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Explaining the Effects of Psychological Factors: Trauma Exposure, Dissociation, Emotion Dysregulation and Alexithymia on Deliberate Self-harm with the Mediating Roles of Dissociation and Emotion Dysregulation

Golnoosh Shahbaz[1], Maryam Bakhtiari[2*], Mohammad Davazdahemami[3] and Mohsen Saberi[4]

Shahid Beheshti University of Medical Sciences, Tehran, Iran

[2]Departments of Clinical Psychology, School of Medicine, Shahid Beheshti University of Medical Sciences, Tehran, Iran

[3]Departments of Clinical Psychology, School of Medicine, Shahid Beheshti University of Medical Sciences, Tehran, Iran

[4]Quran and Hadith Research Center and Department of Community Medicine, Baqiyatallah University of Medical Sciences, Tehran, Iran

[*]**Corresponding author:** Maryam Bakhtiari, Ph.D. of Psychology, Associate Professor, Departments of Clinical Psychology, School of Medicine, Shahid Beheshti University of Medical Sciences, Tehran, Iran, E-mail: golnoush.shahbazz@gmail.com

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Abstract

Background and aims: Self-Harm, also known as nonsuicidal self-injury or self-mutilation is the intentional, direct act of harming the body tissue without suicidal intentions. Being of a violent and primitive nature, self-harm is a crucial clinical problem which cause great concern among clinicians. This study aims to examine relationship between deliberate self-harm and psychological variables including trauma exposure, dissociation, emotion dysregulation, Alexithymia with the mediating roles of dissociation and emotion dysregulation.

Materials and methods: For this purpose, 200 (female 114, male 86) medical students of Shahid Beheshti University of Medical Sciences, in Tehran, Iran were selected and assessed in terms of deliberate self-harm inventory DSHI, dissociative experiences scale-II DES-II, childhood trauma questionnaire CTQ, Difficulties in emotion regulation scale DERS, and Toronto Alexithymia Scale TAS which were totally 114 items. Data analysis was done based on Partial Least Squares Structural Equation Modeling PLS-SEM and the use of Partial Least Squares of software.

Results: The results revealed trauma exposure directly affects emotion dysregulation, dissociation, and deliberate self-harm with the Significant t values measures: 10.087, 9.450, 2.075, and β-value: 0.512, 0.564, 0.161 respectively. Moreover, trauma exposure has an indirect effect on deliberate self-harm by mediating role of emotion dysregulation and dissociation with the respectively t values: 2.363, 3.459 and β-value: 0.102, 0.227. In addition, emotion dysregulation and dissociation have a direct effect on deliberate self-harm with the t values: 2.440, 4.035, and β-value: 0.198, 0.403 respectively. Finally, Alexithymia with t value =0.759, and β-value=0.041 do not affect deliberate self-harm significantly.

Conclusion: It was predicted that higher exposure to trauma would be related to increased levels of emotion dysregulation, dissociation followed by deliberate self-harm. So the findings of the study at hand provide more evidence on the significant effect of trauma exposure, emotion dysregulation, and dissociation on deliberate self-harm. They also support the mediating role of emotion dysregulation and dissociation as chief functions of deliberate self-harm.

Keywords: Deliberate self-harm; Trauma exposure; Emotion dysregulation; Dissociation; Alexithymia

Introduction

Deliberate self-harm (DSH), which has been addressed in research literature under other titles such as non-suicidal self-injury or self-mutilation, is a direct destruction or body tissue change without deliberate suicidal intention and is related to the objectives which are not confirmed socially [1,2]. Such an important clinical behavior has had numerous negative consequences and irreparable harm including the risk of high suicide attempts [3]. Although the studies on DSH have essentially emanated from Borderline personality disorder BPD [4] many studies indicated that DSH is not merely related to BPD [5,6] and some evidence suggested that DSH is common in non-clinical populations [7]. University students with an estimated life expectancy rate of approximately 10.5%, from 3.8 to 17.3, are considered as an example in this regard. However, this reported rate was related to Western societies [8] another study in this field reported the prevalence of longevity rate as 12.3% among the university students in Iran [9].

