KMAN PUBLISHING INSTITUTE
Journal Website

Article history:
Received 20 April 2024
Revised 03 May 2024
Accepted 11 May 2024
Published online 10 June 2024

Journal of Adolescent and Youth Psychological Studies

Volume 5, Issue 6, pp 22-29

E-ISSN: 2981-2526

Factor Structure of the Fourth Edition of the Millon Clinical Multiaxial Inventory

Davoud. Bazmara[1], Kambiz. Kamkari[2*], Mahdieh. Salehi[3], Mojgan. Mardani Rad[4]

[1] Ph.D student of Education and Counseling Department, Central Tehran Branch, Islamic Azad University, Tehran, Iran
[2] Associate Professor, Department of Psychology, Islamshahr Branch, Islamic Azad University, Tehran, Iran
[3] Assistant Professor, Department of Psychology, Central Tehran Branch, Islamic Azad University, Tehran, Iran
[4] Assistant Professor, Training and Counseling Department, Central Tehran Branch, Islamic Azad University, Tehran, Iran

*** Corresponding author email address**: Kambizkamkary@gmail.com

A r t i c l e I n f o

Article type:
Original Research

How to cite this article:
Bazmara, D., Kamkari, K., Salehi, M., & Mardani Rad, M. (2024). Factor Structure of the Fourth Edition of the Millon Clinical Multiaxial Inventory. *Journal of Adolescent and Youth Psychological Studies*, 5(6), 22-29.
http://doi.org/10.61838/kman.jayps.5.6.3

A B S T R A C T

Objective: The aim of the present study was to examine the construct validity (factorial) of the fourth edition of the Millon Clinical Multiaxial Inventory (MCMI-IV) with an emphasis on personality patterns and personality disorders.

Methods and Materials: Given the nature of standardization, this study employed an analytical cross-sectional method. This method examined the current status and situation and included both descriptive and correlational methods. The statistical population of this study comprised all individuals who visited counseling centers or treatment clinics in Tehran from June 2022 to September 2022. Participants were at least 18 years old, had completed at least five grades of schooling, and had either sought initial treatment or continued their treatment at these centers or had been referred to them. In this study, a purposive sampling method was used to select 500 visitors from counseling centers in Tehran. The measurement tool included the standardized Millon Clinical Multiaxial Inventory (fourth edition). To analyze the data statistically, the KMO index, Bartlett's test, and factor analysis were performed using SPSS-26 software.

Findings: The results of the factor analysis in this study of visitors to family counseling centers in Tehran indicated that four factors were identified: 1) styles of clinical personality patterns, 2) severe personality pathology, 3) clinical syndromes, and 4) severe clinical syndromes.

Conclusion: These results demonstrate that the MCMI-IV has a distinct factor structure that can effectively measure personality and clinical characteristics. This factor analysis enhances the construct validity of the test and improves the accuracy of measuring the intended characteristics. Based on the findings of the present study, it can be concluded that the fourth edition of the MCMI has a suitable factor structure and can be used as a reliable tool for measuring personality and clinical characteristics. These findings can aid researchers, counselors, and physicians in diagnosing and treating personality and clinical disorders.

Keywords: *Construct validity, factorial validity, personality patterns, personality disorders, fourth edition of the Millon Clinical Multiaxial Inventory.*

1. Introduction

The initial emergence and development of psychopathology and scientific psychometrics in Western culture have made the application of these findings in other cultures a contentious and challenging endeavor. Human mental and behavioral phenomena are "culture-dependent" and cannot easily transcend the barriers of one's native culture and language. The very establishment of a field called cross-cultural psychology, which even has a separate department within the American Psychological Association, underscores this issue. The complexity increases when attempting to measure constructs such as personality and, beyond that, clinical personality patterns or personality disorders. Personality is an intricate phenomenon intertwined with culture, and differentiating between normal and abnormal personality cannot disregard the cultural elements and processes surrounding personality and its disorders (Bazmara et al., 2023; Chegini et al., 2013; David et al., 2022).

