

A Systematic Review: Examining the association among Self-Esteem, Depression and NSSI behavior emphasizing on Adults

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Abstract

21st century witnesses a new trend, entitled as Non-Suicidal Self-Injury (NSSI), within the society that is described as a self-destructive urge representing an unending burden on the individual as well as the society. One of the psychological variables that leads an individual to NSSI is identified as low self-respect or depression. Considering the seriousness of the emerging concern in the society, this study tries to examine the nature of the relationship between human depression and Non-Suicidal Self-Injury among the individuals, with special focus on adults. For this, the study adopts systematic analysis of the available literature and review the available literature on human depression and Non-Suicidal Self-Injury. The study aims to synthesize the available literature on human depression and Non-Suicidal Self-Injury. In the initial stage, articles were identified and later conducted an assessment, considering the risk of bias, which is commonly found in systematic reviews. In the next stage, inclusion and exclusion criteria was decided, followed by analysis. Results of the study state that there is a negative association among self-esteem, depression and NSSI. Furthermore, this study identifies various other variables that affects the relationship between human depression and NSSI, apart from low self-esteem of the individual. This study also discusses the limitations and further recommendations.

Keywords: Adults; Human Depression; NSSI; Systematic Analysis; Self-Respect; Self-Esteem

1. Introduction

1.1 Non-suicidal self-injury (NSSI)

Non-suicidal self-injury (NSSI) has been increasingly growing at a rapid pace, especially within adult population. Past researchers have paid attention in analyzing this Non-suicidal self-injury (NSSI) behaviour and found that one in eight adults participated in this risk-taking behaviour [1]. Identifying the risk-taking behavior, researchers, along with clinical practitioners' defined NSSI as an action, which is regarded as deliberate and direct harm performed with one's own body by means of self-destructive instinct. This type of behavior includes actions such as bruising, hitting, bone breaking, scratching, embedding, burning and so forth. It could be argued that above identified types of risk actions might lead to other mental health issues [22].

According to García-Nieto et al. (2015), NSSI is identified as a serious issue rising within the society, with reports ranging between 5.9% and 23.2% [16, 25, & 32]. Surprisingly, very limited literature [4, & 5] had been published on the act of NSSI, especially in adults, along with its surrounding stigma.

Taylor et al, (2011) found that the rates of Non-suicidal self-injury cases are invariably underestimated within the general population [43]. Most researchers in the field define NSSI as "a deliberate, direct destruction of the body tissues with conscious or unconscious suicidal instinct", which includes certain risk-taking behavioural action like cutting, scratching the skin, banging on self, burning, and hitting oneself [29, 45].

1.2 NSSI, Self-Esteem, and Human Depression

Most researchers in the field agree that Non-suicidal self-injury is associated with suicidal attacks, despite of suicidal instinct [20, 42]. Furthermore, it was estimated that there was a consistent increase in the suicide attempts pertaining to one year. Kapur et.al, (2013) have identified that psychological behaviours lead to Non-suicidal self-injury, which eventually help the practitioners to identify the most vulnerable groups, tailor their interventions, and prevent them from NSSI [24]. The study found that self-esteem is one major factor leading individuals to NSSI. However, none of the studies attempted to conduct a systematic review and analyze the association between human

depression and Non-suicidal self-injury. Predominant part of available literature focuses on children as well as adolescents, while there had been little criticism focusing on adults. Therefore, the current study identifies the association among self-esteem, depression, and NSSI in adults.

There is now considerable body of research which suggests that individuals who engage in Non-Suicidal Self-Injury are labeled as heterogeneous group. These heterogeneous groups have several possible factors that lead individuals to perform such self-destructive acts [28, 16]. Most existing research on NSSI has been relatively based on the key contributors that lead an individual to suicidal instinct, which include parental emotion neglect, childhood sexual abuse, bullying, and engaging with peer group, who are involved in NSSI [19, 8, 12].

Another research conducted primarily concentrates on examining the effect of low self-esteem or human depression on NSSI along with supporting adverse life events [30, 31]. Few other researches demonstrated that Non-Suicidal Self-Injury is adopted to mitigate negative emotions like low self-esteem and later use them as a weapon to deal with people who face difficulty in their life [26]. Henceforth, analyzing the impact of self-esteem, a psychological mediator, helps to understand the ways to maintain the relationship between risk-taking actions or behaviours and NSSI.