DSH has recently been the hot topic for a large body of clinical research [10] so that researchers have summarized and conceptualized the causes of engaging in these behaviors and introduced many models in this regard [11]. For example, Yates et al. [12,13] studied the developmental stages of DSH on the adolescents who were sexually or physically abused in childhood to refer to the role of DSH as a regulating mechanism for tolerating the consequences of traumatic childhood events. In other words, DSH is a frequent trait among those who have exposed with trauma [14-16] and perhaps it can be justified that DSH helps traumatic individuals get rid of annoying thoughts and hateful emotional states [17]. Nock's theoretical integrated model is one of the most comprehensive models presented in this area explaining the onset and sustainability of NSSI. In this model, Nock mentioned the significant role of child abuse (such as maltreatment) entitled "distal risk factors" of NSSI [18]. Thus, the studies in research literature considered several functions for DSH [11]. For example, the emotion regulation model of self-injury suggested that self-injury is a strategy to relieve emotional arousal [19], which is derived from the invalidating primary environments teaching poor strategies to individuals for tolerance with emotional distress [20] Emotion regulation, involves a range of processes monitoring, evaluating, and adjusting the emotional experiences [21].

Furthermore, Alexithymia, which is the inability to identify and describe emotions, is regarded as other major psychological trauma

effects [22]. Numerous evidence suggested the relationship between self-harm and the levels of Alexithymia; For example, Zlotnick, et al. [23] found high levels of Alexithymia among self-harming women. Dissociation, as another variable focused in this study, reflects disruption in the normal integration of a person's memory, consciousness, identity, perception, and body representation commonly following traumatic experiences [24]. Anti-dissociation model is another model of self-injury describing self-injury as a response to episodes of dissociation and depersonalization [25]. For this reason, DSH has been positively correlated in several studies with post-traumatic symptoms and dissociative states [7,16,26-28] In fact, DSH has been an attempt to avoid or end the unpleasant experiences of depersonalization and numbness [29].

In addition to the relationship of the above-mentioned variables with DSH, many studies postulated some mediators for the relationship between child maltreatment and self-injurious behavior including dissociation and emotion regulation being supported by part of the studies more than other mediators [28,30]. However, it is highly simplistic to focus on stopping DSH before we can deeply understand it; this behavior is only the tip of an iceberg, which has spread to almost everywhere and appeared on a cultural scene [31]. In addition, it is a significant psychological and social concern for cultures, which requires more studies in different cultures. In other words, the results of non-western studies and their inconsistency with western studies testified the significant impact of cultural factors on NSSI risk factors and its different functions [9,32]. Therefore, due to the sensitivity of the subject, the present study aimed at investigating the relationship between DSH and important psychological factors such as trauma exposure, dissociation, emotion dysregulation, and alexithymia with the mediating role of emotion dysregulation and dissociation to achieve a profound and culture-based etiological understanding.

Material and Methods

The present study conducted based on a descriptive and correlational design based on structural equation method.

Participants and procedure

The participants in this study were selected among medical students of Shahid Beheshti University of Medical Sciences, Tehran, Iran. First, the second author communicated with the students alone in the college campus or in a group before their class and invited them to participate in the study. Then, he introduced the ongoing psychological research, and provided them with some explanations on the ethical issues related to the research and rights of participants (anonymity) which should be observed the researchers. Then, those students who were interested in participating in the study received five questionnaires including 114 items. The first page of the questionnaire included general information about the research, ethics, and privacy. The participants were asked to return the packages of questionnaires after completing them. A total of 281 packages of questionnaire were distributed among which 200 questionnaires were returned. Thus, 200 students including 86 men (Mean age=19.454, SD=0916), and 114 women (Mean age=19.790, SD=1.156). It worth noting that the present study was approved by the research committee of Shahid Beheshti University of Medical Sciences, Tehran, Iran.

Materials

The package of questionnaires included six sections as described below:

Demographics

This section first included a general and brief explanation of the research and its ethics. Then, the participants asked two general questions about their age and gender.

Deliberate Self-Harm Inventory

DSH was evaluated by Deliberate Self-Harm Inventory DSHI (2) which is a 17-item behavior-based questionnaire identifying the self-harm behaviors (you have ever intentionally scratched your wrist, arms, or other area (s) of your body). The subjects responded to every 17 questions exploring a variety of self-harm behaviors whether they have ever had the described behavior or not.