Throughout the history of clinical psychology and psychopathology, three tools—observation, clinical interviews, and psychological tests—have consistently been used for constructs and psychological phenomena such as intelligence, personality, and mental disorders. However, these psychological diagnostic tools, compared to medical diagnostic tools that focus on the individual's body, have significantly lower validity. The interest of psychiatrists and forensic specialists in applying the medical model to psychological phenomena, stemming from their professional needs and academic training, has led researchers to standardize various psychological tests using statistical science. Another factor significantly influencing this standardization process is the development of the Diagnostic and Statistical Manual of Mental Disorders (DSM) by the American Psychiatric Association and its revised editions. In developing and revising the fifth edition of this manual, working groups were divided into six categories, each focusing on a broad topic. One of these groups focused on personality and its relationship with disorders. Furthermore, the second axis in this "manual" is dedicated to personality disorders (American Psychiatric Association, 2022).

The original version of the Millon Clinical Multiaxial Inventory (MCMI) was developed and presented in 1977, successfully applying the DSM criteria and advanced psychometric methods. Additionally, the third edition (1994) and fourth edition (2017) of the MCMI have several unique strengths not found in many other tools. One strength is the use of base rate scores instead of standard scores, allowing clinicians to interpret test scores more precisely. Another strength is the use of both logical and empirical methods in test construction. The use of both methods in constructing the multiscale inventory is considered a strength because each method independently affects the tool's validity. Another unique feature of this test is its high consistency with the DSM classification system (Reynolds et al., 2021; Shah et al., 2014). The MCMI-IV is one of the unique tests that emphasizes personality disorders and the symptoms often associated with these disorders. This test was designed to operationalize Millon's psychopathology model and has been revised three times since its initial publication, in parallel with changes in Millon's biopsychosocial theory and the DSM (Chegini et al., 2013).

It is essential to note that personality disorders, distress, and dysfunctions resulting from them affect an individual throughout their lifetime. However, these disorders vary in their impact on the individual's life. Nevertheless, whether mild or severe, these disorders affect all aspects of a person's existence. On the other hand, intervening and treating personality disorders is one of the most challenging types of psychotherapy. Considering the diagnostic criteria for personality disorders, it can be observed that their symptoms and signs significantly overlap, making differentiation difficult (Zimmerman, 1994). Even personality pathologists have difficulty diagnosing between disorders, often leading to multiple diagnoses for a single individual. Additionally, clinicians frequently disagree on the type of personality disorder a patient has (Chegini et al., 2013).

This issue is even more evident in explaining marital conflicts since the family, as a system with multiple functions, operates within functional/structural domains, particularly in its developmental polarities of self and other and in the domain of behavior (expressive emotion and interpersonal conduct) (Price, 2019). Although Taggart, Bannon, and Mamet (2019) have shown that existing research does not support the mediating relationship between individual personality traits and conflict resolution or relationship satisfaction, they also indicate that agreeableness and conscientiousness are related to stable long-term relationships, while neuroticism is associated with weaker relationships (Taggart et al., 2019).

Given the recent and updated nature of the fourth edition of the Millon Clinical Multiaxial Inventory and the lack of empirical findings on the validity of this inventory in the Iranian population, this study aimed to enrich the psychometric research literature in the field of personality by

JAYPS Adolescent and Youth Psychological Studies
E-ISSN: 2981-2526

providing a tool for clinical specialists and family counselors within the country for diagnosing, differentiating, and treating personality disorders both in the realm of personality pathology and in identifying and explaining marital conflicts. Therefore, the present study aimed to examine the construct validity (factorial) of the fourth edition of the Millon Clinical Multiaxial Inventory.

2. Methods and Materials

2.1. Study Design and Participants

This study employed a construct validity standardization method and an analytical cross-sectional approach, including both descriptive and correlational methods. The statistical population consisted of all visitors to counseling centers or treatment clinics in Tehran from June 2022 to September 2022, who were at least 18 years old and had completed at least five grades of schooling, seeking initial treatment or continuing their treatment, or being referred to these centers. The sample included 500 visitors from counseling centers in Tehran. The sampling method was purposive and convenience due to the high diversity of the 24 scales of the MCMI-IV, making random sampling impractical. Since the diversity of diagnostic groups was crucial in this study (based on the 24 scales of the MCMI-IV), a purposive sampling method was used to select the clinical sample. Additionally, invalid questionnaires were excluded, and valid questionnaires were statistically analyzed (Piotrowski, 1997; Price, 2019).

