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# Development and Validating of a Process-Based Therapeutic Package for Non-Suicidal Self-Injury Disorder

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# Abstract

**Introduction:** Non-suicidal self-injury (NSSI) is a common mental health threat among youth and adolescents with various etiology factors. Extensive treatments have been proposed for this disorder, but there is a need for a therapeutic package with good efficiency and effectiveness. This study aimed to develop and validate a process-based therapeutic package for patients with NSSI disorder.
**Method:** This was an applied study in terms of objective and qualitative in terms of data collection. The statistical population of the study consisted of psychology experts in Tehran, Iran in 2022. Twenty-three effective university professors who worked in this domain were selected via purposive selection sampling. The design and validation of the program were performed in four stages and 14 steps: reviewing the theoretical background and existing packages, developing the content of the package, validating it, and explaining the validation.
**Results:** Grounded theory as a qualitative method was used to conceptualize the content. Investigator triangulation facilitated the data validation. Percent agreement of inner raters and content validity index (CVI) were used for assessment reliability and validity. The reliability of the program based on the percent agreement of inner rater was 0.98; CVR and CVI of all the sessions were 0.93 and 0.99, respectively.
**Conclusion:** This study proposed process-based therapy package for non-suicidal self-injury disorder that is a reliable and valid comprehensive psychological therapy. This package is suggested to be used by expert in this domain to enhance the effectiveness of it.


**Keywords:** Process-based therapy, Non-suicidal self-injury, NSSI, Content validity index, Reliability

## Introduction

Non-Suicidal Self-Injury (NSSI) consists of intentional and deliberate damage to own body tissue without a conscious intention of commit suicide [1] to give immediate relief from pain and distress [2]. This disorder can create an acquired ability for suicide [3]. These self-injuring behaviors do not include unwanted self-injury [4], attempted suicide, and socially acceptable behaviors such as piercing, tattooing, or religious practices [1]. Self-injurious behaviors are usually considered self-directed behaviors with the goal of self-harm, but they are distinct from suicidal behaviors because they are not intended to result in death [5].
Self-injury is most common in borderline personality disorder (BPD) and it was exclusively classified as a BPD criterion in the beginning [6]. Recently, self-injury is considered as a serious mental health problem in many psychiatric disorders and is not a specific disorder [7].
NSSI disorder criteria were included in the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DMS-5) for further investigation. It is defined as intentionally

damage of own body for at least five days over the past year and this act cannot have been culturally influenced, and this behavior is associated with negative emotions and feelings such as pervasive anxiety, stress, anger, and confusion, and this act can have significant implications to achieve a specific goal [8].

The prevalence of NSSI in people of different age group varies in different studies. According to one study, the estimated lifetime prevalence is about 18-22% across the world [9]. Sex differences are also important in this disorder, which is more prevalent in girls [10]. Non-suicidal self-harm affects 15-20% of adolescents and is a strong predictor of attempted suicide [11]. Prevalence rate of this behavior is cultural related. The overall prevalence of NSSI (32.6%) is higher in non-western countries compared to countries with a western culture (19.4%) [12].

NSSI is a major public health concern in different groups and is associated with several adverse consequences. However, there are various treatment and interventions for this disorder [13], including pharmacotherapy [14], family therapy [15], emotion regulation training [16], cognitive-behavioral therapy (CBT) [17], narrative therapy [18, 19] and group counseling [20], none of them have been obtained as an effective treatment for this disorder [21]. Due to high prevalence and dangerous nature of NSSI, it is not better as usual for this behavior [22].

There are limitations and inadequacies documents about etiology and intervention of NSSI.

Process based therapy (PBT) as a new package is a general approach for clinical assessment, conceptualization, and therapeutic planning that utilizes a novel framework for organizing evidence-based therapeutic techniques (rational, explicit, and accurate use of the best evident clinical healthcare system for each patient). It’s already well-known for psychologists, along with the basic psychological dimensions related to human adaptation to specific contexts [23].

The function of PBT is to provide a coherent and adequately broad array of theoretical framework encompassing a wide variety of psychotherapeutic approaches and an unique connection for psychologists to communicate seemingly different ideas [24]. PBT relies on evolutionary science that assumed as a unified theoretical framework in almost biological sciences, including psychology [25]. Furthermore, PBT target and change core biopsychosocial processes related to individual treatment goals [26]. This evidence based treatment is designed to promote people's skills to adapt to environmental needs and personal goals in the moment [24].

PBT focuses on improving mental health rather than symptom reduction [27, 28].

Evidently, PBT can effectively improve many psychological functions; though, there is no therapeutic protocol based on PBT that can help people with NSSI, in Iran. It is anticipated that PBT can fundamentally alter the conceptualization of mental well-being and the development of psychological treatments, thus leading to the development of therapies that effectively and efficiently meet the needs arising from immense human complexity. The research gap in this area highlights the necessity of the present research, which has been conducted to design, develop, and validate an efficient and effective treatment program for people with NSSI. Accordingly, this study aimed to design and validate a PBT package for NSSI. Based on this objective, the research question is whether PBT for NSSI disorder is valid and reliable package according to experts' opinion.