Based on the yes or no answers, (i.e. those who answered yes received "0" score and those who answered no received "1" score), the scores were summed and the frequency of self-harm behaviors was obtained. Higher scores represented a greater number of DSH behaviors.

The internal consistency of this questionnaire was reported α=0.7 among the university students [15], and the Cronbach alpha of the questionnaire was 0.93 in the present study having the necessary reliability and validity. It is worth noting that DSHI was used in various studies to examine DSH among university students [26].

Dissociation

The Dissociative Experiences Scale-II (DES-II) which was a 28-item, self-report, and a reliable tool measured the dissociative states with a good internal consistency; Such a tool has been widely used for obtaining the frequency and severity of dissociative experiences [33]. The participants selected a number based on how often (such as the percentage of time) they have such dissociative experiences described in questions (for example, some people have had the experience of driving, inside a bus or subway, and suddenly they have found that they cannot remember what happened on all or part of the trip. Select a number representing the percentage of time that such a thing happens to you). The options increased by 10% from 0 to 100%. The internal consistency of the Persian version of this questionnaire was reported α=0.92 in the study of Nobakht and Dale [15]. This questionnaire had a good validity and reliability (α=0.94).

Emotion Dysregulation

Emotion Dysregulation was measured by the Difficulties in the Emotion Regulation Scale (DERS) [21]. DERS is a self-report questionnaire of 36 items including six areas of emotion dysregulation difficulties such as non-acceptance of negative emotions, difficulties engaging in goal-oriented behaviors when experiencing negative emotions, limited access to effective emotion regulation strategies, impulsivity, lack of emotional awareness and limited emotional clarity. The items were scored from one (almost never) to five (usually). Higher scores in DESR represented higher levels of emotion regulation or in other words emotion dysregulation.

DESR demonstrated a good re-test reliability, construct validity, and sufficient predictability, and DESR internal consistency was (α=0.94) [21]. In the normal Iranian sample, the internal consistency of this

scale was obtained using the Cronbach alpha from 0.66 to 0.88 for all factors [34]. The internal consistency of this scale was highly good in this study (α=0.97).

History of trauma

The Childhood Trauma Questionnaire CTQ (35) measured history of trauma. This tool consists of two parts including 13 questions. The first six questions related to the first part namely the traumatic events of childhood. For example "have you ever experienced the death of a close friend or family member before the age of 17?" The next seven questions are related to the second part of the recent traumatic events. For example, "have you ever experienced a traumatic sexual experience such as rape and harassment in the last three years?" The internal consistency of the original Persian version of CTQ was reported with Cronbach alpha α=0.52 in the study of Nobakht and Dale [15]. In this research, the questionnaire was translated and edited again and its internal consistency with alpha (α=0.91) was good.

Alexithymia

The Toronto Alexithymia Scale (TAS) having 20 items measured Alexithymia. TAS was developed by Bagby, et al. [36], and consists of difficulty describing feelings (DDF), difficulty-identifying feelings (DIF), and externally oriented thinking (EOT) [37].

The items were scored with a five-point Likert scale from one (totally disagree) to five (totally agree). A score above 60 represented high Alexithymia while a score of less than 52 represented low Alexithymia [38]. The internal consistency of TAS-20 in the normal Iranian sample was reported α=0.79 based on Cronbach alpha [39], and the internal consistency of this scale was good (α=0.94) in this study.

Design and data analysis

The impact of demographic variables such as age and gender on DSH was measured through chi-square tests. Since the data followed no normal distribution, the PLS-SEM approach (Partial Least Square-Structured Equation Modeling) invented by Wold [40], was used to analyze the data in structural equations. PLS is considered as powerful analytical method due to a minimum requirement on the scales of measurement, sample size, and residual distribution. In fact, part of its strength is having no hypothesis in relation to data distribution and the sample size can be much less than the required value in SEM.

Results

DSH, gender and age

The results indicated that 64% of the respondents were healthy and 36% had DSH. Among 200 participants, 72 participants (38 males, 34 females) had DSH while only 128 participants (80 females, 48 males) had no DSH. Chi-square test was used regarding the effect of gender on different levels of DSH. The results indicated that gender had a significant effect on DSH rates (x^2=7.534; r=0.006), and males reported more DSH than females.