The new normative sample for the MCMI-IV included 1547 adults from clinical settings, aged 18 to 85, with diversity in education, geographic region, ethnicity, gender, and marital status. The revision added the Turbulent scale, which assesses chronic mood instability, often irregular or reckless by nature. The MCMI-IV includes 5 validity scales, 15 personality scales, 45 profile scales, and 10 clinical syndrome scales. Unlike previous versions, the MCMI-IV's scoring system was updated to no longer allow manual scoring. Results can be obtained through mail-in answer sheets, online responses, or scoring via regional test administration software (MCMI-IV; Millon, Grossman, & Millon, 2015). Internal consistency estimates for the 15 personality scales, 45 profile scales, and 10 clinical scales were conducted. The 15 personality scales showed high internal consistency (alpha coefficients ranging from 0.67 to 0.92). The Impulsive (0.67), Narcissistic (0.75), and Antisocial (0.78) scales were the only personality scales with internal consistency below 0.80. The 45 profile scales had reasonably high internal consistency alpha coefficients ranging from 0.63 to 0.88. Finally, the clinical scales also showed relatively high internal consistency coefficients ranging from 0.65 to 0.93. The lowest internal consistency estimates were for the Alcohol Use (0.65) and Bipolar Spectrum (0.71) scales. However, the test-retest reliability coefficients varied across the scale groupings. Notably, the profile scale test-retest coefficients ranged from 0.56 to 0.94, while the 41 personality scales showed higher correlation coefficients from 0.81 to 0.93, and the clinical scales from 0.73 to 0.89 (Piotrowski, 1997; Price, 2019).

Data were collected using the MCMI-IV for all sample members, and for concurrent external validity measurement, the revised Minnesota Multiphasic Personality Inventory-2 was used for 120 individuals. The research implementation involved randomly selecting 20 counseling centers from various regions of Tehran, and from each center, 25 available clients were tested.

2.2. Measures

2.2.1. Millon Clinical Multiaxial Inventory (Fourth Edition)

The MCMI-IV is a fundamentally revised version of the MCMI-II, consisting of 195 self-report items. One change is the addition of 20 new items. The primary goal of the MCMI-IV is to identify personality patterns as it relates to clinical symptomatology, significant issues, and the test-taking approach to inform treatment outcomes. This revision also includes updated norms, new test items, renamed scales, and alignment with the criteria of the DSM-IV-TR (Chegini et al., 2013; Price, 2019).

2.2.2. Millon Clinical Multiaxial Inventory (Fifth Edition)

The MCMI-IV has 25 scales: fifteen clinical personality pattern scales: Schizoid, Avoidant, Melancholic, Dependent, Histrionic, Turbulent (new in the fourth edition), Narcissistic, Antisocial, Sadistic, Compulsive, Negativistic, and Masochistic. Three severe personality pathology scales: Schizotypal, Borderline, and Paranoid. Seven clinical syndrome scales: Anxiety, Somatoform, Bipolar Spectrum, Persistent Depression, Alcohol Dependence, Drug Dependence, and Post-Traumatic Stress Disorder. Three severe clinical syndrome scales: Thought Disorder, Major Depression, and Delusional Disorder. Three correction indices, one inconsistency scale, and one validity scale. These personality scales are refined by theory and aligned

JAYPS Adolescent and Youth Psychological Studies
E-ISSN: 2981-2526

with personality disorders listed in the DSM-5. They are grouped into two levels of severity: clinical personality patterns and severe personality pathology scales. Clinical symptomatology scales reflect syndromic conditions frequently seen in clinical settings, also grouped into clinical syndrome and severe syndrome scales. The three correction indices—Disclosure, Desirability, and Debasement—assess response orientations related to specific personality patterns or syndromic conditions. The scoring is dichotomous (true/false), with the true option scoring one and the false option scoring zero. The MCMI is a standardized self-report inventory that assesses a wide range of personality-related information, emotional adjustment, and respondent attitudes, suitable for individuals over 18 years with a minimum reading level of fifth grade. It is the second most important inventory after the Minnesota Multiphasic Personality Inventory (Piotrowski, 1997). The MCMI uniquely emphasizes personality disorders and associated symptoms. The original MCMI was developed in 1977 and has been revised three times (Bazmara et al., 2023; Price, 2019) and is one of the most widely used inventories in clinical practice (Bazmara et al., 2023).