Past studies have tried to define self-esteem as a global judgement [18] or criticism of oneself as a worthwhile or good person and low self-esteem [36] is identified to be one risk-taking factor closely related to Non-Suicidal Self-Injury with suicidal instincts like depression and suicide [27]. The motives of NSSI include disappointment in oneself or depression, self-punishment, and feelings of shame [13, 34, & 33]. These negative feelings developed within an individual towards self will result in NSSI [19, 14]. According to [7] individuals with low self-esteem tend to be involved in NSSI, as they lack self-regard. Furthermore, low self-esteem is regarded as a hostile condition that is commonly mitigated through in Non-Suicidal Self-Injury by means of a model named Experiential Avoidance Model [6]. It was found that self-esteem based intervention in individuals demonstrated a decrease in NSSI and at the same time decreased tolerance to pain. Hence self-esteem is regarded as a crucial factor in controlling NSSI acts among adults. Keeping all this in mind, this study aims to methodically analyze the existing literature exploring the association among self-esteem, depression, and the act of NSSI, with special focus on adults. Specifically, this study aims to ascertain if low levels of self-esteem or human depression leads to the act of Non-Suicidal Self-Injury.

2. Methodology Employed

According to [36] in a research knowledge accumulation can be built as foundation only through literature review. Literature review provides a basis for the theories, its expansions, identifies research gaps, helps to close research gaps, and finally discusses uncovered areas in any topic of the research area. The key research areas that have not been focused so far will be identified and explained in literature review. This research adopts Systematic Literature Review Method (SLR) to understand the relationship between human depression or low self-esteem and the act of NSSI with distinct focus on adults.

By adopting the SLR method, researchers as well as practitioners will be able to easily identify the findings of the study to understand the relationship between human depression or low self-esteem and the act of NSSI with special focus on adults and further provide the inferences consequently. Moreover, researchers and practitioners across the world can make the findings and compare their analysis of the relationship between human depression or low self-esteem and the act of NSSI with special focus on adults across the world. In a nutshell, the SLR method identifies, analyzes, and interprets the results within the specific period related to the topic. For this, the researcher had to pre-register the review protocol on the International Prospective Register of Systematic Reviews with a separate registration id. As per the review protocol, meta-analysis was added later based on the advice of the reviewer.

After the pre-registration, the researcher started searching the articles, journals, and review papers in the electronic databases such as Web of Science, CINAHL, PsycINFO, Medline and so forth, from the date of inception until October 2019. The following key words were used by the researcher to find the appropriate articles for review: self-esteem, self-attack, self-punishment, self-injury, self-destruction, self-identity, self-harm, self-mutilation, self-suicide, suicidal instinct, human depression, NSSI, and self-criticism. In the initial stage, reviewers and researchers screened articles, journals and review papers independently based on their abstract, titles, and key words. As the second step, authors and reviewers examined the eligibility of the remaining papers by assessing the entire text. After this, articles found in manual search were considered as eligible for review and hence were considered for further analysis [42]. Following this, corresponding authors of the considered articles were contacted enquiring any other publications, which can be considered as eligible in the present study. The study includes 16 articles and is regarded as inclusive in this study. Using a data extraction form, the first author extracted the data from the included articles.

2.1 Inclusion Criteria

Researchers adopted the following inclusion criteria to select the review papers. The inclusion criteria included:

1. Full-text review papers available in English language.
2. Review papers that are published from 2000- 2019.
3. Articles that discussed on the act of Non-Suicidal Self-Injury (NSSI)
4. Review papers that assessed the concept of self-esteem
5. Review papers that analyzed the association between human depression and the act of NSSI
6. Review papers that analyzed the association among self-esteem and the act of NSSI
7. Articles that included key words like self-esteem, self-attack, self-punishment, self-injury, self-destruction, self-identity, self-harm, self-mutilation, self-suicide, suicidal instinct, human depression, non-suicidal self-injury, and self-criticism
8. Articles that are case-based, cross-sectional, and correlational were included in the study.
9. Data, which established the link among self-injury and NSSI was included in the study.

