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Comparison of Behavioral Inhibition and Metacognitive Thinking and Cognitive Fusion in Self-Injured and Normal People

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Abstract

Introduction: Self-injury encompasses not just physical sensations but also includes psychological, emotional, and social dimensions. The present study aimed to compare behavioral inhibition and metacognitive thinking and cognitive fusion in self-injured and normal people.

Method: This study is a causal-comparative research. The statistical population for the study consisted of individuals with a history of self-injurious behaviors who sought treatment at psychological clinics in Shiraz from July to September 2023. The research employed purposive sampling as the sampling method. At the end, the data of 53 participants was analyzed. The data collection tools utilized in this study were the Measure of Behavioral Inhibition (2005), Cognitive Fusion Scale (2014), and Meta-Cognition Questionnaire (2004). Data analysis was conducted using the MANOVA and Independent Samples T-Test and Welch's t-test through SPSS version 27 software.

Results: According to findings, the observed difference in the mean of behavioral inhibition, positive beliefs about worry, negative beliefs about the controllability of thoughts, and cognitive uncertainty in two groups with self-injury and without self-injury was significant ($p<0.05$).

Conclusion: The findings of this research suggest that individuals who engage in self-harm display notable disparities in terms of behavioral inhibition and metacognitive thinking in comparison to those who do not self-harm. However, there is no significant divergence observed in cognitive fusion between the two groups. The study reveals that individuals with self-injury exhibit higher levels of behavioral inhibition harbor negative beliefs about their ability to control thoughts, and experience cognitive uncertainty more frequently than individuals without self-injury. Conversely, individuals without self-injury tend to possess stronger positive beliefs about worry compared to those with self-injury

Keywords: Behavioral Inhibition, Metacognitive Thinking, Cognitive Fusion, Self-Injury

Introduction

Around 20% of adolescents worldwide experience mental health problems and this figure is expected to rise due to increasingly stressful environments. Among the prominent concerns for public health is self-harm, which is closely associated with other mental health issues, notably depression [1]. Self-harm can be defined as any deliberate act of inflicting harm on oneself, irrespective of the underlying motivation. The occurrence of self-harm is typically observed between the ages of 11 and 14, with severity peaking between 18 and 25 years old [2] .According to a report by the World Health Organization (WHO), self-harm, and interpersonal violence rank as the third and fourth leading causes of death among individuals aged 15 to 29, following road injuries and tuberculosis. Current estimates

suggest that approximately 14.6 million individuals engage in self-harm annually [3]. With Iranian teenagers, the prevalence of self-harm is estimated to be 22.13% [4]. Furthermore, a study highlights the association between non-suicidal self-harm, attempted suicide, and the diagnosis and severity of depression [5].

Behavioral inhibition is considered as one of the factors that can predict the occurrence of non-suicidal self-harm [6]. In contrast to children who are not inhibited, behaviorally inhibited children demonstrate heightened fear, caution, and avoidance when confronted with new stimuli [7]. Early in childhood, having a strong and consistent tendency to avoid certain behaviors is closely linked to future anxiety and could increase the likelihood of encountering heightened emotional challenges during anxiety-inducing events that are also stressful [8]. A study has revealed a positive correlation between behavioral inhibition and non-suicidal self-injury [6]. Additionally, another study has demonstrated a significant disparity in behavioral inhibition between adolescents engaging in non-suicidal self-harm and normal adolescents. Furthermore, individuals who engage in non-suicidal self-harm exhibited higher scores in terms of risky decision-making, behavioral inhibition, and emotion regulation disorder [9].

