



NARRATIVE REVIEW ON THE USE OF THE MMPI-2 IN HEALTH PSYCHOLOGY APPLICATIONS OVER THE PAST 20 YEARS

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Abstract

The Minnesota Multiphasic Personality Inventory-2 (MMPI-2) has long been recognized as one of the most comprehensive and widely utilized tools in psychological assessment. Health psychology's application has extended beyond merely cataloguing personality traits to offering critical insights into the complex interactions between psychological states and physical health outcomes. This narrative review synthesizes research published over the past two decades, specifically focusing on clinical applications related to chronic pain, behavioural health, and psychosomatic disorders. Emphasis is placed on appraising MMPI-2's utility when used in the assessment of chronic pain populations, its comparative effectiveness against other widely known personality assessment instruments—namely the NEO Personality Inventory-Revised (NEO-PI-R), the Personality Assessment Inventory (PAI), and the 16-Personality Factor Questionnaire (16PF) and its practical implications for health practitioners.

Index terms: Psychological Assessment, Behavioural health, Chronic pain, Personality Assessment

Introduction

Over the last 20 years, research in health psychology has underlined the pressing need for practical psychological assessment tools that aid clinicians in understanding the interplay between mental states and chronic medical conditions (Ben-Porath & Archer, 2008). Given that many health conditions, including chronic pain, behavioural health difficulties, and psychosomatic disorders, often have overlapping physical and psychological components, tools such as the MMPI-2 have been extensively examined and refined (Friedman et al., 2014; Ben-Porath & Archer, 2008). This narrative review draws on peer-reviewed studies that have elaborated on the psychometric properties of the MMPI-2 and its specific applications within health settings. The review details findings regarding the differential profile characteristics of chronic pain patients

and considers the instrument's broader role in elucidating pertinent psychosocial factors that predict treatment outcomes. In clinical health psychology, the utility of thorough personality assessment cannot be overstated. Comprehensive tests like the MMPI-2 offer structured insights into dimensions such as hypochondriasis, depression, and hysteria—domains that are often magnified in populations contending with chronic physical illnesses (Arbisi & Seime, 2006; Friedman et al., 2014; Chisholm, Crowther & Ben-Porath, 1997). The current review delineates the evidence supporting the use of the MMPI-2. It offers a comparative analysis with other personality assessments to inform researchers and practitioners about the most effective methods of integrating personality profiling into clinical practice (Arbisi & Butcher, 2004; Ben-Porath & Archer, 2014).

Overview of the MMPI-2 in Health Psychology

The MMPI-2 is a revised version of the original MMPI, developed to yield a comprehensive assessment of an individual's emotional, cognitive, and behavioural functioning. It has been particularly impactful in settings where understanding the multifaceted nature of health complaints is crucial (Ellertsen & Klove, 1987). In clinical health psychology, the test captures stable trait-like characteristics and evaluates the symptomatology that might relate to psychological distress and somatic complaints. With a robust body of literature spanning 20 years, the MMPI-2 is credited for its reliability and validity in differentiating between clinical populations and normative groups (Nordin, Eisemann & Richter, 2005; Ellertsen & Klove, 1987). A significant application of the MMPI-2 has been its use in populations experiencing chronic pain. Pain, as a complex phenomenon, interacts with multiple psychological factors; thus, the ability of MMPI-2 scales to capture variations in affective distress and compensation patterns through indices such as Hypochondriasis (Hs), Depression (D), and Hysteria (Hy) provides clinicians with actionable insights (Slesinger, Archer, & Duane, 2002). Over time, these scales have facilitated a better understanding of the biopsychosocial model of chronic pain, whereby psychological factors not only influence pain perception but also modulate treatment outcomes and overall quality of life.