Much of the recent studies defined the concept of self-esteem as positive or negative evaluation of an individual's self-worth. Nevertheless, the concept of self-esteem is regarded as multi-faceted and inter-dimensional [38, 39]. It was also observed that there are several other facets of self-esteem, which can be represented in illustration [34]. Hence, this study also includes studies that discuss the different facets of self-esteem, which is otherwise considered as the evaluation of one's own self. Research articles that discussed self-criticism, self-esteem, and their relationship with each other were also included in the study, as it involves personal judgment of one-self.

2.2 Exclusion Criteria

Researchers adopted the following exclusion criteria to select the review papers. The inclusion criteria included:

1. Research papers with comorbid diagnosis, in terms of intellectuality were excluded
2. Research papers with unclear research methods were excluded
3. Research paper with unclear purpose – if self-injury of one-self was due to the underlying fact of suicidal instinct were excluded
4. Research studies which were manipulated in terms of experimental designs were excluded from the study.

2.3 Assessment of Risk Factor

In order to assess the risk factor of the systematic review, both researcher and authors conducted an independent assessment of the selected papers. Through discussion, other authors tried to resolve the disagreements raised in regard to the quality of the papers and its rating. The final ratings against each paper were reviewed by another author. Assessment tool that measures the risk factor of the systematic review, named as Agency for Research and Healthcare Quality assessment tool is used [2,3]. According to this tool, the quality rating was marked as yes, no, partial, and cannot tell for the majority of the elements provided in the selected papers. Furthermore, the study follows PRISMA guidelines to check if the systematic review is conducted appropriately.

2.4 Meta-analysis

This research study also conducted a meta-analysis to understand the relationship between self-esteem and NSSI, among the studies that have adopted the same research design, for instance group comparisons. Cohen's d was calculated for the groups with differences, as mean, standard deviation, and sample size. For those studies with no data, statistics like t-test will be conducted. Pearson's r extraction was employed to examine the relationship between the identified groups. Two authors will perform the data extraction in this study. This study utilizes the DerSimonian and Laird (1986) inverse variance estimator, a random-effects meta-analysis was undertaken [3] due to the difference in design of the selected studies, location and measurement was expected. Studies with multiple independent samples were included in meta-analysis. Meta-analysis was employed by means of MetaXL as suggested by [2].

3. Analysis, Interpretations, and Discussion

3.1 Special features of the Study

The most significant special feature of all the selected studies is identified as 17 of them being cross-sectional in its research design and nature; almost 9 research articles utilized student samples to analyze the relationship between self-esteem and NSSI behavior or act; 3 of the research articles employed generalized population samples; 5 of the research studies utilized clinical populations, and very limited studies utilized homeless people. Another important feature of the selected studies is that, majority of them were initiated in the United States of America, United Kingdom, Denmark, Canada and so forth. Most importantly, all the studies participants belonged to White or Caucasian. While calculating the mean age of the participants, it was noted that most of them belonged to the age group of 18-25. Furthermore, the majority of the participants in the selected studies are identified as females followed by males. It is also observed that studies with or without NSSI are also included in the study.

3.2 Analysis and Interpretations of Risk of Bias Assessment

Multiple concerns such as inconsistency in methodologies of the selected studies, inadequate description of the participants, inadequacy in understanding overwhelming factors, inadequacy in the power of calculations, and lack of justification in the sample sizes utilized in the selected studies. Understanding these concerns is crucial as there may be a possibility of being underpowered due to self-esteem and NSSI behaviour, which will eventually increase the suicidal instinct among the individuals. Nevertheless, all the selected studies not only discuss the association among self-esteem, depression, and the act of NSSI. The above stated reason explains that there is a lack of power calculations, which was supposed to be undertaken in the analysis. Most of the selected studies utilized large sample sizes, which is greater than 300, due to which the risk of bias in the analysis was underpowered.

