Relationship Between the Millon Clinical Multiaxial Inventory-II and Coolidge Axis II Inventory in Chronically Mentally Ill Older Adults: A Pilot Study

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The purpose of this study was to investigate the relationship between two self-report measures of personality disorders in older chronically mentally ill inpatients. A random sample of 30 chronically mentally ill (DSM-III-R schizophrenia, schizoaffective disorder, recurrent major depression) inpatients aged 55 and older completed the Millon Clinical Multiaxial Inventory-II (MCMI-II) and the Coolidge Axis II Inventory (CATI). The personality inventories were concurrently administered in counterbalanced fashion to assess concurrent validity of the CATI and MCMI in this older adult group. Data were submitted for correlational analysis. Median concurrent validity (raw score sums) between the CATI and MCMI-II for the 13 personality disorder scales was moderate ($r = .55$). Individual scale correlations ranged from $-.13$ for schizoid disorder to .88 for borderline disorder. Individual scale correlations were somewhat lower than previously reported values, but were above .54 for 7 of 13 disorders. Findings provide preliminary support for use of the CATI and MCMI with chronically mentally ill elders. Suggestions for future research are offered. © 1997 John Wiley & Sons, Inc. J Clin Psychol **53**: 559–566, 1997.

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Despite the burgeoning literature on psychiatric impairment in older adults, there is a paucity of information pertaining to the assessment of personality disorders in the clinical geriatric population. With the growing number of older adults seeking mental health services, accurate assessment of personality disturbance is critical, especially since personality disorders are frequently overlooked, underdiagnosed, and undertreated in older adults (see reviews by Kroessler, 1990; Segal, Hersen, Van Hasselt, Silberman, & Roth, 1996). In addition, with the development of recently updated personality disorder assessment instruments it is important to examine the validity and application of such devices in the growing, older adult population.

Millon (1983) created one of the first and most frequently used self-report inventories for the assessment of personality disorders, the Millon Clinical Multiaxial Inventory. Despite many unique features and strengths, several concerns about the original instrument were raised. For example, item overlap has been cited as a weakness of the MCMI in general (Choca, Peterson, & Stanley, 1986). It has been suggested that such overlap contributes to poor discriminant validity, spurious interscale correlations, and artifactual factor structure (McCann, 1991). Widiger, Williams, Spitzer, and Francis (1985) also raised concerns about the applicability of the theoretically-derived MCMI items and diagnoses to the DSM-III criteria and system. In particular, results from two concurrent validity investigations were notably poor for antisocial and obsessive-compulsive personality disorder scales (McCann 1989; Streiner & Miller, 1988). In response to these criticisms, Millon (1987) introduced a revised version of the instrument. Items were updated, and the diagnostic labels of the MCMI-II (Millon, 1987) were changed to coincide with DSM-III-R terminology. A recent validity study employing the MMPI personality disorder scales as criterion found better results for the MCMI-II than for the original instrument (McCann, 1991). Further, ample evidence for good reliability and validity have been obtained for this improved personality instrument (Millon, 1992).

Despite widespread application of the MCMI-II with diverse younger populations, older individuals have rarely been studied with MCMI inventories. Indeed, application of the MCMI specifically to the older adult psychiatric population has been investigated in only one study. Hyer and Harrison (1986) administered the inventory to 60 geriatric inpatient subjects (mean age not reported). Results showed that incidence rates were high for dependent and avoidant personality disorders, while histrionic, narcissistic, and antisocial personality disorders had low rates. Hyer and Harrison (1986) concluded that the "higher energy" personality types appear to temper with age. Davis and Greenblatt (1990) investigated age differences on the MCMI in a sample of 310 psychiatric inpatients. However, they defined "old" as anyone over 36 years of age and failed to break down the results for specific age groups, thus severely limiting applicability of their results to those over age 55.

Another recently popular self-report questionnaire, the Coolidge Axis II Inventory (CATI; Coolidge, 1984), has been designed to assess all 13 DSM-III-R personality disorders, as well as three Axis I scales (anxiety, depression, brain dysfunction). In a cross-sectional study, Coolidge, Burns, Nathan, and Mull (1992) administered the CATI to a normal older sample ($N = 36$; mean age $= 69.4$) and compared results to a younger sample ($N = 573$; mean age $= 24.0$). Results indicated that the older adults were significantly less anxious and showed more signs of brain damage, while no differences were obtained on the depression scale. On personality disorder scales, the older adults scored significantly lower on the antisocial, borderline, histrionic, narcissistic, paranoid, passive-aggressive, schizotypal, sadistic, and self-defeating personality disorder scales than their younger counterparts. In contrast, the older adult sample was significantly more obsessive-compulsive and schizoid. The groups did not differ on the avoidant or dependent personality scales. Coolidge et al. (1992) noted that, in general, the older sample scored low on questions associated with impulsivity and endorsed items consistent with restricted affectivity. Also, the nonsignificant finding for depression was attributed to the lack of somatic items on that particular scale (Coolidge et al., 1992).