Individuals with a past of suicidal behaviors exhibit diminished performance in attention, memory, cognitive inhibition, mental ability, verbal ability, problem-solving ability, and executive performance when compared to individuals without such a history. Furthermore, individuals who engage in self-injury may also experience deficits in metacognition [10]. Metacognition refers to a wide range of constructs that involve thinking about one's thinking. It is believed that metacognitive beliefs can influence cognitive processes such as worry, threat monitoring, and self-regulatory processes, which in turn can impact unhelpful self-perceptions [11]. In a study conducted by Aadahl et al., it was discovered that positive and negative metacognitive beliefs about suicidal thoughts were significantly associated with the occurrence of suicidal thoughts [12]. Another research suggests that higher-order categories of cognitive risk factors may have distinct connections with the severity and prevalence of non-suicidal self-injury [13]. Additionally, a study found that individuals who engage in non-suicidal self-injury tend to have more pronounced emotional and cognitive responses to stress [13].

Cognitive fusion also plays a crucial role in the occurrence of suicidal thoughts and self-harm [14]. It is an essential element in the distress model, a theoretical framework based on acceptance and commitment therapy and central to the development and maintenance of various mental disorders. Pathological cognitive fusion leads to a decrease in psychological flexibility and the emergence of psychological issues [15]. Patients with cognitive fusion tend to interpret their thoughts and emotions as reality, giving excessive importance to negative self-evaluations. Moreover, cognitive fusion can result in being consumed by one's thoughts, leading to increased rumination and depressive symptoms [16]. A study found that individuals with high psychological inflexibility, distress, cognitive fusion, and value development were more likely to experience suicidal thoughts [17]. Similarly, another study revealed that a significant portion of the relationship between rumination, depression, and anxiety is accounted for by the bidirectional relationship between experiential avoidance and cognitive fusion in the presence of stressful life events [18].

It is alarming that 13.7% of children and adolescents admit to having engaged in self-harm at some point in their lives, and these behaviors are closely linked to suicide risk. Therefore, it is crucial to identify the factors that contribute to self-harm and distinguish it from typical behavior. Unfortunately, previous research has not explored the simultaneous comparison of behavioral inhibition, metacognitive thinking, and cognitive fusion in individuals who self-harm and those who do not. As a result, there is a significant research gap in this area, and this study aims to fill that gap by examining the differences in behavioral inhibition, metacognitive thinking, and cognitive fusion between individuals who self-harm and those who do not. This study seeks to answer the question of what is the difference between behavioral inhibition, metacognitive thinking, and cognitive fusion in people with self-harm and normal people.

Method

This study formed part of a causal-comparative research design. The target population for the study comprised individuals who had a previous record of self-injurious behaviors and sought treatment at psychological clinics in Shiraz between July and September 2023. The sample for the study was composed of 60 individuals, who were selected using the purposive sampling method and the random number table randomization technique and divided into two groups: one group with a history of self-injury and another group without any self-injurious behavior history with 30 participants in each group. The sample size adequacy was determined using G-Power software, with a significance level of α = 0.05, effect size of 0.80, and a power test of 0.90 [19].

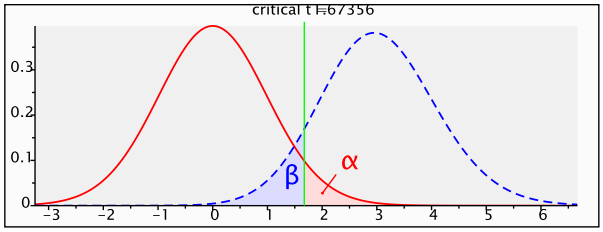

Figure 1. Sample size calculation with G-Power software.

The researcher calculated that there were 28 individuals in each group. To account for potential sample size reductions, the researcher decided to include 30 individuals in each group.

The criteria for inclusion were having a psychological counseling record related to self-injurious behaviors, obtaining informed consent from the participants, and having sufficient literacy and comprehension to answer the questions. Individuals who were at least 20 years old and had any physical or mental disorders that hindered their participation in the study were excluded. Upon acquiring the required authorizations for their research and obtaining the university's approval, the researchers initially contacted seven psychology clinics in Shiraz. The clinics were chosen utilizing a predetermined method, whereby the researcher was initially introduced to them by university professors. Specialists in the clinics established the identification of self-harming behaviors in individuals through the documentation of these behaviors in the past and subsequently confirmed. Furthermore, the presence of correlated disorders was diagnosed by employing a diagnostic interview based on the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR). The researcher proceeded to explain the research methodology and the goals of the study for managing the undisclosed clinics. Upon receiving initial approval, the researcher collaborated with the clinics' reception department to identify individuals engaged in the field. They specifically identified the self-mutilated individual who had been referred. Subsequently, the clinics sent a message to these individuals outlining the research objectives, seeking their permission to participate in the study if they were willing.

