Undergraduate Research Journal at UCCS
Volume 2.3, September 2009

A Proposal to Hone Client-Centered Treatment at Pikes Peak Mental Health

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Abstract

Designed as a proposal for Pikes Peak Mental Health (PPMH), this paper examines the institutional benefits of adopting the Coolidge Axis II Inventory (CATI) and the Coolidge Personality and Neuropsychological Inventory for Children (CPNI) at PPMH. The CATI and CPNI are compared to three widely-used and alternative assessment methods-- the Minnesota Multiphasic Personality Inventory – 2; the Million Pre-Adolescent Clinical Inventory; and the Million Adolescent Clinical Inventory. Reliability and validity of the CATI and CPNI are discussed. Based on scholarly research, the proposal includes a section covering the need to assess pre-adolescent and adolescent clients as well as a section examining the advantages of dimensional diagnosis. The findings presented in this paper suggest the CATI and CPNI are comprehensive assessments that provide benefits of honing client-centered treatment plans that enhance company values at a minimal cost.

Introduction

At Pikes Peak Mental Health (PPMH), a limited number of clinicians employ psychological inventories to assess the needs of clients. Many mental health clients display comorbid pathology and in the normal interview process secondary diagnoses can be missed. Using inventories based on the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-IV-TR*) would allow clinicians to collect more information on a wide range of Axis I and II diagnoses applicable to each client. With more information, clinicians' client-centered treatment plans would become more relevant to each individual asking for help.

Unfortunately, most psychology based assessments are expensive and time consuming. However, adopting the Coolidge Axis II Inventory (CATI) and the Coolidge Personality and Neuropsychological Inventory for Children (CPNI) is cost effective at two dollars an assessment. Furthermore, the time consuming evaluation associated with most exams will be reduced. For PPMH, each test's results will be generated by Dr. Frederick Coolidge who will submit a report of the results to the responsible clinician. Designating the CATI and CPNI for use at PPMH promotes the collection of objective data capable of determining secondary concomitant diagnoses of clients with a whole person focus.

Research supports the need to use personality assessments when considering the disorders of children (Coolidge, Thede, Stewart & Segal, 2002). For many years, adult assessments have been used to

determine the needs of adult clients. Fears of self-fulfilling prophecies have hindered the care of young clients by avoiding the use of inventories (Coolidge et al., 2002). Furthermore, Coolidge et al. (2002) suggests that identifying aversive behavioral trends at a young age would enable clinicians to teach coping and management skills to increase future success of affected children. Implementing the CPNI at PPMH Child and Family Network would reveal aspects of the children's psyche that could otherwise remain unseen and untreated.

In the following proposal, the CATI and CPNI will be evaluated and compared to other prevailing psychological inventories available on the market, the Minnesota Multiphasic Personality Inventory – 2 (MMPI-2), the Million Pre-Adolescent Clinical Inventory (M-PACI), and the Million Adolescent Clinical Inventory (MACI). Furthermore, the reliability and validity of Coolidge's assessments will be explored. There is a discussion on the necessity of administering questionnaires to young children and the value of diagnoses being applied to children. Additionally, the advantages of dimensional diagnosis are discussed. With a whole person focus, PPMH is committed to providing excellent mental health services to the community and these services will be enhanced by the adoption of the CATI and CPNI without draining the organization's budget.

Methods

Research data for this proposal was collected in several ways. First, a basic understanding of the CATI came from the exam's manual, and the characteristics of the CPNI were extracted from an article in the psychology journal *Behavior Modification*. For comparison, the specifics of the MMPI-2, the M-PACI and the MACI were obtained from the Pearson Assessments website. Next, determining the need to assess children and adolescents was achieved through psychology journal article research using the PsycINFO database. In addition, the same database was used to find the article regarding dimensional and categorical diagnosis. Lastly, the Pikes Peak Behavioral Health Group's 2007-08 annual budget provided the statistics of PPMH's client population and expenses. The questions guiding the research are as follows:

- How does the CATI compare to the MMPI-2?
- Are there assessments on the market comparable to the CPNI?
- What versions and scoring methods are available for the MMPI-2, CATI, CPNI, and CPNI comparable exams?
- How would the PPMH budget be affected by the adoption of the CATI and CPNI?
- Are childhood mental illnesses and personality disorders heritable and assessable by an exam like the CPNI?
- Is dimensional or categorical diagnosis better for assessment of disorders?

Comparison of the CATI to the MMPI-2

Considering the CATI is a less known assessment, there is a need to establish the inventory as analogous to the MMPI-2. To ascertain the effectiveness of the CATI, the available exam formats, scoring and report options, clinical scales, and norms of each inventory are compared in this section. Especially relevant to PPMH, the time and cost of each exam is analyzed first. This section ends with an overview of the CATI and MMPI-2 in Table 1.

Time and Cost

The MMPI-2 is the most widely used exam for the assessment of adult mental and behavioral disorders. Even though the MMPI-2 is popular, the exam is time consuming, 60-90 minutes to administer with 597 questions, and expensive, costing a minimum of $15 for one adult clinical system report ("Pearson Assesments," 2008a). On the other hand, the CATI may not be as popular, but the exam takes less time to complete, 30-45 minutes with 250 items, and costs $2 per exam (Coolidge, 1993; F. Coolidge, personal

communication, August 17, 2009). Undoubtedly, the CPNI beats the MMPI-2 for administration time and cost effectiveness.