The concurrent validity of the CATI with the MCMI-II has recently been ascertained in a younger sample ($N = 24$; mean age $= 38.0$ years) of psychiatric outpatients (Coolidge & Merwin, 1992). Median concurrent validity coefficient of .58 for the 13 scales was obtained when raw scores were compared. Specifically, the correlations were as follows: borderline, .87; passive aggressive, .86; avoidant, .80; histrionic, .72; self-defeating, .67; schizotypal, .65; paranoid, .58; antisocial, .57; dependent, .43; sadistic, .40; narcissistic, .38; schizoid, .22; and obsessive-compulsive, .10. These results generally are encouraging for continued application of and research with these measures with younger adults. It is unclear, however, how these instruments would perform in an older adult sample, in which some personality disorders are manifested quite differently than in younger populations (Segal et al., 1996). Given that the numbers of mentally ill elders are predicted to increase concurrent with the rise in the number of elderly in general, accurate assessment of personality disturbances will become more critical. To date, however, no research was located pertaining to the use of the CATI with mentally ill elders, while only one investigation employed the MCMI with this population. Absence of studies applying the MCMI-II and CATI to older mentally ill individuals represents a gap in the research literature. Further, concurrent validity of the MCMI and CATI remains to be established in the older psychiatric population, and independent replication of the Coolidge and Merwin results is needed. The purpose of our study, therefore, was to examine the concurrent validity of the CATI when compared to the MCMI-II in an older adult psychiatric population. Given the small numbers of and general inaccessibility to chronically mentally ill older adults at present, a small pilot study seemed warranted.

METHOD

Subjects

Subjects were 30 elderly inpatients (18 females and 12 males) aged 55 to 83 years ($M = 63.3$; $SD = 6.48$) who were participating in an inpatient residential treatment program at the Nova Southeastern University Geriatric Institute, part of a community mental health center. All patients were diagnosed by a psychiatrist as having a chronic mental illness as defined by DSM-III-R. Four subjects (13%) were diagnosed with schizophrenia, 14 subjects (47%) were diagnosed with chronic, severe major depression, and 12 subjects (40%) met criteria for schizoaffective disorder. Years of education completed ranged from 8 to 16 years ($M = 12.36$; $SD = 2.09$). Approximately 37% of the sample were divorced, 20% were separated, 20% had never been married, 13% were widowed, and 10% were married. Approximately 33% of the sample reported to be Catholic, 23% Jewish, 23% Protestant, and 20% affiliated with another religion.

Instruments

Millon Clinical Multiaxial Inventory-II (MCMI-II; Millon, 1987). The MCMI-II is a 175-item, true/false, self-report inventory that has enjoyed widespread use in diverse clinical and research contexts. The inventory includes 22 clinical scales and is constructed to distinguish between Axis I and Axis II diagnoses, as well as the level of severity of syndromes (Millon, 1992). According to Millon, there are 10 basic personality structures (schizoid, avoidant, dependent, histrionic, narcissistic, antisocial, aggressive/sadistic, compulsive, passive-aggressive, and self defeating), as well as three that possess a greater level of severity (schizotypal, borderline, paranoid). Additionally, there are nine symptom scales, six "lower level" (e.g, dysthymia, depression, anxiety) and three "severe level" scales (thought disorder, major depression, delusional disorder). The MCMI-II has excellent internal consistency and test–retest reliability, as well

as good diagnostic power as measured against the criterion of clinician generated diagnoses (Millon, 1987).

Coolidge Axis II Inventory (CATI; Coolidge, 1984). The CATI is a 200 item, self-report, 4 point true/false inventory developed to assess personality disorders according to the 117 unique diagnostic criteria for DSM-III-R personality disorders. The inventory contains 13 personality disorder scales, including the proposed sadistic and self-defeating personality disorders, and three Axis I scales (brain dysfunction, depression and anxiety). Excellent test–retest reliability (.90) has been established for the CATI, as well as moderate internal consistency (.76). As to validity, a 50% concordance rate with clinicians' diagnoses for 24 personality-disordered out-patients was found (Coolidge & Merwin, 1992).