## Method

This was an applied study in terms of objective. The statistical population included psychologists, and the research sample consisted of 23 Iranian expert clinical psychologists in this domain in Tehran, in 2022. The inclusion criteria for the psychologists were PhD in psychology, at least 5 years clinical experience and theoretical knowledge in self-injury treatment. The exclusion criterion was unwillingness to participate in the research.

The design and validation of the package were performed in four stages: Reviewing the theoretical background and existing programs, designing the program, validating the program, and explaining the validation stage.

The first stage (the theoretical and conceptual foundations of the subject) has been reviewed in the introduction section. In the second stage, the conceptual framework established from Aghamohammadi et al. (2022) was specifically developed to address NSSI [29]. Therapeutics’ components involved the set of distal and proximal risk factors and the models explaining the disorder as extracted from the interviews. Then, the stages of therapeutic package were designed as a process-based approach with two axis, including *continuous communication* and *focused intervention*, four stages and 14 steps.

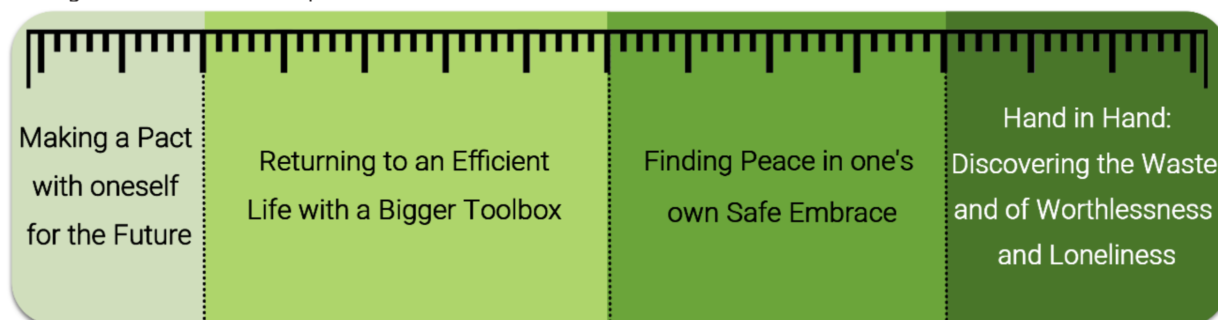
The researcher visited the experts one by one in the initial stage of designing program. After a preliminary summarization of their opinions, the researcher received and applied the experts’ recommendations for finalizing the program in multiple stages. In each stage, all the professionals were informed of the changes in the program until the researcher reached the final PBT program with the experts' support. Then, data from the findings of a qualitative research by Aghamohammadi et al. (2022) [29] along with the designed therapeutic package were provided to the experts and they were asked to comment on the relationship of each items with the assessment goals and the necessity of each item. The relevant comments including omission merge, changing of name or correction of the content of each item was applied

to package.
Finally, the collected data were analyzed in SPSS 24 using reliability coefficient of criterion-referenced tests (percentage agreement method) to determine reliability, and Lawshe's method was used to calculate the validity index of the package.

## Results

The PBT package for NSSI was validated in four stages. The first stage reviewed the theoretical background and the existing programs, as explained in the Introduction. The second stage is dedicated to design of the content of the program. The model showed that because of the multi-dimensional nature of NSSI, a 360-degree perspective on the theories of using PBT is necessary for designing an effective therapeutic framework and a PBT package.
It was designed in two axis in chronological order; one included therapeutic communication woven into conceptualization, called "continuous communication", and the other included four therapeutic stages called "focused intervention".
In the axis of "continuous communication", it is necessary for the client to constantly receive the message of being valuable from the therapist until it is gradually internalized and turned into self-compassion, in addition to reviewing and revising psychological flexibility, communication techniques should be used in each session and the risk of suicide emergency or similar risks also assessed.

Four stages of treatment were predicted for the "focused intervention" axis:




The first stage called "Discovering the wasteland of worthlessness and loneliness hand-in-hand" and is dedicated to evaluation and conceptualization. In the second stage, named "Finding peace in one's safe embrace", the therapist not only takes care of the client's 'vulnerable inner child', but also validates, and creates valuableness and gaining of meaning in life as the main rewards of this stage. In which, a strong emotional bond is formed between therapist and patient that is full of compassion and comfort and will help the client's inner child, who could not even hold their heads up, to find peace first in the therapist's arms and then in their own arms.
The third stage of treatment allows "Returning to a functional life with a bigger toolbox," allowing the client to confront challenges of life and overcome problems. The fourth stage, "Making a pact with oneself for the future", addresses the two issues of "relapse prevention" and "dealing with relapse".
This protocol does not assign fixed number of sessions in each stage; however, tests can be taken to discover if it is time to enter the next stage, as the transition differs from client to client based on their natural conditions, intelligence, intensity of childhood injuries and current context of the client's life. Table 1 presents a description of the goals and content of the steps and stages of this therapeutic package.
Demographic characteristics of experts are reported in Table 2. Six professionals were male and others were female.
For validation, selected experts filled out a 14-items questionnaire on the relevancy & necessity of the steps based on content of the sessions. The results of this stage are reported in Table 3. Coefficient of criterion-referenced tests and percent agreement method were used to calculate the reliability coefficient.
Table 3, experts' mean agreement score was more than 3.5 for all the sessions. Each of these numbers represents the reliability coefficient of each session when expressed as a percentage. For the final