In addition, there was a significant difference between the different age groups in terms of DSH rate based on the significance level because the significance level was less than 0.05 (x2=9.470; and r=0.049) . Based on the percentage, the DSH rate in the individuals with a young age was higher than that of the older individuals.

Cutting was considered as the most common self-harm behavior among males and females, and difference was observed between males and females in terms of answering the yes/no option only in the item 15 of DSHI (self-punching) because the significance level was less than 0.05 and males used this behavior more for harming themselves. In other cases, no significant difference was reported between males and females in terms of answering the yes/no option (DSH types).

Goodness of fit

Since the questions of the questionnaire followed no normal distribution in the research, the PLS method was used for analyzing the data and studying the goodness of fit and research hypotheses. The researchers using the PLS method and its related software such as Smart PLS should perform three following steps in their research: 1) First, they should make sure of the accuracy of the relations in the measurement model using the validity and reliability criteria. 2) Then, they should examine and interpret the relations in the structural part. 3) Finally, they should examine the total model goodness fit of their research model. It should be noted that the structural relations are significant and interpretable only when the relations and values of the measurement models are acceptable. Accordingly, the present study evaluated the goodness of fit and then the total structural model fit. Finally, the research hypotheses were studied

Evaluating the measurement model fit

In the model studied in the present study, there were five measurement models related to the five main variables of the study. Therefore, three reliability criteria such as coefficients of factor loadings, Cronbach alpha, and composite reliability were used along with convergent validity and discriminant validity.

Reliability

Reliability was studied through the coefficients of factor loadings, Cronbach alpha, and composite reliability. The results of composite reliability and Cronbach alpha are presented in Table 1.

Cronbach Alpha	Composite Reliability	Measures
0.972	0.973	Emotion Dysregulation
0.964	0.966	Dissociation
0.935	0.944	Deliberate Self-herm
0.946	0.952	Alexithymia
0.916	0.928	Trauma Exposure

Table 1: Composite reliability and cronbach alpha.

Since the Cronbach alpha is a traditional criterion for determining the reliability of the variables, the PLS method uses a better criterion called composite reliability [41]. If the composite reliability for each variable is higher than 0.7, [42], it will indicate the appropriate internal reliability for the measurement models while the value less than 0.6 indicates the lack of reliability [43]. As indicated, the value of Cronbach alpha and composite reliability in each of the five variables is higher than 0.7 indicating the appropriate reliability of the model.

Validity

Validity was measured through two methods of convergent and discriminant. Convergent validity was the second criterion used for fitting the measurement models in the PLS method. Fornell and Larcker [44] introduced the AVE criterion (average variance extracted) for measuring the convergent validity and stated that the critical value was 0.5 for AVE. In other words, the AVE value greater than 0.5 indicates the acceptable convergent validity [44]. The AVE criterion represents the average variance shared by each variable with its own questions. In other words, the AVE indicates the correlation of a variable with its own questions. Higher amount of correlation leads to an increase in the goodness of fit [45].

AVE	Measures
0.508	Emotion Dysregulation
0.511	Dissociation
0.507	Deliberate Self-herm
0.504	Alexithymia
0.501	Trauma Exposure

Table 2: AVE values.

Finally, discriminant validity was evaluated as the third measure of fitting the measurement models in the PLS method.

According to Forrnell and Larcker [44], discriminant validity is at an acceptable level when that the AVE rate for each construct is more than the shared variance between that construct and other constructs (i.e. the square of the coefficients of correlation between the constructs) in the model. In PLS, this is performed by a matrix. The square of this matrix contain the correlation coefficients between the constructs and square root of AVE values for each construct.

Trauma Exposure	Alexithymia	Deliberate Self-herm	Dissociation	Emotion Dysregulation	Measures
				0.713	Emotion Dysregulation
			0.715	0.623	Dissociation
		0.712	0.639	0.55	Deliberate Self-herm
	0.71	0.446	0.588	0.555	Alexithymia
0.708	0.38	0.503	0.564	0.512	Trauma Exposure

Table 3: Correlation coefficients between the constructs and square root of AVE related to each construct.

Table 3 indicates the matrix related to a model with five constructs. This model had an acceptable discriminant validity where the numbers in the original diameter were greater than their lower values. Therefore, considering the reliability values (coefficients of factor loadings, Cronbach alpha coefficient, and composite reliability) and validity (discriminant and convergent validity), the measurement model had a good fit.

