

Relationship of Early Maladaptive Schemas and Big Five Personality Factors with Impulsivity in Middle-Aged Women

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Quantitative Study

Abstract

Background: Mental health in the middle-age period is vulnerable due to the many biological, physical, psychological, and social changes, and the consequences of these changes. Women experience more changes and complications associated with aging in this phase of life than men. The aim of the present study was to determine the relationship of early maladaptive schemas and Big Five personality factors with impulsivity.

Methods: The present study was a correlational research. The study population consisted of all middle-aged women in regions 1 and 2 of Tehran, Iran. From among them, 150 were selected through randomized cluster sampling. Subjects completed the Big Five Inventory-2 (BFI-2), Dickman's Impulsivity Inventory (DII), and the Young Schema Questionnaire-Revised (YSQ) before and after the intervention. To analyze the data, descriptive statistics (mean and standard deviation) and inferential statistics (the Pearson correlation coefficient and multiple regression) were used in SPSS software.

Results: Correlation analysis indicated that all domains of early maladaptive schema had a significant positive correlation with impulsivity ($P < 0.01$). Impairment limitations (Beta = 0.45; $t = 33.8$), self-regulation and impaired function (Beta = 0.42; $t = 27.44$), and disconnection and rejection (Beta = 0.41; $t = 25.83$) were able to predict 78% of impulse variance ($R^2 = 0.78$; $F = 7122.63$; $P < 0.0001$).

Conclusion: The results showed that early maladaptive schemas and Big Five personality factors were significant predictors of impulsivity. Impaired limits, self-regulation and impaired performance, and disconnection and rejection were the strongest predictors of impulsivity.

Keywords: Early maladaptive schemas; Big Five personality; Impulsivity; Middle-aged women

Citation: Salehi Mourekani S. **Relationship of Early Maladaptive Schemas and Big Five Personality Factors with Impulsivity in Middle-Aged Women.** *Int J Body Mind Culture* 2020; 7(1): 18-26.

Received: 15 Jan. 2020

Accepted: 10 Feb. 2020

Introduction

Middle age (45-65 years) is a bridge between youth and old age. Today, this period of life forms the largest part of adult life due to increased life expectancy. This stage of life is the golden and the most fertile period of life (van Dyck, Teychenne, McNaughton, De Bourdeaudhuij, & Salmon, 2015). Middle age can be the peak of human life as long as mental health is maintained and increased during this period. Due to the many biological, physical, psychological, and social changes individuals experience in this period of life, and the consequences of these changes, there are vulnerable to mental health issues (Ayers & Hunter, 2013). Compared to men, women experience more changes and complications as they age. The most critical event for women in middle age is menopause and the loss of fertility. Menopause and middle age have many consequences including decreased libido and sexual satisfaction, high prevalence of sexual dysfunctions, insomnia, increased risk of hypertension, cardiovascular diseases, cancers especially breast cancer, and various chronic and disabling diseases, which severely affect middle-aged women, and create mood and emotional disorders and interpersonal stress, and seriously threaten their mental health (Geeske Peeters, Rainbird, Lorimer, Dobson, Mishra, & Graves, 2017).

One of the issues affecting the quality of life (QOL) of individuals (especially those suffering from personality problems) is impulsivity and the personality traits of these individuals. In daily life, most people show impulsive behaviors. Although it is easy to provide examples of impulsive behaviors, accurately defining the phenomena of impulsivity is extremely difficult because there are many differences in the impulsive or non-impulsive interpretations of a behavior. However, it can be said that impulsivity is a multidimensional concept that includes the inability to delay pleasure due to the desire to obtain immediate rewards and the inability to inhibit current behavior or immediate and predetermined responses. Impulsive behavior can be defined as lack of resistance to immediate gratification, deficiency in motor inhibition, and lack of focus when making decisions. In fact, impulsivity is a vast domain of behaviors, appears in the form of immediate pleasure or reward seeking, can cause a high level of danger, and has significant undesired consequences (Bari & Robbins, 2013). Impulsivity is a response that is mixed with each dimension of the five-factor model (FFM), impulsive extraversion or cognitive processing speed, impulsive neuroticism or inability to inhibit behavior, impulsive or spontaneous emotionality and lack of planning, impulsive aggression or explosive aggression and inability to inhibit anger, impulsive activity or unrest and distraction. Cognitive/emotional functions such as attention, memory, reward processing, and motivation are also involved in impulsivity (Stahl et al., 2014).