content of the session was 3.89 out of 4. In other words, it was 97%, indicating the high reliability of the therapeutic program. The content validity ratio (CVR) and content validity index (CVI) were used to quantitatively assess the content validity. Lawshe's (1975) method was utilized to determine the CVR of the program. In this method, the experts rated the content of each session as either of the three following: *Necessary*, *useful but not necessary*, and *not necessary*. The CVR was calculated by the following equation (The closer is CVR to 1, the higher it's validity):

Table 5 lists the experts' opinions to determine the CVI of the sessions. For this purpose, the number of answers choosing the *relevant but needing revision* and *totally relevant* options was divided by the total number of answers to each session. Therefore, based on the above table, a CVI of 0.99 was obtained. Based on Tables 4 and 5, the CVR and mean CVI of all the sessions were 0.93 and 0.99, respectively.

CVR for all the sessions was 0.93 based on the experts' opinions (Table 4).

**Table 1.** Description Information of Stages and Steps

| Axis | Stage | General objective | Detailed objectives |
|---|---|---|---|
| Axis 1:<br>Continuous communication | - | Step 1:<br>Therapeutic relationship and assessing the risk of suicide | - Using techniques to create 'secure attachment' to strengthen communication<br>- Examining and revising the process of 'psychological flexibility'<br>- Continuous assessment of suicide risk |
| Axis 2:<br>Focused intervention | Stage 1:<br>Discovering the wasteland of worthlessness and loneliness hand-in-hand | Step 2:<br>Assessment and diagnosis | - Assessing the disorder based on the assessment form |
| | | Step 3:<br>Conceptualization and psychological training of the model of the disorder | -Conceptualization of the disorder in the client according to one or a combination of several models derived from the qualitative study by Aghamohammadi et al.<br>- Psychological training of the client about their self-harm model(s) |
| | Stage 2:<br>Finding peace in one's own safe embrace | Step 4:<br>Validating pain and unpleasant emotions | -Validation of pain using 'Leahy's validation' techniques<br>-Validation of pain using 'Linehan's validation' techniques<br>-Validation of emotions using Sue Johnson's validation techniques |
| | | Step 5:<br>Self-validation | -'Self-validation' using 'Linehan's' and 'Leahy's' techniques<br>-'Empathy' based on EFT and CBPT<br>-'Self-compassion' based on MSC techniques |
| | | Step 6:<br>Self-comforting (caring for the vulnerable child) | -'Limited reparenting' based on schema therapy<br>-'Distress tolerance' based on DBT<br>-'Mindfulness' based on mindfulness-based nterventions<br>-'Self-embrace' based on EFT |
| | | Step 7:<br>Nurturing meaning | -Choosing and clarifying values based on ACT approach<br>- Training on Leahy's techniques for relating emotions with values |
| | Stage 3:<br>Returning to a functional life with a bigger toolbox | Step 8:<br>Self-awareness | -'Self-awareness' based on the life skills package |
| | | Step 9:<br>Effective communication | -'Effective communication' based on the life skills package |
| | | Step 10:<br>Interpersonal skills | - Improving 'interpersonal skills' based on CBPT |
| | | Step 11:<br>Self-regulation | -'Self-management' based on CBPT<br>-'Emotion regulation' based on CBPT |
| | | Step 12:<br>Problem-solving skills | -'Problem-solving' based on CBPT |
| | Stage 4:<br>Making a pact with oneself for the future | Step 13:<br>Preventing relapse | - Designing a notebook to compile steps taken in the treatment and care plan<br>- Learning about psychological emergencies<br>- Psychological training on other models of self-harm to prevent sudden occurrence |
| | | Step 14:<br>Coping with relapse | -Teaching 'self-acceptance' techniques to treat oneself compassionately in case of re-committing self-injury |