Evaluating the structural Model fit

T Values: The most basic criterion for measuring the relationship between the constructs in a model (structural section) is the t significance values. If the value of these numbers is greater than 1.96, it indicates the accuracy of the relationship between the constructs and confirms the research hypotheses at 95% confidence level. However, the numbers only indicate the accuracy of the relationship but numbers cannot measure the intensity of the relationship between the variables. As can be observed in the figure 1, all variables except for Alexithymia were t values higher than 1.96 having a significant relationship at 95% level.

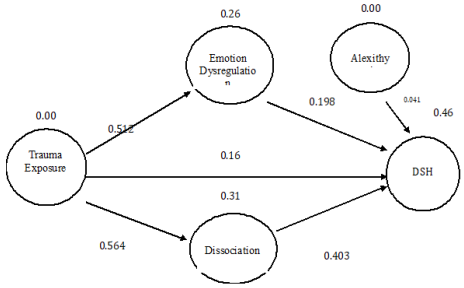

Figure 1: Value.

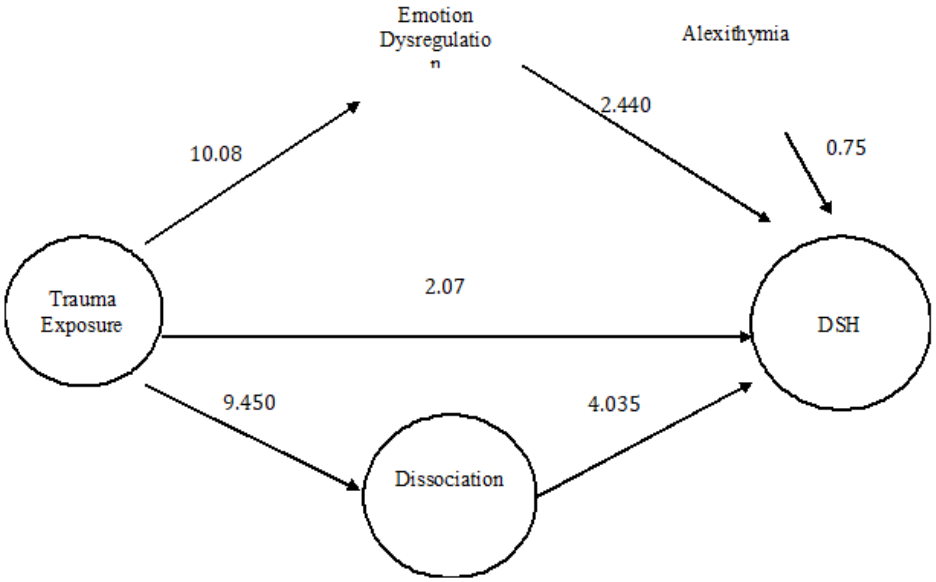

Figure 2: T values.

R Squares criterion (R^2)

R^2 is a criterion for connecting the measurement part and structural part of structural equation modeling indicating that an exogenous or independent variable affects an endogenous or dependent variable. R^2 value is calculated only for endogenous (dependent) constructs of the model. Such a value is zero for exogenous constructs.

The researchers using the PLS method for their research should necessarily report the R^2 values for all endogenous variables of their model [46]. The higher the R^2 values related to endogenous variables of a model, the better the fit of the model. Chin [47] introduced three values of 0.19, 0.33 and 0.67 as criteria for weak, moderate and strong R^2 values. Based on Table 4, R^2 values for all dependent variables of the model were at the moderate and strong levels and based on the criterion value and confirmation of R^2 value for most independent variables, the appropriateness of structural equations fit was confirmed.

R Square	Measures
0.262	Emotion Dysregulation
0.318	Dissociation
0.464	DSH

Table 4: R^2.

Stone-Geisser Criterion (Q2)

This criterion, which indicates the model predictability, was introduced by Stone and Geisser [48]. According to Stone and Geisser, the models with acceptable structural fit should have the predictability of the indices related to the endogenous (dependent) constructs. In other words, if the relationships between the constructs are appropriately defined in a model, the indices able to affect the indices of each other adequately to validate the hypotheses. Q^2 value should be calculated for all endogenous (dependent) constructs of the model.