Next, the researchers targeted individuals who had submitted their information in response to the research participation notices. Out of this group of volunteers, a selection of 46 participants was made for further examination. In an initial phone interview, the researcher explained the research objectives and ethical principles while addressing any inquiries from the participants. Individuals who were unable to participate for any reason were not considered for the selection process. Ultimately, 37 participants were chosen by the researchers and extended an invitation to physically attend the clinics, with 30 individuals ultimately attending. Subsequently, the researchers procured their written agreement to take part in the study via a consent questionnaire. Afterwards, the research instruments were employed to gauge the variables. The individuals within the group lacking any prior instances of self-injury were specifically selected from the client pool of the clinics.

The participants were screened for any previous self-harming behaviors through an initial interview before collecting data and administering the questionnaires. The interviews and questionnaires took approximately 100 hours to complete, and the entire research process lasted for 32 days within three months. Additionally, seven individuals were excluded from the study: four from the self-injurious group and three from the non-self-injurious group. The exclusions were due to incomplete or intentionally flawed questionnaire responses. To adhere to ethical standards, before implementing the surveys, the research participants were asked to provide a form indicating their consent to cooperate without any pressure or requirement to participate further. They were informed of the voluntary nature of the study, with the freedom to withdraw at any point. Additionally, it was clarified that the questionnaires were devoid of any personally identifiable information.

The tools used in this study were as follows:

Measure of Behavioral Inhibition (RMBI): This self-report questionnaire was created in 2005 by Gladstone and Parker, with the aim of measuring behavioral inhibition in people [20]. This questionnaire is a 16-item scale and is measured in a 5-point Likert scale (0=rarely to 4=often). In this questionnaire, items 4, 6, 9, 13, 15 and 16 are measured in reverse. The range of scores in this scale is from 0 to the maximum score of 64, where a higher score indicates greater behavioral inhibition. During the investigation in Iran, Cronbach's alpha coefficient of this scale was found to be 0.84 Likewise, the validity and reliability of the scale were checked by the creators and the reliability rate was calculated as 0.87 with the internal consistency method and 0.86 with the retest method [21]. In this research, the researcher found the Cronbach's alpha coefficient of this scale to be 0.74.

Cognitive Fusion Scale (CFS): This self-report questionnaire was created in 2014 by Gillanders et al., with the aim of measuring cognitive fusion in people [22]. This questionnaire is a 12-item scale in which the two factors of fusion are evaluated with questions 3, 4, 5, 6, 7, 8, 10, 11, and 12 and fault with questions 1, 2, and 9. The items of this questionnaire are measured in a 6-point Likert scale (the option never gets 1 point, rarely 2 points, sometimes 3 points, often 4 points, almost always 5 points and always 6 points). A high score in this questionnaire indicates greater mastery of thought over behavior. In general, the minimum possible score is 12 and the maximum score is 72. If a person's score on this scale is 12 to 24, it means low fusion. If the person's score in this scale is 24 to 48, it means medium fusion and if the person's score is higher than 48, it means high fusion. Likewise, the validity and reliability of the scale was checked by the creators and the reliability rate was calculated as 0.93 with the internal consistency method and it was obtained as 0.80 with the retest method after four weeks. During the investigation in Iran, Cronbach's alpha coefficient of this scale was found to be 0.88 [23]. In this study, the researcher found the Cronbach's alpha coefficient of this scale to be 0.77.