2.3. Data analysis

To statistically analyze the data, the KMO index, Bartlett's test, factor analysis, and SPSS-26 software were used.

3. Findings and Results

The first step in the factor analysis process, which is also considered its first assumption, is addressing Missing data. These data, also referred to as missing data, can compromise the factor analysis process. It should be noted that factor analysis is the most sensitive statistical technique that considers Missing data, and when these data increase, the results derived from it cannot be trusted. Therefore, the first assumption is termed minimal Missing (less than 0.05). In dealing with Missing data, two methods were utilized, and a rate of 0.02 was considered. Accordingly, if a particular respondent left more than 0.02 of the questions unanswered, they were excluded from the research process. In this section, no respondents were excluded from the statistical analysis, thereby ensuring the factor analysis assumption of minimal Missing (0.02) per respondent was met. This criterion was also applied to each question, and their ambiguity coefficient was determined by examining the non-response rate, showing that all questions had a high degree of clarity, with an ambiguity coefficient of less than 0.02.

The second assumption of factor analysis is the adequacy of the sample size. At this stage, the KMO measure should be considered as an indicator of sampling adequacy. Most experts in the field of factor analysis refer to the KMO as a measure of sampling adequacy, calculated by three prominent individuals, and it can indicate the sampling adequacy. When the KMO index is less than 0.70, the results of the factor analysis cannot be relied upon. In other words, when the KMO is between 0.80 and 0.90, it can be said that the KMO indicates a sufficient sample size. When the KMO is greater than 0.90, it is considered a highly desirable feature in sample size. In this study, the KMO was 0.823, indicating a sufficient sample size.

The third assumption of factor analysis is known as the normality of multivariate distribution. In multivariate distributions, the normality feature is referred to differently and is termed sphericity. Sphericity, also known as the normality of multivariate distribution or the normality of covariance matrices, does not have an inherent meaning. To identify sphericity, the Chi-square approximation distribution must be emphasized. When the sphericity level in the Chi-square approximation becomes significant, it can be said that the sphericity is significant. To identify the corresponding point in the Chi-square approximation, the degrees of freedom are used, which are closely related to the sample size, but their calculation involves complex mathematical formulas beyond the scope of this discussion. Thus, specific tests are proposed for sphericity, and in other words, interpreting the sphericity level occurs in the Chi-square approximation, and its significance indicates sphericity. Bartlett's test, Hartley's test, and, in rare cases, the Lyon test, are used to identify and examine sphericity; however, Bartlett's test is one of the most reliable tests used to identify sphericity with an emphasis on the Chi-square approximation in the factor analysis process. The results of this test showed that the significance level was 0.001, indicating the normality of the multivariate distribution.

The fourth assumption of factor analysis is identifying communalities. In this regard, the correlation of each question with the entire test should represent the internal consistency of the questions, meaning that each question shares variance with the entire test. When each question has a communality less than 0.2, it is necessary to exclude that question from the factor analysis and remove it from the entire scale. Table 1 represents the communalities:

JAYPS Adolescent and Youth Psychological Studies
E-ISSN: 2981-2526

Table 1

Communalities (Factor Loadings) of the MCMI-IV Components

Variable	Initial	Extracted
Schizoid	1.000	.695
Avoidant	1.000	.744
Depressive	1.000	.879
Dependent	1.000	.408
Histrionic	1.000	.743
Turbulent	1.000	.756
Narcissistic	1.000	.710
Antisocial	1.000	.625
Sadistic	1.000	.614
Compulsive	1.000	.673
Negativistic	1.000	.724
Masochistic	1.000	.715
Schizotypal	1.000	.782
Borderline	1.000	.810
Paranoid	1.000	.649
Generalized Anxiety	1.000	.638
Somatic Complaints	1.000	.652
Bipolar Spectrum	1.000	.289
Persistent Depression	1.000	.864
Alcohol Abuse	1.000	.609
Drug Abuse	1.000	.715
PTSD	1.000	.593
Schizophrenic Spectrum	1.000	.754
Major Depression	1.000	.729
Delusional Disorder	1.000	.406

