RELATIONSHIP OF MMPI-2-RC DEMORALIZATION SCALE TO MCMI-III SCALES IN PSYCHIATRIC INPATIENTS

A Dissertation by

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DEDICATION

The completion of my academic endeavors could have not been accomplished without the unconditional love and support of my family. To my mother and father, Rosie and Roland Padilla, I would not have accomplished all that I have without your inspiration, compassion, and patience, nor without the perseverance, inquisitiveness, and empathy you have instilled in me. To my brother, Eric, your guidance and camaraderie has provided me with the much needed strength to experience this adventure. To my brother, Paul, you have inspired me more than you will ever understand. I thank you for the lessons you have taught me. To my brother, Roland, this degree is all of ours. Lastly, I want to thank Rajah for making my life complete and for providing me the best medicine: cheerful greetings and warm hugs.

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ABSTRACT

In 2003 (Tellegen, Ben-Porath, McNulty, Arbisi, Graham, & Kaemmer) the MMPI-2 RCd scale was developed to independently measure the MMPI ―factor one," an inherent technical problem within the Clinical scales. The developers renamed this factor ―demoralization" after exploratory factor analyses were utilized to extract this dimension from the basic nine MMPI-2 scales, creating a separate demoralization scale known as the Restructured Clinical Demoralization scale (RCd). This study examined a sample of 440 adult psychiatric inpatients to determine the relationship of the MMPI-2 RCd scale with the MCMI-III scales to assess the degree to which it may measure demoralization. Exploratory principal axis factoring with promax rotations were conducted resulting in a four factor solution. RCd loaded moderately (0.48, 0.43) on two of the four factors, Factor I named demoralized affect and Factor II named demoralized social functioning. This study indicated the presence of demoralization among several of the MCMI-III scales and supported the multidimensionality of demoralization suggested within the literature.

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CHAPTER ONE

INTRODUCTION

This study examined the relationship of the Minnesota Multiphasic Personality Inventory-Second Edition-Restructured Clinical (MMPI-2-RC) scales Demoralization scale to the Millon Clinical Multiaxial Inventory-Third Edition (MCMI-III) scales in a sample of 440 adult psychiatric inpatients. The MMPI-2-RC scales were introduced in 2003 by Tellegen, Ben-Porath, McNulty, Arbisi, Graham, and Kaemmer. They were developed to address a technical problem inherent in the original and revised Clinical scales, also known as the "basic nine" scales. Specifically, because these original scales were constructed using the (then) innovative technique of empirical criterion keying, all the scales were saturated with a common factor sometimes referred to as the "first factor" (Eichman, 1961; Millimet, 1970; Welsh, 1956, 2000). This factor emerged as a result of all the criterion groups sharing the common characteristic of all being psychiatric patients. Another result of utilizing the empirical criterion keying approach is that items can be keyed as indicators of more than one disorder, resulting in item overlap among the scales. Thus, the items on the "basic nine" scales appeared on more than one scale. Because all the "basic nine" scales shared this "first factor" and because many items appeared on multiple scales, the scales intercorrelated to such a degree as to diminish their discriminant validity (Campbell & Fiske, 1959). This problem persisted with the development of the MMPI-2 (Graham, 2003, 2006; Tellegen et al., 2003), as many of the original MMPI items appear on the MMPI-2 "basic nine" Clinical scales. By carrying over items, the demoralization dimension was passed on to the subsequent MMPI measures. To assist in determining the degree to which demoralization saturated the Clinical scales, the developers of the RC scales utilized factor analyses.

Tellegen et al. (2003) conducted a series of exploratory factor analyses on four large sample populations. A major and easily identifiable factor, thought to be synonymous with the ―first factor", was recognized as a dimension of demoralization. Items loading this factor were used to construct the demoralization factor scale (RCd). That is, any items from MMPI-2 scales 1, 2, 3, 4, 6, 7, 8, or 9 that loaded significantly on the demoralization factor were removed from their original Clinical scale(s), thereby extracting demoralization from each ―basic nine" scale. The remaining eight scales, now denuded of the demoralization factor, were called Seed scales and were reconstructed by selecting MMPI-2 items that correlated highly with a given Seed scale, but did not correlate highly with any other Seed scale. The reconstruction process also assured that no item appeared on more than one scale. Since, the focus of this paper is on the MMPI-2-RC Demoralization scale the details of the remaining RC scales' development will not be reviewed further.

Previous Examination of Demoralization and RCd

Demoralization as a psychological construct has been long recognized. Workers in the medical field began to investigate its prevalence and impact on the medically ill population decades ago. In their 1980 article, Link and Dohrenwend found demoralization present among 25% of the United States population, and approximately half of those were considered clinically impaired. Generally, demoralization occurred more frequently in women and in those of lower socioeconomic status.

Mangelli et al. (2005) set out to measure the presence of demoralization and major depression among 807 gastroenterology, cardiology, endocrinology, and oncology patients. Using criteria from the Diagnostic and Statistical Manual of Mental Disorders-Fourth Edition-Text Revised (DSM-IV-TR) (2000), the Diagnostic Criteria for Psychosomatic Research

(Mangelli et al., 2005), and semi-structured interviews, it was found that 30.4% of patients were considered demoralized and 16.7% were diagnosable as having Major Depressive Disorder. The most interesting finding was that 43.7% of patients with Major Depressive Disorder were not considered demoralized and 69% of those classified as demoralized did not meet diagnostic criteria for Major Depressive Disorder (Mangelli et al., 2005). The three required DCPR criteria used for the classification of ~~d~~emoralized" are as follows:

1. Feeling state characterized by the patient's consciousness of having failed to meet his or her own expectations (or those of others) or being unable to cope with some pressing problems, the patient experiences feelings of helplessness, hopelessness, and giving up.
2. The feeling state should be prolonged and generalized for at least one month in duration.
3. The feeling state should closely antedate the manifestations of a medical disorder or exacerbate the symptoms.

These results indicated demoralization was common among various types of medical settings and the need exists for differential diagnosis between demoralization and depression.

Rafeanelli et al. (2005) examined the role of demoralization, depressive symptomatology, major depression, and stressful life events in the year preceding the first myocardial infarction and/or the first instable angina among 97 patients and 97 healthy participants. Assessments used included the Paykel's Interview for Recent Life Events, a semi-structured interview using the DSM-IV criteria for depression and the DCPR criteria for demoralization. The results indicated that 20% of patients suffered from demoralization and 12% of these patients overlapped with depression. Patients with major depression who did not also suffer from demoralization accounted for 17% of the sample, while 7% who suffered from demoralization did not meet criteria for major depressive disorder. The authors concluded that those patients who met criteria

for demoralization and major depression may have had a worse outcome than those who did not meet either set of criteria.

The aforementioned research provides a basis for the existence and identification of demoralization. However, considering its reported prevalence, there is an apparent need for more accurate identification of demoralization. The MMPI-2-RC Demoralization scale is, to our knowledge, the first and only self-report psychometric tool to be developed to measure it directly. The initial psychometric properties of RCd as published in the "Restructured Clinical (RC) Scales Manual" (2003) suggest that it has acceptable psychometric properties. Since its publication in 2003, a handful of publications reviewing the empirical correlates of the RC scales, including RCd have appeared (Arbisi, Sellbom, Ben-Porath, 2008; Sellbom, Ben-Porath, Baum, Erez, & Gregory, 2008; Forbey & Ben-Porath, 2008). These studies also provide evidence that RCd has acceptable technical qualities.

The existence of ample research indicates that demoralization is a common, prevalent, and measureable psychological construct. There is a pressing need for more empirical research on demoralization to help us understand it psychometrically and clinically. To further our understanding of demoralization, the author proposed to study the concurrent validity of the RCd scale by comparing the commonly utilized scales of the MCMI-III.

Concurrent validity studies are a common method used to and broaden our understanding of new constructs. The MCMI-III (2006) is based on Millon's extensive theory of personality and psychopathology. It provides a conceptual and psychometric base that differs from that of the MMPI family. Developed primarily as an index of Axis II disorders, it also assesses several Axis I disorders. Unlike the MMPI, the MCMI was developed on a theoretical basis and utilizes somewhat different statistical conventions. Nowhere in his voluminous work does Millon use the

term demoralization. However, in his 1996 personality disorders text titled ―Disorders of Personality: DSM-IV and Beyond" he cites the work of Engle on helplessness and hopelessness as it applies to the depressive personality disorder. Perhaps more importantly Dohrenwend, Shrout, Egri, and Mendelsohn (1980) observed that the common underlying dimension measured by psychiatric screening scales is demoralization. Thus, it would be expected that the MCMI-III would, to a considerable extent, measure demoralization.

This study will begin with a review of the history of the MMPI ―first factor" and will advance to our present day understanding of demoralization.

The MMPI First Factor

This ―first factor" has had various labels (Eichman, 1961; Millimet, 1970; Welsh, 1956, 2000). In his 1956 article, spoke of a study in which he examined the ―general maladjustment or general malaise" (GM) scale that he, Pearson and Peek deduced from the 550 items of the MMPI. The term ―general maladjustment or malaise" was selected to describe the general dimension that appeared to underlie the MMPI Clinical scales. After deducing the GM scale, nine ―pure" scales were then derived by removing items that overlapped with the GM scale and any other scale within the MMPI. Welsh (1956, 2000) referred to a later cluster analytic study he conducted on the GM scale and the nine ―pure" scales using 150 male patients from a VA general medical and surgical hospital. Two dimensions accounted for the most variance. The first cluster represented high loadings on the GM scale and the ―pure" psychasthenia and ―pure" schizophrenia scales, while the second cluster represented a high positive loading on the ―pure" depression scale and a high negative loading on the ―pure" mania scale.

In order to obtain a more adequate measure of factor dimensions, ―special" scales were then derived from the GM and ―pure" depression and ―pure" mania scales, and the recently

derived –pure" Correction (K) scale and the –pure" social introversion scale. The intention of the MMPI Correction (K) scale was to measure and correct for any defensiveness to the MMPI-2 items (Butcher, Dahlstrom, Graham, Tellegen, & Kaemmer, 2001). A second sample of 137 male patients from a VA dental hygiene clinic was then introduced. The –special" scales were developed through item analysis and then by the separation of items based on extreme scores on the GM scale. For example, if 10 of 100 people obtained the highest scores and 10 obtained the lowest scores, the items with extreme differences were considered for the –special" scales. Two scales resulted: Scale A (anxiety) and Scale R (depression). Scale A represented at least a 75% separation in both samples and contained 39 items. Scale R contained 40 items and signified at least a 60% separation.

Based on the cluster analysis, Scale A was comprised of five clusters of items that appeared to measure thinking and thought process; negative emotional tendency and dysphoria; anxiety and worry; lack of energy and pessimism; personal sensitivity (reflected a concern regarding how they may be perceived by others and by themselves); and a malignant mentation (reflected experiences of derealization, fantasy, or psychotic dissociation). Scale R was also comprised of five clusters of items that seemed to measure health and physical symptoms; emotionality, violence, and activity; social reactivity; social dominance, feelings of personal adequacy, and personal appearance; and personal and vocational interests.

Welsh (1956, 2000) then examined Scales A and R using profile configuration, also known as code typing. The use of code types as a method for interpreting the Clinical scales of the MMPI and MMPI-2 allows for the overall interpretation of the Clinical scales. This method is thought to provide a more rich and meaningful clinical picture, as opposed to interpreting single scales without considering the relationship among the scales (Graham, 2003, 2006). Code

types are based on score elevations on two or three scales. For example when a profile has elevations on Clinical scales 2 (depression), 7 (psychasthenia), and 8 (schizophrenia) in that order (highest to the least high elevation) then the code type used to interpret the profile would be code type 278. If for example, the score elevations were instead Clinical scales 8, 2, and 7 in that order, then the interpreted code type would be 827. The highest scale elevation would represent a greater proportion of the interpretation, the second highest scale elevation would signify the next greatest proportion of interpretation and so forth.

Based on Welsh‘s (1956, 2000) examination of 250 MMPI profiles, he found that the 278 combination code types displayed more anxious and depressive features. Thus, those with scale elevations on any combination of the Clinical scales 2, 7, and 8 experienced more anxiety and depressive symptoms. The combinations of code types that would be encompassed in this finding are the code types 278, 287, 728, 782, 827, and 872. Please note that the labels assigned to each of the Clinical scales are merely descriptive and an elevation on any of these scales does not automatically warrant that diagnoses. However, if we use the descriptive labels to understand this combination of elevations, it would seem that those whose elevations resemble the 278 code types would perhaps have depressive, anxious, and psychotic symptoms. These persons might tend to experience emotional turmoil, fear, and feelings inadequacy, and they may tend to be withdrawn, passive, and have somatic complaints (Graham, 2003, 2006). Welsh (1956, 2000) offered preliminarily psychiatric states, similar to the scale descriptors and code type interpretations of the MMPI, which may be representative of scales A and R; these include reactive depression, mania-depression, depression, and states of anxiety.

Similar results to that of Welsh (1956, 2000) were found by Eichman in 1961. Utilizing two psychiatric female samples recruited from a VA hospital, Eichman conducted a factor

analytic study using 17 scales: MMPI scales Lie (L) scale, Frequency (F) scale, and Correction (K); the nine Clinical scales; the Dependency (Dp) and Ego Strength (Es) scales; and Welsh's A and R scales, and Taylor's A scale. The first factor, with loadings above 0.90 and accounting for 63% of the variance, was defined by high loadings by Welsh's A scale, Taylor's A scale, Dp, and Psychasthenia (Pt). Eichman (1961) described this first factor as a "general maladjustment, anxiety, and/or complaints factor."