**Table 2.** Demographic Characteristics of Experts

| Expert Number | Gender | Age | Education | Clinical Experience | Field Of Expertise |
|---|---|---|---|---|---|
| 1 | Female | 41 | PhD PSY-C | 13 | Adult |
| 2 | Male | 50 | PhD PSY-E | 20 | Adult |
| 3 | Male | 36 | PhD PSY-C | 5 | Adult |
| 4 | Female | 41 | PhD PSY-C | 12 | Youth |
| 5 | Female | 36 | PhD PSY-C | 15 | Adult |
| 6 | Female | 45 | PhD PSY-D | 13 | Adult |
| 7 | Female | 40 | PhD PSY-D | 14 | Youth |
| 8 | Male | 63 | PhD PSY-D | 25 | Adult |
| 9 | Female | 34 | PhD PSY-C | 10 | Adult |
| 10 | Female | 46 | PhD PSY-C | 13 | Adult |
| 11 | Female | 34 | PhD Candidate of PSY-G | 10 | Youth |
| 12 | Female | 35 | PhD PSY-C | 8 | Adult |
| 13 | Female | 34 | PhD Candidate of PSY-C | 6 | Youth |
| 14 | Male | 52 | PhD PSY-E | 26 | Adult |
| 15 | Female | 48 | PhD PSY-G | 22 | Adult |
| 16 | Female | 38 | PhD Candidate of PSY-H | 6 | Adult |
| 17 | Male | 33 | PhD PSY-H | 6 | Adult |
| 18 | Female | 35 | PhD PSY-G | 5 | Adult |
| 19 | Male | 34 | PhD PSY-C | 10 | Adult |
| 20 | Female | 38 | PhD PSY-C | 10 | Adult |
| 21 | Female | 40 | PhD PSY-C | 15 | Adult |
| 22 | Female | 35 | PhD PSY-C | 8 | Youth |
| 23 | Female | 35 | PhD Candidate of PSY-C | 7 | Youth |
| Mean | - | 40 | - | 12 | - |

**Table 3.** Experts' Evaluation of Relevancy and Necessity based on 14 Items Questionnaire

| Expert | Step 1 | Step 2 | Step 3 | Step 4 | Step 5 | Step 6 | Step 7 | Step 8 | Step 9 | Step 10 | Step 11 | Step 12 | Step 13 | Step 14 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| 2 | 4 | 4 | 3 | 4 | 4 | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| 3 | 4 | 4 | 4 | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| 5 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| 6 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| 7 | 4 | 4 | 4 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 4 | 4 |
| 8 | 4 | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 1 | 1 | 4 | 4 | 4 |
| 9 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| 10 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| 11 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| 12 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| 13 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| 14 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| 15 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| 16 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| 17 | 4 | 4 | 3 | 3 | 3 | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| 18 | 4 | 4 | 4 | 4 | 3 | 4 | 4 | 4 | 3 | 4 | 4 | 4 | 4 | 3 |
| 19 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| 20 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| 21 | 4 | 4 | 4 | 4 | 4 | 3 | 3 | 4 | 3 | 3 | 3 | 3 | 4 | 4 |
| 22 | 4 | 4 | 3 | 4 | 4 | 4 | 4 | 4 | 3 | 3 | 4 | 4 | 4 | 4 |
| 23 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| Mean | 4 | 3.96 | 3.87 | 3.87 | 3.87 | 3.83 | 3.91 | 3.96 | 3.83 | 3.74 | 3.78 | 3.91 | 4 | 3.96 |
| Reliability | %100 | 99% | 97% | 97% | 97% | 96% | 98% | 99% | 96% | 93% | 95% | 98% | %100 | %99 |
| Total Mean | 3.89 | | | | | | | | | | | | | |
| Total Reliability | 97 % | | | | | | | | | | | | | |

**Table 4.** Content Validity Ratio of Each Item based on Experts' Opinion

| Steps | Options | Number of Experts | CVR Coefficient |
|---|---|---|---|
| 1 | Necessary | 23 | 1.00 |
| | Useful But Not Necessary | 0 | |
| | Not Necessary | 0 | |
| 2 | Necessary | 22 | 0.91 |
| | Useful But Not Necessary | 1 | |
| | Not Necessary | 0 | |
| 3 | Necessary | 22 | 0.91 |
| | Useful But Not Necessary | 1 | |
| | Not Necessary | 0 | |
| 4 | Necessary | 25 | 1.00 |
| | Useful But Not Necessary | 1 | |
| | Not Necessary | 0 | |
| 5 | Necessary | 23 | 1.00 |
| | Useful But Not Necessary | 0 | |
| | Not Necessary | 0 | |
| 6 | Necessary | 23 | 1.00 |
| | Useful But Not Necessary | 0 | |
| | Not Necessary | 0 | |
| 7 | Necessary | 23 | 1.00 |
| | Useful But Not Necessary | 0 | |
| | Not Necessary | 0 | |
| 8 | Necessary | 23 | 1.00 |
| | Useful But Not Necessary | 0 | |
| | Not Necessary | 0 | |
| 9 | Necessary | 20 | 0.74 |
| | Useful But Not Necessary | 2 | |
| | Not Necessary | 0 | |
| 10 | Necessary | 19 | 0.65 |
| | Useful But Not Necessary | 2 | |
| | Not Necessary | 2 | |
| 11 | Necessary | 22 | 0.91 |
| | Useful But Not Necessary | 0 | |
| | Not Necessary | 1 | |
| 12 | Necessary | 23 | 1.00 |
| | Useful But Not Necessary | 0 | |
| | Not Necessary | 0 | |
| 13 | Necessary | 22 | 0.91 |
| | Useful But Not Necessary | 0 | |
| | Not Necessary | 1 | |
| 14 | Necessary | 23 | 1.00 |
| | Useful But Not Necessary | 0 | |
| | Not Necessary | 0 | |
| | | CVR Of All The Sessions | 0.93 |