Therefore, since all scale loadings or communalities of the questions with the scale are greater than 0.2, the factor analysis can be conducted with all questions included. Thus, the first assumption (minimal Missing less than 0.02 per respondent and variable), the second assumption (sufficient sample size), the third assumption (achieving multivariate normal distribution or sphericity), and the fourth assumption (each question's communality with the entire test greater than 0.2) were achieved, and all these assumptions support conducting the factor analysis process.

The fifth assumption of factor analysis is that the explained variance is above 0.60. Therefore, in the factor extraction process, emphasizing four factors, the minimum explained variance must be 0.60. When the explained variance exceeds 0.60, the psychometric conditions in factor extraction are considered fulfilled. Table 2 the explained variance, indicating each factor's contribution to the total explained variance of the scale, based on the sum of squared loadings associated with factor extraction.

Table 2

Explained Variance of Extracted Components from the MCMI-IV

Factor	Eigenvalue	Sum of Squared Loadings	Sum of Squared Rotated Loadings
	Total	% of Variance	Cumulative %
Schizoid	10.710	42.838	42.838
Avoidant	2.833	11.333	54.171
Depressive	1.838	7.351	61.523
Dependent	1.396	5.584	67.107
Histrionic	1.149	4.597	71.704
Turbulent	1.013	4.053	75.757
Narcissistic	.814	3.255	79.012
Antisocial	.690	2.761	81.773
Sadistic	.674	2.695	84.468

JAYPS Adolescent and Youth Psychological Studies
E-ISSN: 2981-2526

Compulsive	.562	2.249	86.717
Negativistic	.513	2.050	88.767
Masochistic	.474	1.897	90.664
Schizotypal	.363	1.451	92.115
Borderline	.344	1.377	93.492
Paranoid	.309	1.236	94.728
Generalized Anxiety	.273	1.093	95.821
Somatic Complaints	.236	.943	96.764
Bipolar Spectrum	.196	.784	97.548
Persistent Depression	.147	.590	98.138
Alcohol Abuse	.128	.510	98.648
Drug Abuse	.111	.445	99.093
PTSD	.078	.311	99.404
Schizophrenic Spectrum	.072	.289	99.693
Major Depression	.048	.192	99.886
Delusional Disorder	.029	.114	100.000

Since eigenvalues are defined as the sum of squared factor loadings, identifying the main factors is necessary. It should be noted that eigenvalues greater than 1 indicate a fundamental factor; however, in personality tests, eigenvalues above 2 are always considered, and in standardized tests, eigenvalues above 1.5 are the criterion. In some cases, where researcher-developed questionnaires lack precise theoretical foundations and are not based on advanced psychometric principles (such as IRT), eigenvalues above 1 indicate a factor. In the process of identifying and extracting factors, where eigenvalues greater than 1 are emphasized, the following table is presented:

Referring to the scree plot, the explained variance table, and the columns of original eigenvalues (the first three columns) and the sum of squared extracted loadings (the middle three columns), it can be stated that a maximum of four factors have been extracted, which have high explained variance, and this amount is more accurately observable in the scree plot. Therefore, the scale has four factors, which are shown in Table 3.