Keeping in mind that several factor analytic studies have found a common factor among the nine Clinical scales, Tellegen et al. (2003), perhaps being influenced by the work of Jerome Frank (1974), chose the term "demoralization" to describe this general malaise factor. From this point forward, the general malaise/common factor will be called demoralization. Frank (1974) considered demoralization to be a common denominator of all conditions that all psychotherapists attempt to address. This universality posed a problem; it complicated the task of discerning demoralization from other forms of mental illness. Eichman (1961) and Welsh (1956, 2000) clearly found this to be the case when discerning forms of anxiety and depression.

It has been demonstrated here that demoralization has been acknowledged and that attempts have been made to identify and define demoralization. The next appropriate step would be to describe characteristics of demoralization in order to better discern it from other forms of mental illness. To do so we will now review the literature that addresses this issue.

Characteristics of Demoralization

This section presents an overview of selected theoretical discussions of the construct of demoralization. We will begin this section by examining Bandura's concept of self-efficacy (Bandura, 1997) and offering speculation regarding a possible link to demoralization, and then

by investigating the concepts of suffering, subjective incompetence, social bonds, coping, giving up, and hope.

Self-efficacy in relation to one's sense of self appeared as a main theme in the literature, as seen in the work by Bandura (1997), Welsh (1956, 2000), Mangelli et al. (2005), and Rafeanelli et al. (2005). Bandura's theory of self-efficacy provided a basis for understanding the relation of self-efficacy to feelings of inadequacy. According to Schultz and Schultz (1998) Bandura's self-efficacy referred to "our feelings of adequacy, efficiency, and competence in coping with life". Bandura (Schultz & Schultz, 1998) considered self-efficacy as being comprised of four elements: performance attainment, vicarious experiences, verbal persuasion, and physiological and emotional arousal. The first element, performance attainment, referred to our sense of mastery. If one has past experiences of being successful then expects to be successful in the future. However, if their past experiences consist of many failures, their expectation of future performance will be failure. Vicarious experiences, the second element, pertained to observing others' performances and developing coping skills as a result of observing the ways in which others deal with complicated circumstances. Witnessing others' successes can increase the belief of one's own future success; just as witnessing others' failures can decrease one's belief of being successful. As Schultz and Schultz (1998) noted, "If they can do it, then I can do it" or "If they can't do it, then neither can I" (p. 397). The third element, verbal persuasion, referred to the ability to provide others with a vote of confidence in their abilities. Bandura viewed this ability as enhancing one's own self-esteem, thereby transferring this belief onto one's self. The last element, physiological and emotional arousal, pertained to one's reactions to a situation and judging one's ability to cope based on their physiological and emotional response. Although Bandura never mentions demoralization, the argument may be

made that the construct most assuredly involved a relative absence of a sense of self efficacy. We now turn to related works by Cassel (1982), de Figueiredo and Frank (1982), Clarke and Kissane (2002), and Engle (1967).

Cassel (1982) offered that one‘s self-efficacy and self-esteem are affected by one‘s suffering. He examined the effect of demoralization on medically ill patients. Cassel viewed demoralization as an assault on sense of self, and postulated that suffering is a psychological entity, whereas pain is a bodily experience. As such, suffering results in a sense of losing control over one‘s symptoms, and thus leads to feelings of hopelessness in regards to prognosis. Cassel (1982) postulated that this perceived loss of control and loss of hope causes one to become demoralized as their sense of control is linked to their sense of self.

In a similar vein, de Figueiredo and Frank (1982) addressed the concept of self-efficacy as it pertained to demoralization; they referred to one‘s sense of self as subjective incompetence. They claimed the coexistence of two major components of demoralization, subjective incompetence and distress, where subjective incompetence is a ―self-perceived incapacity to act at some minimal level according to some internalized standard in a specific stressful situation" (de Figueiredo & Frank, 1982, p. 353). One who experiences this may make several failed attempts at problem solving and will eventually be fearful of the problem worsening (Clarke & Kissane, 2002; de Figueiredo & Frank, 1982). de Figueiredo and Frank (1982) considered symptoms of distress to include feelings of anxiousness, sadness, and discouragement. The authors argued each phenomena, distress and subjective incompetence, can and do coexist independently of one another; however, it is their coexistence coupled with the invalidation of self-esteem that results in demoralization. It was stated that this occurs when one‘s self-esteem is

in jeopardy of becoming a false belief. Once a person‘s self-esteem is connected to their inability to act and one is distressed over this perceived incompetence, then one is demoralized.

Another aspect which de Figueiredo and Frank (1982) considered to have influence on a person‘s self-esteem in relation to demoralization is the absence of social bonds. Arguments are made that subjective incompetence and distress are less likely to co-occur in the presence of adequate social bonds, which create natural concerns for one‘s peers. Inadequate social bonds are caused by unfulfilled expectations related to one‘s self-esteem, from either self or the peer group, which lead to distress and subjective incompetence. These expectations can be created by either one self or the peer group. The more global the sense of incompetence the more likely it is that the person‘s internalized standards will be relevant to their self-esteem. Therefore, de Figueiredo‘s and Frank‘s (1982) model of the development of demoralization stated that a person‘s assumptions relevant to their self-esteem are disconfirmed by a stressful situation, or by their inadequate social bonds.

The concept of coping in relation to demoralization was articulated by Clarke and Kissane (2002), who viewed the center of demoralization as the ―breakdown of coping.” They identified coping as the mechanism that controls distress. The ―breakdown of coping” results in the dysregulation of distress; thus, leading to demoralization. Components of the dysregulation of distress include inadequate social support, dysfunctional cognitions, and temporary avoidance. This concept is similar to de Figueiredo‘s notion that subjective incompetence is more likely to occur when problem-solving tactics are limited or exhausted, and when there are inadequate social bonds.

A similar concept to that of coping is offered by Engel in his 1967 article on somatic complaints and the ―giving-up–given-up complex,” as an equivalent to demoralization. Engel

characterized the ―giving-up–given-up complex" as the inability to cope; thus, possessing feelings of discouragement or despair that are provoked by the endangered loss or severance from a chief object or goal. When the loss is perceived as un-recoverable, helplessness and hopelessness play a significant role. Other characteristics of the ―giving-up–given-up complex" identified by Engel included a devalued self image, a loss of fulfillment from engaging in usual roles and relationships, an interference in the sense of continuity between past, present, and future, and a reactivation of memories from earlier periods of giving-up (Engel, 1968, 1977).

Clarke and Kissane (1982) also related the concept of hope to Engel's ―giving-up–given-up complex". The authors viewed hope as the opposite of demoralization, articulating that hope is future-oriented and expectant, and includes cognitive and affective longing for and believing in that something is that at least possible. It was argued that hope is similar to having faith. It can be generalized, allowing a person to find value when life circumstances become difficult. Clarke and Kissane (1982) postulated that it is our human need to predict and control our world and that the inability to do so results in us questioning our purpose in this world. They considered this sense of the loss of hope as central to the development of demoralization.

Thus far, we have identified what the literature suggested to be the overall characteristics of demoralization. In general, the literature suggested that low self-efficacy, suffering, subjective incompetence, absence of social bonds, breakdown of coping, giving up, and hopelessness are characteristics of demoralization. This review helps us more thoroughly understand demoralization, but it does not clarify the link of demoralization to depression. Tellegen et al. (2003) were faced with this dilemma and attempted to correct for it by restructuring the MMPI-2 ―basic nine" scales. In fact, the correlations between RC2 (depression) and RCd for the normative sample were men (0.44) and women (0.53), and the averaged

correlations for the four psychiatric samples were men (0.70) and women (0.73). A benefit of restructuring the Clinical scales was gaining the ability to now measure demoralization independently of depression, though a relationship between the two exists. The author will now turn to literature differentiating the link between depression and demoralization.

Theoretical Literature Differentiating Demoralization From Depression

At this point, a review of de Figueiredo's and Frank's work will ensue. However first, to better conceive the task of differentiating demoralization from depression, an abbreviated definition of depression will be provided, then will be followed by de Figueiredo's and Frank's theoretical distinction, and then the empirical distinctions found within the literature.

Like demoralization, depression is also a cluster of symptoms. de Figueiredo (1993), Kaplan and Saddock (2003), and the DSM-IV-TR (2000) offer definitions of depression. de Figueiredo (1993) affirmed that depression is anhedonia, or loss of pleasure. Kaplan and Saddock (2003) characterized depressed mood as the ~~l~~loss of energy and interest in things one used to enjoy, feelings of guilt, difficulty concentrating, loss of appetite, suicidal ideation, and includes changes in the levels of one's activity, cognitive abilities, speech, and biological rhythms, e.g., sleep" (p. 534). The DSM-IV-TR (2000) stated that the essential feature required for the diagnosis of major depressive disorder is ~~a~~ period of at least two weeks during which depressed mood, or the loss of interest or pleasure in nearly all activities" is present (p. 349). Other criteria included in the DSM-IV-TR include: loss of appetite or weight and sleep, decreased energy, feelings of hopelessness, guilt, discouragement, difficulty in concentrating, thinking and in making decisions, and possibly suicidal ideation, plans, or threats.

After reviewing the overall concept of depression common themes were found within each of the definitions articulated above. These themes included are the loss of energy, of

pleasure, of appetite, difficulty concentrating, cognitive deficits, and suicidal ideation. Themes were also found among the demoralization literature. In his recent tribute to Jerome Frank, de Figueiredo (2007) identified three themes among various theories pertaining to the makeup of demoralization. The first theme described demoralization as a ―non-specific distress," characterized by a variety of affective and cognitive symptoms which clinicians typically consider representative of depression. Examples of these non-specific symptoms include discouragement, anxiety, sadness, anger, and resentment. The second theme suggested demoralization is a sense of ―self-perceived incapacity", which leaves the individual feeling unable to act when in a particularly stressful situation. The final theme consisted of a combination of the first two themes, characterizing demoralization as both ―non-specific distress" and as ―self-perceived incapacity." de Figueiredo settled on the terms distress and subjective incompetence. When comparing themes within the depression and demoralization literature, one specific difference is apparent, that difference is one's sense of self. Indeed, demoralization has similar physiological and cognitive symptoms; however, it is the individual's belief in their capabilities that appeared to make demoralization a separate clinical entity.

de Figueiredo (2007) defined subjective incompetence as ―feeling of being trapped or blocked because of a sense of inability to plan and initiate concrete action towards one or more goals" (p.130). This inability to act is what de Figueiredo argued to be the ―clinical hallmark" of demoralization and is what makes demoralization a separate clinical syndrome. He clarified his assumption by explicating that the presence of one or more observable states of distress in combination with the sense of incompetence makes demoralization a common clinical entity. Frank (1974) viewed demoralization as the common ―observable clinical entity" which all psychotherapists attempt to treat and do, generally, obtain the same outcome. de Figueiredo

(2007) further clarified that both distress and subjective incompetence can and do exist in the absence of the other, though it is the presence of both that results in demoralization. Though this common clinical entity can easily be confused with depression, it is argued that the presence of the true "clinical hallmark" of demoralization, subjective incompetence, is what makes demoralization a separate clinical syndrome from depression.

Frank's (1974) notion that distress is a component of demoralization was supported in Dohrenwend et al's. 1980 article, which was based on the Psychiatric Epidemiology Research Interview (PERI), a 25 scale questionnaire designed to measure dimensions of psychopathology and non-specific psychological distress. Eight of the 25 scales, which measured non-specific distress are as follows: Poor Self-Esteem, Hopelessness and Helplessness, Dread, Confused Thinking, Sadness, Anxiety, Psychophysiologic Symptoms, and Perceived Physical Health. Dohrenwend et al. (1980) believed that these eight scales were a measure of Frank's (1974) conception of distress.

In his 2007 article, de Figueiredo also aimed to further differentiate demoralization from depression by articulating two dissimilarities. The first dissimilarity was based on the conviction that the clinical hallmark of demoralization is the presence of subjective incompetence. The second dissimilarity was determined by the degree and direction of the motivation to act. To make this determination, de Figueiredo suggested that one's symptoms must be compared to those of depression. More specifically, depression results in a decrease in motivation; thus, resulting in inactivity. In the case of demoralization motivation levels are not decreased, it is the ability to make concerted action that is affected. Therefore, those who suffer from depression may know in what way to act, but they lack the motivation to do so. Whereas those who are demoralized have the motivation, but have difficulty in knowing how to act.

de Figueiredo (2007) continued the differentiation by denoting two experiences: consummatory pleasure and anticipatory pleasure. According to de Figueiredo, examining these will help to further clarify the degree and direction of one‘s motivation. Consummatory pleasure referred to the satisfaction gained out of engaging in activities one enjoys. Those who are depressed do not experience consummatory pleasure, but those who are demoralized do enjoy such experiences. For example, someone who is depressed does not gain pleasure out of eating a delicious meal, though one who is demoralized does obtain enjoyment out of this experience.

Anticipatory pleasure referred to the enjoyment one obtains from the act of selecting a preference, such as what movie to watch at the theater. Anticipatory pleasure requires positive evaluation of the self and the initiation of concerted action. Therefore, if one cannot view themself as a competent decision maker, then it is difficult to expect positive results from one‘s actions, and thus, one is unable to expect to obtain the pleasure one once gained from making a determined decision. Both depressed and demoralized individuals lack anticipatory pleasure. A final dissimilarity de Figueiredo (2007) suggested was that those who are depressed experience fluctuations in sleep and eating patterns; however, those who are demoralized tend to not experience these types of disturbances. This coincides with his notion regarding consummatory pleasure.

A review of the theoretical literature has led us to begin to define demoralization and differentiate it from depression. Overall, several authors have suggested that demoralization is a separate clinical entity from depression, though still similar. In the case of de Figueiredo, the reasoning regarding the differences sometimes seems forced to the extreme. However, the idea that the two constructs have independence may have some merit. In summary, the similarities between demoralization and depression include symptoms related to anxiety, feelings of

hopelessness and discouragement, suicidal ideation, and anticipatory pleasure. Differences include self-efficacy, sadness, feelings of anger and resentment, self-perceived incapacity, helplessness, and consummatory pleasure. To help deepen our understanding a review of the empirical literature will be subsequently presented.