**Table 5.** Content Validity Index of Each Item based on Experts' Opinion

| Steps | Options | Number Of Experts | CVI Coefficient |
|---|---|---|---|
| 1 | Irrelevant | 0 | 1.00 |
| | Needing Major Revision | 0 | |
| | Relevant But Needing Revision | 0 | |

| | | | |
|---|---|---|---|
| | Totally Relevant | 23 | |
| 2 | Irrelevant | 0 | 1.00 |
| | Needing Major Revision | 0 | |
| | Relevant But Needing Revision | 1 | |
| | Totally Relevant | 22 | |
| 3 | Irrelevant | 0 | 1.00 |
| | Needing Major Revision | 0 | |
| | Relevant But Needing Revision | 3 | |
| | Totally Relevant | 20 | |
| 4 | Irrelevant | 0 | 1.00 |
| | Needing Major Revision | 0 | |
| | Relevant But Needing Revision | 3 | |
| | Totally Relevant | 20 | |
| 5 | Irrelevant | 0 | 1.00 |
| | Needing Major Revision | 0 | |
| | Relevant But Needing Revision | 3 | |
| | Totally Relevant | 20 | |
| 6 | Irrelevant | 0 | 1.00 |
| | Needing Major Revision | 0 | |
| | Relevant But Needing Revision | 4 | |
| | Totally Relevant | 19 | |
| 7 | Irrelevant | 0 | 1.00 |
| | Needing Major Revision | 0 | |
| | Relevant But Needing Revision | 2 | |
| | Totally Relevant | 21 | |
| 8 | Irrelevant | 0 | 1.00 |
| | Needing Major Revision | 0 | |
| | Relevant But Needing Revision | 1 | |
| | Totally Relevant | 22 | |
| 9 | Irrelevant | 0 | 1.00 |
| | Needing Major Revision | 0 | |
| | Relevant But Needing Revision | 4 | |
| | Totally Relevant | 19 | |
| 10 | Irrelevant | 1 | 0.97 |
| | Needing Major Revision | 0 | |
| | Relevant But Needing Revision | 3 | |
| | Totally Relevant | 19 | |
| 11 | Irrelevant | 1 | 0.97 |
| | Needing Major Revision | 0 | |
| | Relevant But Needing Revision | 2 | |
| | Totally Relevant | 20 | |
| 12 | Irrelevant | 0 | 1.00 |
| | Needing Major Revision | 0 | |
| | Relevant But Needing Revision | 2 | |
| | Totally Relevant | 21 | |
| 13 | Irrelevant | 0 | 1.00 |
| | Needing Major Revision | 0 | |
| | Relevant But Needing Revision | 0 | |
| | Totally Relevant | 23 | |
| 14 | Irrelevant | 0 | 1.00 |
| | Needing Major Revision | 0 | |
| | Relevant But Needing Revision | 1 | |
| | Totally Relevant | 22 | |
| CVI Mean Of All Session | | | 0.99 |

## Discussion

The fourth stage explains the validation of the program; based on the above results, the process-based NSSI therapeutic package is reliable and valid. There are few studies in this field to be compared with present study.

This approach is novel and good therapeutic package for NSSI.

This finding is consistent with the results of previous studies [23, 24, 27, 28, 30]. The steps in the first axis of this package (continues communication) includes use of secure attachment techniques to better equipped to communicate effectively. To explain the efficacy of this axis, it can be stated that based on Mikulincer and Shaver's model [31], people with anxious attachment styles use emotion-oriented coping styles when faced with stressful situations, this style is associated with their negative beliefs about self-efficacy on stress management. People with avoidant attachment use avoiding threat-related thoughts and feelings, suppression of painful memories, shifting attention from threat-related thoughts, and withdrawing from problem-solving. The maladaptive suppression of distress signs would result in unresolved distress and increase violence, loneliness, isolation, and separation from others and exacerbating NSSI [32]. Therefore, teaching this step (continues communication) can stop people from injuring themselves by creating secure attachment.

The first axis focuses on creating the process of psychological flexibility. Psychological inflexibility reduces one's ability to change, adjust, and adapt their thinking, and precludes the use of alternative solutions, appropriate behaviors based on environmental demands and characteristics. NSSI people have one-dimensional thinking, which prevents integration, change, and thoughts balance [33].