MMPI-2 in Chronic Pain Assessment

Chronic pain represents a persistent and often debilitating condition, characterized by an interplay between physiological dysfunction and psychological distress. The literature demonstrates that individuals with chronic pain exhibit MMPI-2 profiles that significantly deviate from those seen in normative populations (Vendrig, Derksen, & De Mey, 1999). Notably, scales such as Hypochondriasis (Hs), Depression (D), and Hysteria (Hy) tend to be elevated, suggesting a heightened state of affective distress and a propensity for somatic complaints (Pop-Jordanova, 2015; Vendrig, Derksen, & De Mey, 1999).

Elevated Scale Scores in Chronic Pain Populations

Slesinger, Archer, and Duane (2002) provided empirical evidence that chronic pain patients tend to score higher on scales that measure anxiety, depression, and somatic preoccupations. The findings from their study highlighted that the MMPI-2 is adept at identifying underlying affective disturbances in individuals who suffer from chronic pain. These scales, particularly Hs, serve as markers of a patient's predisposition towards interpreting physical symptoms as indicative of broader health problems. As such, the MMPI-2 becomes a valuable tool in diagnosing these symptoms and tailoring intervention strategies that address pain's physical and emotional experience (Pop-Jordanova, 2015; Deardorff, Chino, & Scott, 1993).

Factor Analytic Studies and Pattern Discovery

Further deepening our understanding of chronic pain assessments, factor analytic approaches have been used to elucidate the underlying dimensions measured by the MMPI-2. In an influential study, Deardorff, Chino, and Scott (1993) conducted factor analyses that unearthed four interpretable factors among chronic pain populations: “Psychological Dysfunction,” “Interpersonal Isolation,” “Psychomotor Retardation,” and “Physical Dysfunction.” These factors encapsulate a spectrum of experiences from emotional disturbances and isolation to physical debilitation. The identification of these specific factors highlights the multidimensional nature of chronic pain. It underscores the necessity for a diagnostic tool to integrate various psychological domains into a cohesive understanding of a patient’s condition (Clements & Heintz, 2002; Ben-Porath & Archer, 2014). The research presented by Deardorff, Chino, and Scott (1993) emphasizes the need for clinicians to appreciate the complexity of chronic pain, where cognitive, emotional, and physical factors are integrally connected. The MMPI-2’s ability to quantify these dimensions provides clinicians with a nuanced view of the patient’s overall functioning, thereby aiding in developing bespoke treatment plans well-informed by the psychological underpinnings of chronic pain (Finn & Martin, 1997; Deardorff, Chino, & Scott, 1993).

Comparative Analysis with Other Personality Assessment Tools

In the domain of personality assessment, several instruments are frequently utilized alongside the MMPI-2, including the NEO Personality Inventory-Revised (NEO-PI-R), the Personality Assessment Inventory (PAI), and the 16 Personality Factor Questionnaire (16PF). Although direct comparative studies remain somewhat limited, available evidence supports the continued relevance of the MMPI-2 when integrated with, or considered alongside, these alternative measures in predicting health outcomes in clinical settings (Byravan, 1996; Morasco, Gfeller, & Elder, 2007; Aberra, 2000).

MMPI-2 versus NEO-PI-R

The NEO-PI-R is a widely accepted tool that assesses the Big Five personality traits—Neuroticism, Extraversion, Openness, Agreeableness, and Conscientiousness. However, while the NEO-PI-R provides valuable insights into normative personality traits, it may not capture the full spectrum of psychopathological symptoms that are often prevalent in chronic pain patients (Byravan, 1996; Trull et al., 1995; Morasco, Gfeller, & Elder, 2007). In contrast, the MMPI-2’s comprehensive scale structure, which includes dimensions specifically tuned to capture symptoms of distress such as depression and hypochondriasis, renders it particularly well-suited for clinical health environments where symptom severity and maladaptive coping are typical. Consequently, the MMPI-2 remains a critical instrument for situations where a clinical picture of distress must be elaborated in greater detail (Slesinger, Archer, & Duane, 2002).