Personality has been defined as a dynamic organization of the psychological system within the person that controls his/her compatibility with a changing environment. The mentioned system includes the systems cognitive adaptation, excitement and mood, response inhibition, and social relations. Therefore, personality traits are long-standing patterns of perception, communication, and thinking about oneself and the world as a whole (Josefsson et al., 2013). The 3 main theories regarding personality which are mainly studied and supported are the FFM, alternative five model of personality, and three-factor model (Leutner, Ahmetoglu, Akhtar & Chamorro-Premuzic, 2014). Although the 2 factors of neuroticism and extraversion are the same across all 3 models, there is much disagreement about the remaining factors (Zuckerman & Glicksohn, 2016).

The role of personality traits and early maladaptive schemas in impulsivity were investigated in the current study with the hope that it may help us identify

personality trait components and early maladaptive schemas, and their possible effects on impulsivity. Therefore, the present study was conducted with the aim to investigate the relationship of early maladaptive schemas and the Big Five personality traits with impulsivity in middle-aged women of the first and second districts of Tehran, Iran.

Methods

The present study was a correlational research. The statistical population of this study consisted of all middle-aged women referring to neighborhood houses of districts 1 and 2 of Tehran. The study participants were 150 middle-aged women who were selected using cluster random sampling. As maladaptive schemas and personality traits were investigated in the current study, a suitable sample size of 80 individuals was obtained, and considering the possible loss of samples this number was increased to 150 individuals. For the selection of the participants, first, 3 to 6 neighborhood houses were identified and selected from among all the neighborhood houses in districts 1 and 2. Then, after referring to each neighborhood house and coordinating with neighborhood house authorities, the people present in the neighborhood house were surveyed. The study inclusion criteria were being within the age range of 45-65 years. The exclusion criterion was presenting incomplete information. Before the distribution of the questionnaires, all individuals received written information about the research and participated in the study if they so desired. They were assured that all information would remain confidential and would only be used for research purposes. The participants' names and surnames were not recorded for privacy reasons. The duration of the entire process was 2 months.

The Big Five Inventory-2 (BFI-2) measures the Big Five personality traits (extraversion, agreeableness, openness, conscientiousness, and neuroticism) using short statements. This questionnaire includes 44 short items which are rated on a 5-point scale ranging from strongly disagree to strongly agree (van Dyck et al., 2015; Stahl et al., 2014; Soto & John, 2017). In one study, the Cronbach's alpha coefficients for the subscales of conscientiousness, neuroticism, agreeableness, extraversion, and openness were reported as 0.85, 0.85, 0.84, 0.76, and 0.60, respectively (Gurven, von Rueden, Massenkoff, Kaplan, & Lero, 2013). In the present study, Cronbach's alpha coefficients for neuroticism, extraversion, agreeableness, openness, and conscientiousness were 0.73, 0.69, 0.75, 0.71, and 0.77, respectively.

Dickman's Impulsivity Inventory (DII) is a self-report questionnaire designed to assess both functional and dysfunctional impulsivity. The questionnaire consists of 23 yes-no questions (Gurven et al., 2013). The Cronbach's alpha of the functional impulsivity and dysfunctional impulsivity subscales was reported as 0.83 and 0.86, respectively. The reliability analysis of this scale indicated a good internal correlation between both functional and dysfunctional impulsivity subscales and showed that Cronbach's alpha coefficients of the German version of the functional impulsivity subscale (0.76) and dysfunctional impulsivity subscale (0.84) of this questionnaire were similar to that of the functional impulsivity subscale (0.74) and dysfunctional impulsivity subscale (0.85) of the USA version (Gurven et al., 2013). However, in the USA version of this questionnaire, the correlation coefficient between the two subscales was positive ($r = 0.23$) (Gurven et al., 2013), but in another study (Estevez, Ozerinjauregi, Herrero-Fernandez, & Jauregui, 2019), these two subscales were independent of each other.

