The Role of Childhood Abuse in Predicting Core and Compensatory Schemas among University Students

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Abstract

Aim: This study aims to predict core and compensatory schemas based on childhood abuse. **Method:** Four hundred and twenty-two students were selected from three universities in Tehran (Iran) through cluster random sampling from May to July 2019. The Child Abuse Self-Report Questionnaire (Nourbakhsh, 2103), and the Young Schema Questionnaire (Young, 1998) were applied. Data were analyzed using SPSS software version 25 and the model was analyzed by Pearson correlation coefficient and multivariate regression with the stepwise method in a descriptive correlational study. **Results:** The results showed that all the components of childhood abuse had a significant effect on the core schemas. Also, some types of childhood abuse (physical, emotional, and neglect) had positive significant effects on compensatory schemas. Moreover, neglect and emotional abuse (β= 0.46, P<0.05) had the greatest impact on the core schemas, and emotional abuse (β= 0.35, P<0.05) had the greatest impact on the compensatory schemas. The results of this study could have therapeutic implications for psychotherapists working with childhood abuse survivors and schema therapists. **Conclusion:** Based on the results of this study we can imply that psychotherapists working with childhood abuse survivors, especially schema therapists can try to find the EMSs, especially the core schemas (due to their unconditional nature and the fact that if the core schemas are not created, the compensatory schemas will not be formed) and treat them so that the damages resulting from the experience of childhood abuse can be reduced.

Keywords: Childhood abuse, Core schemas, Compensatory schemas, Early Maladaptive Schemas.

Introduction

Mental health is a form of psychological well-being that helps people cope with life's stresses, better understand their abilities, learn and work well, and perform useful actions for society. This integral component of health and well-being is a solid foundation for our individual and collective abilities to make decisions, build relationships, and shape the world in which we live. What is clear is that mental health is a fundamental human right that is crucial for individual, social, and socio-economic development. Mental health is more than the absence of mental disorders. This state is a complex continuum that is experienced differently from person to person and with varying degrees of difficulty, discomfort, and potential social and clinical consequences. Exposure to adverse conditions such as poverty, violence, inequality, and environmental deprivation increases the risk of endangering people's mental health. Risks can manifest at any stage of life, but those that occur during critical periods of development, especially early childhood to adolescence, are significantly more harmful. For example, strict parents and corporal punishment can be extremely harmful to a child's mental health as it also affects their future (WHO, 2022). Mental health can be explained as"a person's harmony with the world around as much as possible, in such a way that it brings personal happiness and a useful and effective perception" (Abdel-Khalek& Lester, 2017). Sarmento(2015) whoworked on the mental health of students, states that those who have mental health had better performance and quality of life.

Factors such as childhood abuse experience (Herrenkohl et al., 2009), family support, family socioeconomic among students (Shakib et al., 2014), and social environment (Taheri et al., 2016), can impact mental health because of their vital roles.One of the most important factors that can endanger people's mental health is experiencing abuse in childhood.For a long time now, all types of child abuse have always existed in all societies, and according to the report of the WHO (2020), it is increasing. Lippard and Nemeroff (2020) state that according to the definition of theWHO, endangering the mental, physical, and well-being of a child by parents or other people is considered child abuse. The different types of this abuse include physical (severe physical punishment or excruciating pain for the child as a result),sexual (any kind of sexual touch andgetting sexual pleasure from the child),emotional (verbal and non-verbal annoying behaviors such as humiliation, blame, rejection, and any behavior that disrupts the child's self-esteem, sense of worth, and emotional development), andneglect (removing the child's basic needs such as food, clothing, education, hygiene and everything necessary for the child's growth and development).Child abuse has harmful effects on growth and health and can lead to consequences such as anxiety, depression, risk of suicide, anti-social behavior, and drug abuse (Herrenkohl et al., 2009). Child abuse is one of the strongest predictors of poor mental health (Evans et al., 2014). Kiani et al. (2021) stated that there is a significant difference between the suicidal and non-suicidal groups of university students in the scores of depression, adverse childhood experiences, exposure to suicide attempts, self-injurious behaviors, and the possibility of self-harm in the future. Also, the most mentioned differences were related to defeat and entrapment, and adverse childhood experiences.In the research conducted by Rostami et al. (2015), the findings indicated

that the experience of childhood abuse can play an essential role in the formation of EMSs, and, emotional abuse and neglect were able to predict EMSs and stress coping styles.Further, Pourshahriar et al. (2018) showed that the experience of emotional abuse in childhood can predict the characteristics of borderline personality disorder among university students.Furthermore, Basharpoor et al. (2016) found that the experience of childhood traumatic events isan important risk factor forsubstance use among university students.