Table 3

Rotated Component Matrix

Component	1	2	3	4
Schizoid	.776	.089	-.263	-.126
Avoidant	.839	-.011	-.200	-.003
Depressive	.934	.065	-.032	.037
Dependent	.633	.063	-.036	.050
Histrionic	.544	.402	.534	-.002
Turbulent	.550	.467	.458	-.158
Narcissistic	.799	.046	.225	-.135
Antisocial	.614	.297	-.061	.395
Sadistic	.644	.163	.337	.243
Compulsive	.771	.136	.154	-.189
Negativistic	.802	.262	.101	-.045
Masochistic	.802	.161	-.213	.018
Schizotypal	.291	.829	-.035	-.096
Borderline	.235	.852	-.161	.079
Paranoid	.485	.592	.051	-.247
Generalized Anxiety	.312	.175	.712	.012
Somatic Complaints	.109	-.025	.799	.041
Bipolar Spectrum	.093	.172	.475	.157
Persistent Depression	.101	.022	.924	-.009
Alcohol Abuse	.064	.390	.635	.223
Drug Abuse	.083	.082	.834	.079
PTSD	.202	.104	.727	-.071
Schizophrenic Spectrum	.035	.395	.251	.731
Major Depression	.124	.034	.001	.841
Delusional Disorder	.209	.235	-.032	.597

JAYPS Adolescent and Youth Psychological Studies
E-ISSN: 2981-2526

Therefore, referring to the factor analysis results, the factors are presented in a component matrix, emphasizing the principal component extraction method. Table 4 is provided:

Table 4

Component Matrix Results Using Principal Component Extraction Method

Variable	1	2	3	4
Clinical Personality Patterns	.975	.218	-.039	.010
Severe Personality Pathology	-.171	.856	.481	-.075
Clinical Syndromes	-.083	.266	-.363	.889
Severe Clinical Syndromes	.113	-.386	.797	.451

In conclusion, four factors were extracted from the factor rotation analysis, and the MCMI-IV consists of these four factors. Therefore, the results of the present factor analysis study on clients visiting family counseling centers in Tehran indicate that these four factors are considered the main components of the MCMI-IV, which include Clinical Personality Patterns, Severe Personality Pathology, Clinical Syndromes, and Severe Clinical Syndromes.

4. Discussion and Conclusion

This study aimed to examine the construct validity (factorial) of the fourth edition of the Millon Clinical Multiaxial Inventory (MCMI-IV) with an emphasis on personality patterns and personality disorders. To assess the construct validity (factorial), factor analysis using principal component extraction was employed. The results of the factor analysis indicated that the MCMI-IV could identify four significant factors in recognizing personality patterns and personality pathology in clients visiting family counseling centers in Tehran. These findings are consistent with the prior results (Bazmara et al., 2023; David et al., 2022; Reynolds et al., 2021), who also examined the validity and reliability of this test.

These results demonstrate that the MCMI-IV has a clear factor structure that can accurately measure personality and clinical features. This factor analysis enhances the construct validity of the test and improves the precision in measuring the intended characteristics. Based on the findings of the present study, it can be concluded that the MCMI-IV has an appropriate factor structure, making it a reliable tool for measuring personality and clinical features. These findings can assist researchers, counselors, and physicians in diagnosing and treating personality and clinical disorders. The prominence of the severe personality pathology factor indicates that this test can be useful in identifying and assessing complex and severe cases of personality pathology. This is crucial for designing treatment programs tailored to the specific needs of each individual. Additionally, distinguishing between clinical syndromes and severe clinical syndromes can help specialists gain a more precise understanding of the severity and impact of disorders on patients' daily lives.

5. Limitations & Suggestions

Every research study may encounter limitations. This study also faced certain limitations. For instance, the limitation of the statistical population, which only included clients of family counseling centers in Tehran. This limitation may pose a challenge in generalizing the results, making it difficult to apply the findings to other populations. Additionally, the use of self-reported data may involve errors such as self-report bias. Moreover, environmental and cultural factors that may influence personality patterns were not considered in this study. Therefore, to better understand the generalizability of the results, it is recommended to conduct similar studies in different populations and with a broader statistical sample. Additionally, studying the impact of environmental and cultural factors on personality patterns can contribute to a deeper understanding of the obtained data. The findings of this study can also be applied in counseling and psychotherapy, allowing psychologists and counselors to more accurately diagnose personality disorders and design more appropriate treatment programs. It is noteworthy that these results emphasize the validity and reliability of the MCMI-IV in identifying and analyzing personality disorders, which can be significant in clinical and research decision-making. Finally, the findings of this study can be utilized in future clinical research, particularly in areas that examine personality disorders and develop innovative treatment methods.