Available Exam Formats

One unique advantage of the CATI over the MMPI-2 is that the CATI offers a significant-other format that is important because in many situations the target person is unaware of their problem, is in full denial, cannot be tested because of proximity or willingness, etc (Coolidge, 1993). Ease of administration and convenience are key concepts related to the efficiency needed in a clinical setting. These two adult assessments are available in various formats, and multiple languages. Like the MMPI-2, the CPNI is available in computer and paper format ("Pearson Assesments," 2008a; Coolidge, 1993). Currently, the MMPI-2 is also available as an audio cassette. The MMPI-2 is designed in a self-report format for participants 18 years of age or older with no significant-other exam options ("Pearson Assessments," 2008a). Both a self-report test version and a significant-other test version are available with the CATI, and the exam can be administered to clients 15 years of age and older (Coolidge, 1993). Increasing flexibility with availability in several languages, the CATI is administrable in English, Spanish, Vietnamese, Chinese, and German (F. Coolidge, personal communication, April 6, 2009). On the other hand, the MMPI-2 comes in English, Spanish, Hmong, and French for Canada ("Pearson Assessments," 2008a). Even though the MMPI-2 offers an audio version, the CPNI remains flexible for administration with an option for informant data using the significant-other test version and by offering the exam in several languages.

Focusing on question design, the CATI becomes more comprehensive than the MMPI-2. The MMPI-2 is a true-false questionnaire with a total of 567 questions ("Pearson Assessments," 2008a). The CATI uses a "4-point true-false Likert scale ranging from Strongly False, More False Than True, More True Than False, to Strongly True," and contains 250 items (Coolidge, 1993, p. 3; F. Coolidge, personal communication, August 17, 2009). Using a Likert scale is advantageous, because this format provides dimensional diagnoses of client dysfunctions while still being capable of providing categorical diagnoses.

Scoring and Report Options

Time consuming and tedious, scoring and interpreting lengthy assessments can become a monumental task. With the CATI, test scoring will be completed by Dr. Frederick Coolidge via computer submission or mail. Once completed, Dr. Coolidge will send an interpretive report with dimensional and categorical scoring to the appropriate clinician (F. Coolidge, personal communication, March 2, 2009). The clinician, a mail-in service, or a computer software program can score the MMPI-2. If the clinician scores the exam, valuable clinical time must be dedicated to interpreting the results. Otherwise, the mail-in service includes a report, but is costly, $43.25 per assessment. Using the Q-local scoring and report option is also expensive. The facility would have to purchase the software with an annual network licensing fee of $250. In addition, to obtain a report from the Q-local scoring method an additional fee of $40.25 per assessment would apply ("Pearson Assessments," 2008a). The original two dollar fee for the CATI includes the interpretive report (F. Coolidge, personal communication, March 2, 2009). Clearly, the CATI will reduce the cost of implementing standard psychopathological assessments at PPMH and will not greatly increase clinicians' time committed to side work.

When dealing with mentally ill clients, clinicians are faced with the possibility that some clients will attempt to make themselves look better or worse by answering questions in formulated ways. To counteract response bias tendencies, many of the CATI items are scored in the reverse. More specifically, Coolidge (1993) controls for response bias by scoring 34% of the 13 personality disorder items in the reverse. The exam's author incorporated 4 validity scales that cover random responding, a tendency to look good or bad, a tendency to deny blatant pathology, and answer choice frequency (Coolidge, 1993).

The MMPI-2 relies on the length of the inventory, items that have similar or opposite meanings, "test taking strategies that invalidate the MMPI-2," and "exaggerated symptom endorsement" when addressing validity issues (Butcher, 2005, p. 23-32). Both exams strive to maintain the validity of the results by incorporating validity scales, but only the CATI uses reverse scoring.

Personality Disorders and Axis I Scales of the CATI

A very important aspect of any inventory is the information the exam tests for and collects. The *DSM-IV-TR* is divided in to five axes. Personality disorders are diagnosed under Axis II while clinical disorders are diagnosed under Axis I (Funder, 2007). Thirteen personality disorders are assessed by the CATI. Each scale is derived from criteria in the *Diagnostic and Statistic Manual for Mental Disorders* (*DSM-III-R, 1987*) and is based on the 117 distinctive criteria from the 11 personality disorders on Axis II (Coolidge, 1993). Coolidge (1993) obtained the other two disorders from Appendix A in the *DSM*. The original version of the CATI was based on the *DSM-III-R*, but as each revision of the *DSM* is published Coolidge revises the assessment to maintain congruence with any *DSM* changes (1993; personal communication, March 2, 2009).

For Axis I assessments, the anxiety and depression scales were both empirically derived. More specifically, the anxiety scale was based on a study performed by Hosman (as cited in Coolidge, 1993, p. 9) and contains "many items that are similar to the criteria of the Generalized Anxiety Disorder (300.2)." Based on a study by Lucero (as cited in Coolidge, 1993, p. 9) the depression scale contains items similar to the criteria for Major Depressive Episode. Other Axis I scales included in the CATI are Posttraumatic Stress Disorder (PTSD), Schizophrenia, Psychotic thinking, Social Phobia, and Withdrawal. Neuropsychological Dysfunction and subscales were derived from available clinical literature, and the subscales cover memory, language, and somatic concerns. Coolidge (1993) encompasses anger, dangerousness, and impulsiveness in the hostility scales. In addition, indecisiveness, emotional lability, apathy, and adjustment scales are included under the other clinical scales of the CATI. Coolidge (1993) addressed introversion-extraversion within the normal clinical scale. Lastly, five non-normative scales are not summed, but are grouped for content for individual consideration by the clinician (Coolidge, 1993).