Empirical Literature Differentiating Demoralization From Depression

Several researchers have found similarities between depression and demoralization (Clarke & Kissane, 2002; Dohrenwend et al., 1980; Marchesi & Maggini, 2007; Rafeanelli, 2005; Tellegen et al., 2003; Welsh, 1956, 2000). Marchesi and Maggini (2007) found demoralization to be associated with major depressive disorder and adjustment disorder. The authors attempted to identify socio-demographic characteristics and clinical features associated with demoralization in medically ill inpatients in hopes of properly diagnosing and treating demoralized medically ill inpatients. To do so, patients completed the PERI, developed by Dohrenwend et al. (1980). A review of the demoralization scales indicated demoralization tended to influence the course of illness and worsen the prognosis for both patient groups. Another finding suggested an elevated score on the PERI demoralization scales was related to the presence of a functional disability, poor family support, stressful life events, and the female gender.

In Clarke and Kissane‘s (2002) review of the demoralization literature, they discussed two studies that support de Figueiredo‘s distinction between demoralization and depression. The first study supported de Figueiredo‘s (1993) view that depression was seen as anhedonia and demoralization as the feelings of subjective incompetence and helplessness. In their study, distressed patients in a primary care setting preserved their hedonic capacity, but depressed patients did not. Therefore, depressed patients could not experience consummatory pleasure. In

the second study of psychiatric inpatients, the desire to die correlated more strongly with hopelessness than with depression. When hopelessness was removed statistically there was no relationship between suicidal intent and depression. However, with teens and medically ill patients both hopelessness and depression influence suicidal intent independently from psychiatric inpatients.

Empirically, as well as theoretically, it has been demonstrated that demoralization is a separate measureable clinical entity. The empirical evidence also supported de Figueiredo's and Frank's notion that demoralization is identified by the presence of subjective incompetence. However seemingly unclear the literature may have appeared, it was apparent that more investigation is needed to clarify and identify demoralization in order for mental health professionals to utilize this psychological construct in diagnosis and treatment. To begin this deeper investigation, the author must review the discovery of demoralization and its effect on the discriminative power of the MMPI-2 Clinical scales. To do so, the psychometric properties of test construction will be addressed. These properties include construct, convergent, and discriminative validities.

Construct Validity of the MMPI and MMPI-2 Clinical Scales

To understand how demoralization has affected the construct, convergent, and discriminative validities of the MMPI and MMPI-2 Clinical scales, we first must understand the structure of the original Clinical scales. As mentioned previously, empirical criterion keying was applied in the original development of the MMPI (Anastasi & Urbina, 1997; Butcher et al., 2001; Graham, 2003, 2006; Tellegen et al., 2003). The utilization of an empirical criterion keying approach involves administering the same set of items to different sample populations with the prediction that the sample populations will respond differently to the same set of items. The first

sample, known as the criterion group, is comprised of participants who *had* been diagnosed with psychological disorder(s). The other sample, labeled the control group, consists of participants from another population who *had not* been diagnosed with psychological disorder(s). The responses from both sample populations are then compared. If the comparison indicated that those with a psychological disorder endorsed an item in a particular fashion *and* that those without this specific disorder endorsed the same item in the opposite fashion, then that item was ―keyed" to suggest the presence of a disorder. For example, an item will be considered a measure of depression if the item was frequently endorsed as having been experienced by participants who have been diagnosed with depression *and* if the participants without a diagnosis of depression endorsed the same item as having not been experienced (Anastasi & Urbina, 1997; Butcher et al., 2001; Tellegen et al., 2003). The content of the question may not appear to be relevant to a particular disorder; however, the face validity of the item was inconsequential if it was endorsed differently by those who had a disorder when compared to the endorsements made by those without a disorder (Anastasi & Urbina, 1997).

This method of test construction was innovative at the time of the development of the MMPI and was the first test to be constructed in this fashion. Prior to this time, typical test construction utilized content analysis, where the scales are homogenous. The empirical criterion keying approach can result in heterogeneous scales, as no effort was put into forming them to be homogenous. However innovative the empirical criterion keying approach appeared, the construct validity of the Clinical scales of the MMPI were compromised in two ways (Anastasi & Urbina, 1997; Tellegen et al., 2003). The first, many items appeared on several scales and the second, demoralization was measured by several scales. Though the second version was introduced in 1989, the construct validity issue was not addressed. To further explain this

problem, construct validity, as well as its convergent and discriminant validity aspects will be explained.

Construct validity assesses whether the intended construct is in fact being measured (Anastasi & Urbina, 1997; Campbell, & Fiske, 1959; Cronbach & Meehl, 1955; Messick, 1980;). Before delving further into the complexities of construct validity, it is important to first articulate the concept of a construct. A construct is used to describe an abstract idea that is not easily delineated (Anastasi & Urbina, 1997). An example of such a construct is anxiety. Anxiety can be measured and delineated physiologically; however, there are components of anxiety that are not so easily measured. The emotional or cognitive responses to anxiety cannot be measured using electrodes or palmar perspiration. These types of responses can be measured by tapping into a person‘s thinking style, or affect. This may be accomplished through the use of self-report measures. In order to tap into a person‘s cognitions through the means of a test, the test must have construct validity, which indicates that the test is measuring the broad concept of a construct that it intends to measure.

In order for a test to validly assess a psychological construct, it must be demonstrated that it has convergent and discriminant validity (Anastasi & Urbina, 1997; Campbell, & Fiske, 1959; Cronbach & Meehl, 1955; Messick, 1980). Convergent validity can be demonstrated if the test itself significantly correlates with other tests that are thought to measure the same construct, or constructs. If two or more psychometric measures of the same construct, such as anxiety, correlate highly, then construct validity has been evidenced. If the test does not measure what it is intended to measure then the test will not be useful in detecting the presence of that particular construct. However, it is undesirable for a test to correlate highly with similar tests because there

is no point in developing a new test if an existing test already performs the same job well (Anastasi & Urbina, 1997; Campbell & Fiske, 1959; Cronbach & Meehl, 1955; Messick, 1980).

Additionally, to provide evidence of construct validity we must also provide evidence of discriminant validity. To understand discriminant validity, method variance must also be taken into consideration, in which variance unique to a specific measure or test can affect its discriminative validity. Discriminant validity refers to the test not having significantly high intercorrelations with scales of the same test (Cronbach & Meehl, 1955; Campbell & Fiske, 1959; Messick, 1980; Anastasi & Urbina, 1997). Items on a test should not converge if they are not meant to converge. In the case of the MMPI-2 Clinical scales, the utilization of empirical criterion keying compromised the construct validity of the instrument by attenuating its discriminant validity. Therefore, some scales unintentionally converged and lacked in discriminative validity. If, when using an empirical criterion keying approach, an item is endorsed by people with depression *and* by people with anxiety, the item is considered to be suggestive of both depression and anxiety. Because of this convergence, the discriminative power for differential diagnosis of the MMPI-2 Clinical scales was reduced (Tellegen et al., 2003 & Graham, 2003, 2006). Thus, with the construction of the Clinical scales came the inherent problem of the inability to discriminate well between disorders. To correct for this inherent problem, the development of the RC scales ensued (Graham, 2003, 2006; Tellegen et al., 2003).

MMPI-2 RCd Development

It was Tellegen et al. (2003) who set out to correct the construct validity problem within the MMPI-2 Clinical scales. When doing so, they controlled for two characteristics which affected the test‘s discriminative power. The first characteristic controlled for was the MMPI-2 ―first factor”. The second characteristic controlled for item overlap among the Clinical scales.

This latter characteristic will not be addressed in this study. For emphasis, however, it will be stated that eliminating item overlap assisted in reducing the effect of the "first factor" across all the Clinical scales.

Tellegen et al. (2003) empirically extracted the "first factor" from the "basic nine" scales and placed its characteristics on its own scale, naming it appropriately, the demoralization scale. This was accomplished through the technique of exploratory factor analysis of all the 567 items of the MMPI-2 in four large patient groups totaling several thousand subjects and a large normative sample. Tellegen et al. (2003) followed four steps in developing the Restructured Clinical scales:

Step 1: Development of the Demoralization scale (RCd)

Step 2: Identification of a distinct "core" component of each Clinical scale

Step 3: Construction of a Seed scale for each core component consisting of Clinical scale items

Step 4: Derivation of the MMPI-2 Restructured Clinical (RC) Scales composed of items from the entire MMPI-2 booklet.

Before delving into Step 1, please note only Step 1 will be addressed more thoroughly so as to not stray from the purpose of this research. Steps 2 through 4 are mentioned only to illustrate to the reader that the overall reconstruction process was systematic. With that stated, the author will further expand upon Step 1.

Step 1: Development of the Demoralization scale (RCd) consisted of "capturing demoralization" (Tellegen et al., 2003, p.12). The authors viewed the "first factor" as accounting for a portion of the variance for each of the Clinical scales; this encouraged the developers to identify demoralization within the MMPI-2 items. The RC Manual (2003) clearly stated the need

to measure demoralization only once through the creation of its own scale, as opposed to repeated measurement through several Clinical Scales. In order to illuminate the construct of demoralization, the developers turned to Tellegen and Watson‘s (1985) two-dimensional model of affect. This theoretical model of mood is to be depicted as a circumplex of two orthogonal bipolar dimensions called Positive Affect or Arousal (PA) and Negative Affect or Arousal (NA), and a third dimension midway between PA and NA called Pleasantness versus Unpleasantness (PU), refer to Figure 1 (Tellegen, Watson, & Clark, 1999a; Tellegen, Watson, & Clark, 1999b Watson & Tellegen, 1985).

The Unpleasantness end of the PU dimension rests midway between the Low Positive Affect pole, which is characterized by depressed mood, and the High Negative Affect pole, which is characterized by anxiety. Adjectives describing Unpleasant mood are blue, grouchy, lonely, sad, sorry, and unhappy. Unpleasantness is one pole of the dimension of general hedonic valence and Tellegen et al. (2003) asserted that this pole captures the essence of demoralization.

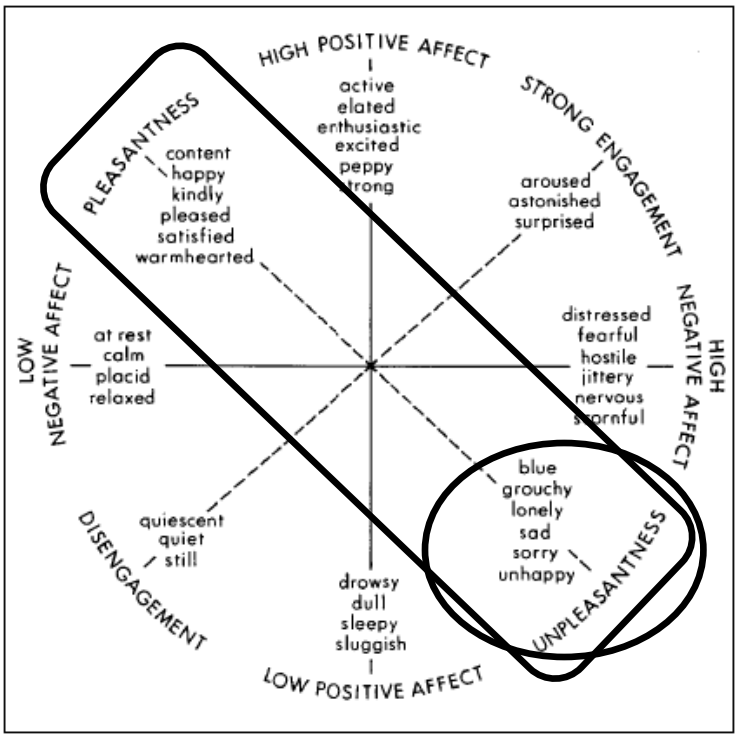

Fig. 1. Watson and Tellegen's (1985) two-dimensional structure of affect.

Tellegen et al. (2003) generalized Tellegen and Watson's hypotheses (1985) to the MMPI-2 Clinical scales when developing the RCd scale. More specifically, the developers made four generalizations. The first generalization was that the PU dimension was the distinctive core component of demoralization. The second and third generalizations were that high NA was the distinctive core component of measures of anxiety and that low PA was the distinctive core component of measures of depression. The last generalization was that high correlations between measures of anxiety and depression are attributable to shared demoralization. Along with these adopted hypotheses, Tellegen et al. (2003) had five working hypotheses:

1. The MMPI-2 Clinical scales contained a substantial number of items measuring an attribute called Demoralization.
2. Demoralization in the MMPI-2 was the equivalent of the general PU factor in self-ratings of affect.

3. Demoralization was a clinically significant variable, warranting separate measurement.
4. The First Principal Factor (PF1) of the combined items of Clinical scales 2 (depression) and 7 (psychasthenia) would be recognizable as a Demoralization factor.
5. Factor analysis of the combined items of Clinical scales 2 and 7 would yield a Positive Emotionality Factor (PEM) and a Negative Emotionality Factor (NEM); items that have substantial and opposite-signed loadings on both these factors would be recognizable as Demoralization markers.

Please note that the following description is paraphrased from the RC Manual (2003). Tellegen et al. (2003) explained that a series of factor analyses with principal component extractions and varimax rotations to simple structure were conducted to test these hypotheses. The developers tested hypotheses 1 and 2, by first examining the PF1 that comprised Clinical scales 2 and 7 and then by identifying which items have high PF1 loadings in all the patient groups. This yielded a total of 14 items loading at least 0.50 in all four patient groups. Following this analysis, the developers then identified distinctive PEM and NEM factors among all patient groups and assembled brief measures of PEM and NEM by selected items with appropriate factor loadings. Seventeen items were then identified to correlate at least $\left|0.25\right|$ with both measures, but in the opposite direction. A factor analysis of the 17 items among all four patient groups identified 12 items with PF1 loadings of at least $\left|0.50\right|$.