For the above reason stated, conclusions of the selected studies were regarded as limited, thus effecting the directions of the studies. Few of the studies were considered as irrelevant, as they failed to involve assessors in the participants' status, for instance, online surveys. Due to this reason, the research designs will be considered as minimal response biases with respect to the subject areas like Non-Suicidal Self-Injury. Although face-to-face interviews or semi-structured interviews seem to have several advantages such as reducing missing data, enriching the value of questions, and ensuring the participants to analyze, understand, and synthesize the questions [17]. According to [35], missing data can introduce bias among the researchers preventing them to assess the data associated with self-esteem and NSSI behaviour. In such cases, researcher should provide an explicit statement with reference to the missing data in amount and the ways they managed to review. It is also understood that missing data is entirely different from the responses provided by the participants to those who took part in the studies selected that provide incomplete data. Specifically, the participants or samples were identified as White or Caucasian [21]. Hence, the generalization of findings can be limited or restricted to White or Caucasian. The above mentioned limitation is considered as a significant limitation in regard to Non-Suicidal Self-Injury research [10]. Apart from all these, most of the studies provided limited description of the samples selected. For instance, economic condition, employment, and social conditions of the participants were rarely considered, which led to low self-esteem and Non-Suicidal Self-Injury behaviour.

The study also identified inconsistency with respect to overwhelming variables which lead to biased and unstable estimation of association among self-esteem, depression, and the act of NSSI. To summarize, the papers selected involved questionnaires that are filled by the participants and thus leading to risk of bias.

With regard to the measures adopted, of seventeen studies selected, two of them utilized approved measures of self-esteem [7, 9, 10] The most common measurement scale used in the eight selected studies was the Rosenberg Self-esteem Scale as it theorizes self-esteem as a negative or positive attitude towards one's own self. Sowislo & Orth, (2013) stated that RSES seems to have properties of psychometrics [39]. All of the studies discussed the presence of NSSI behavior in individuals as opposed to human thoughts, perceptions, and cognitions. Out of seventeen studies, only 5 of them utilized non-validated measures, while remaining utilized validated measures to examine the association among self-esteem, depression, and the act of NSSI.

3.3 Self-esteem and Non-Suicidal Self-Injury

Out of 17 studies, 12 of them discussed association among self-esteem, depression, and the act of NSSI. These studies also distinguished the difference between self-esteem and NSSI groups as well as non-NSSI groups. Of these 12 studies, six of them utilized student samples, two of them utilized general population samples, and three of them utilized clinical samples. Surprisingly, a study conducted by [45,43, 42] stood alone indicating low self-esteem among NSSI control groups than in non-NSSI control groups. The same study observed that this kind of behavior was found in Danish samples.

Another significant finding of the study is that majority of the study's research designs stood adequate to justify the meta-analysis, which suggested that an overall large effect of d , identified as 1.17, with a greater level of diversion across studies. The same has been illustrated in figure 1. Study conducted by [30,31] stood as an exception amongst other studies. The main focus of the above stated study was on body esteem, which stood against self-esteem in a global perspective. Keeping this one study aside, other studies led to a smaller, moderate effect size, bordering on large, $d = 0.78$, with diversion of 85%. Studies that employed RSES show slighter lower moderate effect size with insignificant diversions with value $d = 0.59$. Majority of the studies, excluding the above ones tend to be measure various forms of self-perception.