The CATI assesses a wide range of Axis I and II disorders in a concise format. Neuropsychological dysfunctions are also addressed. Since the CATI is founded on the *DSM*, clinicians will already be familiar with the criteria the exam is based on. With the CATI, a clinician can determine a wide range of client concerns that need attention, and will be able to provide a truly client-centered treatment plan.

Scales Assessed by the MMPI-2

According to the Pearson Assessment website, the MMPI-2 can generate a multitude of reports, and each report can include different scales. This subsection focuses on the basic scales found in the MMPI-2 and it is important to note that the MMPI-2 is not *DSM-IV-TR* aligned which forces clinicians to spend valuable time translating the results into accepted diagnoses. Hypochondriasis, depression, hysteria, psychopathic deviate, masculinity-femininity, paranoia, psychasthenia, schizophrenia, mania, and social introversion-extraversion comprise the ten standard scales of the MMPI-2. Each item included in the MMPI-2 was empirically derived by Hathaway and McKinley (as cited in Butcher, 2005, p. 5) with clinical concerns and objectivity in mind. Items were searched for in "clinical charts as well as the psychiatric problem research literature" (Butcher, 2005, p. 5). The content scales of the MMPI-2 are anxiety, fears, obsessiveness, depression, health concerns, bizarre mentation, anger, cynicism, antisocial practices, Type A, low self-esteem, social discomfort, family problems, work interference, and negative treatment indicators. Concepts covered in the supplementary scale are addiction, marital distress, hostility, and PTSD (Butcher, 2005). The MMPI-2 contains a wide range of empirically derived items that can reveal client issues, but for a price.

CATI Scales versus MMPI-2 Scales

Probably the most important aspect of the CATI is that the items are based directly on or are similar to the *DSM-IV-TR* criteria for Axis I and II diagnoses. In the descriptions of the MMPI-2 reviewed for this proposal, there are no references to the *DSM-IV-TR* required criteria for the diagnosis of psychopathology. Similar to the MMPI-2, the CATI addresses 29 psychological concerns (Butcher, 2005; Coolidge, 1993). Each inventory assesses a wide range of psychological and behavioral issues, but the CATI is more closely aligned with the *DSM* than the MMPI-2.

Norms of Each Exam

Norms are critical to the generalizability of an exam's content. For the CATI, norms were established on a diverse group of 937 individuals ranging in age from 18-92 (Coolidge, 1993). Of the 937 subjects who established the CATI norms, 89% were Caucasian, 7% Hispanic, 2% Black, and 1% Asian. The education of the CATI normative sample ranged from High school equivalent or greater, some college, and Bachelor degree or greater, and the marital status of individuals varied too (Coolidge, 1993, p. 29). With the MMPI-2, a nationwide sample of participants was used to establish this exam's norms. The MMPI-2 normative sample consisted of 1,138 males and 1,462 females with ages ranging from 18-80, and the sample came from varied geographic areas and communities. More specific demographic details are available in the MMPI-2 manual ("Pearson Assessments," 2008a). As long as a representative sample of participants is used to establish a norm, the results of a study may become generalizable. Both inventories adhere to psychology's standards of normative samples.

Please refer to Table1 for a quick overview of the CATI and the MMPI-2.

Summary

After comparing the CATI and MMPI-2, the advantages of the CATI become apparent. Adopting the CATI at PPMH will be cost and time effective. As a comprehensive assessment, the CATI covers a wide range of Axis I and II diagnoses closely aligned with *DSM-IV-TR*, and has the added benefits of neuropsychological evaluation. Furthermore, multiple exam formats and languages increase flexibility of administration. With the implementation of this exam at PPMH, evidenced based practice would be strengthened, an additional assessment tool would increase diagnostic accuracy, and client-centered treatment plans would be enhanced.

Table 1: An Overview of the CATI and MMPI-2

	CATI	MMPI-2
Date Published	1993	1989
Administer to Clients	15 years of age or older	18 years of age or older
Number of Items	250	567
Completion Time	30-45 minutes	60-90 minutes
Answer Formats	1-4 strongly false to strongly true	True/False
Test Formats	Paper-and-pencil or computer administration	Paper-and-pencil, audiocassette, or computer administration
Available Languages	English, Spanish, Vietnamese, Chinese, or German	English, Spanish, Hmong, or French for Canada
Scoring Options	Submission to Dr. Frederick Coolidge via mail-in scoring service, or computer submission	Q-Local Software, Mail-in scoring service, or hand scoring
Clinical Scales*	Anxiety Depression Posttraumatic Stress Disorder Schizophrenia Psychotic Thinking Social Phobia Withdrawal Neuropsychological Dysfunction Hostility Indecisiveness Emotional Lability Apathy Adjustment Introversion-Extraversion	Hypochondriasis Depression Hysteria Psychopathic Deviate Masculinity–Femininity Paranoia Psychasthenia Schizophrenia Hypomania Social Introversion
Validity Scales	Random Responding Tendency to Look Good or Bad Tendency to Deny Blatant Pathology Answer Choice Frequency	Cannot Say Variable Response Inconsistency True Response Inconsistency Lie Defensiveness Superlative Self-Presentation Infrequency Scale Infrequency-Back Psychiatric Infrequency
Norms	Representative sample of 937 participants	Nationwide adult community sample

Source: Pearson Assessments website (2008a), The Beginners Guide to the MMPI-2 by J. N. Butcher (2005), and Dr. Coolidge's CATI Manual (1993).