The fourth step of this package deal with the validating of pain and emotions, which is the core factor of dialectical behavior therapy. Validation is a combination of the dialectical concepts of acceptance and change. Process-based therapists can repeatedly use this validation technique during therapeutic sessions to lead NSSI patients to change their behaviors. In addition, validating pain and emotions helps the patient endure the therapeutic process as a result of proper empathizing with the patient and encouraging their appropriate behaviors during the session [34]. The fourth, fifth, and ninth steps of this package address self-validation, which includes teaching self-compassion techniques based on emotion-oriented therapy. According to Gilbert’s self-compassion theory (2005), lack of self-compassion is associated with self-criticism, depression, anxiety and stress symptoms; difficulty in mindfulness skills. Therefore, including self-compassion training for NSSI patients can help them reduce the symptoms of their disorder. Empathy is one of the most important foundations of emotion-based psychotherapy [35]. Therefore, the inclusion of empathy training in PBT is an important factor in treatment of NSSI patients.

The sixth to eighth steps cover self-comforting, which includes limited parenting techniques based on the schema therapy approach, teaching distress tolerance based on DBT, mindfulness techniques, self-comforting and self-embrace techniques based on emotion-oriented therapy for NSSI patients. Schema therapy reduces ineffective methods of emotion regulation when facing stressful events, which helps patients use efficient methods of emotion regulation and show less self-injuring behavior [36]. Furthermore, distress tolerance training based on dialectical behavior therapy is important because people with low distress tolerance make wrong attempts to confront their negative emotions. Therefore, distress tolerance ability helps NSSI patients refrain from using self-injury to adapt to psychological distress [37]. Additionally, mindfulness techniques in the form of PBT helps NSSI patients to be aware of both pleasant and unpleasant experiences, and can overcome negative emotion; they remain less vulnerable to cognitive reactivity, which has been identified as a risk factor for self-injury. Moreover, mindfulness is a contradictory process of rumination with a negative role in the continuation of negative mood and self-injury according to various studies [38].

The seventh step of the package addresses two approaches of acceptance-commitment therapy and meaning therapy techniques. Meaningfulness can predict expectations from the future and hope for it as well as having meaning in life can prevent self-injury in people [39]. Meaning in life plays a mediating role in the relationship between depression, despair, and suicidal thoughts, which indicates that having meaning in life helps people with suicidal ideations engage in less self-injuring behaviors [40].

The tenth and eleventh steps teach effective communication techniques and interpersonal skills. In order for people to have adequate skills to deal with problems and be able to protect their physical and mental health and continue to improve their health, they need to be able to communicate effectively. Interpersonal skills also help people communicate with others and receive the support of others at stressful events, and because of this support, they show less self-injuring behaviors and deal with problems with the help of family and friends.

The twelfth step address self-regulation by teaching self-management techniques based on the process-based cognitive-behavioral theory. Self-management training helps people control their negative thoughts and prevent self-injuring behaviors by increasing adaptive emotion regulation skills. When a person experiences less negative emotions and becomes able to manage their negative thoughts, they cause less injury to themselves for immediate emotional release. Therefore, by increasing skills such as emotion regulation and self-control, self-management helps reduce NSSI behavior in people [41].

The final steps of PBT addresses problem-solving skills. Adolescents and adults can be very involved in their inner mental world and get distracted from the outside environment and from their academic and occupational assignments, which could result in deteriorating performance. These techniques can reduce people’s mental conflicts by helping solve their problems and they end up having less NSSI behaviors.

Overall, this package was based on good theoretical foundations. Given the strong theoretical foundations of this therapy, it also has a good construct validity. The

knowledge of the researcher and experts who supervised the design of the program approves its face validity.
This research had some limitations, including the failure to investigate the effectiveness of the therapy package designed for NSSI disorder, since this therapy requires a longer intervention period than other therapeutic interventions and cannot be performed in groups and is only applicable individually. To overcome this limitation, future studies are recommended to investigate the effectiveness of the designed package for NSSI disorder in the form of single-subject projects. This therapy package can help therapists and psychologists prevent suicide attempts in NSSI patients by investing in their health and well-being.

## Conclusion

This finding indicates this package will have very good efficiency and correctly targeted the processes involving NSSI. Each of these competencies focuses on theoretically-based and testable mediators and moderators that connect these methods to the process domains and principles. These defined processes of change are in fact the bio psychosocial functions of the individual in their given context and are distinguished from the procedures, therapeutic or environmental changes that involve these functions.
In general, this reliable and valid package is not just another name for eclecticism because it is necessary to organize processes of change into models that guide their application. The main advantage of this therapeutic package compared to the existing ones is its focus on the process based that target moderators and mediators that cause self-injury.

## Conflict of Interest

The authors declare no conflicts of interest.