The developers then compared the set of 14 items and the set of 12 items and determined that several of the items overlapped resulting in 6 non-overlapped items retained in the final Demoralization scale. To identify other items that represent demoralization, the developers correlated items not in scales 2 or 7 with the PEM and NEM measures. This resulted in 18 items additionally retained in the final Demoralization scale. Table A1 lists all 24 items retained for the

final Demoralization scale (Tellegen et al., 2003). Now that the development of the MMPI-2 RCd scale has been reviewed, Theodore Millon's theory of personality and its influence in the development of the MCMI-III will now be reviewed. Please note that Millon's theory is very complex and multidimensional; thus, only a brief synopsis of his theory is provided.

Theodore Millon's Theory and the MCMI-III

The MCMI-III is based on Theodore Millon's evolutionary model of personality and psychopathology. His model is not restricted to one particular theoretical perspective, but encompasses several. Please note that only a brief description of Millon's theory will be addressed, as further discussion is beyond the scope of this research. Millon's (1994, 2006) overall theory provides specifications for personality taxonomy. Millon specifies personality prototypes that consist of subcomponents, which are the characteristics that describe the prototype. Within the MCMI-III, Millon measured both Axis I and Axis II syndromes as he postulates Axis I syndromes accentuate the basic personality type. Though the Axis I syndromes are ephemeral states, they are distinctive and affected by stressful circumstances, which can provide an abundance of information relating to a patient's functional style. Millon viewed the Axis II scales of the MCMI-III as a balance of clarity and inclusiveness and were constructed based on his development of eight domains of psychological functioning. Employing these eight domains was an attempt to be inclusive. He postulated that personality is not based solely on behavior and cognitions, but includes a variety of clinically applicable domains, including expressive acts, interpersonal conduct, cognitive style, self-image, object representations, regulatory mechanisms, morphologic organization, and mood and temperament (Millon, 2006). In fact, one way in which Millon attempted inclusivity can be seen in one of the criteria for the development of the domains, —the eight domains correspond to many of our profession's current

therapeutic modalities (e.g., self-oriented phenomenological techniques for altering dysfunctional cognitions, treatment group procedures for modifying interpersonal conduct)" (Millon, et al., 2006, p. 19).

Link Between Millon's Theoretical Model and Demoralization

In the initial section relating to sources of validity evidence, the current *Testing Standards* states, ~~"~~It is the degree to which all the accumulated evidence supports the intended interpretation of test scores for the proposed purpose." (APA, 1999, p. 11). A common method of examining the degree to which the accumulated evidence contributes to the validity of a given test is the employment of concurrent validity studies. Concurrent validity studies compare the degree to which a new measure correlates with an established test with a reasonably well established validity base. Hence, an investigation of the link between a relatively new measure of demoralization (RCd) and the dimensions of personality and psychopathology measured by a more established instrument such as the MCMI-III (Millon et al., 2006) may be justified on entirely empirical grounds.

Such a comparison is also of considerable theoretical interest. Although the various developers of the MMPI and MMPI-2 have, for decades, strongly advocated an atheoretical stance the developers (in particular Tellegen) of the demoralization construct and its MMPI-2 scale have developed a highly articulated theory of the dimensions of emotions. The coauthors of the RC scales, including RCd, nested the demoralization construct within the framework of Watson and Tellegen's (1985) model of Positive Affect (PA) and Negative Affect (NA). Their factor analytic work located a dimension of Pleasantness-Unpleasantness (PU) lying midway between PA and NA and the unpleasantness end of this dimension was interpreted as demoralization having links to both anxiety and depression.

As noted above, Millon designed his instruments to be isomorphic with his extensive theory of personality and psychopathology. Millon never used the term demoralization in the second edition of his extensive volume on personality disorders (Millon & Davis, 1996). He mentions Engel exactly once in the section on the cognitive style of persons with depressive personality. He wrote: "In what has been termed the helplessness-hopelessness' outlook, these patients assume that they are unable to help themselves and are unlikely to be helped by outside forces as well (Engel, 1968)." (Millon & Davis, 1996, p. 301). Engel's helplessness-hopelessness construct has been linked to Frank's (1974) notion of demoralization. In other works, Millon more directly links his evolutionary theory of polarities directly to the work of Tellegen and Watson. In *Toward a new personology: An evolutionary model* (1990) he cites the work of Tellegen (1985), Watson and Tellegen (1984), and Zevon and Tellegen (1982). He observed that their two-factor circumplex model of the positive and negative affect also includes a unidimension of pleasantness-unpleasantness. He wrote, "*Tellegen's systematic work corresponds again to the first two polarities of the evolutionary model*."(italics added, p. 59).

Millon returned to this subject in the *Manua*l for the Second Edition of Millon Index of Personality Styles (MIPS) (Millon, 2004). The second chapter of the Manual reviews the theoretical foundations of his theory. In this section he refers to "other parallels" that relate to his theory, "albeit indirectly and partially" (p. 12). For example, he cites Gray's (1964, 1973) three dimensional theory of emotion. He goes on to note that "A three part model of temperament matching our three-part Motivating-Styles model in most regards has been formulated by the American psychologist Arnold Buss and his associates (Buss & Plomin, 1975, 1984)" (p. 12). Finally he wrote that the polarity schema of Russell (1980) and Tellegen (1985) "align well" (p. 13) with his work.

To this date Millon has not articulated the exact degree to which the work of Tellegen and other circumplex theorists link to his own formulations. However, he is not at all ambiguous in stating that there is, indeed, a commonality among the theories, most especially those of Tellegen. Hence, an exploration of the degree of covariation between the MMPI-2 RCd scale and the scales of the MCMI-III would be of not only empirical interest as there are compelling theoretical issues to be examined as well. In view of the theoretical links articulated by Millon himself it would come as a surprise if at least some of the MCMI-III scales were not saturated with demoralization.

CHAPTER TWO

PURPOSE OF THIS STUDY

The purpose of this study was to cross-validate the MMPI-2 RCd scale and the scales of the MCMI-III, as well as to build upon the body of research on demoralization. This was achieved by exploring whether the MCMI-III scales measured demoralization. The RCd scale was developed to measure demoralization independent of the Clinical scales. Prior to the scale's development, demoralization was measured repeatedly in several of the MMPI Clinical scales decreasing their construct validity and suggesting that demoralization is experienced by many mental health consumers with varying mental health issues. As such, it was thought possible for the MCMI-III scales to also in part measure demoralization as it is a measure of personality and psychopathology. The author knew of no other study examining the direct relationship of demoralization, as measured by RCd, to that of the Millon scales. By its nature, this study was exploratory; thus, no formal hypotheses were articulated. However, based on the research on the MMPI-2 RC scales and the dynamic nature of the MCMI-III, it was anticipated that a dimension of demoralization would be identified within at least some of the MCMI-III scales. Both the MMPI-2 RC scales and the MCMI-III are widely used in both clinical and research settings, and the occurrence of demoralization is considered common, widespread, and measureable. Therefore, understanding how it permeates within the MCMI-III scales will help to further establish demoralization's incidence, measurability, and role among those who suffer with mental illness.

CHAPTER THREE

METHODOLOGY

Participants

The study sample consisted of data obtained from 440 adult psychiatric inpatients; 47.5% were male and 52.5% female. The mean age was 34 years and the mean years of education were 12.8 years. The ethnicity reported by these patients was as follows: 88.3% Caucasian, 6.1% African-American, 3% Native American, 1.6% Hispanic, .5% Asian, and .5% "other". The principal diagnoses given to this population were as follows: 60% mood disorders, 8.3% schizophrenic and other psychotic disorders, 6.8% substance abuse disorders, 4.3% anxiety disorders, and 13.8% "other". In addition to the principal diagnoses, 49% of this patient population was given a comorbid Axis II diagnosis. Approximately 5% of all patients at this setting are administered the MMPI-2 and MCMI-III as part of their admittance, as these cases tend to be very complex and puzzling (D.C. Morgan personal communication, March 3, 2010).

Setting

The subjects in this study were hospitalized in an inpatient psychiatric facility in a medium sized Midwestern city. Patients were admitted between December 1996 and May 2004. The length of stay for patients ranged from one day to 28 days, with the length of inpatient stays declining over the years in response to decreases by managed care in length of authorized stays. The average length of stay was 7 days. In the course of admission, all patients received a complete medical work-up to rule out medical pathology. Psychological testing was requested to assist with the process of diagnosing psychiatric disorders.

Measures

Minnesota Multiphasic Personality Inventory-2 (MMPI-2). The MMPI-2 (Butcher, Dahlstrom, Graham, Tellegen, & Kaemmer, 2001) is a 567-item self-report inventory designed to assess patterns of personality and psychopathology in adults. Respondents to the MMPI-2 are asked to make true/false decisions as to whether each item applies to them. The MMPI-2 was scored using NCS and Pearson Assessment's computerized scoring program Microtest-Q, which calculates the following scales used in this study: seven Validity scales (used for exclusion criteria), nine Clinical scales, and the RC Demoralization scale. Scale scores are reported as T-scores.

Clinical Scales. These scales measure personality and current emotional status.

RCd (Demoralization). This scale consists of 24 items derived from the RC Scale development project (see Table A1 for items).

Millon Clinical Multiaxial Inventory-Third Edition (MCMI-III). The MCMI-III (Millon, Millon, Davis, & Grossman, 2006) is a 175-item self-report inventory also designed to assess patterns of personality and psychopathology in adults. Respondents are asked to make true/false decisions as to whether each item applies to them. Scale scores are reported as Base Rate (BR) scores, where BR scores take into consideration the base rate of the disorder being measured. While contributing to the development of the DSM-III, Millon witnessed the distribution of disorders across populations. This experience taught him that psychopathology is not normally distributed; thus, he utilized base rates as a means of obtaining the most sensitivity and specificity. The MCMI-III was scored using NCS and Pearson Assessment's computerized scoring program Microtest-Q, which calculates the following scales used in this study: 4 Modifying Indices (used for exclusion criteria), 11 Clinical Personality Patterns scales, 3 Severe

Personality Pathology scales, 7 Clinical Syndromes scales, and 3 Severe Clinical Syndromes scales. For a description of each of the MCMI-III scales, refer to Table B1.

Clinical Personality Patterns Scales. These scales measure Axis II pathological personality characteristics.

Severe Personality Pathology Scales. These scales measure more psychological manifestations of personality pathology.

Clinical Syndromes Scales. These scales measure common Axis I clinical syndromes which are viewed as embedded within the context of a client's basic personality pattern.

Severe Clinical Syndromes Scales. These scales, similar to the Clinical Syndromes Scales, measure markedly severe Axis I clinical syndromes.

Refer to Figures E1, E2, and E3 for de-identified sample profiles of the MMPI-2 Clinical scales, MMPI-2-RC scales, and the MCMI-III scales.

Procedure

All subjects completed the MMPI-2 and the MCMI-III during their inpatient hospital stay as part of a psychological assessment. A Licensed Psychologist or a Psychology Intern provided each patient with written and verbal instructions prior to testing and each test was scored using Microtest-Q. In the analysis, only valid test results were included. Any tests that were shown to be invalid due to inconsistent item endorsement, under-reporting, or over-reporting of psychopathology by a patient were excluded from this study (Arbisi & Ben-Porath, 1998; Ladd, 1998). Though the F scale was often used to establish invalidity due to patient exaggeration of symptoms, inpatients with serious psychopathology often earn high scores (Graham, 2003, 2006); therefore, no F cutoff was set. Additionally, the L scale was designed to detect attempts by patients to under report symptoms (Greene, 1991). In the current sample high L scale scores

were rare (15 cases with L T scores >75), therefore no cutoff was set. MMPI-2 profiles with VRIN raw scores ≥13, TRIN raw scores ≤5 or ≥13, Fp T scores >100, and Cannot Say raw scores ≥32, as well as MCMI-III profiles with 2 or more items endorsed on the scale V were excluded from analysis (Graham, 2003 & 2006; Morgan, Schoenberg, Dorr, & Burke, 2002).

Analysis

These analyses were conducted in two steps, each involving a separate steps of analysis. The first step began with the evaluation of the Pearson correlations between RCd and the MCMI-III Personality and Clinical scales. In the second unit of analysis the RCd scale of the MMPI-2 and 24 personality and clinical scales of the MCMI-III were factor analyzed to explore the extent to which demoralization may or may not have existed within each of the MCMI-III scales. Factors were extracted using principal axis in order to seek the least number of factors which account for the most common variance (Gorsuch, 1983; Tabachnick & Fidell, 2001). Because the scales themselves were correlated by design to some degree, oblique (promax) rotation was performed to find the most parsimonious solution. Simple structure and psychological meaningfulness was sought using Kaiser-Guttmann and Cattell's Scree Test (Cattell, 1966) to determine the number of factors to rotate. To specify a statistically significant weight, a "cut-off" of 0.40 was set.

CHAPTER FOUR

RESULTS

Generally speaking, the results of the two units of analyses indicated the presence of a relationship between the demoralization scale of the MMPI-2 (RCd) and several scales of the MCMI-III.