EMSs are emotional and cognitive self-destructive patterns that are formed in the mind at the early time of growth and are continued throughout life. A person's behavior is not considered a part of the schema, but maladaptive behaviors arise in response to the EMSs. Therefore, behaviors originate from schemas, but they are not part of the schema (Young, 2003).

Some studies have shown that childhood abuse can lead to the creation of EMSs in children. Calvete (2014) has found that the emotional abuse of children by parents and peers leads to the formation of EMSs. Farhang Esfahani (2021) indicated that childhood maltreatment can directly predict EMSs and difficulty in emotion regulation. Therefore, those who have been mistreated in childhood might form EMSs and cannot develop skills to regulate and manage emotions. ShidAnbarani et al. (2020)found that EMSs play a mediating role in the relationship between childhood emotional maltreatment experiences and aggression. In a research conducted by Zheng et al. (2021),the results showed that emotional abuse was significantly associated with the EMSs domains of deprivation and emotional subjugation. Furthermore, they indicated that sexual abuse was significantly associated with the EMSs domains of abandonment, vulnerability, and dependence/incompetence.

 EMSs can be divided into core and compensatory schemas. Core schemas are beliefs that harm a person's self-image during growth, and compensatory schemas are beliefs that are formed to adapt or avoid core schemas that are negative and harmful beliefs (Broersen, 2012). Core schemas are the result of damage to the self-concept during development, especially during childhood (They are listed in domains 1 to 3) whereas compensatory schemas (listed in domains 4 and 5) develop to cope with or avoid the activation of core schemas. Therefore, in addition to the confrontational style, there is also a kind of confrontation at the level of schemas. Over time, compensatory schemas become harder and more inconsistent and end up as reinforcers of primitive schemas (Simeone-DiFrancesco, 2015). Very few studies have focused on the distinction between core and compensatory schemas. Fathi et al. (2022) emphasized the role of core schemas in shaping an individual's inability to forgive. Farazmand et al. (2017), in their study, showed thatparents' and peers' emotional maltreatment during childhood predicts unconditional schemas, and emotional maltreatment of parents', peers', and otherspredict conditional schemas among college students.

Since schemas arise from childhood experiences and are influential in people's mental health and considering that the distinction between core schemas and compensatory schemas is clinically important, much research in the field of childhood abuse experience is done without focusing on the categorization of schemas (Calvete, 2014). Therefore, in this research, we seek to examine the following hypothesis: 1- There is a significant

relationship between the experience of childhood abuse and core EMSs. 2-There is a significant relationship between the experience of childhood abuse and compensatory EMSs. 2- Childhood abuse experience can predict core and compensatory EMSsamong university students.

Methods

Study Design
The current research was descriptive-survey research.
Participants
The statistical population of the research was the students of Allameh Tabataba'i, Shahid Beheshti, and Azad Central University in Tehran. The sample size was 422 individualsfrom May to July 2019with a multi-stage cluster sampling method. Regarding the sample size in the present study, it can be said that in the regression analysis, the ratio of the number of samples (observations) to the predictor variables should not be less than 5 because otherwise, the results of the regression equation will not be generalizable. A more conservative ratio is 10 observations per predictor variable. From Stevens' point of view, it is even appropriate to consider 15 observations for each predictor variable in regression analysis (Hooman, 2016). So it can be said that the number of samples in the current research is appropriate. The criteria for entering the research were: 1. Willingness to participate in the research, 2. Studying in one of the associates to doctorate levels in Tehran universities, and the exclusion criterion was a failure to complete the questionnaires.
Procedure
After the study was approved by the second author'suniversity research committee, instructions and informed consent was provided to the students, and all respondents completed the questionnaires. The multi-stage cluster sampling method was used. One faculty was randomly selected from each university(AllamehTabataba'i, Shahid Beheshti, and Azad Central University) and the questionnaires were distributed among the students.
Data Analysis Plan
Data were analyzed using SPSS software version 25 and Smart PLS version 3 and the relevant model was analyzed by Pearson correlation coefficient and multivariate regression with the stepwise method. Based upon the purpose of the study, this research has focused on the probability of childhood abuse to predict an effect on EMSs, especially core schemas. To perform linear regression, the normality of the data was checked by the Kolmogorov-Smirnov test.
Instruments
Child Abuse Self-Report Questionnaire:This questionnaire contains 25 items with a Likert scale rated 1 – 5 (1 = very little, 5 = very much). Nourbakhsh (2012) developed and validated the questionnaire in Iran, to be culturally sensitive. It measures five