** Please note, only the basic clinical and validity scales are shown here. Both exams have additional subscales, and the CPNI includes 13 personality disorders. The type of MMPI-2 report requested will include some subscales while excluding others; please refer to the Pearson's website for additional MMPI-2 scales specific to the desired report.*

The Reliability and Validity of the CATI

In the realm of psychology, reliability and validity are a necessity for any assessment tool. With reliability, a test proves to consistently report similar results when taken multiple times by the same individual. Without reliability, a test cannot be valid. An exam that actually measures what it was designed to measure becomes valid (Funder, 2007). Obviously, the CATI must meet these requirements to be considered an acceptable inventory. This section covers these two very important concepts, reliability and validity, in relation to the CATI.

Reliability

A convenient means of determining reliability is to recruit a group of willing participants, and test them twice over a short period of time. In this fashion, Merwin & Coolidge (as cited in Coolidge, 1993, p. 17) performed a study to examine the test-retest reliability of the CATI. Recruiting participants from an introductory college psychology course, a mean scale reliability of .90 was determined after participants took the exam twice in a two week period. The participants received extra credit for their involvement, and were asked to answer honestly during each trial (Coolidge, 1993). Reflected by this study, the reliability of the CATI was substantiated.

Individual scale reliability was addressed by Coolidge as well. The reliability of the personality disorder scales was revealed through a study of 609 participants. A median reliability of .76 was determined for the 13 personality disorder scales. Three Axis I scale reliabilities were calculated from the same sample used for the personality disorder scales. Thusly, neuropsychological dysfunction (.83), depression (.88), and anxiety (.89) Axis I scales showed a strong reliability (Coolidge, 1993).

Construct and Convergent Validity

Using standardized methods to demonstrate validity, the CATI was compared to the Million Clinical Multiaxial Inventory-II (MCMI-II). The construct and convergent validity of the personality disorder scales was obtained through "eleven licensed clinical psychologists . . . [who] agreed to participate in the validation of the CATI with the MCMI-II" (Coolidge, p. 20, 1993). Clinicians were asked to choose clients that were thought to have personality disorders without any psychotic syndromes. After administration, a mean convergent validity correlation of .58 was calculated between the raw scores of the MCMI-II and the CATI (Coolidge, 1993).

Of the Axis I scales, construct and convergent validity of the depression and anxiety scales was determined. After comparing the MMPI depression scale to selected depression items from the CATI, a correlation of .68 was discovered. For the anxiety scale, a correlation of .83 was obtained between face validity selected anxiety items on CATI and the MMPI anxiety scale (Coolidge, 1993). Both scales displayed validity when compared to the MMPI. Ultimately, the CATI holds up to construct and convergent validity tests and exhibits an acceptable level of validity.

What do These Results Mean to a Clinician?

Clinical therapists and psychologists are required to make treatment decisions every day, and the CATI will give them a more data for making these decisions because the results of this assessment are *DSM-IV-TR* aligned. The CATI has preliminary support as a reliable and valid assessment of personality disorders and Axis I diagnoses (Coolidge, 1993). Despite this support, Coolidge (1993) emphasizes the need of clinicians to use "other corroborative information" when diagnosing their clients (p. 27). Using the CATI as one method to assess a client's issues allows clinicians to collect more data to confirm psychopathology, and increase evidence based practice documentation.

Examining the Need for the Assessment of Children and Adolescents

The diagnoses of childhood personality disorders have been avoided by the psychological community for two main reasons. First, a fear of the "iatrogenic effects" reinforced by primary caretakers and teachers inhibit clinicians from labeling children (Coolidge, et al., p. 551, 2002). Second, clinicians have been severely handicapped in the diagnosis process by the limited number of standardized assessments and interview processes aligned with *DSM* criteria especially created for pre-adolescent and adolescent clients (Coolidge, Thede, & Jang, 2001; Coolidge et al., 2002). The three main characteristics of personality disorders are "early onset, continuation through adult life, and a pervasive constellation of inflexible and maladaptive behaviors causing significant impairment in social or occupational functioning" (Coolidge et al., p. 551, 2002). Appropriate diagnosis of personality disorders in childhood give affected children an opportunity to learn coping and management skills at a young age to increase their opportunity for success in their future (Coolidge et al., 2002). The detrimental effects of childhood concerns would be lessened by early intervention and by addressing the concerns at a younger age.

Although personality disorder diagnosis in childhood has been avoided, there is abundant evidence supporting the idea that personality disorders may originate in adolescence or sooner (Coolidge et al., 2001). Grounded in research on genetic heritability, Coolidge et al. (2001) "suggest that individual differences in personality disorders . . . are present and measurable in childhood" (p. 37-38). Furthermore, the heritability study performed by Coolidge et al. (2001) "cautiously supports" that personality disorders should be considered dimensionally instead of categorically (p. 39). Client-centered treatment could be enhanced by looking at personality disorders dimensionally in children and adolescents and the CPNI provides dimensional diagnoses.

Identifying comorbid diagnoses of children would be aided by the CPNI. In a study by Coolidge, Thede, and Young (2000), heritability and comorbidity of ADHD with conduct disorder, oppositional defiant disorder, and executive dysfunction is due primarily to genetics. The results of this study "suggest that comorbidity is driven, in large part, by heritable factors," and understanding this connection could help to determine which children are at risk for inheriting personality disorders from their family histories (Coolidge et al., 2001). Identifying the children that would benefit from in depth assessment could help clinicians decide when using the CPNI is an absolute necessity.