MMPI-2 versus PAI

The Personality Assessment Inventory (PAI) is another tool frequently utilized in clinical settings, valued for its efficiency in assessing personality and psychopathological constructs. The PAI provides an alternative approach by focusing on indices relevant to emotional and interpersonal functioning (Morey, 2004; Bagby et al., 2002). However, its relative brevity and different emphasis compared to the MMPI-2 may limit its sensitivity to the more subtle, trait-like disturbances critical in chronic pain (Wise, Streiner, & Walfish, 2010). Due to its intricate item composition and extended scale structure, the MMPI-2 is often better positioned to

detect the nuanced interplay between psychological distress and physical health manifestations. This advantage is particularly salient when examining conditions where somatic symptoms and affective disturbances converge (Slesinger, Archer, & Duane, 2002; Vendrig, Derksen, & De Mey, 1999).

MMPI-2 versus 16PF

The 16 Personality Factor Questionnaire (16PF) is an assessment method focusing on a broad range of personality traits. Although the 16PF yields valuable information regarding personality structure, it does not explicitly target the specific clinical symptoms of distress that are prevalent in populations dealing with chronic pain or psychosomatic disorders (Lore, Nerviano, & Myhill, 1985; Hobi, 1973). The MMPI-2 offers a more clinically oriented perspective by incorporating scales for general personality facets and psychological syndromes. This comprehensive approach enables the MMPI-2 to function as a dual-purpose instrument, serving as a measure of personality and as a diagnostic tool for psychopathology, making it particularly relevant in health psychology applications where the overlap between mental and physical health is pronounced (Hobi, 1973). While the comparative studies between the MMPI-2 and other personality assessment instruments have not provided exhaustive statistical comparisons, the existing literature supports the notion that the MMPI-2's integration of clinical symptom scales, along with its documented reliability and validity in chronic pain samples, reinforces its status as an indispensable tool for practitioners in the health psychology field (Martinez, 2005; Aberra, 2000).

Clinical Applications and Predictive Utility

One of the most critical aspects of personality assessment tools in health psychology is their ability to predict treatment outcomes and inform clinical decision-making. The MMPI-2 has been shown to have substantial predictive utility in chronic pain management and broader applications involving behavioural health and psychosomatic disorders (Vendrig, Derksen, & De Mey, 1999).

Predicting Treatment Outcomes in Chronic Pain

Chronic pain poses unique challenges not only in diagnosis but also in treatment planning. In studies examining treatment outcomes for chronic pain patients, specific MMPI-2 scales have emerged as significant predictors of a patient's response to therapy. For example, Vendrig, Derksen, and De Mey (1999) investigated the predictive validity of selected MMPI-2 scales and subscales to physical and psychosocial treatment outcome measures. Their findings revealed a clear association between elevated scores in scales corresponding to emotional and affective distress and poorer treatment outcomes. This predictive capacity suggests that dimensional assessment using the MMPI-2 can be crucial in identifying patients at higher risk of experiencing less improvement throughout treatment. In chronic pain management, such assessments allow clinicians to customize interventions that target both the physical symptoms of pain and its psychological correlates (Easterly, 2008; Clements & Heintz, 2002). By recognizing patients with marked emotional distress, practitioners can implement supportive measures (e.g., cognitive-behavioural therapies, psychoeducation) to mitigate the negative impact of psychological factors on treatment adherence and outcome (Derksen & De Mey, 1999).

Applications in Psychosomatic Disorders

Psychosomatic disorders, defined by the presence of physical symptoms that are significantly influenced by psychological processes, present a complex challenge to clinicians. The MMPI-2 has emerged as a handy tool in this domain, enabling practitioners to identify characteristic personality profiles associated with these conditions (Pop-Jordanova, 2015). Ellertsen and Kløve's (1987) study, for instance, demonstrated that patients with psychosomatic presentations, such as those suffering from headaches or low back pain, often report atypical bodily sensations. This is frequently accompanied by heightened anxiety and a concurrent denial of feelings such as anger or aggressiveness. Such findings underscore the importance of using the MMPI-2 to capture the psychosomatic interplay underlying a patient's symptomatology (Pop-Jordanova, 2015). The ability to differentiate between symptoms primarily somatic in origin versus those heavily influenced by psychological factors is essential in conceptualizing treatment. Moreover, identifying these distinctions through the MMPI-2 can pave the way for integrated treatment approaches that address the mind and body. For instance, a patient presenting with significant psychosomatic complaints might benefit from a regimen that combines pharmacological pain management with psychotherapeutic interventions aimed at reducing anxiety and improving emotional regulation (Hilsenroth et al., 1995; Finn, S. E., & Martin, 1997).