## Ethical Approval

The ethical principles in writing this article have been observed according to the instructions of the National Ethics Committee and the COPE regulations**.**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## References


1. Hooley JM, Fox KR, Boccagno C. Nonsuicidal Self-Injury: Diagnostic Challenges And Current Perspectives. Neuropsychiatr Dis Treat. 2020;16:101-12.
2. da Silva Bandeira BE, Dos Santos Júnior A, Dalgalarrondo P, de Azevedo RCS, Celeri EHVR. Nonsuicidal self-injury in undergraduate students: a cross-sectional study and association with suicidal behavior. Psychiatry research. 2022:114917.
3. Moseley RL, Gregory NJ, Smith P, Allison C, Cassidy S, Baron-Cohen S. Non-suicidal self-injury and its relation to suicide through acquired capability: investigating this causal mechanism in a mainly late-diagnosed autistic sample. Molecular autism. 2022;13(1):1-16.
4. Vafaei T, Samavi SA, Whisenhunt J, Najarpooriyan S. Examination of individual or psychological factors of adolescents self-injury: a qualitative study. Journal of Educational Psychology Studies. 2022;19(45):155-42.
5. Hudzik TJ. Self-Injurious Behavior in Clinical and Preclinical Populations: Description, Etiology, and Management. Advanced Issue Resolution in Safety Pharmacology. 2019:131-41.
6. Sharifi pour chokami Z, Abolghasemi A, Kafie M. Predicting Non-Suicidal Self-Injury Based on Exposure, Outcome Expectancies, and Avoidance Self-Efficacy in Students of the University of Guilan. Clinical Psychology and Personality. 2022;20(1):75-87.
7. Bracken-Minor KL, McDevitt-Murphy ME. Differences in features of non-suicidal self-injury according to borderline personality disorder screening status. Arch Suicide Res. 2014;18(1):88-103.
8. Guha M. Diagnostic and statistical manual of mental disorders: DSM-5. Reference Reviews. 2014.
9. Esposito C, Dragone M, Affuso G, Amodeo AL, Bacchini D. Prevalence of engagement and frequency of non-suicidal self-injury behaviors in adolescence: an investigation of the longitudinal course and the role of temperamental effortful control. European Child & Adolescent Psychiatry. 2022.
10. Bresin K, Schoenleber M. Gender differences in the prevalence of nonsuicidal self-injury: A meta-analysis. Clin Psychol Rev. 2015;38:55-64.
11. Beauchaine TP, Hinshaw SP, Bridge JA. Nonsuicidal self-injury and suicidal behaviors in girls: The case for targeted prevention in preadolescence. Clinical psychological science. 2019;7(4):643-67.
12. Lim KS, Wong CH, McIntyre RS, Wang J, Zhang Z, Tran BX, et al. Global Lifetime and 12-Month Prevalence of Suicidal Behavior, Deliberate Self-Harm and Non-Suicidal Self-Injury in Children and Adolescents between 1989 and 2018: A Meta-Analysis. Int J Environ Res Public Health. 2019;16(22).
13. Simonsson O, Engberg H, Bjureberg J, Ljótsson B, Stensils J, Sahlin H, et al. Experiences of an Online Treatment for Adolescents With Nonsuicidal Self-injury and Their Caregivers: Qualitative Study. JMIR Form Res. 2021;5(7):e17910.
14. Eggart V, Cordier S, Hasan A, Wagner E. Psychotropic drugs for the treatment of non-suicidal self-injury in children and adolescents: a systematic review and meta-analysis. Eur Arch Psychiatry Clin Neurosci. 2022;272(8):1559-68.
15. Bean RA, Keenan BH, Fox C. Treatment of Adolescent Non-Suicidal Self-Injury: A Review of Family Factors and Family Therapy. The American Journal of Family Therapy. 2022;50(3):264-79.
16. Ataie S, Gharraee B, Shahboulaghi FM. The Effectiveness of Emotion Regulation Therapy for Adolescent Females With Nonsuicidal Self-Injury Disorder: A Mixed-Method Study. J Nerv Ment Dis. 2022;210(6):411-7.
17. Liu W, Li G, Wang C, Yu M, Zhu M, Yang L. Can fluoxetine combined with cognitive behavioral therapy reduce the suicide and non-suicidal self-injury incidence and recurrence rate in depressed adolescents compared with fluoxetine alone? A meta-analysis. Neuropsychiatric disease and treatment. 2022:2543-57.
18. Taghipour A, Ghamarikivi H, Sheykholeslami A, Rezaeisharif A. The effectiveness of the narrative therapy emphasizing on innovative moments on resilience in girls with non-suicidal self-harm. Rooyesh-e-Ravanshenasi Journal(RRJ). 2021;10(9):45-56.
19. Taghipour A, Ghamari kivi H, Sheikholslamy A, Rezaeisharif A. The efficacy of the narrative therapy emphasizing on innovative moments on cognitive emotion regulation in girls with nonsuicidal self injury. The Journal Of Psychological Science. 2022;21(109):145-62.
20. Zhang Y, Huang K, Cong H, Wang M. Effects of Group Psychological Counseling on Nonsuicidal Self-Injury (NSSI) Behaviors of College Students with Depression. Psychiatr Danub. 2022;34(2):229-35.
21. Hooley J, Franklin J. Why do people hurt themselves. A new conceptual model. 2018.
22. Glenn CR, Franklin JC, Nock MK. Evidence-based psychosocial treatments for self-injurious thoughts and behaviors in youth. J Clin Child Adolesc Psychol. 2015;44(1):1-29.
23. Hayes SC, Ciarrochi J, Hofmann SG, Chin F, Sahdra B. Evolving an idionomic approach to processes of change: Towards a unified personalized science of human improvement. Behav Res Ther. 2022;156:104155.