According to Coolidge et al. (2002) "given the pervasive and chronic nature of the inflexible and maladaptive behaviors associated with personality disorders, it may behoove clinicians to identify the earliest features of these disorders in order to reduce the magnitude and chronicity of later adult pathology" (p. 563). The apparent relationship between personality disorders and genetics reveals the complexity of psychopathology and implementing a competent assessment will reduce the uncertainty of diagnosing young clientele. As a comprehensive assessment tool, the CPNI is a proficient means of assessing child and adolescent psychopathology, and PPMH would benefit from its adoption.

Comparison of the CPNI to the M-PACI and MACI

The Coolidge Personality and Neuropsychological Inventory for Children (CPNI) is an assessment that does not have another exam that is equivalent. Partly due to the limited number of childhood inventories available, but also due to the wide-range of clinical concerns addressed by the CPNI in pre-adolescent and adolescent populations. To ascertain the effectiveness of the CPNI, the available exam formats, scoring and report options, clinical scales, and norms of each inventory are compared to the two other assessments. Especially relevant to PPMH, the time and cost of each exam is analyzed first. This section ends with an overview of the CPNI, the Million Pre-Adolescent Clinical Inventory (M-PACI), and the Million Adolescent Clinical Inventory (MACI) in Table 2 and Table 3.

Why Does the CPNI Need to be Compared to Two Inventories?
On today's market, there are a limited number of assessments available to assess childhood psychopathology (Coolidge, Thede, Stewart, & Segal, 2002). In order to cover the age range, 5-17, assessable by the CPNI, the M-PACI and MACI must both be considered (Coolidge et al., 2002; "Pearson Assessments," 2008b & c). The majority of children's inventories focus on single psychological concerns like depression or anxiety, the M-PACI covers a larger range of clinical issues that children might face, similar to the CPNI ("Pearson Assessments," 2008b). Like the CPNI, the MACI was developed specifically for a younger population while most adolescent inventories are adapted from their adult counterpart (Coolidge et al., 2002; "Pearson Assessments," 2008c). Of the available assessments for children and adolescents, the M-PACI and the MACI are the most comparable to the CPNI.

Time and Cost
The CPNI, like the CATI, only costs $2 for the entire assessment and report (F. Coolidge, personal communication, August 17, 2009). The price for one M-PACI assessment is a minimum of $5.70 ("Pearson Assessments," 2008b). To use the MACI, a minimum of $7.55 per inventory will be required ("Pearson Assessments," 2008c). Also, the cost of using two exams instead of one will increase the time a clinician will need to commit to understanding the different approaches. Using a parent-as-respondent format, the CPNI will take approximately 30-45 minutes to complete with 200 items (Coolidge et al., 2002; Coolidge, 1993). For the M-PACI, each exam will take 15-20 minutes with 97 questions, and the test is taken by the child in question ("Pearson Assessments," 2008b). Similar to the M-PACI, the MACI is completed by the adolescent being assessed, but the exam takes 25-30 minutes with 160 questions ("Pearson Assessments," 2008c). The minimum cost associated with the M-PACI and the MACI is for hand scoring the tests which will add even more valuable clinical time to the overall expenditure of the facility. Again, it is clear that the CPNI will be the most cost and time effective exam for the assessment of pre-adolescents and adolescents at PPMH.

Available Exam Formats
The CPNI is a parent-as-respondent assessment only; however, it covers age ranges from 5-17 years old (Coolidge et al., 2002). On the other hand, the M-PACI and MACI are only available is self-report formats that combined cover ages 9-19 ("Pearson Assessments," 2008b & c). Both exams are flexible with various means of administration, but the CPNI diverges from the M-PACI and MACI in the person designated to take the test. Paper-and-pencil and computer administration versions of the CPNI are available for clinical convenience (F. Coolidge, personal communication, March 2, 2009). Both the M-PACI and the MACI are published in paper-and-pencil, audio CD, and computer administration formats ("Pearson Assessments," 2008b & c). The self-report questionnaire of the M-PACI is designed for children 9-12 years of age ("Pearson Assessments," 2008b). Also in a self-report format, the MACI is designed for adolescents 13-19 years old ("Pearson Assessments," 2008c). Coolidge et al. (2002) designed the CPNI as a parent-as-respondent inventory that can be used to assess children and adolescents ranging from 5-17 years old (personal communication, March 2, 2009). Despite not having an audio version, the CPNI provides clinicians access to a comprehensive exam that assesses children and adolescents without forcing clinicians to learn separate test versions like the M-PACI and MACI. Furthermore, the parent-as-respondent format of the CPNI may reveal aspects of a child's psyche that the child may not be capable of recognizing in themselves.

Comprised of 200 items using a 4-point Likert scale, the CPNI covers both dimensional and categorical diagnoses (Coolidge et al., 2002; F. Coolidge, personal communication, March 2, 2009). The M-PACI questions are true-false, and the exam contains 97 items ("Pearson Assessments," 2008b). Akin to the M-PACI, the MACI uses true-false questions, but there are 160 items to be answered ("Pearson

Assessments," 2008c). The single comprehensive CPNI provides clinicians a single tool with a flexible answer system that provides more detailed information regarding young clients.