Correlational Analysis. Correlation coefficients were calculated using Pearson‘s Product Correlation. The magnitude of the RCd correlations with most MCMI-III scales was in the ―large" range as denoted by Cohen and Hemphill (>.50) (Cohen, 1988; Hemphill, 2003). Of the 24 MMPI-2 RCd-MCMI-III scales‘ correlations, the following 17 scales met this criterion: Scale 1(Schizoid) 0.57, Scale 2A (Avoidant) 0.67, Scale 2B (Depressive) 0.71, Scale 3 (Dependent) 0.63, Scale 4 (Histrionic) -0.68, Scale 5 (Narcissistic) -0.64, Scale 7 (Compulsive) -0.55, Scale 8A (Negativistic) 0.60, Scale 8B (Masochistic) 0.66, Scale S (Schizotypal) 0.62, Scale C (Borderline) 0.64, Scale A (Anxiety) 0.64, Scale H (Somatoform) 0.62, Scale D (Dysthymic Disorder) 0.75, Scale R (Posttraumatic Stress) 0.68, Scale SS (Thought Disorder) 0.70, and Scale CC (Major Depression) 0.70. See Table C1 for all MMPI-2 RCd-MCMI-III scales‘ correlations. Interestingly, all of these scales loaded meaningfully within the selected factor solution.

Factor Analyses. A principal axis factor analysis was calculated resulting in the rotation of three, four, five, and six factors with an oblique promax procedure. After careful examination and the use of the Kaiser-Guttman criterion and Cattell‘s Scree test (Cattell, 1966), it was decided that the four factor solution provided the clearest solution in terms of simple structure and psychological meaningfulness. Refer to Figure F1 to view the scree plot. Rotation of three factors obscured meaningful findings and the rotation of six factors led to a trivial solution with the sixth factor having no significant loading. The five factor rotation had some merit, but this

author found the four factor rotation was the most satisfactory. In this solution, the dimension of demoralization, as measured by RCd, was present within two of the four factors. To illuminate the distinct nature of the four factor solution in comparison to the three, five and six factor solutions, refer to Table D1 for a comparison of the three, five, and six factor solutions‘ beta weights and Table D2 for the four factor solution beta weights.

Within the four factor solution the first two factors were the most relevant to this dissertation. I will first offer a brief description of the third and fourth factors (refer to Table D2 for beta weights) followed by a detailed description of Factor I and Factor II. Factor IV was defined by the following three MCMI-III scales by the order in which they are listed in the Tables D1 and D2: MCMI-III scales Schizotypal (Scale S) 0.43, Paranoid (Scale P) 0.86, and Delusional Disorder (Scale PP) 0.84. This factor, with its high positive loadings by the Paranoid and Delusional Disorder scales and a strong positive loading on the Schizotypal scale, seemed to be described by scales measuring a **psychotic-like pathological style** characterized by projection and externalization. Factor III was defined by the eight following scales and presented by order in which they are listed in the Tables D1 and D2: MCMI-III scales Antisocial (Scale 6A) 1.11, Sadistic (Scale 6B) 0.77, Borderline (Scale C) 0.51, Bipolar-Manic (Scale N) 0.47, Alcohol Dependence (Scale B) 0.83, Drug Dependence (Scale T) 0.96, and by a negative loading by the Compulsive (Scale 7) -0.54. This factor appeared to be representative of scales measuring **acting out behavior**.

Factor I was defined by the following 9 scales with beta weights ≥0.40 and are presented by the order in which they are listed in the Tables D1 and D2: MMPI-2 Demoralization scale (RCd) 0.48, and MCMI-III scales Depressive (Scale 2B) 0.51, Borderline (Scale C) 0.45, Anxiety (Scale A) 0.76, Somatoform (Scale H) 0.96, Dysthymic (Scale D) 0.83, Post-traumatic

Stress (Scale R) 0.81, Thought Disorder (Scale SS) 0.81, and Major Depression (Scale CC) 1.03. Scales descriptive of affective states associated with low mood, anxiety, and tension accounted for the most amount of variance within this first factor. As such, this factor was named **demoralized affect**.

Major markers of Factor I consisted of a cluster of depressive scales (Depressive, Dysthymic Disorder and Major Depression) and a cluster of scales linked to anxiety (Anxiety and Posttraumatic Stress). Tellegen, et al. (2003) hypothesized that the PU dimension (demoralization equivalent) of Tellegen and Watson's model (1985) is related to PA (Positive Affect) and NA (Negative Affect) dimensions, with low PA being the core component of depression and high NA being the core component of anxiety. As such, they further hypothesized that the MMPI-2 Scale 2 (Depression) was a measure of low PA, while Scale 7 (Psychasthenia) was a measure of high NA, and that low PA and high NA were attributable to the high intercorrelations between Scale 2 and Scale 7. Additionally, they also hypothesized that their PF1 (first Principal Factor) of the Scale 2 and 7 would be representative of demoralization. The analysis resulted in PF1 containing 14 items from Scales 2 and 7 (Tellegen, et al., 2003). Taking this into consideration, Factor I defined by depressive and anxiety scales should come as no surprise as the development of RCd stemmed from Scale 2 and Scale 7 and six of these items comprise the RCd scale.

It is a bit more difficult to explain why the Somatoform scale loaded on Factor I. However, an admittedly speculative interpretation may be supported by a reading of the Prototypal items on this scale, which might be called "somatic demoralization" (recall de Figueiredo's subjective incompetence). For example, "I feel weak and tired much of the time," "I have a hard time keeping my balance when walking," "I very often lose my ability to feel any

sensations in parts of my body," ~~I~~n recent weeks I feel worn out for no special reason," and ~~I~~ can't seem to sleep, and wake up just as tired as when I went to bed" (Millon et al., 2006).

Another MCMI-III scale that defined Factor I was Thought Disorder. Millon (2006) wrote that, ~~t~~he Thought Disorder scale is usually elevated in persons with schizophrenia, schizophreniform disorder, or brief psychotic reactions" (p. 24). If this is the case the Thought Disorder scale should theoretically load on a psychotic like factor; for example, this study's Factor IV of the four factor solution. However, repeated factor analytic solutions of the MCMI-III scales by the KU-WSU Research Collaborative consistently have found that it loads on a factor defined by depression and anxiety, rather than a factor defined by psychotic-like scales (Partridge, Dorr, Webster, & Morgan, 2010; and Webster, Partridge, Dorr, & Morgan, 2010). A reading of the Prototypal items on the Thought Disorder scale suggested that they may be measuring demoralization rather than thought disorder in most cases. For example, ~~L~~ately, I have gone all to pieces," "Ideas keep turning over and over in my mind and they won't go away," ~~L~~ately, I have to think things over and over again for no good reason," ~~E~~ven when I'm awake, I don't seem to notice people who are near me," ~~E~~ver since I was a child, I have been losing touch with the real world," "I very often hear things so well that it bothers me" (Millon, et al., 2006, The last three items might be more closely related to the psychotic realm.)

A final scale that defined Factor I was the Borderline scale. This scale also loaded on Factor III, which was named acting out behavior. According to the MCMI-III Manual (Millon, et al., 2006), the mood of the borderline prototype is labile. In the realm of mood the Manual (2006) states, ~~h~~as marked shifts from normality to depression to excitement or has periods of dejection and apathy, interspersed with episodes of inappropriate and intense anger and brief spells of anxiety or euphoria" (p.45). The finding that the Borderline scale loaded on Factor I and

III in this study was not at all surprising. In fact, this split occurred among all four factor solutions, suggesting a stable account for the amount of variance within the Borderline scale. This was not a ―muddy solution." Indeed, this is exactly how clients with borderline structure present, depressed, anxious and they deal with their abandonment depression by acting out. Furthermore, virtually every factor analysis of the MCMI-III by the KU-WSU Research Collaborative has found exactly the same thing, the MCMI-III Borderline scale consistently loads on a depressive factor and an acting-out factor.

Factor II was defined by the following nine scales with beta weights ≥ 0.40 and are presented by the order in which they are listed in the Tables D1 and D2: MMPI-2 Demoralization scale (RCd) 0.43, and MCMI-III scales Schizoid (Scale 1) 0.55, Avoidant (Scale 2A) 0.90, Dependent (Scale 3) 0.52, Masochistic (Scale 8B) 0.51, and negatively with Narcissistic (Scale 5) -0.95, Histrionic (Scale 4) -0.95. Clinically speaking, it appeared reasonable to expect the Narcissistic and Histrionic scales to load in the opposite direction as these patients are less likely to experience demoralization and low moods, whereas those who obtain elevated scores on the Schizoid, Dependent, and Masochistic scales are more likely to be demoralized and experience low moods.

Also, it is highly relevant that all of the MCMI-III scales defining Factor II are measures of Axis II disorders. Indeed, the MCMI-III was intended primarily to gauge Axis II pathology (Millon, et al., 2006). Accordingly, the MCMI-III Manual (2006) provides descriptors of each personality disorder within eight domains of psychological functioning. Two of these domains, Self Image and Interpersonal Conduct are quintessential elements of personality disorders; that is, distorted self concept and extreme difficulties in interpersonal relationships. The primary

adjectives Millon (2006) ascribed to these two domains for the MCMI-III scales that defined Factor II are as follows:

Scale	Self Image Domain	Interpersonal Conduct Domain
Schizoid	Complacent	Unengaged
Avoidant	Alienated	Aversive
Dependent	Inept	Submissive
Masochistic	Undeserving	Deferential
Histrionic	Gregarious (not)	Attention seeking (not)
Narcissistic	Admirable (not)	Exploitive (not)

In Millon‘s theoretical system, Self Image is at the phenomenological realm (the inner world of symbols) and the Interpersonal Conduct is at the behavioral level (external style of relating) (Millon, et al., 2006). Since self image and interpersonal relations are both central elements in social functioning, Factor II was tentatively labeled **demoralized social functioning.**

CHAPTER FIVE

DISCUSSION

We now return to the theories and empirical research to help conceptualize the factor solution. J.S. Ben-Porath (personal communication, April 25, 2008) has said that demoralization is not depression, but is highly related to depression. Additionally, recall that Millon (1990) notes the commonality between his pleasure enhancing-pain avoiding polarity and Tellegen's theories of positive and negative emotionality. In Watson and Tellegen's two-dimension structure of affect (Fig. 1) demoralization occupies the realm in the area of the unpleasant end of the pleasantness-unpleasantness dimension. This region rests midway between High Negative Affect (anxiety) and Low Positive Affect (depression). It is not surprising that one of our two demoralization factors links scales measuring demoralization, depression, and anxiety. That is, demoralization is not depression, but it is highly related to depression as Ben-Porath asserted.

Another set of findings that may help us understand the results of the present study may be found in Heinrichs' (2007) factor analysis of the items of the RCd scale. She identified three factors, Negative Self Perception, Indecision and Helplessness, and Sadness. Listed below are each factor and the RCd items that loaded on that factor.

Negative Self Perception (Factor I)

I have sometimes felt that difficulties were piling up so high that I could not overcome them. (T)

I certainly feel useless at times. (T)

I wish I could be as happy as others seem to be. (T)

I sometimes feel that I am about to go to pieces. (T)

At times I think I am no good at all. (T)

I am certainly lacking in self-confidence. (T)

I do many things which I regret afterwards (I regret things more than others seems to). (T)

Sadness (Factor II)

I am happy most of the time. (F)

Most of the time I feel blue. (T)

There is something wrong with my mind. (T)

Even when I am with people I feel lonely much of the time. (T)

Life is a strain for me much of the time. (T)

I very seldom have spells of the blues. (F)

I feel tired a good deal of the time. (T)

Often, even though everything is going fine for me, I feel that I don‘t care about anything. (T)

Indecision and Helplessness (Factor III)

I feel helpless when I have to make some important decisions. (T)

I usually have a hard time deciding what to do. (T)

When my life gets difficult, it makes me want to just give up. (T)

I have difficulty in starting to do things. (T)

I find to keep my mind on a task or job. (T)

I often feel that I‘m not as good as other people. (T)

I am so sick of what I have to do every day that I just want to get out of it all. (T)

Heinrichs‘ first and third factors, Negative Self Perception and Indecision and Helplessness, appear to be closer to the low personal and interpersonal social self efficacy aspect of

demoralization (Factor II, demoralized social functioning, in this study). This finding is supported by the arguments made by de Figueiredo (1982), Bandura (1997), and Cassel (1982). de Figueiredo (1982) considered inadequate social bonds as an influence on one's self-esteem. Bandura (1997) postulated that self-efficacy is related to feelings of "inadequacy, efficiency, and competence," while Cassel (1982) links self-efficacy to perceived loss of control over one's circumstance. Her second factor, Sadness, appeared to be closer to the depressive aspect of demoralization (Factor I, demoralized affect, in this study). Support for Heinrichs' and the present study's findings are found within the works of de Figueiredo and Frank's (1982) and de Figueiredo's (2007), which asserted that distress is one component of demoralization. Likewise, Marchesi and Maggini (2007), Rafeanelli (2005), Tellegan et al. (2003), Clarke and Kissane (2002), Watson and Tellegen (1985), and Dohrenwend et al. (1980) linked depression and demoralization. It is possible that items on Heinrich's second factor resulted in the loading of RCd on our Demoralized Affect factor and the items on her first and third factors resulted in the RCd loading on our Demoralized Social Functioning factor.

It could be argued that the fact that RCd loaded on two factors in this study instead of one suggested that the scale is "muddy," has low internal consistency, or is multidimensional. This conclusion can be challenged on empirical grounds. In the RC Manual (Tellegen et al., 2003) internal consistency coefficients for RCd ranged from 0.87 to 0.95 for the various samples studied. Secondly J.S. Ben-Porath (personal communication, April 25, 2008) has made it clear that the developers of the RC Scales did not intend for them to be unidimensional. They were merely trying to rid them of as much demoralization as possible. Thirdly, Heinrichs' (2007) factor analysis of the RC scales showed that all scales were multidimensional.

Scale unidimensionality is not a goal if the construct being measured is multidimensional. The "muddy" speculation can also be challenged on theoretical grounds. Recall that Frank and de Figuiedro (1982) argued that in order for demoralization to occur, both the presence of distress and subjective incompetence are necessary. The fact that this study found that the RCd scale loaded on two dimensions, one related to distress and the other one describing social incompetence is consistent with their theorizing.