dimensions of childhood abuse: physical (assault, hitting, slapping, punching, kicking, hair-pulling, biting, pushing, etc.), sexual (rape, attempted rape, sexual assault, inappropriate touch, etc.), neglect (failure to provide or allow access to shelter, clothing, heating, stimulation, and activity, personal or medical care), nutrition (failure to provide or allow access to food, not providing adequate food and drink, or assistance with eating), and emotional (behaviors like intimidation, coercion, harassment, use of threats, humiliation, bullying, swearing or verbal abuse). To get the total score of the questionnaire, the scores of all items are added.A higher or lower score indicates higher or lower childhood abuse. This questionnaire has appropriate validity and reliability. Three experts verified the content validity. The questionnaire's reliability was examined by Cronbach's alpha, in which child abuse was reported as more than 0.7 in each dimension. The authors used a Confirmatory Factor Analysis (CFA) through LISREL-8/72. In another study by Eskandari and Refahi (2016), Cronbach's alpha was assessed, indicating sufficient reliability(physical abuse= 0.69, sexual abuse=0.72, neglect= 0.70, nutritional abuse= 0.82, emotional abuse= 0.77, total=0.80).In the present study, Cronbach's alpha was calculated to be 0.75.

Young Schema Questionnaire-short form (YSQ-SF): This questionnaire was developed by Young (1998) to measure fifteen schemas in five domains. This scale consists of 75 items that are answered on a 6-point Likert scale (completely false = 1 to completely true = 6). A high score in any of the subscales most likely indicates the existence of a maladaptive schema (Ghiasi et al., 2011). The five domains are 1. Disconnection and Rejection, 2. Impaired autonomy and performance, 3. Impaired limits, 4. Other-directedness, 5. Over-vigilance and Inhibition (Young, 2003). The first three domains are considered core schemas and the other two are compensatory schemas (Simeone-DiFrancesco et al., 2015). Waller et al. (2001) reported the internal consistency of the scale as 0.96. In addition, the internal consistency of all subscales was higher than 0.80. The internal consistency of the scale was reported 0.96 by Waller et al. (2001). Also, the internal consistency of all domains was higher than 0.80. The retest reliability of the subscales was between 0.5 and 0.82. Sadooghi et al. (2008) reported the similarity of the domains between 0.62 and 0.90 and the total score was 0.94.In this study, Cronbach's alpha was calculated to be 0.81.

Results

Demographic Information

Table 1 shows the frequency and percentage of demographic characteristics of the participants (see Table 1).

Table 1. Demographic information of research		
Demographics	**F**	**%**

Gender	Male	246	57
	Female	181	43
Education	BA	255	60
	MA	154	36
	PH. D	16	4
Age	18-25	329	77
	26-35	71	17
	+36	27	6
Marital status	Single	370	87
	Married	53	13

The data collected from the students of Tehran universities(35% from AllamehTabataba'I University, 25% from Shahid Beheshti University, and 40% from Azad University) included 57% male and 43% female. 60% were bachelors, 36% were masters and 4% were doctoral students. 77% of respondents were 18-25 years old, 17% were 26-35 years old, and 6% were 36 and above. Also, 87% of the respondents were single and 13% were married.

The significance level of the Kolmogorov-Smirnov test for the childhood abuse, core, and compensatory schemas was 0.080, 0.038, and 0.017. Therefore, there was no reason to reject the assumption of normality of these variables ($p<0.01$).

Correlations between Childhood abuse, Core Schemas, and Compensatory schemas

According to the correlation matrix of table 2, based on the correlation coefficients, the results indicated a statistically significant relationship between the core schemas with emotional abuse (0.46), neglect (0.46), sexual abuse (0.41), physical abuse (0.37), nutritional abuse (0.35). Furthermore, compensatory schemas indicated a statistically significant relationship with emotional abuse (0.35), neglect abuse (0.24), physical abuse (0.14), and nutritional abuse (0.13).