Meta Cognition Questionnaire (MCQ-30): Metacognition Questionnaire 30, designed by Cartwright-Hatton et al. (2004), was made to assess individual differences in metacognitive beliefs that are considered in the metacognitive theory of generalized anxiety disorder [24].This questionnaire has 30 items and five sub-scales, which questions 28, 23, 19, 10, 7, 1 are positive beliefs about worry, questions 21, 15, 11, 9, 4, 2 are negative beliefs about the controllability of thoughts and risks. Related to worry, questions 29, 26, 24, 17, 14, 8, cognitive

uncertainty, questions 27, 25, 22, 20, 13, 6, need to control thoughts and questions 30, 18, 16, 12, 5, 3 metacognitive processes evaluate cognitive self-awareness. The options of this questionnaire are calculated through a 4-point Likert scale (1=completely agree to 4=completely disagree). Likewise, the validity and reliability of the scale were checked by the creators and Chronbach's alpha coefficient of its subscales are expanded from 72% to 93%. Retest correlation with interval of 22 to 118 days in total score equals to 0. 75, positive beliefs scale equals to 0.79, uncontrollability of danger equals to 0.59, cognitive reassurance equals to 0.69, need to control thought equals to 0.74, and conscious awareness equals to 0.87. Also, the validity of this questionnaire in Iran was reported to be 0.91 for the whole scale and between 0.71 and 0.87 for the subscales using the internal consistency method and Cronbach's alpha formula [25]. In this research, the researcher obtained the reliability of the scale based on Cronbach's alpha equal to 0.81.

We performed data analysis using SPSS version 27 software by employing both MANOVA and the Independent Samples T-Test and Welch's t-test. To verify the normal distribution of the research variables, the Kolmogorov Smirnov test was utilized. For this research, a significance level of 0.05 was deemed appropriate.

Results

In this research, 53 participants (26 with self- injury, 27 without self- injury) participated. At first, the researcher investigated the descriptive statistics of the research variables. The participants were divided into four groups according to their average age: 20 to 30 years, 31 to 40 years, 41 to 50 years, and 50 years and above. Likewise, the participants were divided into two groups, male and female. Similarly, the participants were divided into four groups in terms of education, including high school, associate degree, Bachelor's degree, and Master's degree. The researcher also compared the demographic variables of the research in three groups. Based on the Kruskal Wallis Test coefficients, none of the variables in the two groups were significantly different from each other (P>0.05).

Table 1. Demographic Characteristics in Groups

Variables	Demographic information	with Self-injury	%	without Self-injury	%	Total	%	Kruskal-Wallis H	P
Age	20 to 30 years	5	19.2%	2	7.4%	7	13.2%	1.09	0.295
	31 to 40 years	12	46.2%	13	48.1%	25	47.2%		
	41 to 50 years	6	23.1%	8	29.6%	14	26.4%		
	+51	3	11.5%	4	14.8%	7	13.2%		
	Total	26	100.0%	27	100.0%	53	100.0%		
Gender	Male	10	38.5%	7	25.9%	17	32.1%	0.93	0.333
	Female	16	61.5%	20	74.1%	36	67.9%		
	Total	26	100.0%	27	100.0%	53	100.0%		
Education	High School	4	15.4%	7	25.9%	11	20.8%	2.32	0.127
	Associate degree	6	23.1%	7	25.9%	13	24.5%		
	Bachelor's degree	12	46.2%	13	48.1%	25	47.2%		
	Master's degree	4	15.4%	0	0.0%	4	7.5%		
	Total	26	100.0%	27	100.0%	53	100.0%		