Behavioural Health Applications

Beyond assessing chronic pain and psychosomatic conditions, the MMPI-2 holds considerable promise in the broader behavioural health arena. Behavioural health issues, which frequently include mood disorders, anxiety disorders, and maladaptive coping behaviours, are intricately connected with both personality structure and somatic experiences (Duckworth & Anderson, 2019; Chisholm, Crowther, & Ben-Porath, 1997). The MMPI-2's extensive range of scales enables clinicians to articulate a more detailed psychological profile encompassing these facets. Such comprehensive assessments are valuable when designing personalized treatment protocols sensitive to the diverse needs of individuals facing behavioural health challenges (Chisholm, Crowther, & Ben-Porath, 1997). Integrating personality assessment findings into treatment planning can guide behavioural interventions and psychotherapeutic strategies in clinical practice. For example, in patients presenting with significant depressive and anxiety-related symptoms, an elevated depression scale may signal the need for interventions that prioritize mood stabilization and cognitive restructuring. Thus, the predictive utility and diagnostic granularity of the MMPI-2 can serve as a foundation for designing targeted and evidence-based interventions (Vendrig et al., 1999).

Practical Implications for Health Practitioners

Translating complex assessments into actionable clinical insights remains a paramount challenge for health practitioners. The MMPI-2 not only facilitates the identification of key personality traits and psychopathological features but also guides the development of treatment strategies tailored to individual patient needs (Tsushima, Bridenstine, & Balfour, 2004; Vendrig, Derksen, & De Mey, 1999). The following sections outline several practical implications from the literature, offering guidance on incorporating the MMPI-2 into clinical practice (Chisholm, Crowther, & Ben-Porath, 1997).

Enhancing Diagnostic Accuracy

One of the foremost benefits of utilizing the MMPI-2 in clinical settings is its capacity to enhance diagnostic accuracy. The instrument's robust psychometric properties allow clinicians to discern subtle differences between normative and pathological personality profiles (Clements, & Heintz, 2002; Osberg, & Poland, 2002). In the realm of chronic pain management, for instance, the recognition of elevated scores on scales measuring hypochondriasis, depression, and hysteria can alert practitioners to the presence of underlying affective disturbances that might compound the physical manifestations of pain (Slesinger, Archer, & Duane, 2002). This, in turn, enables a more informed diagnostic process that factors in both the physical and psychological dimensions of a patient's clinical presentation.

Informing Treatment Planning and Intervention Strategies

In addition to aiding diagnosis, the insights garnered from MMPI-2 profiles have direct implications for treatment planning. The ability to predict treatment outcomes based on specific scale elevations, such as those linked with emotional distress, means that clinicians can proactively adjust their intervention strategies (Chisholm, Crowther, & Ben-Porath, 1997). For example, patients who exhibit marked affective distress may benefit from adjunctive psychological therapies focused on emotion regulation and stress management, thereby optimizing the overall treatment plan for chronic pain management (Vendrig et al., 1999). Moreover, when the MMPI-2 is used with other clinical assessments, it offers a more holistic view of the patient's condition (Chisholm, Crowther, & Ben-Porath, 1997). This comprehensive approach can facilitate multidisciplinary treatment planning, where input from psychologists, pain specialists, and primary care providers is synthesized into a cohesive strategy (Duckworth & Anderson, 2019). In settings dealing with psychosomatic disorders, leveraging the MMPI-2's capacity to identify atypical bodily sensations and related psychological factors can lead to more collaborative and tailored intervention plans that address both physical symptoms and their emotional underpinnings (Ellertsen & Klove, 1987).