Procedure

Informed consent was obtained from all subjects and their confidentiality was insured through the use of numerical codes so that the subject's names never appeared on any of the data forms. Inventories were concurrently administered in counterbalanced order to subjects, in groups of five with a 15 minute break between sessions. If a subject was unable to complete the questionnaires during the group administration, the examiner met with him/her individually to finish the protocol. MCMI-II test protocols were scanned and computer scored. Data from the CATI were manually entered into a computer for computer scoring.

RESULTS

Table 1 shows mean raw scores and standard deviations for the 13 personality disorder scales of the MCMI-II and CATI. Table 2 gives mean base rates and standard deviations for the MCMI-II and mean *t* scores and standard deviations for the CATI personality disorder scales. It can be seen in Table 2 that the highest base rates for the MCMI-II were found for dependent (73.9), avoidant (70.0) and obsessive-compulsive (69.5) disorders, while highest *t* scores for the CATI

Table 1. *Mean Raw Scores and Standard Deviations for the MCMI-II and CATI*

	MCMI-II		CATI	
Disorder	*M*	*SD*	*M*	*SD*
Antisocial	27.0	11.8	80.4	15.0
Avoidant	23.3	12.3	38.0	8.7
Borderline	29.4	19.2	49.4	11.2
Dependent	33.6	8.7	61.4	11.2
Histrionic	30.5	7.9	71.5	8.3
Narcissistic	35.9	11.0	60.6	9.1
Obsessive-Compulsive	39.1	7.6	76.0	7.8
Paranoid	28.4	10.9	42.4	6.7
Passive-Aggressive	27.4	14.6	45.3	8.4
Sadistic	29.3	10.4	28.4	5.3
Schizoid	22.0	7.0	72.0	8.4
Schizotypal	22.7	11.9	42.4	8.0
Self-Defeating	22.4	12.8	47.3	8.5

Table 2. *Mean Base Rates and Standard Deviations for the MCMI-II and Mean T scores and Standard Deviations for the CATI*

Disorder	MCMI-II		CATI	
	M	*SD*	*M*	*SD*
Antisocial	61.6	23.9	50.4	11.2
Avoidant	70.0	23.3	53.1	12.1
Borderline	61.9	24.8	52.1	12.6
Dependent	73.9	27.0	55.9	11.3
Histrionic	66.3	16.2	48.7	10.3
Narcissistic	66.6	22.0	48.5	11.5
Obsessive-Compulsive	69.5	18.1	54.7	10.0
Paranoid	63.0	13.0	50.1	9.5
Passive-Aggressive	59.7	35.0	51.5	12.2
Sadistic	62.0	24.1	48.2	9.2
Schizoid	66.4	15.0	59.6	10.5
Schizotypal	64.1	18.2	49.5	11.5
Self-Defeating	67.6	26.0	57.2	13.7

were obtained for schizoid (59.6), self-defeating (57.2), and dependent (55.9) disorders. Correlations among the raw score sums on the MCMI-II and CATI are presented in Table 3. Median convergent validity coefficient for the 13 personality disorder (Axis II) scales was .55. As can be seen in Table 3, correlations ranged from a high of .88 (borderline) to a low of −.13

Table 3. *Correlations Between MCMI-II and CATI Raw Scores*

Disorder	
Personality Disorders	
Antisocial	.70**
Avoidant	.55**
Borderline	.88**
Dependent	.20
Histrionic	.10
Narcissistic	.40*
Obsessive-Compulsive	−.11
Paranoid	.55**
Passive-Aggressive	.77**
Sadistic	.42*
Schizoid	−.13
Schizotypal	.57**
Self-Defeating	.67**
Clinical Syndromes	
Depression	.80**
Anxiety	.62**
Brain dysfunction (CATI)/Alcohol dependence (MCMI-II)	.68**
Brain dysfunction (CATI)/Drug dependence (MCMI-II)	.64**

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

(schizoid). Approximately half of the concurrent validity coefficients were in the moderate range as 7 of 13 individual disorders had values above .54. Correlations for Axis I clinical syndromes were excellent for depression (.80) and moderate for anxiety (.62). To validate the brain dysfunction scale of the CATI, correlations were obtained with MCMI scales of alcohol dependence (.68) and drug dependence (.64). The CATI diagnosed 24 subjects (80%) as having a personality disorder (≥ 1 *SD* above the mean); whereas, the MCMI-II diagnosed 28 subjects (93%) as having a personality disorder (greater than or equal to a base rate of 85); however, this difference was not statistically significant.