24. Ong CW, Lee EB, Levin ME, Twohig MP. Online process-based training for perfectionism: A randomized trial. Behav Res Ther. 2022;156:104152.
25. Hayes SC, Sanford BT. Modern psychotherapy as a multidimensional multilevel evolutionary process. Current Opinion in Psychology. 2015;2:16-20.
26. Ciarrochi J, Sahdra B, Hofmann S, Hayes S. Developing an item pool to assess processes of change in psychological interventions: The Process-Based Assessment Tool (PBAT). Journal of Contextual Behavioral Science. 2022;23.
27. Springer KS, Levy HC, Tolin DF. Remission in CBT for adult anxiety disorders: A meta-analysis. Clin Psychol Rev. 2018;61:1-8.
28. Linardon J, Wade TD, de la Piedad Garcia X, Brennan L. The efficacy of cognitive-behavioral therapy for eating disorders: A systematic review and meta-analysis. J Consult Clin Psychol. 2017;85(11):1080-94.
29. Aghamohammadi S. Pathological Explanation of Non-Suicidal Self-Injury (NSSI) in young adaults: Clinical Feature and suggesting Unified Integrated Therapeutic Protocol. Iran: Shahid Beheshti University; 2022.
30. Ong CW, Hayes SC, Hofmann SG. A process-based approach to cognitive behavioral therapy: A theory-based case illustration. Front Psychol. 2022;13:1002849.
31. Mikulincer M, Shaver PR. Adult attachment and affect regulation. 2008.
32. Ahmadi marvili N, Mirzahoseini H, Monirpoor N. The Prediction Model of Self–Harm Behaviors and Tendency to Suicide in Adolescence based on Attachment Styles and Personality Organization: Mediating Role of Cognitive Emotion Regulation Strategies. Journal of Applied Psychological Research. 2019;10(3):101-17.
33. Sadri Damirchi E, Honarmand Ghojebeyglou P, Khakdal Ghojebeyglou S, Amir SMB. The Role of Cognitive Flexibility and Perceived Social Support in Predicting Suicidal Tendency in University Students. Rooyesh-e-Ravanshenasi Journal(RRJ). 2019;8(5):61-6.
34. Amini-Fasakhoudi M, Mahmoud Alilou M, Tahmassian K, Bakhshipour-Roudsari A. Efficacy of dialectical behavior therapy techniques in reducing problems of patients with preoccupied attachment style having chronic musculoskeletal pain: a single case study. Feyz Journal of Kashan University of Medical Sciences. 2017;20(6):539-50.
35. Greenman PS, Johnson SM. Process research on Emotionally Focused Therapy (EFT) for couples: linking theory to practice. Fam Process. 2013;52(1):46-61.
36. Ghodrati Shahtoori K, Rahnejat AM, Dabaghi P, Taghva A, Donyavi V, Ebrahimi MR, et al. Effectiveness of Emotional Schema Therapy on Improvement in Cognitive -Emotion Regulation in Attempting to Self-Mutilation Soldiers. Journal of Military Medicine. 2020;22(9):956-68.
37. Ghaderi M, Ahi Q, Vaziri S, Mansoori A, Shahabizadeh F. The Mediating Role of Self–Criticism and Distress Tolerance in Relationship between Attachment Styles and Non-Suicidal Self-Injury Behaviors in Adolescents. Journal of Research in Behavioural Sciences. 2020;17(4):552-37.
38. Smith JM, Alloy LB. A roadmap to rumination: a review of the definition, assessment, and conceptualization of this multifaceted construct. Clin Psychol Rev. 2009;29(2):116-28.
39. Dogra AK, Basu S, Das S. Impact of meaning in life and reasons for living to hope and suicidal ideation: A study among college students. SIS Journal of Projective Psychology & Mental Health. 2011;18(1):89.
40. Sun FK, Wu MK, Yao Y, Chiang CY, Lu CY. Meaning in life as a mediator of the associations among depression, hopelessness and suicidal ideation: A path analysis. J Psychiatr Ment Health Nurs. 2022;29(1):57-66.
41. Nourouzi K, Mojtabaee M, Saberi H. The compairsion effectiveness yoga training based on mindfulness and self management on self- destructive behaviors in adolescents. Iranian Journal of Nursing Research. 2021;16(3):47-58.