The Young Schema Questionnaire (YSQ) was developed by Young (1994) on the basis of clinical observations to identify early maladaptive schemas and evaluate 15 early maladaptive schemas using 75 items (Waller, Meyer, & Ohanian, 2001). The factor structure and construct validity of this scale were confirmed and Cronbach's alpha of the schemas ranged from 0.69 to 0.83. In the present study, Cronbach's alpha of the measures ranged from 0.62 to 0.90, and internal consistency of the scale was 0.94.

For statistical analysis, the raw data obtained from descriptive and inferential statistical methods were used. Descriptive statistics were used to calculate frequencies, determine central indices, dispersion, and draw charts, and the Pearson correlation coefficient and multiple regressions (inferential statistics) were used to investigate the effect of predictor variables on the criterion variable. In addition, all statistical calculations were performed using SPSS software (version 22, IBM Corporation, Armonk, NY, USA).

Results

The mean (standard deviation) age of the subjects was 54.67 (16.21) years, with an age range of 45-65 years. Among the participants, 55 (40%) individuals were employed and 95 (60%) were unemployed. Those with a bachelor's degree (34.2%) had the highest frequency and those with a master's degree (8.8%) had the least frequency.

Kolmogorov-Smirnov test was used to assess the normality of data distribution. The results indicated that all subscales of early maladaptive schemas, attachment styles, and depression followed the assumption of normality ($P > 0.05$). The study results indicated that all domains of early maladaptive schemas have a positive significant correlation with impulsivity ($P < 0.01$). Increase in the scores of the domains of early maladaptive schemas resulted in an increase in impulsivity scores. This means that individuals with more early maladaptive schemas have higher impulsivity scores. However, among the subscales of the YSQ, the Defectiveness/Shame and Eligibility/Dignity subscales did not have significant relationships with impulsivity ($P > 0.05$). This means that the scores of individuals in the Defectiveness/Shame and Eligibility/Dignity schemas do not have any significant statistical relationship with each other. The variable of openness has negative significant correlation with impulsivity (Two-domain test; $P < 0.01$; $n = 150$; $r = -0.75$). This correlation is large and significant, and the explained variance is 56.2%. Openness has a negative correlation with impulsivity, which means that the higher individuals' openness scores, the lower their impulsivity scores. Furthermore, the two variables of conscientiousness and agreeableness have a significant negative correlation with impulsivity, meaning that the higher the individuals' conscientiousness and agreeableness scores, the lower their impulsivity scores. Moreover, an increase in extraversion and neuroticism scores was found to result in an increase in impulsivity scores.

In order to study the multiple relationships between these variables, multiple linear regression method was used; early maladaptive schemas and Big Five personality traits as predictor variables and impulsivity as outcome variable were entered into the regression equation. The results are presented in tables 1 and 2.

Table 1. Research variables

Variables		Mean ± SD
Early maladaptive schemas	Disconnection and Rejection domain	22.47 ± 5.41
	Impaired autonomy and performance domain	23.81 ± 3.42
	Impaired limits domain	19.99 ± 2.73
	Other-directedness domain	20.55 ± 3.44
	Over-vigilance and inhibition domain	19.66 ± 3.38
Attachment Styles	Openness	14.12 ± 5.66
	Extraversion	15.47 ± 4.21
	Neuroticism	14.13 ± 3.37
	Conscientiousness	19.47 ± 4.17
	Agreeableness	18.13 ± 3.07
Impulsivity	Functional	15.16 ± 4.66
	Dysfunctional	17.55 ± 4.69

SD: Standard deviation

A tolerance coefficient of less than 0.1 and variance inflation factor of higher than 10 illustrates the linearity of data. Another assumption that was investigated in regression was the assumption of the independence of errors (the difference between the real values and the values predicted by the regression equation). If the assumption of independence of errors is null and errors have correlation with each other, it will not be possible to use multiple linear regression method. The Durbin-Watson test was used to assess the independence of errors and showed the errors to be independent of each other (value range: 1.5-2.5). Tolerance coefficient values were not less than 0.1 and variance inflation factor values were not higher than 10 for each predictor variable. A significance model was obtained using the Enter-method (F = 49.67 and R2 = 0.47); this model justified 47% of the variance (R2 = 0.47).

