceptable, place of residence, confined by location of where data collection primarily occurred, limits the generalizability of the findings. Majority of participants resided within the same county, possibly within the same city. Follow-up studies should focus on data collection from other geographic locations. These finding should be replicated in a future study in order to evaluate the results with a different sample to be able to make greater generalizations.

Implications for Future Direction

Given that the depression process-based construct is in the early stages of development, several paths of research could be explored in order to further understand the measurement of depression using foundations of Gestalt theory. As previously suggested, methodological concerns can be countered with the use of equal sample size for depressed and non-depressed groups, establish test-retest reliability and data collection should occur from other geographic locations. Furthermore, future studies should consider rewriting some items and carrying out more factor analyses to determine if the same and/or new items can be identified through the process of data reduction.

Additionally, future studies with access to a clinically depressed sample should conduct the EFA with the clinical sample. Comparisons can be made between the two groups and EFA results. The construct validity of an instrument is never fully established or achieved (Nunnally, 1970); therefore, it is important to continue examining the construct validity of the DPS-C.

A follow-up study, which utilizes children's interviews, is recommended in the continued effort of the measure's construct validation. Focus groups asking children from different age groups questions such as "How do you know when you are sad?", "What does being very sad feel like?", and "What do you do (not do) when you are sad?" will further add to conceptualization of the construct of childhood depression. The inclusion of a child focus group will contribute to the understanding of the process of depression from the perspective of the target group.

The symptom-based approach for diagnosis has been shown to have several problems. Many symptoms of depression are typically associated with medical conditions including physical symptoms (e.g., fatigue, headaches, sleep disturbance, muscle and joint pain) and cognitive complaints (e.g., impaired concentration, memory problems; Conradi, et. al., 2012). If the focus were to shift from the behavioral manifestation/ outcome of a disorder to the process of how one functions in their environment, interventions would likely be more focused on treating the pathology rather than masking the symptoms. For example, if it is identified through proper assessment that the individual has stopped noticing their needs and is functioning in a state of not having needs, treatment can focus on increasing level of awareness starting with basic needs.

In conclusion, literature review and findings pose important implications regarding diagnostic criteria. Should research in using a process approach rather than symptom-based approach continue to suggest the utility of the process approach over the symptom-based approach, diagnostic criteria for mental illness such as Major Depressive Disorder could incorporate this perspective in place of overt depressive symptoms. People display overt symptoms of sadness in various ways and one person cannot be compared with another regarding how they display depression. Diagnostic criteria that incorporate the process should be explored in future studies.

It is the hope that the present study will spark research interest in clinicians who treat depression using models different than symptom identification. Theory and treatment models should be better represented in research in order to help broaden the parameters currently used to identify mental disorders. Improvement in our methods of assessment for mental disorders can improve identification of individuals in need of treatment. Better identification and understanding a diagnosis can guide treatment specific for that mental state rather than simply focusing on symptom reduction. There is significant work to be done in the development process of a measure of depression, which is reliable, valid and useful in clinical practice. Ultimately, this study can provide a framework for conceptualizing a new way of assessing for depression as well as bridging the gap between theory and research.

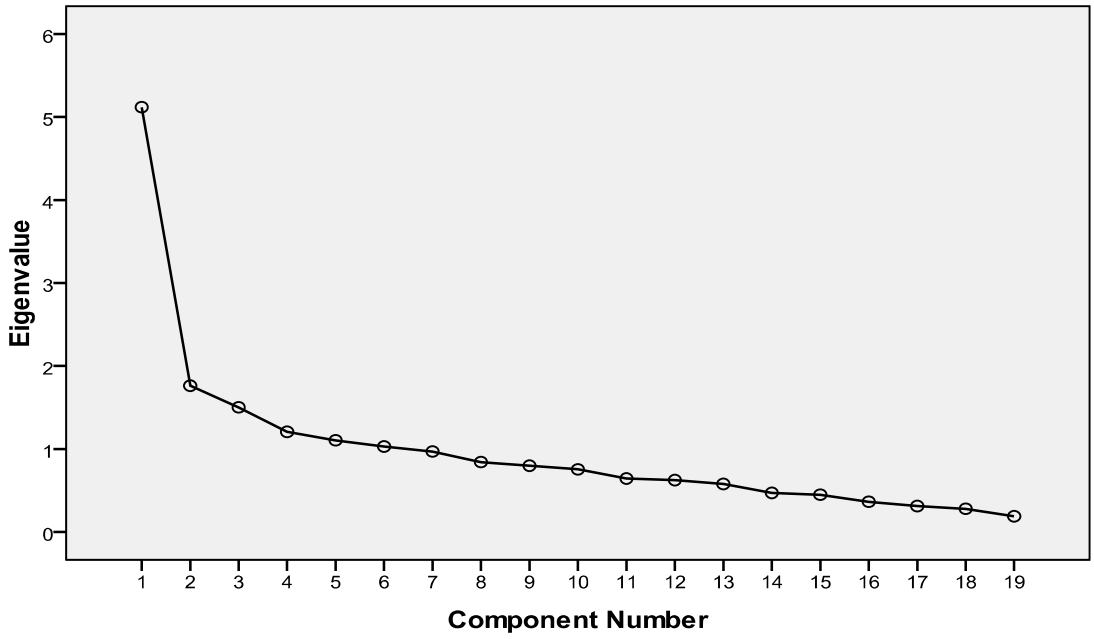

Figure 1. Scree Plot.

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APPENDIX A

DEPRESSION PROCESS SCALE

Scale 1	Awareness of External Factors Item 6: When I have an idea about something I want to do on the weekend, I find a way to do it. Item 7: If something is happening to me that I don't like, I can find a way to change what is happening to me. Item 9: I know I can be whatever I want to be when I grow up. Item 11: Nobody cares if my feelings are hurt. Item 13: No matter how bad of a day I have, I know for sure that tomorrow can be a better day. Item 23: When I walk into a room for the first time, I like to look around and see who is there and what are they doing.
Scale 2	Helplessness/Hopelessness Item 8: I don't really care how mean other kids are to me because I know I can't do anything to feel better. Item 18: I don't realize when I am hungry, thirsty, or tired. Item 22: If I'm walking and I get lost, I know I won't figure out my way until someone comes and finds me.
Scale 3	Awareness of Personal Needs Item 10: It's difficult for me to know what I want. Item 14: Other people make decisions for me all the time. Item 15: I don't know how to make myself feel better when I'm feeling sad. Item 20: There is no point in having a plan because things never work out the way they should.