In its most fundamental form this project was a concurrent validity study of the MMPI-2 RCd scale using the more established MCMI-III scales as the criterion variable. However, in the introduction to the dissertation, under the heading explaining the link between Millon's theoretical model and demoralization, the point was made that Millon himself articulates several parallels between his work and that of Tellegen and his colleagues. Recall the quote: "*Tellegen's systematic work corresponds again to the first two polarities of the evolutional model.*" (italics added, p. 59) Since the MCMI-III is based on Millon's model of polarities it would be very surprising if RCd, which is firmly embedded in Tellegen's model, would not have a strong relationship to many of the scales of the instrument. Indeed in the correlational model, 17 of the 24 correlations were in the "high" range as per the criteria advanced by Cohen (1988) and Hemphill (2003). Although no formal hypotheses were advanced in view of the exploratory nature of the study, the strong link between RCd and several of the MCMI-III scales was expected The discovery that RCd loaded on two factors, one seemingly describing demoralized affect and the other describing demoralized social incompetence, was somewhat surprising, but not wholly unanticipated in view of the theorizing by de Figuierdo and Frank (1982) that demoralization is characterized by both distress and subjective incompetence.

Limitations and Future Research

There are several limitations of the present study. First, because the MMPI-2 RCd scale was introduced only seven years ago, there was still relatively little empirical research that directly focused on its many possible covariates. There was no well developed body of psychometric research on the RCd scale upon which to base generalizations from this study. Thus, no ample amount of research existed for meta-analytic comparison; thereby, leaving no reference point by which to gauge these results. Second, this is the first study of the relationship of the MMPI-2 RCd scale to the MCMI-III scales to the author‘s knowledge. Therefore, the findings of this research must be cross validated in future research. Third, the sample consisted of very complex and disturbed inpatients, which made it difficult to extrapolate to all populations, even inpatient samples as this study‘s sample population represents only 5% of those admitted to inpatient treatment. However, an advantage to the utilization of this setting and population was the very fact that these patients experienced severe psychopathology and were, therefore, more likely to experience demoralization. This allowed demoralization to be more easily examined for research purposes. Lastly, we will review several disadvantages to the use of factor analytic methods.

Though factor analytic methods contribute to the explanation of psychological constructs, Tabachnick and Fidell (2001) provided several limitations of the use of such statistical methods. Accordingly, variables are presumed to be correlated, which results in difficulty defining factors when variables correlate with several factors. Also, because there are no set standard objective criteria by which to select factor solutions, the interpretability and value of the factor solution is dependent on the researcher‘s assessment, which can vary from researcher to researcher. Because factor analytic methods attempt to assist in explaining abstract and typically complex constructs

that are difficult to define, this type of analysis is considered less preferable to some researchers (Tabachnick & Fidell, 2001). To assist in correcting for these effects, we utilized the widely used Kaiser-Gutman criteria and Cattell's (1966) scree plot.

When approaching the present study, it appeared clear that demoralization was complex and would likely correlate with multiple symptoms of psychopathology. With this premise in mind, promax rotation was utilized as it assumes the constructs are correlated. The solution initially did appear "muddy" because RCd loaded on two factors and because some scales' loadings initially appeared puzzling. However, the MMPI-2 RCd scale has psychometrically sound properties (Tellegen et al., 2003), allowing it to be used as type of predictor variable for which to conduct concurrent validity studies. Finally, when considering what the literature suggested regarding the dimensionality of demoralization, the intention of Millon's evolutionary model of personality and psychopathology, and the fact that many scales loaded heavily on one factor, the overall solution appeared more straight forward than originally considered; thereby, making interpretation less thorny. The limitations within the present study may be addressed with future research.

Future research will now be discussed that may correct this study's limitations, as well as other research ideas to build upon the body of demoralization literature. Simply continuing to research demoralization will develop a literature basis, thereby eventually making future meta-analytic work possible. Also, utilizing various types of sample populations and settings would assist in making this study and future studies more applicable to clinical populations. Other future research to assist in broadening our clinical understanding and prevalence of demoralization, as well as its measurement, would include conducting an item analysis of the RCd items and the items within the MCMI-III scales that loaded on Factors I and II of this study.

Also, examining the factor loadings of RCd items in Heinrichs‘ (2007) study will further assist in empirically beginning to establish the dimensionality of demoralization. Additionally, examining the existence of demoralization within other commonly used psychometrically sound measures of depression and anxiety, such as the Beck Depression Inventory and Beck Anxiety Inventory, could also assist in our clinical understanding and treatment of demoralization. The aforementioned research ideas could also lead to establishing the extent to which demoralization influences diagnostic criteria among various diagnoses within the DSM-IV-TR. As demoralization seems to be a clinically proforelevant und entity, this would assist in perhaps how best to detect and treat those who are demoralized. Because demoralization appears as though it could potentially have widespread implications on the course and prognosis of various mental illnesses, numerous other research studies could be conducted.

Summary

The purpose of this research was to examine the likelihood that demoralization permeated any of the scales of the MCMI-III scales using the MMPI-2RCd (demoralization) scale as a criterion variable. The literature suggested that demoralization is a separate, measurable, clinical entity that is comprised of both an affective state and an internalized representation of the self in relation to social functioning. The results of this study indicated that demoralization was clearly present in specific scales of the MCMI-III and that one cluster of scales seemed to define demoralized affect and another cluster defined demoralized social functioning. Though the finding of demoralization within certain MCMI-III scales was not unexpected, the discovery of two seemingly unique manifestations of demoralization (affective and social) was somewhat of a surprise which begs further investigation.

With that said the author wished to make explicit that this research was entirely exploratory and that no implications were being made regarding the integrity or clinical use of the MCMI-III. Additionally, nor was the author suggesting that the MCMI-III be ―restructured" in a similar manner as the MMPI-2 was restructured. In fact, when considering the nature of demoralization and the purpose of the MCMI-III, it was expected that demoralization would be present in certain scales of the MCMI-III. It was Millon's intention to develop an instrument based on his integrated and expansive theory of personality and psychopathology (Millon et al., 2006). Therefore, these scales not only measure demoralization, but also other forms of psychological constructs. Lastly, it was not the assumption of the author that those MCMI-III scales saturated with demoralization can not or should not be used for differential diagnosis.

It appears unambiguous that demoralization is both an affective and a social/cognitive experience. As such, both clinical and community implications can be deduced. Recall that Frank (1974) viewed demoralization as the common ―observable clinical entity" which all psychotherapists attempt to and do treat. It could be argued that Frank's concept of demoralization is perhaps related to the common factors of psychotherapy, tapping into the client's sense of hope. As Clarke and Kissane (2002) articulated hope is the opposite of demoralization, is future oriented and includes cognitive and affective longing for and believing in that something this possible. Similarly, the concepts of demoralization and hope could be related to the concept of empowerment, a concept commonly emphasized in community psychology. Link and Dohrenwend (1980) found that 25% of medically ill patients experienced demoralization and approximately half of those were considered clinically impaired. Magnelli et al's. (2005) research indicated similar findings in that patients who experience major depressive disorder and demoralization have worse prognoses. Further research is needed to clarify the

construct of demoralization in order to explore the clinical and community implications, as well as its measurement. To begin doing so, the author intends to further examine the extent of the relationship between demoralization and specific scales of the MCMI-III through item analysis.

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APPENDICES

Appendix A: MMPI-2 Restructured Clinical Scale Demoralization Items Description

Table A1:*RC Demoralization Items with Direction of Keying.*

Item Number	Keying	Item
31	True	I find it hard to keep my mind on a task or job.
56	True	I wish I could be as happy as others seem to be.
65	True	Most of the time I feel blue.
73	True	I am certainly lacking in self-confidence.
82	True	I do many things which I regret afterwards (I regret things more than others seem to).
94	True	Much of the time I feel as if I have done something wrong or evil.
130	True	I certainly feel useless at times.
180	True	There is something wrong with my mind.
215	True	I brood a great deal.
233	True	I have difficulty in starting to do things.
273	True	Life is a strain for me much of the time.
277	True	Even when I am with people I feel lonely much of the time.
339	True	I have sometimes felt that difficulties were piling up so high that could not overcome them.
400	True	Often, even though everything is going fine for me, I feel that I don‘t care about anything.
411	True	At times I think I am no good at all.
464	True	I feel tired a good deal of the time.
469	True	I sometimes feel that I am about to go to pieces.
482	True	I usually have a hard time deciding what to do.
485	True	I often feel that I‘m not as good as other people.
491	True	I feel helpless when I have to make some important decisions.
505	True	I am so sick of what I have to do every day that I just want to get out of it all.
554	True	When my life gets difficult, it makes me want to just give up.
95	False	I am happy most of the time.
388	False	I very seldom have spells of the blues.

Appendix B: MCMI-III Scales Descriptions

Table B1: *MCMI-III Scales Descriptions.*

Diagnostic Scales	Description
	Clinical Personality Patterns
Schizoid (Scale 1)	Elevated scores indicate the lack of desire and incapacity to experience deep pleasure or pain; being apathetic, listless, distant, and asocial. They are passive observers detached from the rewards, affection, and demands of human relationship.
Avoidant (Scale 2A)	Elevated scores indicate a vigilance and being always on guard and ready to distance themselves from anxious anticipation of life‘s painful or negatively reinforcing experiences. Though they desire relationships, they deny these feelings and feel the safest when interpersonally distant.
Depressive (Scale 2B)	Elevated scores indicate a sense of giving up and the loss of hope that joy can be retrieved. Pain is a permanent experience and pleasure is no longer considered possible.
Dependent (Scale 3)	Elevated scores indicate a tendency to turn to others for support and nurturance, they wait passively for their leadership of other and lack initiation and autonomy as consequence of parental overprotection
Histrionic (Scale 4)	Elevated scores indicate maximizing the attention and favors they receive, while avoiding the indifference and disapproval of others. They exhibit an insatiable search for stimulation and affection, but while appearing confident they instead fear autonomy and continually need reassurance through all relationships they engage in.
Narcissistic (Scale 5)	Elevated scores indicate the experience of primary pleasure by passively being or focusing on themselves. They are identified by their egotistic self-involvement as they have been taught to overvalue their self-worth and expect others to recognize their specialness. Praise from others is desired and encouraged, and little confirmation regarding genuine accomplishments is needed to maintain their superiority.

Table B1 (Cont.): *MCMI-III Scales Descriptions.*

Diagnostic Scales	Description
	Clinical Personality Patterns
Antisocial (Scale 6A)	Elevated scores indicate acting to counter the expectation of pain and depredation at the hands of others by engaging in dishonest or illegal behaviors designed to exploit the environment for self-gain. They are skeptical by others‘ motives, they desire autonomy, and wish revenge for what they consider past injustices. They are irresponsible and impulsive and feel these behaviors are justified as others are seen as unreliable and disloyal. Insensitivity and ruthlessness are their only means of avoiding abuse and victimization.
Sadistic (Aggressive) (Scale 6B)	Elevated scores indicate obtaining personal pleasure and satisfaction on ways that humiliate others and violate their rights and feelings. Depending on social class and other factors, they may be akin to the Type A personality or aggressive personality, they are hostile, passively combative, and appear to be unaffected by destructive consequences of their abusive and brutal behavior.
Compulsive (Scale 7)	Elevated scores indicate an ambivalent orientation that coincides with the DSM-IV obsessive compulsive personality disorder. Their prudent, controlled and perfectionistic ways derive from a conflict between hostility towards others and fear of social disapproval. They resolve this ambivalence by suppressing their resentment and by overconforming and placing high demands on themselves and others.
Negativistic (Passive-Aggressive) (Scale 8A)	Elevated scores indicate a conflict between following the rewards that are offered by others and those they desire themselves. This represents an inability to resolve conflicts similar to those of the obsessive-compulsive; however, the conflicts remain close to consciousness and intrude into everyday life. They tend to have an erratic pattern of explosive anger or stubbornness intermingled with periods of guilt and shame.
Masochistic (Self-Defeating) (Scale 8B)	Elevated scores indicate that they allow and encourage others to exploit or take advantage of them; they focus on their very worst features and assert they deserve to be shamed and humbled. They actively and repetitively recall their past misfortunes and expect problematic outcomes from otherwise fortunate circumstances.

Table B1 (Cont.): *MCMI-III Scales Descriptions.*

Diagnostic Scales	Description
	Severe Personality Pathology
Schizotypal (Scale S)	Elevated scores indicate a cognitively dysfunctional and interpersonally detached orientation. They prefer social isolation with minimal personal attachments and obligations. They think tangentially and appear self-absorbed and ruminative. They typically display anxiousness and hypersensitivity or an emotional flatness and deficiency of affect. Others perceive them as strange or different.
Borderline (Scale C)	Elevated scores indicate experiencing of intense endogenous moods with recurring periods of dejection and apathy often interspersed with spells of anger, anxiety, or euphoria. Exhibit instable and labile mood; recurring thoughts of self-mutilation and suicide; difficulty maintaining a sense of identity; are preoccupied with securing affection; and a cognitive-affective ambivalence as seen in the conflicting feelings of rage, love and guilt toward others.
Paranoid (Scale P)	Elevated scores indicate a display of vigilant mistrust of others and an edgy defensiveness against anticipated criticism and deception. There is an abrasive irritability and a tendency to precipitate exasperation and anger in others. They fear losing independence and fight vigorously against external influence. They are inflexible in their thoughts and feelings.
	Clinical Syndromes
Anxiety (Scale A)	Elevated scores indicate experiencing feelings of vague apprehension or specific phobia. They typically feel tense, experience indecisiveness and restlessness, and tend to complain of various types of physical discomfort, such as tightness, excessive perspiration, muscular aches, and nausea. They report the inability to relax, are fidgety, and easily startled.
Somatoform (Scale H)	Elevated scores indicate the expression of psychological difficulties through somatic channels with persistent periods of fatigue and weakness, and a preoccupation with ill health and with a variety of dramatic, but largely nonspecific pains in different and unrelated regions of the body.
Bipolar: Manic (Scale N)	Elevated scores indicate experiencing periods of superficial elation, inflated self-esteem, restless overactivity and distractibility, pressured speech, impulsiveness, irritability. They tend to have unselective enthusiasm, excessive planning for unrealistic goals, an intrusive and demanding quality of interpersonal relations, decreased need for sleep, flights of ideas, and rapid and labile shifts of mood.