If Q^2 is zero or less than zero in case of an endogenous (dependent) construct, the relationships between the other constructs of the model and the endogenous (dependent) construct is not be explained well. Thus, the model will need some modifications.

Hensler, et al. [49] determined the intensity of the model predictability on endogenous constructs as 0.02, 0.15 and 0.32 (weak, moderate, and strong). They emphasized that the model will have a weak predictability against the indices of that construct if the Q^2 value of an endogenous construct is close to 0.02.

SSE: Sum of squared errors of prediction in endogenous (dependent) constructs

SSO: Sum of the squared observations related to indices

1-SSE/SSO: It indicates the CV-COM.

1-SSE/SSO	SSE	SSO	Measures
0.121	6329.686	7200	Emotion Dysregulation

0.148	4768.98	5600	Dissociation
0.066	3174.793	3400	Deliberate Self-herm

Table 5: Q^2.

As represented in the Table 5, this criterion was moderate for all variables indicating that almost a majority of exogenous (independent) constructs were appropriate for predicting the dependent variables and the research structural model fit was confirmed again.

Evaluating the general model fit

This criterion is related to the general part of structural equations. In other words, the researcher can use this criterion to check the fitness of the measurement, structural, and general parts. Tenenhaus et al [50] developed GOF. Communality is obtained from average of shared values of each endogenous variable in the model.

$$GOF = \sqrt{\overline{R^2} * \overline{Communality}}$$

$$GOF = \sqrt{0.509 * 0.348} = 0.421$$

R^2	Communality	Measures
0.262	**0.508**	**Emotion Dysregulation**
0.318	0.511	Dissociation
0.464	0.507	Deliberate self-harm
0.348	0.509	Mean

Table 6: GOF.

R2 represents the mean values of R Square for the endogenous (dependent) variable in the model. Wetzels, et al. introduced three values of 0.01, 0.25, and 0.36 as weak, moderate and strong values for GOF. The model indicated a good fit due to the obtained value of 0.421 for GOF.

Then, the effects of psychological factors: such as trauma exposure, dissociation, emotion dysregulation and alexithymia on deliberate self-harm with the mediating roles of dissociation and emotion dysregulation were explained

Finally, the direct and indirect effects of research variables on DSH were examined after confirming the structural, measurement, and general model fit. As illustrated in Figures 1 and 2, trauma exposure has a direct significant effect on emotion dysregulation (β-value=0.512, t value=10.087) and dissociation (β-value=0.564, t value=9.450) since the t value is greater than 1.96. In other words, as the person experiences more traumatic events, his associative experiences increase and causes more problems in his emotion regulation. Furthermore, traumatic exposure directly influence on DSH (β-value=0.1651, t value=0.075). In other words, the DSH rates are higher as the number of traumatic events the person faces is higher. On the other hand, as illustrated in Figures 1 and 2, emotion regulation (β-value=0.198, t value= of 2.440), and dissociation (β-value=0.403, t value=4.035) have a significant effect on DSH. In other words, the DSH rate increases as dissociative modes and difficulties in emotion regulation increase.

In addition, as depicted in Figures 1 and 2, Alexithymia is the only variable with path coefficient of 0.041 and t value of 0.759, without any significant effect on DSH. In case of the mediating effect of dissociation and emotion dysregulation on the relationship between trauma exposure and DSH, the results indicated that emotion dysregulation (β-value=0.102, t value=2.363) and dissociation (β-value= 0.227, t value- of 3.459) both mediate the relationship between trauma exposure and DSH. Since t values are greater than 1.96, the trauma exposure has a significant and indirect effect on DSH (Figures 1 and 2).

Discussion

The present study aimed to investigate the effect of psychological factors such as trauma exposure, dissociation, emotion dysregulation and alexithymia on DSH with the mediating roles of dissociation and emotion dysregulation using PLS-SEM method. This study first assumed that trauma exposure has a direct effect on emotion dysregulation. Based on the obtained results, the effect of trauma exposure on emotion dysregulation is significant, which is consistent with the findings of many studies indicating that emotion regulation problems are frequent among the people with trauma exposure especially the numerous abuses in childhood [52,53] Such abuses have devastating effects on expression, recognition, understanding of emotions, and use of strategies to manage extreme emotions [54].