Optimizing Resource Allocation and Clinical Outcomes

By identifying patients at risk for poorer treatment outcomes, the MMPI-2 can also assist clinicians in optimizing resource allocation (Duckworth & Anderson, 2019). For instance, patients with significant elevations in distress-related scales might be earmarked for more intensive follow-up and adjunctive psychotherapy (Finn, & Martin, 1997). In a busy clinical setting, such prognostic information is invaluable in allocating therapeutic resources efficiently and effectively. The predictive utility of the MMPI-2 thus serves not only as a tool for assessment but also as a guide for ongoing patient management and intervention refinement (Vendrig et al., 1999).

Guidance for Future Research and Clinical Practice

The insights gained from applying the MMPI-2 in clinical settings have important implications for future research. The current body of literature suggests that further comparative studies are needed to explore the utility of the MMPI-2 relative to other personality assessments, particularly in diverse patient populations and clinical environments. Future research may focus on examining the incremental validity and cost-effectiveness of the MMPI-2 when combined with instruments like the NEO-PI-R, PAI, and 16-PF (Weed & Butcher, 1992; Byravan, 1996). For clinicians, such ongoing research will provide additional guidance on best practices for assessment and intervention (Ben-Porath & Archer, 2014). Importantly, as health psychology continues to

integrate more sophisticated models of mind-body interactions, the role of comprehensive assessments such as the MMPI-2 is likely to expand. Thus, Health practitioners are encouraged to remain abreast of emerging findings and consider incorporating MMPI-2 assessments into routine clinical practice, particularly when dealing with complex cases involving significant behavioural health and psychosomatic components (Weed & Butcher, 1992; Ben-Porath & Archer, 2014).

Applications Across Specific Health Conditions

The versatility of the MMPI-2 is demonstrated by its application across a range of health conditions. Although chronic pain remains a focal point in the literature, nuances in its application concerning other health outcomes suggest a broader relevance in clinical health psychology.

Chronic Pain and Physical Dysfunction

Chronic pain, as noted throughout the literature, is characterized by persistent physical dysfunction and an intermingling of psychological distress. The MMPI-2 has proven adept at capturing the salient features of this condition (Nordin, Eisemann, & Richter, 2005; Slesinger, Archer, & Duane, 2002). Elevated scores on specific scales signal challenges in physical functioning and psychological adjustment, thereby assisting clinicians in formulating well-rounded treatment approaches (Ellertsen & Klove, 1987). By delineating the interplay between physical symptoms and corresponding psychological indicators, the MMPI-2 facilitates tailored treatment programs that address both domains simultaneously (Deardorff et al., 1993).

Behavioural Health and Mood Disorders

Behavioural health problems frequently manifest with prominent emotional disturbances that impede functional recovery. The MMPI-2's comprehensive scale enables clinicians to detect subtle mood fluctuations and maladaptive behavioural patterns that might go unnoticed (Park et al., 2021; Hissom, 2005). Even though instruments such as the NEO-PI-R help assess normative personality dimensions, they may lack the capacity to capture clinically significant symptoms of distress that are critical for therapeutic intervention (Hissom, 2005). Consequently, the MMPI-2's ability to target key psychopathological features makes it an invaluable tool in assessing and managing behavioural health conditions (Slesinger, Archer, & Duane, 2002).

Psychosomatic Disorders and Atypical Somatic Presentations

One of the emerging trends in health psychology research is the recognition that many physical complaints have a significant psychosomatic component. In patients presenting with atypical somatic symptoms, such as unexplained headaches, gastrointestinal disturbances, or chronic low back pain, the MMPI-2 has provided clinicians with a window into the psychological factors that may be exacerbating these conditions. Ellertsen and Klove (1987) demonstrated that patients with psychosomatic presentations often report unusual bodily sensations. However, these symptoms are intertwined with psychological issues such as anxiety and a tendency to minimize aggressive impulses. Such findings reinforce the need for holistic assessments considering somatic and psychological dimensions to develop effective, integrative treatment strategies (Snyder, 1990; Easterly, 2008).