Table 2. Mean, standard deviation, and matrix of correlation of core and compensatory schemas, and childhood abuse

	Variables	1	2	3	4	5	6	7
1	Physical abuse	1						
2	Sexual abuse	0.633**	1					
3	Neglect	0.670**	0.568**	1				

4	Nutritional abuse	0.601^{**}	0.568^{**}	0.644^{**}	1			
5	Emotional abuse	0.592^{**}	0.411^{**}	0.663^{**}	0.549^{**}	1		
6	Core schemas	0.375^{**}	0.419^{**}	0.465^{**}	0.358^{**}	0.467^{**}	1	
7	Compensatory schemas	0.147^{*}	0.066	0.245^{**}	0.136	0.352^{**}	0.602^{**}	1
	M	**8.27**	**7.38**	**9.20**	**8.95**	**9.75**	**129.27**	**56.85**
	SD	4.07	3.74	3.82	4.16	4.22	37.67	**15.20**

** $P<0.01$ * $P<0.05$

Childhood abuse predicting core and compensatory schemas

Table 3. Regression results of childhood abuse components on core and compensatory schemas

	dependent variables	Independent variables	R	R Square	sig	Std. Error	D.W
1	Physical abuse	Core schemas	0.37	0.14	0.00	35.01	1.39
		Compensatory schemas	0.14	0.02	0.03	15.07	1.42
2	Sexual abuse	Core schemas	0.41	0.17	0.00	34.00	1.37
		Compensatory schemas	0.06	0.00	0.34	15.20	1.40
3	Neglect	Core schemas	0.46	0.21	0.00	33.44	1.53
		Compensatory schemas	0.24	0.06	0.00	14.77	1.49
4	Nutritional abuse	Core schemas	0.35	0.12	0.00	35.27	1.42
		Compensatory schemas	0.13	0.01	0.054	15.10	1.43
5	Emotional abuse	Core schemas	0.46	0.21	0.00	33.40	1.60
		Compensatory schemas	0.35	0.12	0.00	14.26	1.61

The results of table 3 indicated that the types of childhood abuse indicated a more significant effect on the domains of core schemas than on the domains of compensatory schemas, and the different types of childhood abuse were more capable of predicting core schemas.As the dataindicated, emotional abuse and neglect could predict 21% of the changes in the core schemas. Also, the results show that sexual abuse and nutritional

abuse were not capable of predicting compensatory schemas, and the results were not significant.

Table 4. Regression coefficients for predicting core and compensatory schemas based on the components of childhood abuse

Independent variables	dependent variables	Unstandardized Coefficients		Beta	t	Sig
		B	Std. Error			
Physicalabuse	Core schemas	3.47	0.60	0.37	5.70	0.00
	Compensatory schemas	0.54	0.26	0.14	2.09	0.03
Sexualabuse	Core schemas	4.21	0.64	0.41	6.50	0.00
	Compensatory schemas	0.27	0.28	0.06	0.93	0.34
Neglect	Core schemas	4.58	0.61	0.46	7.41	0.00
	Compensatory schemas	0.97	0.27	0.24	3.56	0.00
Nutritionalabuse	Core schemas	3.23	0.59	0.35	5.40	0.00
	Compensatory schemas	0.49	0.25	0.13	1.93	0.054
Emotionalabuse	Core schemas	4.16	0.55	0.46	7.44	0.00
	Compensatory schemas	1.26	0.23	0.35	5.30	0.00

According to the results of table 4, it can be concluded that all the components of childhood abuse had a significant effect on the core schemas. Also, the components of physical abuse, emotional abuse, and neglect had a significant effect on compensatory schemas. However, sexual and nutritional abuse did not have a significant effect on compensatory schemas.Moreover, according to the non-standard coefficients, these effects were positive and significant, and it can be said that neglect and emotional abuse ($\beta= 0.46$, $P<0.05$) had the greatest impact on the core schemas, and emotional abuse ($\beta= 0.35$, $P<0.05$) had the greatest impact on the compensatory schemas.

Discussion

This study aimed to investigate the relationship between childhood abuse dimensions, core EMSs, and compensatory EMSs. Moreover, it aimed to present a regression model of core and compensatory EMSs based on childhood abuse.