Scoring and Report Options

Similar to the adult inventories, the children's assessments are scored and reported in several ways. Dr. Coolidge will provide an interpretive report for all inventories submitted in paper-and-pencil format or by computer. When using the CPNI, all reports will include dimensional and categorical results for only $2 (F. Coolidge, personal communication, March 2, 2009). Similar to other Pearson assessments, the M-PACI and MACI are available for scoring by hand, mail-in service, or Q-Local Software (2008b & c). A fee of $250 for network licensing is required for both the M-PACI and the MACI, and the interpretive report costs an additional $25.50 and $29.75 respectively. The M-PACI and the MACI offer a profile report that requires an additional $19 and $23.75, respectively ("Pearson Assessments," 2008b & c). Again, Coolidge's inventory offers more for a nominal fee.

Personality Disorders and Axis I Scales of the CPNI

Offering an extensive assessment of psychopathology, the CPNI covers Axis I and II criteria as well as neuropsychological evaluation. From the *DSM-IV -TR* Axis II criteria, the 12 personality disorders plus the 2 disorders from Appendix B are incorporated into the CPNI and at least one item from the 101 criteria for the disorders in the *DSM* are represented in the inventory. In particular, avoidant, borderline, dependent, depressive, and passive-aggressive personality disorders are tested for by the CPNI (Coolidge, 2002). Coolidge et al. (2002) integrated conduct disorder in the exam as a personality disorder because this condition is "intimately related" to antisocial personality disorder which cannot be diagnosed in clients under the age of 18 (p. 554). With the CPNI, consequential personality concerns are examined in a child providing an opportunity to teach them necessary skills to overcome the negative effects of present disorders.

Axis I scales tested by the CPNI are general anxiety, major depressive, separation anxiety, oppositional defiant, and gender identity disorders. Additionally, the CPNI examines 5 neuropsychological disorder scales, 11 neuropsychological dysfunction subscales, eating disorders, hostility, and other clinical scales (Coolidge et al., 2002). There are a total of 60 concepts Coolidge et al. (2002) integrated into the CPNI. Please refer to Tables 2 and 3 for a complete list of the CPNI's scales. Overall, a broad-spectrum of psychological and neuropsychological concerns are found in this inventory.

By making the CPNI a parent-as-respondent inventory, Coolidge et al. (2002) was able to incorporate a variety of Axis I and II diagnoses. Parents are aware of their children's myriad behaviors and tendencies that the children themselves may not be conscious of; thusly, parents are more capable of reporting their children's tendencies. This aspect of the CPNI allows a clinician to review wide-ranging aspects of their clients' concerns.

Validity of the CPNI responses is monitored by the tendency to deny pathology scale (Coolidge et al., 2002). Since the CPNI is completed by a child's parents, the clinical concerns associated with a self-report test are not relevant. The largest concern of the examiner is the possibility that a parent does not want to admit to pathological behavior in their children. Therefore the single validity scale of the CPNI is sufficient.

Scales Assessed by the M-PACI

Unlike the CPNI, the M-PACI focuses on patterns present in a child's behavior. Furthermore, the M-PACI is not based on *DSM* criteria, but rather evaluates 7 personality patterns and 7 clinical signs of childhood psychological problems. This approach allows clinicians to detect early signs of Axis I and II

disorders of their clients. Personality traits considered by the M-PACI are confidence, outgoingness, conforming, submissiveness, inhibition, unruliness, and instability. Clinical signs tested for are anxiety/fears, attention deficits, obsessions/compulsions, conduct problems, disruptive behaviors, depressive moods, and reality distortions ("Pearson Assessments," 2008b). Specific patterns of concern can be detected with the scales of the M-PACI, but the M-PACI is not as inclusive as the CPNI.

To detect uncooperative children, the response validity indicators of the M-PACI alert clinicians of faulty results. An invalidity scale and response negativity scale comprise the two scales used to determine response validity ("Pearson Assessments," 2008b). The integrity of the M-PACI results is protected by these validity scales.

Scales Assessed by the MACI

The MACI is more comparable to the scales contained in the CPNI. Like the CPNI, the MACI is designed to assess 12 personality patterns like introversion, inhibition, dolefulness, dramatizing, self-demeaning, and egotistic patterns and is correlated with the *DSM*. In addition, clinical syndromes like eating dysfunctions, substance abuse proneness, suicidal tendency, and delinquent predisposition are assessed by the MACI. In addition, expressed concerns encompassing concepts like childhood abuse, family discord, body disapproval, and peer insecurity are incorporated in the inventory ("Pearson Assessments," 2008c). Because teenagers are better able to comprehend complex behavior and mental concepts, the MACI embody more psychological concerns than the M-PACI can.

Validity of MACI results is monitored by three modifying indices and one validity scale. The modifying indices cover disclosure, desirability, and debasement while the validity scale assesses confused or random responding ("Pearson Assessments," 2008c). Between these four precautions a clinician should be able to identify problems with the exam's results.

CPNI Scales versus M-PACI and MACI Scales

Corresponding closer to the CPNI, the MACI begins to account for more personality and psychological concerns than the M-PACI. Even though, the CPNI still contains a wider-range of clinical concerns that are based on specific *DSM* criteria. The use of informant-data in the parent-as-respondent inventory allows clinicians to assess broader and more complex psychological and behavioral concerns that may not be apparent to young children and adolescents. Adopting the CPNI at PPMH can provide an assessment tool unparalleled in a clinical setting.