In addition, the results indicated that trauma exposure has a direct and significant effect on dissociation, which is in line with the results of other studies [15,55,56]. Dissociative processes can act as a defense against the frustrating emotions of trauma exposure to reduce the awareness of the information associated with that particular trauma [57,58].

Furthermore, the results indicated that trauma exposure significantly affects DSH, which is consistent with the findings of Nobakht and Dale's studies [15]. For example, Nobakht and Dale [15] indicated that both forms of traumatic events (childhood and recent) are significantly correlated with DSH. However, the childhood traumatic events are more relevant to DSH than recent traumatic events; In other words, childhood experiences play a significant role in the evolution of personality and mental health of humans while negative childhood experiences such as childhood trauma, sexual abuses, negligence, and emotional discrediting are among the risk factors of DSH [19].

Similarly, emotion dysregulation had a direct significant effect on DSH. The results indicated that individuals use DSH to regulate their negative emotions which are frustrating and uncontrollable at very high and frequent levels. The finding was in line with the findings of [19,30, 59-62].

Unlike the western studies, Gholamrezaei, et al. [9] indicated no strong relationship between NSSI and emotion dysregulation. Perhaps,

a justification in the area of inconsistency with Western studies is related to cultural difference. Gholamrezaei, et al. [6] reported that other factors than psychological factors (such as high levels of emotion, anxiety, depression) including social and interpersonal motivations can be regarded as the main risk factor for suicide and NSSI in Iran due to a different cultural background than the West. From this perspective and based on the importance of culture, there is a lot of ambiguity on psychological or social function of emotion regulation requiring more examination in this area.

In addition, dissociation had a direct effect on DSH. Dissociation is one of the frequent companions and key factors of DSH [14]. Many patients reported feeling "numbness" and "death" before the self-harming behaviors (Farber 2004). In line with these findings, Nobakht and Dale [15] indicated that people reported more dissociative states when had more DSHs.

Therefore, experiencing pain and blood can be a tool for neutralizing the dissociative states and keep the sense of reality and coherent sense of existence.

However, Alexithymia was the only variable in this model having no significant effect on DSH. One justification on the insignificance of Alexithymia in this model is that the research design, the number of subjects, and the application of the PLS analysis method to analyze the data were in such a way that Alexithymia, along with other variables, had no significant effect on DSH. However, as shown in Table 3. Alexithymia was correlated with DSH, which is in line with Lee [63], Paivio and MacCulloch [64], Evren and Evren [65]. However, along with other variables in this model, Alexithymia was not significant.

Concerning the mediating effect of emotion regulation in the relationship between trauma exposure and DSH, the results indicated that there is an indirect and significant relationship between trauma exposure and DSH and emotion dysregulation acts as a mediating variable.

This issue intensifies the effect of trauma on DSH, which is consistent with the results of some other studies [30,53,66,67]. For example, the results of path analysis by Peh, et al. [19] indicated that emotion dysregulation significantly mediates the severity of child abuse and self-injury. In fact, the early exposure to harsh, abusive, and neglecting environments disrupts the healthy growth of emotion regulation skills [53,68] Such environments with abusive caretakers not only harm the child physically and psychologically, but also consider the weak emotion regulation as a model to children, because these caretakers are extremely reactive in terms of emotion, indicate severe rage of anger, and have aggressive behaviors including intentional self-harm [69].

In addition, the results indicated that trauma exposure has a significant indirect effect on DSH through the dissociation mediating, which is consistent with several findings indicating that dissociation mediates the relationship between child maltreatment (as one of the psychological trauma) and NSSI. The features of dissociation mediating in the context of child maltreatment and NSSI were investigated by some other researchers e.g. [13,27,28,70]. The results indicated that although dissociation mediates the relationship between child abuse and NSSI, this is only true for sexual abuse, not physical abuse and neglect.

As a result, the universality of self-harm behaviors and the wounds on the body in the 21st century imply the growth in traumatic contexts. Such a context makes the sufferers to grow disabling and intolerable emotions, have nobody to listen to them, have no means of understanding, expressing, and integrating the traumatic experiences of their lives. Thus, they dissociate such experiences, which can be considered as the parts falling apart from the sufferers. The output would be the individuals being more involved in manipulating their bodies and experiencing their emotions on their bodies instead of experiencing them in their minds.

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