Table 2. Simultaneous impulsive regression on early maladaptive schemas and Big Five personality traits

Variable	R	R ²	R ² _{adj}	F	SD	β	t	P	Linear indices	Tolerance Coefficient	t	VIF
Constant	0.058	0.047	0.046	36.22	0.88	-	10.03	0.0001	-	-	-	-
Disconnection and rejection domain					0.03	0.31	6.22	0.0001	1	1		
Impaired autonomy and performance domain					0.02	0.32	6.61	0.0001	1	1		
Impaired limits domain					0.03	0.35	7.20	0.0001	1	1		
Other-directedness domain					0.03	0.23	4.61	0.0001	1	1		
Over-vigilance and inhibition domain					0.03	0.29	5.86	0.0001	1	1		
Openness					0.04	-0.30	-5.94	0.0001	1	1		
Extraversion					0.03	0.13	2.12	0.03	1	1		
Neuroticism					0.03	0.28	4.79	0.0001	1	1		
Conscientiousness					0.03	-0.19	-3.68	0.001	1	1		
Agreeableness					0.03	-0.22	-4.11	0.0001	1	1		

SD: Standard deviation

Early maladaptive schemas and Big Five personality traits were significant predictors of dysfunctional impulsivity. Moreover, in the stepwise regression model, subscales of early maladaptive schemas and Big Five personality traits as predictor variables and impulsivity as criterion variable were entered into the regression equation. The results showed that impaired limits (Beta = 0.45; $t = 33.80$), impaired autonomy and performance (Beta = 0.42; $t = 27.44$), and disconnection and rejection (Beta = 0.41; $T = 25.83$) were able to predict 78% of the variance in the tendency to quit ($R^2 = 0.78$; $F = 7122.63$; $P < 0.0001$). Therefore, the strongest predictors of impulsivity were impaired limits, impaired autonomy and performance, and disconnection and rejection.

Discussion

The present study showed that there is a relationship between early maladaptive schemas and Big Five personality traits. The results indicated that there was a significant relationship between early maladaptive schemas and impulsivity. This finding is in line with that of Zhu, Luo, Cai, He, Lu, and Wu (2016). However, among the subscales of the YSQ, the Defectiveness/Shame and Eligibility/Dignity subscales did not have significant relationships with impulsivity.

The Abandonment/Instability schema causes neuroticism in individuals. These results can be attributed to the experiences that form the schemas of Abandonment/Instability and Vulnerability to Harm or Illness, and the characteristics of individuals with high neuroticism. Distrust of receiving love, and emotional instability and unpredictability are characteristics that underlie the formation of Abandonment/Instability schema (Estevez et al., 2019), which is very similar to the definition of impulsivity. The extreme fear that disaster is near, it can happen at any moment, and one cannot prevent it is one of the characteristics of the Vulnerability to Harm or Illness schema. These experiences can explain why neurotic people have a negative view of themselves and others without regard to external reality. They consider the world to be insecure and lack any safety.

Furthermore, a significant relationship was observed between Mistrust/Abuse, Social Isolation/Alienation, and Self-Sacrifice schemas and impulsivity. These findings indicate that a combination of Mistrust/Abuse, Social Isolation/Alienation, and Self-Sacrifice schemas leads to personality traits aligned with impulsivity. However, caution must be exercised in making this conclusion. Impulsivity refers to previously thoughtless, but desirable and acceptable behaviors. The most common reasons for such behavior include avoiding hurting others, avoiding guilt over selfishness, or staying in touch with those in need. Based on these results, one can ask whether impulsivity can be considered as one of the characteristics of people with a Self-sacrificing schema. In other words, do the characteristics of impulsive people have a different form than the self-sacrifice schema and can one say that the goal of impulsive people is the same as the goal followed by people who have Self-sacrifice schema? However, more research needs to be conducted to better explain the relationship between these two variables. As previous research has shown, there is a complete overlap between the characteristics of individuals with Self-sacrifice schema and those with Mistrust/Abuse and Social Isolation/Alienation schemas. In other words, the presence of a Self-sacrifice schema and absence of Mistrust/Abuse and Social Isolation/Alienation schemas is likely to lead to the formation of traits known as agreement. A person who has Defectiveness/Shame and Failure schemas may come to the conclusion that if they do their duties pretty well, others will ignore their