The results of this study indicated a statistically significant relationship between the core EMSs with all dimensions of child abuse respectively, emotional abuse, neglect, sexual abuse, physical abuse, and nutritional abuse**.**In line with the present study, Shahab et al. (2021) indicated that adverse childhood experiences can affect the development of young people, threaten their health, and fuel drug abuse and delinquency. Rostami et al. (2015), Calvete (2014), ShidAnbarani et al. (2020), Zheng et al. (2021), and FarhangiEsfahani (2021) indicated that childhood abuse experience especially emotional type has a significant effect on the formation of EMSs. Family is the first environment in which a person is grown and the person's presence continues for many years. The first, most powerful, and lasting environmental influences that a person receives are from the family environment.Even the influence people receive from other environments can be influenced by the atmosphere of their relationships with their parents in their family. Parents and primary caregivers and the way they communicate, and respond, play a major role in the formation of cognitive vulnerabilities of people, especially their negative cognitions (McCarthy et al., 2012).The performance of parents can cause the creation and expansion of schemas within the cognitive organization of a person. These schemas act as glasses through which people interpret and evaluate their experiences (Gunty, 2008). This is how childhood experiences, form our core beliefs about ourselves and others (Young, 2003). Therefore, the experience of abuse during childhood, which is the time of formation of cognition, can create core schemas as the primary basis of the EMSs.

Furthermore, compensatory schemas had a statistically significant relationship with some dimensions of child abuse respectively, emotional abuse, neglect, and physical abuse.The results showed that sexual abuse and nutritional abuse were not capable of predicting compensatory EMSs.As was stated in the research conducted by Rostami et al. (2015), Calvete (2014), ShidAnbarani et al. (2020), Zheng et al. (2021), and FarhangiEsfahani (2021), childhood abuse experience especially emotional type have a significant effect on the formation of EMSs. Although no research was found to investigate the relationship between childhood abuse with compensatoryEMSs, the results of this study are in line with the research of Farazmand et al.(2017) which indicated that emotional maltreatment of parents, peers, and others predicts conditionalschemas.Rostami et al.'s (2015) research showed that the experience of neglect and emotional abuse in childhood has more ability topredict the formation of EMSs. This result indicates that different types of abuse experiences can lead to different cognition, and it might be implied that sexual and nutritional abuse directly harm the core EMSs. One can imply that some type of abuse can disable compensatory schemas that are a kind of confrontation in the level of schemas.

The results of the regression model indicated that all the components of childhood abuse had a significant effect on the core schemas, and physical abuse, emotional abuse, and neglect had a significant effect on compensatory schemas. However, sexual and nutritional abuse did not have a significant effect on compensatory schemas. In line with the present study, Farazmand et al.(2017) indicated that emotional abuse of parents can

impact the formation of both conditional and unconditional EMSs.When the core schemas are created, people look for a coping style to compensate for these schemas. This is where compensatory schemas are formed to reduce the damage caused by the core schemas. These compensatory schemas become more difficult and inconsistent over time and become reinforcements of core schemas (Simeone-DiFrancesco, 2015).The present study is consistent with this theoretical basis and the results clearly showed that all the components of childhood abuse can predict the creation of core schemas, but this did not apply to compensatory schemas, and only physical abuse, emotional abuse**,** and neglect could predict compensatory schemas.We can say that sexual abuse and neglect might prevent using defense mechanisms that are the base for making the formation of compensatory schemas and lead to only core EMSs and might bring deeper suffering that needs further research in the future.

Conclusion

This research led to broadening our perspective on EMSs. According to the results, after experiencing abuse in childhood the formation of core schemas has begun and after the creation of them, compensatory schemas will also be formed. On the other hand, by recognizing the experience of abuse in childhood and observing compensatory schemas, the possibility of the existence of core schemas also increases which can be considered as the starting point of treatment. From a preventive perspective, it can be said that it is better to pay more attention to the way parents treat their children to protect them from the damages that will affect their life in the future. In other words, when parents try to educate themselves, they will be more successful in educating their children. Classification of EMSs and the knowledge that all the components of childhood abuse have a high ability to predict core schemas and the experience of some of them also confirms the formation of compensatory schemas, is clinically important to distinguish the type of abuse and the EMSs that are created as the result.

The limitation of this research is that this work was conducted in Iranian society and among educated people and cannot be generalized to other societies. For this reason, it is suggested that this research can be investigated in other societies with different education, economic status, and people. Moreover, researchers can examine the formation of core and compensatory schemas after the experience of child abuse with a third variable such as the child's mood. It is also suggested to the therapists that after diagnosing the experience of abuse in childhood, they should try to find the EMSs, especially the core schemas (due to their unconditional nature and the fact that as long as the core schemas are not created, the compensatory schemas will not be formed) and treat them, so that the damages resulting from the experience of childhood abuse can be reduced.

Disclosure Statements

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