Norms of Each Exam

For the norms of these three inventories, it is important to include the same age range of participants as the exam is intended to assess. A group of children with 390 boys and 390 girls ranging in age from 5-17 were assessed by their parents using the CPNI (F. Coolidge, personal communication, August 17, 2009). Parents also completed a questionnaire assessing their children's psychological and neuropsychological functioning and each child used in the normative sample was deemed as having no harmful conditions that would affect the sample norms. Ethnicities of the CPNI norm included Caucasian, Hispanic, African American, Asian, and American Indian children (Coolidge et al., 2002). For the M-PACI, the normative sample included 292 pre-adolescent children from various mental health settings between 9-12 years of age ("Pearson Assessments," 2008b). The clinical population for the MACI consists of 1,017 female and male adolescents from 28 states and Canada ("Pearson Assessments," 2008c). All three tests use representative samples that allow the exams to effectively assess the pre-adolescent and adolescent groups intended.

For a quick overview of the CPNI, M-PACI, and MACI, please refer to Tables 2 and 3.

Table 2: Overview of the CPNI, M-PACI, and the MACI

	CPNI	M-PACI	MACI
Date Published	1990 & 1998	2005	1993
Administer to Clients	5-17 years old	9-12 years old	13-19 years old
Number of Items	200	97	160
Completion Time	30-45 minutes	15-20 minutes	25-30 minutes
Data Type	Informant-data, exam completed by parents or primary caretaker	Self-report data, exam completed by child in question	Self-report data, exam completed by child in question
Answer Formats	1-4 strongly false to strongly true	True/False	True/False
Test Formats	Paper-and-pencil or computer administration	Paper-and-pencil, audio CD, or computer administration	Paper-and-pencil, audio CD, or computer administration
Scoring Options	Submission to Dr. Frederick Coolidge via mail-in scoring service, or computer submission	Q-Local Software, Mail-in scoring service, or hand scoring	Q-Local Software, Mail-in scoring service, or hand scoring
Personality Scales	Avoidant Borderline Conduct disorder Dependent Depressive Histrionic Narcissistic Obsessive-compulsive Paranoid Passive-aggressive Schizoid Schizotypal	Confident Outgoing Conforming Submissive Inhibited Unruly Unstable	Introversive Inhibited Doleful Submissive Dramatizing Egotistic Unruly Forceful Conforming Oppositional Self-Demeaning Borderline Tendency
Clinical Scales (CPNI) **Clinical Signs (M-PACI)** **Expressed Concerns (MACI)**	General Anxiety Major Depressive Separation Anxiety Oppositional Defiant Gender Identity	Anxiety/Fears Attention Deficits Obsessions/Compulsions Conduct Problems Disruptive Behaviors Depressive moods Reality Distortions	Identity Diffusion Self-Devaluation Body Disapproval Sexual Discomfort Peer Insecurity Social Insensitivity Family Discord Childhood Abuse
Eating Disorder Scales and Critical Items (CPNI) **Clinical Syndromes (MACI)**	Anorexia Nervosa Bulimia Nervosa Posttraumatic Stress Disorder Antisocial Triumvirate Sexual Problems Pica Worthlessness Stuttering		Eating Dysfunctions Substance Abuse Proneness Delinquent Predisposition Impulsive Propensity Anxious Feelings Depressive Affect Suicidal Tendency

Table 2 cont.	CPNI	M-PACI	MACI
Critical Items (CPNI) cont.	Nightmares Suicidal Ideation Alcohol/Drug Problems		
Validity Scales **Modifying Indices (MACI)**	Tendency to Deny Pathology	Invalidity Response Negativity	Confused or Random Responding Disclosure Desirability Debasement
Norms	Representative Sample of 780 Children/Adolescents	Representative Sample of 292 Children	Representative Sample of 1,017 Adolescents

Source: Pearson Assessments website (2008b & c), and Coolidge et al. (2002).

Table 3: Scales Specific to the CPNI

Scale Name	Pathology Assessed
Neuropsychological Scales	AD/HD AD/HD Inattention Subscale AD/HD Hyperimpulsive Subscale Mild Neurocognitive Disorder Postconcussional Disorder Executive Functions Deficits General Neuropsychological Dysfunction
Neuropsychological Subscales	Neurosomatic Learning Problems Memory Difficulties Language Problems Perceptual-motor Dysfunction Subcortical Hyperactivity Impulsivity Delayed Maturation Emotional Changes
Personality Change Due to a Medical Condition	Emotional Lability Disinhibition Aggression Apathy Paranoia
Other Clinical Scales	Psychotic Thinking Emotional Coldness Sleep Disturbances
Hostility Scales	Dangerousness Conduct Disorder-Aggressive Subscales Conduct Disorder-Delinquent Subscales

Source: Coolidge, Thede, Stewart, & Segal (2002).

The Reliability and Validity of the CPNI

Especially important to pre-adolescent and adolescent inventories that have been resisted by the psychology community for years, the CPNI must prove it maintains reliability and validity. Through psychology's accepted means, Dr. Coolidge and colleagues show that these important aspects are encompassed by the CPNI. Overall, the CPNI was solidly designed and PPMH would hone their treatment plans to center on their young clients by using this assessment. This next section discusses the reliability and validity of the CPNI.

Reliability

Coolidge et al. (2002) "randomly selected [a] sample of 67 parents from the original normative group" to retest the CPNI (p. 560). In a period between 1-7 weeks, participating parents retook the CPNI to demonstrate test-retest reliability. After the test-retest reliabilities were calculated, the personality disorder scales had a median reliability of .81, the Axis I scale median reliability was .89, the neuropsychological scale median reliability was .81, and the median reliability for the other scales was .65 (Coolidge et al., 2002). Each scale maintained strong test-retest reliabilities.