defects and they will be loved (Leppanen, Vuorenmaa, Lindeman, Tuulari, & Hakko, 2016). Forgiveness, kindness, empathy, and other traits that fall under the impulsivity trait can be a response to the Defectiveness/Shame and Failure schemas in the individual. Sometimes, however, people use the extreme behavioral compensation coping style that is completely at odds with their schemas (Shorey, Stuart, & Anderson, 2013). Therefore, impulsivity can be one of the possible responses of a person to Mistrust/Abuse schema and vice versa.

In addition, results of the present study showed that the variables of openness, conscientiousness, and agreeableness had a significant negative relationship with impulsivity, and extroversion and neuroticism had a positive relationship with impulsivity. Based on the results of the present study, reward dependency appears to be defined as an inherent tendency to respond strongly to rewards and to learn to maintain rewarding behavior, and consequently, to be more resistant to behavioral extinction that is associated with impulsivity. This means that as people's tendency to reward a behavior increases, their impulsivity also increases. It can be explained that as the final behavior of impulsive people is without prior thinking and is acceptable by themselves, they always need to receive external rewards from others to increase self-confidence and self-esteem and to confirm themselves, and they always try to use it to maintain their behavior because others' approval of their behavior is an approval of their behavior desirability (Chakhssi, Bernstein, & de Ruiter, 2014). The extraversion and neuroticism subscales had a significant positive relationship with impulsivity. The reason for this is also quite clear; the behavior of impulsive people is without prior thinking and is acceptable by them, and this is also seen in individuals with psychoticism and extraversion.

An explanation for the obtained finding could be that the theoretical foundations of impulsivity and maladaptive schemas remind us that fundamental schemas can lead to an anomalous lack of foresight (action without prior thinking) and ultimately impulsivity, because it is predicted by the theory of planned behavior that individuals with low self-control (e.g., dysfunctional impulsivity) are less likely to act in accordance with their attitudes. In fact, people with dysfunctional impulsive behaviors engage in behaviors that are not consistent with their attitudes.

One of the limitations of the present study was that this study was conducted on middle-aged women referring to districts 1 and 2 of Tehran, so caution should be taken in generalizing these results to other regions. In the present study, many other variables that influence the formation of personality traits have been overlooked. Schematic processing means that a person with a particular schema processes the received information in a way that results in the schema being verified. In other words, schematic processing leads to distorting, searching, remembering, and recalling schema-compliant information, and more importantly, to ignoring the information incompatible with the schema (Shorey et al., 2013). Therefore, in answering the questionnaire, the schematic processing of a person with a particular schema results in the misinterpretation of questionnaire items. This limitation not only in the present study, but in all studies can lead to false correlation between research variables.

It is recommended that the present study be repeated if possible in the general public, not only among a particular class. It is recommended that more researches with the same subject, but with a larger sample size be conducted and the obtained results be compared. The use of other methods like other scales available in the personality domain is recommended. The present study was conducted using close-ended

questionnaires and it seems that, if other methods like interviews are used to obtain information about the experiences of subjects, richer information will be obtained.

Conclusion

The results of the present study indicated that early maladaptive schemas and Big Five personality traits were significant predictors of dysfunctional impulsivity. Impaired limits, impaired autonomy and performance, and disconnection and rejection schemas were the strongest predictors of impulsivity.

Conflict of Interests

Authors have no conflict of interests.

Acknowledgments

None.

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