Table B1 (Cont.): *MCMI-III Scales Descriptions.*

Diagnostic Scales	Description
	Clinical Syndromes
Dysthymia (Scale D)	Elevated scores indicate experiencing periods of years with feelings of discouragement or guilt, lack of initiative, behavioral apathy, low self-esteem, and frequently expressed futility and self-deprecatory comments. They do maintain the ability to remain involved in everyday life, though during periods of dejection, they may be tearful, have suicidal ideation, a pessimistic outlook, be socially withdrawn, have poor appetite or overeating, chronic fatigue, poor concentration, and a marked loss of interest in pleasurable activities.
Alcohol Dependence (Scale B)	Elevated scores indicate a history of alcoholism and attempts to overcome the problem with minimal success. As a result they experience considerable discomfort in family and work settings. This scale allows for the problem to be considered in the context of the person‘s personality functioning and coping style.
Drug Dependence (Scale T)	Elevated scores indicate a recurrent history of drug abuse. They tend to find it difficult to restrain impulses or keep them within conventional social limits, and are unable to manage the personal consequences of this behavior. This scale also allows for the problem to be considered in the context of the person‘s personality functioning and coping style.
Post-Traumatic Stress Disorder (Scale R)	Elevated scores indicate experiencing an event that involved a threat to their life in which they reacted to the event with intense fear or feelings of helplessness. Images associated with the event elicit recollections and nightmares which are distressing and will reactivate the feelings generated by the original event. Symptoms include anxious arousal and efforts are made to avoid circumstances associated with the trauma.
	Severe Clinical Syndromes
Thought Disorder (Scale SS)	Elevated scores indicate schizophrenia or schizophreniform, or having brief reactive psychosis. They may exhibit incongruence, disorganized, or regressive behavior, appearing confused or disoriented, and perhaps displaying inappropriate affect, hallucinations, and delusions. Their thinking may be fragmented or bizarre; their feelings blunted, and may experience a pervasive sense of isolation or of being misunderstood by others. They are typically withdrawn and secluded.

Table B1 (Cont.): *MCMI-III Scales Descriptions.*

Diagnostic Scales	Description
	Severe Clinical Syndromes
Major Depression (Scale CC)	Elevated scores indicate being unusually incapable of functioning in a normal environment, are severely depressed, and express a dread of the future, suicidal ideation, and a sense of hopelessness. Some may exhibit motor retardation, or motor agitation. Decreased appetite, fatigue, weight loss or gain, insomnia, and early rising are common. They have difficulty concentrating and will brood, as well have feelings of worthlessness or guilt.
Delusional Disorder (Scale PP)	Elevated scores indicate an acute paranoid state. They may become belligerent, voicing irrational, but interconnected delusions of a jealous, persecutory, or grandiose nature. Their mood is usually hostile, and they feel mistreated, are suspicious, vigilant, and alert to possible betrayal.

Appendix C: Correlational Analysis

Table C1: *Correlations Between MCMI-III Scales and MMPI-2 RCd Scale.*

MCMI-III Scales	MMPI-2 RCd
MMPI-2 RCd (Demoralization)	—
MCMI-III Scale 1 (Schizoid)	.57
MCMI-III Scale 2A (Avoidant)	.67
MCMI-III Scale 2B (Depressive)	.71
MCMI-III Scale 3 (Dependent)	.63
MCMI-III Scale 4 (Histrionic)	-.68
MCMI-III Scale 5 (Narcissistic)	-.64
MCMI-III Scale 6A (Antisocial)	.31
MCMI-III Scale 6B (Sadistic)	.33
MCMI-III Scale 7 (Compulsive)	-.55
MCMI-III Scale 8A (Negativistic)	.60
MCMI-III Scale 8B (Masochistic)	.66
MCMI-III Scale S (Schizotypal)	.62
MCMI-III Scale C (Borderline)	.64
MCMI-III Scale P (Paranoid)	.42
MCMI-III Scale A (Anxiety)	.64
MCMI-III Scale H (Somatoform)	.62
MCMI-III Scale N (Bipolar:Manic)	.28

Table C1 (cont.): *Correlations Between MCMI-III Scales and MMPI-2 RCd Scale.*

MCMI-III Scales	MMPI-2 RCd
MCMI-III Scale D (Dysthymic Disorder)	.75
MCMI-III Scale B (Alcohol Dependence)	.32
MCMI-III Scale T (Drug Dependence)	.26
MCMI-III Scale R (Posttraumatic Stress)	.68
MCMI-III Scale SS (Thought Disorder)	.70
MCMI-III Scale CC (Major Depression)	.70
MCMI-III Scale PP (Delusional Disorder)	.12

Table D1: Three, *Five, and Six Factor Solutions Beta Weights.*

	3 Factor Solution			5 Factor Solution					6 Factor Solution					
Scales	Factor I	Factor II	Factor III	Factor I	Factor II	Factor III	Factor IV	Factor V	Factor I	Factor II	Factor III	Factor IV	Factor V	Factor VI
MMPI-2 RCd (Demoralization)	**.862**	–	–	**.434**	**.488**	–	–	–	**.424**	**.485**	–	–	–	–
MCMI-III Scale 1 (Schizoid)	**.731**	–	–	**.440**	.379	–	–	**-.505**	**.450**	.395	–	–	**-.505**	–
MCMI-III Scale 2A (Avoidant)	**.832**	–	–	–	**.947**	–	–	–	–	**.961**	–	–	–	–
MCMI-III Scale 2B (Depressive)	**.859**	–	–	**.423**	**.494**	–	–	–	**.408**	**.495**	–	–	–	–
MCMI-III Scale 3 (Dependent)	**.686**	–	–	–	**.799**	–	–	.311	–	**.790**	–	–	.328	–
MCMI-III Scale 4 (Histrionic)	**-.821**	–	–	–	**-.876**	–	–	**.418**	–	**-.896**	–	–	**.409**	–
MCMI-III Scale 5 (Narcissistic)	**-.933**	–	–	–	**-1.047**	–	–	–	–	**-1.055**	–	–	–	–

Note. The figures refer to weights, not correlations. Weights can be <or>1.0. Eigenvalues >.30 were excluded from this table and signified by a –. Scales with loadings of ≤0.40 were selected for inclusion in factors and signified in bold.

Table D1 (Cont.): Three, *Five, and Six Factor Solutions Beta Weights.*

Scales	3 Factor Solution			5 Factor Solution					6 Factor Solution					
	Factor I	Factor II	Factor III	Factor I	Factor II	Factor III	Factor IV	Factor V	Factor I	Factor II	Factor III	Factor IV	Factor V	Factor VI
MCMI-III Scale 6A (Antisocial)	–	**1.058**	–	–	–	**1.105**	–	–	–	–	**1.087**	–	–	–
MCMI-III Scale 6B (Sadistic)	–	**.801**	–	–	–	**.729**	–	–	–	–	**.659**	–	–	–
MCMI-III Scale 7 (Compulsive)	–	**-.503**	–	–	–	**-.488**	–	–	–	–	**-.461**	–	–	–
MCMI-III Scale 8A (Negativistic)	.367	.364	–	–	–	–	.302	–	–	–	–	.366	–	.351
MCMI-III Scale 8B (Masochistic)	**.696**	–	–	–	**.664**	–	–	–	–	**.648**	–	–	–	–
MCMI-III Scale S (Schizotypal)	**.590**	–	**.403**	.355	–	–	.302	–	.325	–	–	**.413**	–	–
MCMI-III Scale C (Borderline)	**.537**	**.529**	–	.362	–	**.421**	–	–	.353	–	.374	–	–	–

Note. The figures refer to weights, not correlations. Weights can be <or>1.0. Eigenvalues >.30 were excluded from this table and signified by a –. Scales with loadings of ≤0.40 were selected for inclusion in factors and signified in bold.

Table D1 (Cont.): *Three, Five, and Six Factor Solutions Beta Weights.*

	3 Factor Solution			5 Factor Solution					6 Factor Solution					
Scales	Factor I	Factor II	Factor III	Factor I	Factor II	Factor III	Factor IV	Factor V	Factor I	Factor II	Factor III	Factor IV	Factor V	Factor VI
MCMI-III Scale P (Paranoid)	–	–	**.852**	–	–	–	**.879**	–	–	–	–	**.939**	–	–
MCMI-III Scale A (Anxiety)	**.699**	–	–	**.687**	–	–	–	–	**.673**	–	–	–	–	–
MCMI-III Scale H (Somatoform)	**.871**	–	–	**-1.105**	–	–	–	–	**1.122**	–	–	–	–	–
MCMI-III Scale N (Bipolar:Manic)	–	**.547**	–	–	–	–	–	**.431**	–	–	–	–	**.455**	–
MCMI-III Scale D (Dysthymic Disorder)	**.961**	–	–	**.803**	–	–	–	–	**.794**	–	–	–	–	–
MCMI-III Scale B (Alcohol Dependence)	–	**.776**	–	–	–	**.863**	–	–	–	–	**.852**	–	–	–
MCMI-III Scale T (Drug Dependence)	–	**.939**	–	–	–	**.954**	–	–	–	–	**.977**	–	–	–

Note. The figures refer to weights, not correlations. Weights can be <or>1.0. Eigenvalues >.30 were excluded from this table and signified by a –. Scales with loadings of ≤0.40 were selected for inclusion in factors and signified in bold.

Table D1 (Cont.): *Three, Five, and Six Factor Solutions Beta Weights.*

Scales	3 Factor Solution			5 Factor Solution					6 Factor Solution					
	Factor I	Factor II	Factor III	Factor I	Factor II	Factor III	Factor IV	Factor V	Factor I	Factor II	Factor III	Factor IV	Factor V	Factor VI
MCMI-III Scale R (Post-Traumatic Stress)	**.751**	–	–	**.777**	–	–	–	–	**.758**	–	–	–	–	–
MCMI-III Scale SS (Thought Disorder)	**.763**	–	–	**.772**	–	–	–	–	**.750**	–	–	–	–	–
MCMI-III Scale CC (Major Depression)	**.988**	–	–	**1.128**	–	–	–	–	**1.140**	–	–	–	–	–
MCMI-III Scale PP (Delusional Disorder)	–	–	**.800**	–	–	–	**.867**	–	–	–	–	**.939**	–	–

Note. The figures refer to weights, not correlations. Weights can be <or>1.0. Eigenvalues >.30 were excluded from this table and signified by a –. Scales with loadings of ≤0.40 were selected for inclusion in factors and signified in bold.

Table D2: *Four Factor Solution Beta Weights.*

Scales	Negative Affect	Negative Self-Image	Factor 3	Factor 4
MMPI-2 RCd (Demoralization)	**.477**	**.432**	–	–
MCMI-III Scale 1 (Schizoid)	–	**.552**	–	–
MCMI-III Scale 2A (Avoidant)	–	**.905**	–	–
MCMI-III Scale 2B (Depressive)	**.507**	–	–	–
MCMI-III Scale 3 (Dependent)	–	**.519**	–	–
MCMI-III Scale 4 (Histrionic)	–	**-.946**	–	–
MCMI-III Scale 5 (Narcissistic)	–	**-.952**	–	–
MCMI-III Scale 6A (Antisocial)	–	–	**1.107**	–
MCMI-III Scale 6B (Sadistic)	–	–	**.773**	–
MCMI-III Scale 7 (Compulsive)	–	–	**-.536**	–
MCMI-III Scale 8A (Negativistic)	–	–	–	–
MCMI-III Scale 8B (Masochistic)	–	**.505**	–	–
MCMI-III Scale S (Schizotypal)	–	–	–	**.428**
MCMI-III Scale C (Borderline)	**.450**	–	**.509**	–
MCMI-III Scale P (Paranoid)	–	–	–	**.859**
MCMI-III Scale A (Anxiety)	**.762**	–	–	–
MCMI-III Scale H (Somatoform)	**.975**	–	–	–
MCMI-III Scale N (Bipolar:Manic)	–	–	**.473**	–

Note. The figures refer to weights, not correlations. Weights can be <or>1.0 Eigenvalues >0.40 were excluded from this table and signified by a −. Scales with loadings of ≤0.40 were selected for inclusion in factors and signified in bold.

Table D2 (cont.): *Four Factor Solution Beta Weights.*

Scales	Negative Affect	Negative Self-Image	Factor 3	Factor 4
MCMI-III Scale D (Dysthymic Disorder)	**.829**	–	–	–
MCMI-III Scale B (Alcohol Dependence)	–	–	**.828**	–
MCMI-III Scale T (Drug Dependence)	–	–	**.960**	–
MCMI-III Scale R (Posttraumatic Stress)	**.812**	–	–	–
MCMI-III Scale SS (Thought Disorder)	**.810**	–	–	–
MCMI-III Scale CC (Major Depression)	**1.034**	–	–	–
MCMI-III Scale PP (Delusional Disorder)	–	–	–	**.844**

Note. The figures refer to weights, not correlations. Weights can be <or>1.0. Eigenvalues >.40 were excluded from this table and signified by a –. Scales with loadings of ≤0.40 were selected for inclusion in factors and signified in bold.