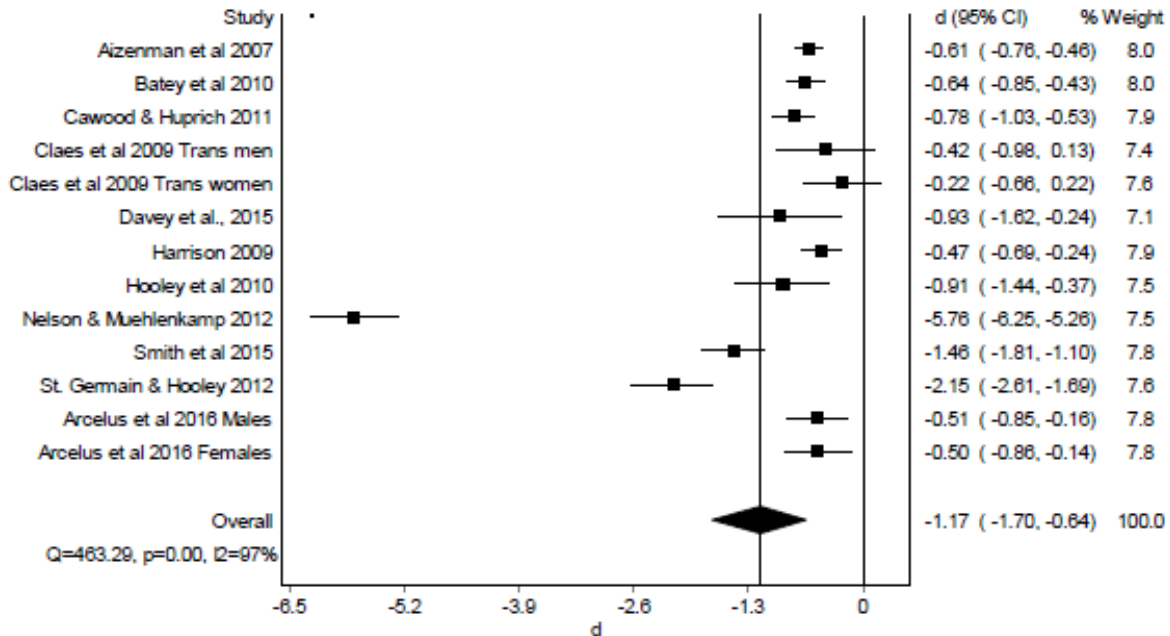


Figure 1. Results of Self-esteem and NSSI Control Groups

On the other hand, 6 studies examined the significance of self-esteem to understand the intensity of Non-suicidal self-injury behaviour. Out of these 6 studies, four of them utilized student samples and two of them, clinical samples. From the analysis of the above mentioned studies, it can be stated that Non-suicidal self-injury behaviour is positively associated with self-esteem. Furthermore, it was found that students' self-esteem is inversely related to Non-suicidal self-injury frequency with greater severity and breadth [22]. Another study conducted by Smith et al., (2015), found that feeling of self-disgust was associated with Non-suicidal self-injury behaviour along with a bodily regard of NSSI frequency [30, 31]. Few other studies stated that within the clinical samples, female patients exhibited low self-esteem and they tended to engage in NSSI behavior frequently using various methods of self-injury. Only a very limited relationship was identified among self-esteem and NSSI behavior, especially in homeless people, who are young.

According to [1, 2, 3] the factor 'gender' controlled the relationship between self-esteem and NSSI behavior, which depicted different symptoms like personality disorder symptoms, human depression, parental negligence, parental bonding, and so forth [23]. Nevertheless, these symptoms were considered as significant when Non-suicidal self-injury was considered as severe. NSSI is associated with self-criticism and hence individuals act sensitive towards punishments or rewards, be it in negative or positive manner [37]. Furthermore, self-criticism seems to have a relationship with NSSI when there is a low positive interaction with the self. On the other hand, [40, 41] stated that self-disgust is also associated with NSSI and human depression strongly with symptoms of depression and sexual abuse. To conclude, the selected studies proposed that individuals who have experienced NSSI carry low self-esteem, which will inversely affect their self-perception. NSSI seem to appear as opposed to self-esteem and thus their relationship is relatively robust.

3.4 Interpretations and Discussion

From the analysis, the study found that self-esteem carries risk taking behaviors when engaged in direct NSSI or even vice-versa. St. Germain & Hooley, (2012) highlighted that there is no significant relationship between self-esteem and NSSI, be it direct or indirect (like getting involved in abusive relationships). The same study found that higher self-criticism was reported among those individuals who directly get involved in NSSI. While students who got involved in piercing, tattoos, and other body modifications, with NSSI behavior show no difference in self-esteem. While some other students who do not exhibit any NSSI behavior, but involved in drug use seemed to show no self-esteem [1]. From the above extracted data, it can be claimed that there is a difference between NSSI control groups and non- NSSI control groups. Hence, the following are the key findings of the study: 1. Low self-esteem is regarded as the common features within individuals who engage in direct NSSI and indirect NSSI; 2. Low-self esteemed individuals are not considered as risk types groups; 3. Self-criticism will lead to self-injury when an individual is involved in direct NSSI; 4. Self-esteem is considered as a mediator leading to NSSI act with mediating risk-factors; 5. Self-criticism acted as a mediator of psychological risk factors associated with NSSI; and 6. Self-

esteem stood in between childhood abuse, leading to NSSI, especially among females; 7. Low self-esteem is a commonly identified among adults who are involved in non-suicidal self-injury; 8. Individual with a history of non-suicidal self-injury seem to exhibit low self-esteem; 9. Adults with no history of NSSI seem to have better self-esteem than with those who have.