Table 2. Descriptive Statistics of Variables

Variables	Groups	N	Mean	SD	Min	Max	Kolmogorov-Smirnov	P
Behavioral inhibition	with Self-injury	26	25.19	6.04	16	36	0.93	0.117
	without Self-injury	27	20.66	5.76	16	36	0.93	0.212
Cognitive fusion	with Self-injury	26	33.07	6.34	24	45	0.93	0.116
	without Self-injury	27	35.14	4.22	26	43	0.94	0.183
Positive beliefs about worry	with Self-injury	26	14.53	3.56	10	20	0.96	0.287
	without Self-injury	27	18.0	1.56	14	20	0.94	0.163
Negative beliefs about the controllability of thoughts	with Self-injury	26	19.50	2.10	15	23	0.94	0.213
	without Self-injury	27	13.88	2.56	10	19	0.95	0.270
Cognitive uncertainty	with Self-injury	26	18.76	3.29	12	23	0.94	0.211
	without Self-injury	27	15.29	3.03	10	21	0.95	0.222
Need to control thoughts	with Self-injury	26	18.42	2.98	12	23	0.94	0.157
	without Self-injury	27	16.74	3.62	10	23	0.95	0.232
Metacognitive processes of cognitive self-awareness	with Self-injury	26	18.26	3.02	12	23	0.95	0.161
	without Self-injury	27	19.25	2.48	13	23	0.94	0.159

It is common knowledge that individuals who engage in self-injury tend to have higher scores in the behavioral inhibition variable as compared to those who do not. On the other hand, the group without self-injury had higher average scores in cognitive fusion. In terms of metacognitive thinking, the group without self- injury showed a greater inclination towards positive beliefs about worry. Conversely, the group with self-injury demonstrated higher levels of negative beliefs about the controllability of thoughts, cognitive uncertainty, and the

need to control thoughts. The researcher conducted an Independent Samples T-Test to assess the significance of the differences between the two groups. Before conducting the analysis, the essential requirements were meticulously investigated, which involved the detection of abnormal data points. It was found that the analysis was not affected by outliers. Furthermore, the Kolmogorov-Smirnov test outcomes revealed that the score distribution followed a pattern. Furthermore, the equality of variance between the groups was assessed, with Levene's Test for equality of variance of two variables producing significant results. As a result, the researcher opted to use Welch's t-test approach when analyzing variables related to cognitive fusion and optimistic notions regarding fretting.

According to Table 3, the observed difference in the mean of the behavioral inhibition variable in two groups with self-injury and without self-injury was significant (p=0.007). Similarly, the observed difference in the mean of cognitive fusion variable in two groups, with self-injury and without self-injury, was not significant (p=.1710). At the same time, among the components of metacognitive thinking, the components of positive beliefs about worry, negative beliefs about the controllability of thoughts, and cognitive uncertainty were significant among the two groups of participants with and without self-injury (p<0.05). However, no difference was found in the components of need to control thoughts and metacognitive processes of cognitive self-awareness among the research groups (p>0.05). Similarly, the researcher also examined the difference between the groups based on the F value in the analysis of variance test and Tests of Between-Subjects Effects.

According to Table 4, the observed difference in the mean of behavioral inhibition, positive beliefs about worry, negative beliefs about the controllability of thoughts, and cognitive uncertainty in two groups with self-injury and without self-injury was significant (p<0.05).

Table 3. Independent Samples T-Test to Check the Difference between Groups

Variables	t	df	P	Mean Difference	95% Confidence Interval of the Difference	
					Upper	Lower
Behavioral inhibition	2.78	51	0.007	4.52	7.78	1.26
Cognitive fusion	-1.39	51	0.1710	-2.07	0.89	-5.03
Positive beliefs about worry	-4.54	51	0.016	-3.46	-1.91	-5.01
Negative beliefs about the controllability of thoughts	8.69	51	0.0001	5.61	6.90	4.31
Cognitive uncertainty	3.99	51	0.0001	3.47	5.21	1.72
Need to control thoughts	1.84	51	0.071	1.68	3.51	-0.15
Metacognitive processes of cognitive self-awareness	-1.30	51	0.199	-0.99	0.53	-2.51

Table 4. Tests of Between-Subjects Effects

Variables	Sum of Squares	df	Mean Square	F	P	Partial Eta Squared
Behavioral inhibition	271.28	1	271.28	7.78	0.0070	0.13
Cognitive fusion	56.82	1	56.82	1.97	0.1670	0.03
Positive beliefs about worry	158.70	1	158.70	21.16	0.00010	0.29
Negative beliefs about the controllability of thoughts	417.02	1	417.02	75.64	0.00010	0.59
Cognitive uncertainty	159.75	1	159.75	15.96	0.00010	0.23
Need to control thoughts	37.48	1	37.48	3.39	0.0710	0.06
Metacognitive processes of cognitive self-awareness	12.98	1	12.98	1.69	0.1990	0.03