Appendix E: De-identified Sample MMPI-2, MMPI-2-RC, and MCMI-III Profiles

Figure E1: MMPI-2 Non-K-Corrected Validity/Clinical Scales Profile

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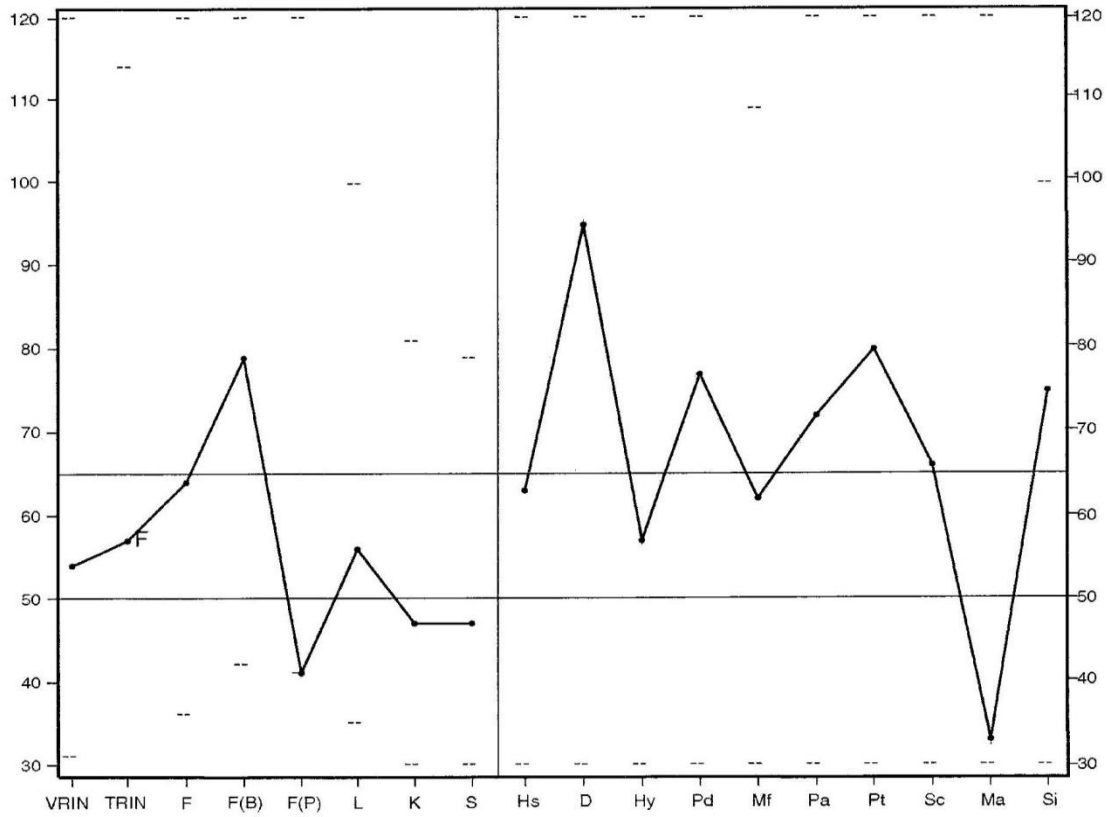
[redacted]

MMPI-2 **NON-K-CORRECTED** VALIDITY/CLINICAL SCALES PROFILE



	VRIN	TRIN	F	F(B)	F(P)	L	K	S	Hs	D	Hy	Pd	Mf	Pa	Pt	Sc	Ma	Si
Raw Score:	6	8	9	9	0	5	14	22	10	41	24	29	32	16	32	23	8	47
T Score(plotted):	54	57F	64	79	41	56	47	47	63	95	57	77	62	72	80	66	33	75
Non-Gendered T Score:	54	57F	66	79	42	57	47	46	61	94	55	78		71	78	65	34	73
Response %:	100	100	100	98	96	100	100	100	100	100	100	100	100	100	100	100	100	100

Cannot Say (Raw): 1
Profile Elevation: 67.9

Percent True: 41
Percent False: 59

Notes: The highest and lowest T scores possible on each scale are indicated by a "--".

Non-K-corrected T scores allow interpreters to examine the relative contributions of the Clinical Scale raw score and the K correction to K-corrected Clinical Scale T scores. Because all other MMPI-2 scores that aid in the interpretation of the Clinical Scales (the Harris-Lingoes subscales, Restructured Clinical Scales, Content and Content Component Scales, PSY-5 Scales, and Supplementary Scales) are not K-corrected, they can be compared most directly with non-K-corrected T scores.

Figure E2: MMPI-2 Restructured Clinical Scales Profile

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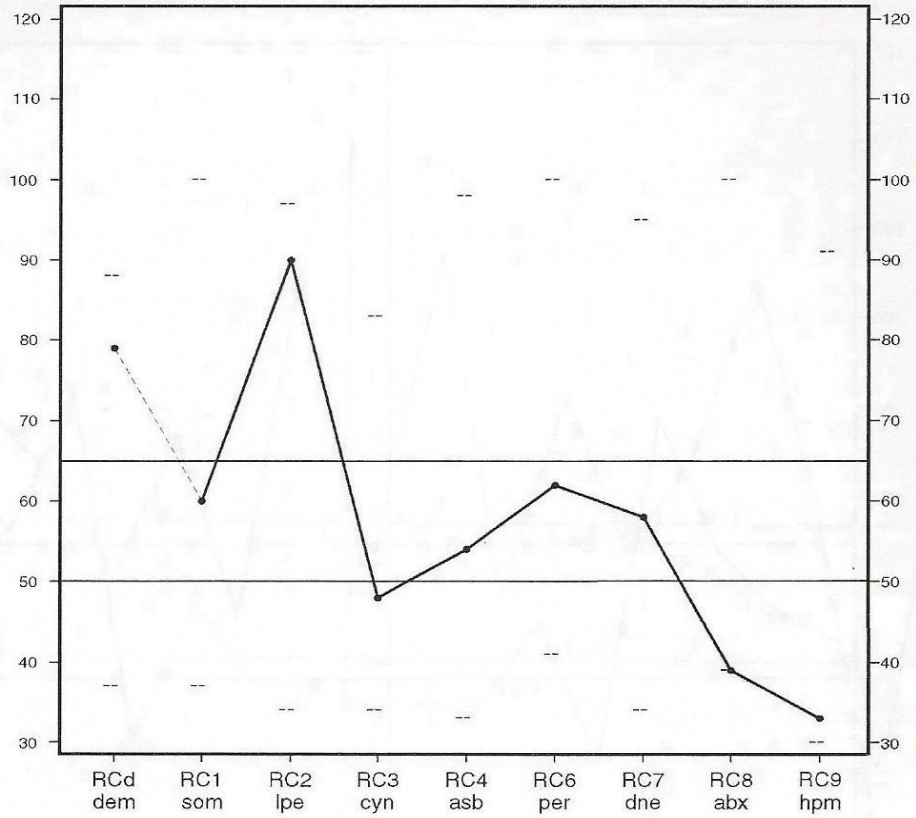
MMPI-2 RESTRUCTURED CLINICAL SCALES PROFILE



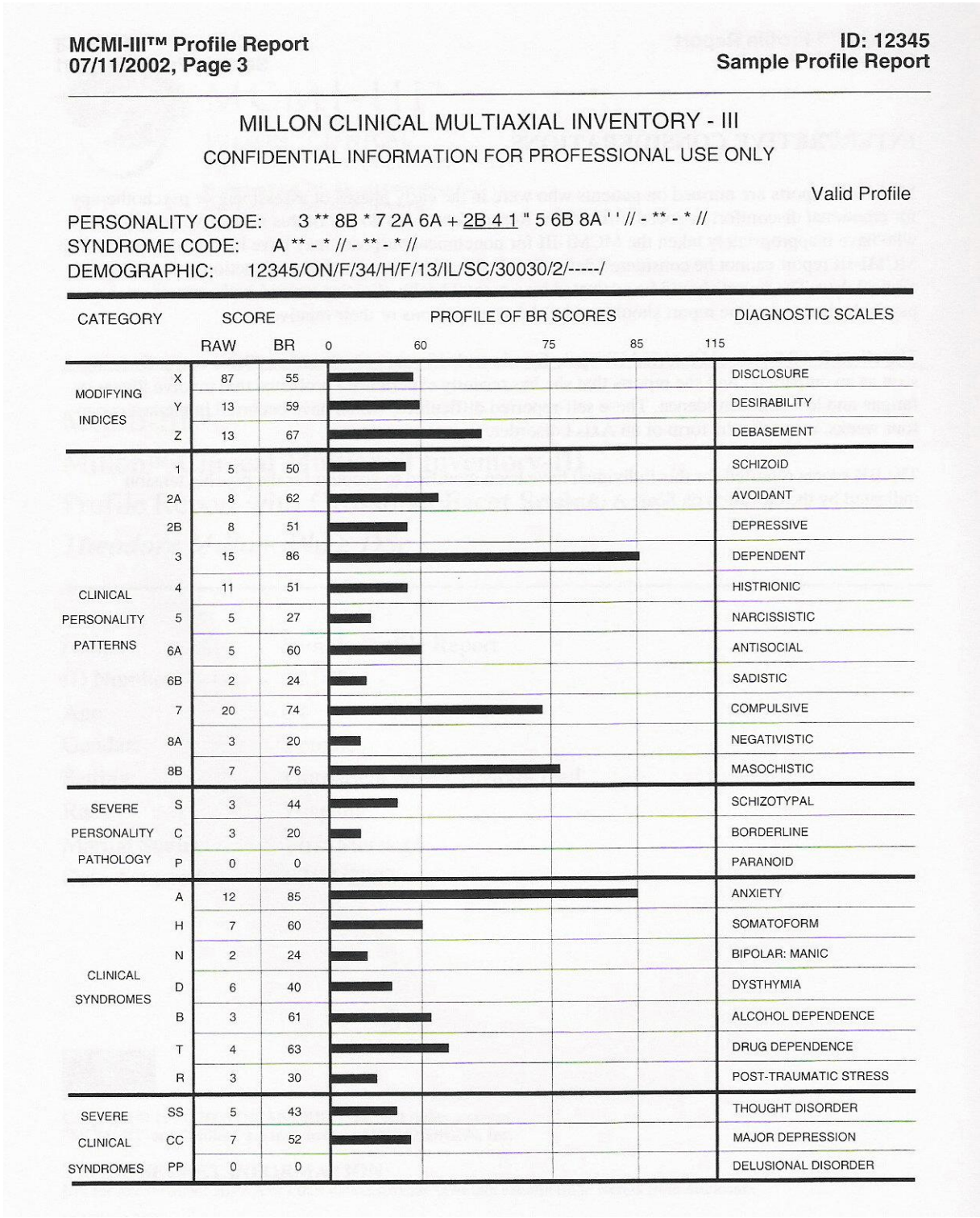
	RCd dem	RC1 som	RC2 lpe	RC3 cyn	RC4 asb	RC6 per	RC7 dne	RC8 abx	RC9 hpm
Raw Score:	19	6	15	6	7	2	9	0	3
T Score (plotted):	79	60	90	48	54	62	58	39	33
Non-Gendered T Score:	77	59	92	49	57	63	55	39	34
Response %:	100	100	100	100	100	100	100	100	100

Note: The highest and lowest Uniform T scores possible on each scale are indicated by a "--".

LEGEND

dem = Demoralization	**cyn** = Cynicism	**dne** = Dysfunctional Negative Emotions
som = Somatic Complaints	**asb** = Antisocial Behavior	**abx** = Aberrant Experiences
lpe = Low Positive Emotions	**per** = Ideas of Persecution	**hpm** = Hypomanic Activation

Figure E3: MCMI-III Profile Report



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ID: 12345
Sample Profile Report

MILLON CLINICAL MULTIAXIAL INVENTORY - III

CONFIDENTIAL INFORMATION FOR PROFESSIONAL USE ONLY

Valid Profile

PERSONALITY CODE: 3 ** 8B * 7 2A 6A + 2B 4 1 " 5 6B 8A ' ' // - ** - * //
SYNDROME CODE: A ** - * // - ** - * //
DEMOGRAPHIC: 12345/ON/F/34/H/F/13/IL/SC/30030/2/-----/

CATEGORY		SCORE RAW	SCORE BR	PROFILE OF BR SCORES (0 / 60 / 75 / 85 / 115)	DIAGNOSTIC SCALES
MODIFYING INDICES	X	87	55		DISCLOSURE
	Y	13	59		DESIRABILITY
	Z	13	67		DEBASEMENT
CLINICAL PERSONALITY PATTERNS	1	5	50		SCHIZOID
	2A	8	62		AVOIDANT
	2B	8	51		DEPRESSIVE
	3	15	86		DEPENDENT
	4	11	51		HISTRIONIC
	5	5	27		NARCISSISTIC
	6A	5	60		ANTISOCIAL
	6B	2	24		SADISTIC
	7	20	74		COMPULSIVE
	8A	3	20		NEGATIVISTIC
	8B	7	76		MASOCHISTIC
SEVERE PERSONALITY PATHOLOGY	S	3	44		SCHIZOTYPAL
	C	3	20		BORDERLINE
	P	0	0		PARANOID
CLINICAL SYNDROMES	A	12	85		ANXIETY
	H	7	60		SOMATOFORM
	N	2	24		BIPOLAR: MANIC
	D	6	40		DYSTHYMIA
	B	3	61		ALCOHOL DEPENDENCE
	T	4	63		DRUG DEPENDENCE
	R	3	30		POST-TRAUMATIC STRESS
SEVERE CLINICAL SYNDROMES	SS	5	43		THOUGHT DISORDER
	CC	7	52		MAJOR DEPRESSION
	PP	0	0		DELUSIONAL DISORDER

Appendix F: Scree Plot for Unrotated Factors

Figure F1: Scree Plot