DISCUSSION

The results provide preliminary support for continued application of the CATI and MCMI-II to evaluate personality disturbances in chronically mentally ill older adults. The moderate rates for most disorders were encouraging given the lack of prior investigative attention to the assessment of personality disorders in mentally ill older adults. In comparing our results to those obtained by Coolidge and Merwin (1992) with a younger less severe sample (24 psychiatric outpatients, mean age = 38.0 years), a similar median convergent validity correlation for the 13 scales was obtained (older sample .55, younger sample .58). However, most correlations were lower for the older sample and some of the differences were quite large (histrionic older .10, younger .72; schizoid older $-.13$, younger .22; avoidant older .55, younger .80). In fact, in the older sample, *negative* correlations between measures were found for the schizoid ($-.13$) and obsessive-compulsive ($-.11$) scales. Considering the confounds of both age (older/younger) and psychiatric severity (chronic inpatient/outpatient), it is unclear to what extent each variable contributed to the poorer convergence in the older sample. A direct comparison between younger and older samples with similar psychiatric dysfunction could answer this question.

The moderate concordance values between the MCMI-II and CATI in our study are quite similar to modest values found by McCann (1989) and Streiner and Miller (1988) in their comparisons between the original MCMI and the 11 personality disorder scales derived from the MMPI (Morey, Waugh, & Blashfield, 1985). However MMPI personality scales have been criticized due to the fact that test items were chosen on the basis of clinical judgment and without reliability analysis (Coolidge & Merwin, 1992). Interestingly, concordance rates found in the present study employing *self-report* instruments are quite similar to the fair to moderate values derived from comparisons between two popular *structured interviews* for personality disorders, the SCID and PDE (see O'Boyle & Self, 1992; Skodol, Oldham, Rosnick, Kellman, & Hyler, 1991).

One possible explanation for the moderate agreement between the MCMI-II and CATI can be traced to the dissimilar development of the two instruments. For example, the MCMI is derived from Millon's theory of psychopathology, while the CATI is based strictly on the formal DSM-III-R criteria for personality disorders and is wholly atheoretical. It is also possible that differences in response formats (4-point vs. 2-point true/false) of the CATI and MCMI-II could contribute to the somewhat divergent results.

Several limitations of our pilot study should be noted. The sample size of 30 is relatively small, but this was also a reflection of the rather specific focus of the study and the small numbers in general of institutionalized chronically mentally ill older adults. In addition, Axis I diagnoses were assigned by a psychiatrist, and no reliability check was performed. Clearly, use of structured interview formats such as the Structured Clinical Interview for DSM-IV (SCID; First, Spitzer, Gibbon, & Williams, 1995) will enhance reliability and validity of Axis I diagnosis. Notably, the SCID has been found to yield reliable Axis I diagnoses in a mixed outpatient and inpatient population of older adults (Segal, Hersen, Van Hasselt, Kabacoff, & Roth, 1993) and a larger outpatient group of elders (Segal, Kabacoff, Hersen, Van Hasselt, & Ryan, 1995).

Further concurrent validity investigations comparing larger groups of older adults may be the logical next step for future studies. In addition, for Axis II diagnosis, other structured interviews updated for DSM-IV criteria, such as the Structured Clinical Interview for DSM-IV Personality Disorders (SCID-II; First, Spitzer, Gibbon, Williams, & Benjamin, 1994), the Structured Interview for DSM-IV Personality (SIDP-IV; Pfohl, Blum, & Zimmerman, 1995), and the International Personality Disorder Examination (IPDE; Loranger et al., 1994) can be employed as better criterion measures in future studies assessing concurrent validity of MCMI-II and CATI in older adults.

Clinicians are encouraged to use the MCMI-II and CATI to assist in evaluation of characterological disturbance in their older patients, and to follow-up test data with a thorough clinical interview focusing on personality disturbances. Clinical attention to personality dysfunction in older clients can enhance case conceptualization and treatment strategy and success. In conclusion, it is underscored that research on assessment of personality dysfunction in older adults is in its nascent stage, and it is hoped that the present application will encourage further clinical and investigative attention to this important area.

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