JAYPS Adolescent and Youth Psychological Studies
E-ISSN: 2981-2526

Acknowledgments

We would like to express our appreciation and gratitude to all those who cooperated in carrying out this study.

Declaration

In order to correct and improve the academic writing of our paper, we have used the language model ChatGPT.

Declaration of Interest

The authors of this article declared no conflict of interest.

Ethics Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants.

Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

Funding

This research was carried out independently with personal funding and without the financial support of any governmental or private institution or organization.

Authors' Contributions

All authors contributed equally.

References

American Psychiatric Association, A. (2022). *Diagnostic and statistical manual of mental disorders: DSM-5-TR*. Washington, DC: American psychiatric association. https://doi.org/10.1176/appi.books.9780890425787

Bazmara, D., Kamkari, K., Salehi, M., & Rad, M. M. (2023). Standardization and Investigation of Internal Consistency, Reliability, and Criterion Validity of the Fourth Version of the Millon Test (MCMI-IV). *Journal of Assessment and Research in Applied Counseling (JARAC)*, *5*(2), 70-84. http://journals.kmanpub.com/index.php/jarac/article/view/1277

Chegini, M., Delavar, A., & Garrayi, B. (2013). Psychometric Characteristics of Millon Clinical Multiaxial Inventory-III. *Journal of Modern Psychological Researches*, *8*(29), 135-162. https://psychologyj.tabrizu.ac.ir/article_4278_d3999c77429569a5d998506e2337ba59.pdf

David, R. M., Carroll, A. J., & Smith, J. D. (2022). Virtual Delivery of Therapeutic Assessment: An Empirical Case Study. *Journal of Personality Assessment*, *104*(3), 417-427. https://doi.org/10.1080/00223891.2021.1929262

Piotrowski, C. (1997). Use of the Millon Clinical Multiaxial Inventory in Clinical Practice. *Perceptual and Motor Skills*, *84*(3_suppl), 1185-1186. https://doi.org/10.2466/pms.1997.84.3c.1185

Price, L. A. (2019). Millon clinical multiaxial inventory-IV (MCMI-IV) profile patterns and scale score correlates for jail inmates referred for mental health services. https://repository.fit.edu/etd/342/

Reynolds, C. R., Altmann, R. A., & Allen, D. N. (2021). Assessment of Personality. In C. R. Reynolds, R. A. Altmann, & D. N. Allen (Eds.), *Mastering Modern Psychological Testing: Theory and Methods* (pp. 383-426). Springer International Publishing. https://doi.org/10.1007/978-3-030-59455-8_10

Shah, A., Banner, N., Heginbotham, C., & Fulford, B. (2014). 7. American Psychiatric Association (2013) Diagnostic and Statistical Manual of Mental Disorders, 5th edn. American Psychiatric Publishing, Arlington, VA. 8. Bechara, A., Dolan, S. and Hindes, A.(2002) Decision-making and addiction (Part II): myopia for the future or hypersensitivity to reward? Neuropsychologia, 40, 1690–1705. 9. Office of Public Sector Information (2005) The Mental Capacity Act 2005. http://www. *Substance Use and Older People*, *21*(5), 9. https://books.google.com/books?hl=en&lr=&id=bXTvBQAAQBAJ&oi=fnd&pg=RA1-PA9&dq=4.+American+Psychiatric+Association.+(2013).+Diagnostic+and+statistical+manual+of+mental+disorders+(5th+ed.).+Arlington,+VA:+American+Psychiatric+Publishing.&ots=AdGH2n1Fz5&sig=3vrg3e_crXdUb9__ezKoTYdhnBk

Taggart, T. C., Bannon, S. M., & Hammett, J. F. (2019). Personality traits moderate the association between conflict resolution and subsequent relationship satisfaction in dating couples. *Personality and individual differences*, *139*, 281-289. https://www.sciencedirect.com/science/article/pii/S0191886918306329

Zimmerman, M. (1994). Diagnosing Personality Disorders: A Review of Issues and Research Methods. *Archives of General Psychiatry*, *51*(3), 225-245. https://doi.org/10.1001/archpsyc.1994.03950030061006

JAYPS Adolescent and Youth Psychological Studies
E-ISSN: 2981-2526