Future Directions and Recommendations

While the current body of research provides a strong foundation for the clinical use of the MMPI-2, several avenues for future inquiry remain. Continued research is warranted to delineate the relative advantages of the MMPI-2 further when compared with other personality instruments in predicting long-term health outcomes. More expansive studies that include diverse populations could also refine MMPI-2 scales, thus enhancing its sensitivity to cultural and demographic variations in clinical presentations (Morasco, Gfeller, & Elder, 2007; Tsushima, Bridenstine & Balfour, 2004).

Future studies are encouraged to focus on the following areas:

Longitudinal Outcomes: It will be essential to investigate the predictive validity of MMPI-2 scales in forecasting long-term treatment outcomes in chronic pain and psychosomatic populations. Such research should aim to establish robust models that integrate personality factors with treatment responsiveness (Chisholm, Crowther, & Ben-Porath, 1997).

Integrated Assessment Approaches: Future work might examine the integration of the MMPI-2 with other well-established personality assessments such as the NEO-PI-R, PAI, and 16-PF. Comparative studies that explore the incremental validity of combined assessments could lead to more efficient diagnostic protocols (Byravan, 1996; Slesinger, Archer, & Duane, 2002).

Intervention Tailoring: Research that assesses how MMPI-2-informed interventions impact treatment responsiveness in behavioural health and chronic pain contexts will be valuable in establishing more effective clinical practices (Vendrig, Derksen, & De Mey, 1999).

Technological Integration: With the evolving landscape of digital health assessments, the MMPI-2 has the potential to be adapted for computerized administration. Future research might explore the benefits and challenges of electronic assessments and integrating MMPI-2 data into electronic health records (Williams & Weed, 2004). For practitioners, it is imperative to recognize that the MMPI-2 is not merely a diagnostic instrument but a dynamic component of a broader clinical strategy (Atlis, Hahn, & Butcher, 2006; Forbey & Ben-Porath, 2007). Integrating test results into treatment planning requires a nuanced understanding of the instrument's psychometric properties and the patient's clinical realities. As the evidence base grows, clinicians are encouraged to adopt a flexible, evidence-based approach that leverages the strengths of the MMPI-2 while remaining open to complementary assessment methods (Atlis, Hahn, & Butcher, 2006).

Conclusion

This narrative review has provided an in-depth examination of the use of the MMPI-2 in health psychology over the past two decades, highlighting its applications in chronic pain assessment, behavioural health, and psychosomatic disorders. The literature supports the value of the MMPI-2 in discriminating between clinical and normative populations, identifying key psychological dysfunctions, and predicting treatment outcomes. The MMPI-2's robust psychometric properties and comprehensive scale structure have made it an indispensable tool in clinical settings, particularly when addressing complex health conditions where the interplay between psychological distress and physical symptoms is prominent. Comparative analyses with other personality assessment instruments such as the NEO-PI-R, the PAI, and the 16-PF suggest that while each instrument has its merits, the MMPI-2's focus on clinically relevant symptom clusters provides unique

insights essential for effective intervention planning. For health practitioners, integrating MMPI-2 data into routine clinical practice offers significant benefits for diagnostic accuracy and treatment personalization. By identifying patients at higher risk for poorer outcomes, clinicians can implement preemptive and targeted interventions that address the mind and body. Moreover, the predictive utility of the MMPI-2 can contribute to more efficient resource allocation in clinical practice, ensuring that patients receive the appropriate level of care based on their psychological profile. In summary, the MMPI-2 continues to be a valuable asset in the toolkit of clinicians working in health psychology. Its application in chronic pain, behavioural health, and psychosomatic disorders enhances our understanding of how personality and psychopathology intersect with physical health. The future of clinical assessment in health psychology will undoubtedly benefit from continuing research efforts, particularly those that explore integrated approaches and technological advancements. Ultimately, the insights derived from the MMPI-2 will continue to inform best practices, improving clinical outcomes and enhancing the quality of life for patients with chronic conditions.

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