Discussion

The purpose of the current study was to compare behavioral inhibition, metacognitive thinking, and cognitive fusion in individuals who engage in self-injury and those who do not. According to findings, there was a significant difference in average scores of behavioral inhibition between the self-injury group and the non-self-injury group, with higher scores observed in the self-injury group. Additionally, although average scores of cognitive fusion were higher in the non-self-injury group, the difference in cognitive fusion between the two groups was not significant. One component of metacognitive thinking, positive beliefs about worry, showed a significant difference between the two groups, with higher levels in the non-self-injury group. Negative beliefs about the controllability of thoughts and cognitive uncertainty were also significantly different between the two groups, with higher levels in the self-injury group. However, there was no difference in the components of the need to control thoughts and metacognitive processes of cognitive self-awareness among the research groups.

The current research supports previous studies by affirming a higher level of behavioral inhibition in individuals who self-harm compared to those who do not self-harm [6, 9, 26]. A study demonstrated a positive correlation between behavioral inhibition and non-suicidal self-harm [6]. Moreover, research findings revealed a significant distinction in behavioral inhibition between adolescents who engage in non-suicidal self-

harm and typically functioning adolescents. Adolescents with non-suicidal self-harm displayed higher scores in high-risk decision-making, behavioral inhibition, and emotion regulation disorders [9]. Additionally, research suggests that deficits in specifically inhibiting emotional responses may contribute to increased severity of urges for non-suicidal self-injury during times of negative affect [26].

To clarify this discovery, it should be noted that timid and aggressive behaviors characterized the behavioral inhibition profile, such as clinging to the caregiver, being watchful, and avoiding new social situations, even when they are not threatening. Children who maintain high levels of inhibitory tendencies during childhood, have a significantly heightened risk of developing social anxiety in adolescence. Around 60% of behaviorally inhibited children do not progress to clinical levels of anxiety indicating the diversity of behavioral inhibition pathways [27]. On the other hand, individuals with a higher level of social anxiety tend to interpret facial expressions negatively, and the emotional instability commonly found in those with anxiety disorders can lead to non-suicidal self-harm. These individuals experience heightened discomfort, which results in a low tolerance or even intolerance towards uncertain events. When making daily diagnoses, intolerance of uncertainty can serve as a valuable indication for assessing the rehabilitation of anxiety disorders. Because of the strong connection between negative emotions and self-injury, negative emotions are often used as a primary indicator to evaluate self-injury occurrence. As a result, the level of behavioral inhibition in individuals with self-injury tendencies is higher than in those without [28].

Furthermore, the implication that the variable of cognitive fusion is not significantly related to self-injury in both groups, as found in this study, contradicts previous research [17, 29]. Previous research has shown that individuals with high psychological inflexibility are more likely to experience distress, cognitive fusion, and value development, which are strongly associated with suicidal thoughts [17]. Another study found that psychological flexibility and inflexibility, including psychological distress, cognitive fusion, and lack of value-based behavior, directly predict suicidal thoughts and behaviors [29]. The difference in findings between the present study and previous research may be attributed to variations in the study population, timing, location, or sample size. It is important to note that cognitive fusion is a cognitive and social concept that refers to individuals' inability to differentiate between their thoughts and themselves. This fusion of thoughts and feelings can lead to confusion, where individuals perceive their experiences as valid interpretations and cannot distinguish them from their real experiences. Consequently, people in this state may struggle to respond appropriately to different events [14]. Some studies suggest that cognitive fusion is a fundamental aspect of psychopathology and plays a crucial role in various psychological disorders. Cognitive fusion takes place when a person's thoughts govern their actions and shift their focus from the procedure to the actual thoughts themselves. When this process dominates individuals' experiences, it results in psychological inflexibility, which can lead to isolation, difficulties in emotion regulation, and depression, both in individuals who engage in self-injury and the general population over time [30].