Median scale reliabilities were calculated for the personality disorder scale (.67), the Axis I scale (.82), the neuropsychological scale and subscales (.89), and the other scales of the CPNI (.61) (Coolidge et al., 2002). The scales of the CPNI demonstrated strong reliability as well. Any new psychological assessment must ascertain reliability to be valid, and the CPNI meets this requirement.

Construct Validity

Factor analysis was conducted by Coolidge et al. (2002) on the personality disorder scales, and the general neuropsychological dysfunction scale and subscales of the CPNI. Similar items are grouped by factor analysis and then interpreted by the researcher. Coolidge et al. (2002) found factors related to narcissism, low self-esteem, instability of mood, and schizoid behavior with a lack of emotion. Single-factor solutions were found for the avoidant, histrionic, and passive-aggressive scales, while two-factor solutions were revealed for the dependent, narcissistic, paranoid, and depressive scales (Coolidge et al., 2002). The neuropsychological dysfunction factor analysis grouped all of the executive function deficit items and the inattention subscale items together. The second factor included the hyperactivity subscale and the impulsivity subscale (Coolidge et al., 2002). For the third factor, Coolidge et al.(2002) interpreted the group as a "measure of delayed maturation," while the remaining factors covered "perceptual motor problems, neurosomatic complaints, language difficulties, poor coordination, tics, pica, enuresis, encopresis, physical illness, and fatigability" (p. 562). These factors reflect the concepts the CPNI is designed to assess and shows the construct validity of the exam.

Categorical versus Dimensional Diagnosis

The psychological industry pays minimal attention to the influence of subthreshold personality disorders (Huprich & Bornstein, 2007). By ignoring the influence of subthreshold symptoms, clinicians may not be able to fully understand the nuances of their client's personality and not be able to address their pathology completely (Huprich & Bornstein, 2007). According to Huprich and Bornstein (2007), "dimensional measures of personality disorders tend to be psychometrically superior to categorical measures" (p. 4). Using dimensional measures as a starting point allows clinicians to discover subthreshold factors affecting client psychological health, while still being capable of making categorical assessments based on the level of a disorder present (Huprich & Bornstein, 2007). Huprich and Bornstein (2007) advise clinicians to use "multimodal assessment" to gather detailed data that may be missed by diagnostic interviews alone (p. 12). Advantageously, the CATI and CPNI provide both dimensional and categorical assessments in their interpretive reports and will add another method of obtaining objective clinical data.

The Impact on PPMH's Budget

According to the Pikes Peak Behavioral Health Group (PPBHG) 2007-08 annual report, PPMH serviced 7,519 clients (PPBHG Annual Report). Of those clients, 3,415 adults, 2,083 children, 1,039 youth, and 982 older adults of diverse ethnicities were seen at PPMH (PPBHG Annual Report). By adopting the CATI and CPNI, and if every client were to complete the inventories, PPMH would only incur a $15,038 fee. Using the MMPI-2, a minimum fee of $65, 955 would be required to test all adults and older adults. In addition, the M-PACI would cost the organization $11,873, and the MACI would add another $7,844. A total of $85,712 would be required to assess the 2007-08 client population using the MMPI-2, M-PACI, and MACI. The expenditure associated with the CATI and CPNI is approximately 17.5% of the expenditure required to use the other three exams. In terms of the 2008 client expenses, the cost of adopting the CATI and CPNI is just 5.5% of the $275,088 spent on clients (PPBHG Annual Report). The difference in the cost of implementing each exam clearly speaks of the economical means of focusing client-centered treatment at PPMH by acquiring the CATI and CPNI as tools in the organization's repertoire.

Conclusion

Both the CATI and the CPNI are comprehensive and effective psychopathological assessments that are comparable to the prominent tests on the market. Beneficial to PPMH, each exam is comprised of 200-250 items, and only requires 30-45 minutes to complete. The CATI remains flexible with paper-and-pencil and computer versions, dimensional and categorical diagnoses, and by offering self-report and informant data. Like the CATI, the CPNI is versatile with two formats available for completion and provides categorical and dimensional diagnoses via a parent-as –respondent questionnaire. A time and cost saving report of the results generated by the creator of the inventory, Dr. Coolidge, greatly enhances the benefits of the exams.

Covering a wide-range of clinical concerns, Axis I and II disorders along with neuropsychological dysfunctions, the CATI and CPNI include pertinent concepts relevant to PPMH client issues. Reliability and validity were established through industry standard and acceptable methods. Diverse normative samples increase the generalizability of results. Another advantage of the CATI and CPNI is their close alignment with *DSM-IV-TR* criteria. Clinicians are intimately familiar with the *DSM*, and therefore will have no trouble understanding the results of the inventories. Overall, the CATI and CPNI are competent tools to confirm clinical diagnoses and provide tools for evidence based practice.

Overwhelming research supports the heritability and comorbidity of childhood psychological problems. Past concerns of adverse effects of early diagnosis should not be ignored, but instead guide clinicians in their approach to client-centered treatments. Now, an assessment derived from *DSM* criteria for children is available for implementation in the mental health field and needs to be taken advantage of.

PPMH would only benefit from adopting the CATI and CPNI. For approximately 5.5% of the 2008 client expenses, every client of PPMH could be assessed by these inventories. More information is always better when making life changing, client-centered treatment plans. Adopting the CATI and CPNI is necessary for PPMH to increase the organization's effectiveness and strengthen company values with a minimal cost.

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