Moreover, the results from the study regarding metacognitive processes and perceptions towards anxiety are consistent with prior research. Individuals without self-harm tendencies exhibited more positive beliefs about worry and fewer negative beliefs about the controllability of thoughts and cognitive uncertainty, while those with self-harm tendencies displayed more negative beliefs in these areas [12, 31]. A study highlighted the significant relationship between positive and negative metacognitive beliefs about suicidal thoughts and actual suicidal thoughts [12]. Another study emphasized the importance of positive emotion and metacognitive beliefs regarding the uncontrollability and danger of thoughts in predicting self-harming behaviors [31].

The explanation of this discovery should clarify that metacognition encompasses understanding, processes, and tactics that assess, monitor, or manage cognition. The formation and continuation of the notion of cognitive impairment are heavily influenced by beliefs and metacognitive processes [11]. When confronted with a worrisome situation or stimulus, the initial form of worry is triggered by "positive super beliefs," which then initiates a cascade of "negative super beliefs." Metacognitive beliefs influence stress management and coping strategies about stressful life events or mental disorders and may be connected to the risk of self-harm and suicide. The positive beliefs regarding type 1 worry serve as the foundation for subsequent negative beliefs and the meta-concern system. Therefore, it can be proposed that the initial level of worry may be higher in individuals who do not engage in self-injury, while other levels of metacognition may differ in a crisis context due to the impact of emotional levels influenced by the stressful environment [32]. In addition, dysfunctional metacognitive beliefs contribute to heightened symptoms of depression and anxiety, while metacognition is positively and significantly associated with perceived stress and negative emotions such as anxiety, depression, and neurotic issues. Consequently, anxiety, depression, and metacognitive beliefs could be independent risk factors for self-harm and suicide [33].

This study, just like any other study faced some limitations. Initially, the data collection method involved a questionnaire, which could result in participants giving unrealistic responses due to misunderstandings of the questions, thus distorting the findings. Nevertheless, measures were taken to minimize this potential issue by providing clear explanations and allowing adequate time for participants to respond. Furthermore, uncontrolled variables such as cultural, social, ideological, and belief differences could also impact self-harm, thereby further restricting the study. Moreover, due to the sensitive nature of self-injury, only a small number of individuals volunteered to participate, resulting in a limited sample

size, which is another constraint that should be addressed in future investigations. It is recommended that future studies employ a larger sample size. Additionally, researchers interested in this field should explore the subject among individuals involved in risky behaviors like substance abuse, reckless driving, and early sexual activity. It would also be valuable to investigate the prevalence, motivations, and connection between self-harm without suicidal intent and suicide attempts in both the general population and self-injuring individuals in future research endeavors. Acknowledging the significant role of family dynamics and individual differences in developing and implementing interventions to address and prevent mental harm, it is suggested that future studies investigate related factors such as personality traits and the presence of family members with a history of self-harm and suicidal behaviors to enhance the current research findings. Additionally, it is essential to simultaneously explore other important factors in individuals who engage in self-harm.

Conclusion

The study found that there are differences in behavior and thinking between those who self-harm and those who do not. The two groups do not differ much in cognitive fusion. People who self-harm have higher levels of inhibition, negative beliefs about controlling thoughts, and uncertainty compared to those who do not self-harm. Those who do not self-harm have more positive beliefs about worry. Further research should be done in different communities to confirm these findings. Training programs should be provided to raise awareness and reduce self-injury. Regular screening should be done in schools to identify those needing help. In addition, steps should be taken to address family issues and mental disorders to prevent severe self-injury in teenagers.

Conflict of Interest

The authors declared that they do not possess any personal or financial conflicts that could impact their work.

Ethical Approval

This article examined all the ethical guidelines. The individuals participating were informed of the purpose and methodology behind the research. They were assured that their data would be kept confidential, and they had the option to withdraw from the study at any time.

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