Studies that employed RSES found that self-esteem is inversely related to Non-Suicidal Self-Injury with greater severity. It was also suggested that self-esteem plays the role of a mediator between the common psychological risk factors and its direct engagement with NSSI behavior. This was regarded as a temporary suggestion as the selected studies employed cross-sectional research design, which will not allow any kind of inferences. Throughout the study, evidence suggests that there is an association among self-esteem, depression, and NSSI behavior, be it direct or indirect. The risk of NSSI acts increases when individuals tend to experience difficult life events, thus leading to low self-esteem. Although, there exists several pathways that account the association among self-esteem, depression, and NSSI behavior, lower levels of self-esteem is regarded as inherently repellent. Moreover, it was stated that low self-esteem is the basic need of every individual to carry the feeling of belongingness.

The study also found that feelings such as shame, rejection, and negligence will trigger Non-Suicidal Self-Injury behaviour within individuals who are into depression [44]. Adding to this, low self-esteem increases the degree of emotional states like shame, rejection, negligence and so forth, which eventually triggers the act of NSSI [32,33]. Individuals with low self-esteem [24] will tend to damage their physical body, fostering the act of NSSI.

In this present study, the researcher tried to understand the concept of self-esteem along with synonyms like self-worth, self-value, and self-perception. From a detailed analysis, it is inferred that self-critical types of self-worth or self-perception such as self-disgust seem to have developed a stronger link to the act of NSSI. It was observed that these types of self-perceptions drive an individual towards Non-Suicidal Self-Injury consistently (Gilbert et al., 2010, thereby allowing individual succumb to self-punishment [15]. Self-aversion is regarded as a hostile form of low self-esteem, thereby leading a depressed person to believe that he/she deserved pain or punishment and thus exhibit NSSI behavior [16].

Few other studies stated that self-criticism provoked individuals towards direct or indirect forms of self-injury, instead of self-esteem [13,15]. Hence, it can be claimed that self-esteem is definitely not a risk factor of NSSI behavior, instead it can predict the risks involved in the safety of a depressed person. Self-esteem related to the physical body seemed to have a stronger relationship with NSSI behavior rather than other forms. In fact self-esteem and NSSI behavior are found to be in a reciprocal relationship as suggested by [7]. Furthermore, disapproval of NSSI within the society will also lead to low self-esteem [1, 2, 3]. It is significant to note that since the majority of the studies were cross-sectional in design, the effects of self-esteem on NSSI cannot be accurately demonstrated. Few other studies stated that within the clinical samples, female patients exhibited low self-esteem and they tend to engage in Non-suicidal self-injury behaviour frequently using various methods of self-injury. Only a very limited relationship was identified between self-esteem and NSSI behavior, especially in homeless young people.

Apart from all these, most of the studies provided limited description of the samples selected. For instance, economic condition, employment, and social conditions of the participants were rarely considered, which led to low self-esteem and Non-Suicidal Self-Injury behaviour. The study also identified inconsistency with respect to overwhelming variables which lead to biased and unstable estimation of association among self-esteem, depression, and the act of NSSI. To summarize, the papers selected involved questionnaires that are filled by the participants and thus leading to risk of bias. The current study utilized student samples who were young and belonged to the age group of 18-25. Specifically, the participants or samples were identified as White or Caucasian [25, 23]. Hence, the generalization of findings can be limited or restricted to White or Caucasian. The above mentioned limitation is considered as a significant limitation in regard to Non-Suicidal Self-Injury research [9, 10]. Henceforth, this review analyzed the association among self-esteem, depression, and the act of NSSI in adults. The results of the study clearly state that low levels of self-esteem are found in individuals who engage in NSSI, than in those individuals who do not engage in NSSI. Moreover, self-esteem is precisely associated with NSSI severity, although their relationship cannot be completely ascertained. It was also found that self-esteem mediates the relationship between adverse events and NSSI. Self-esteem may be an important therapeutic intervention for those who engage in NSSI.

4. Conclusions and Recommendations

To conclude the study found that low self-esteem is regarded as the common features within individuals who engage in direct NSSI and indirect NSSI; low-self esteemed individuals are not considered as risk types groups; Self-criticism will lead to self-injury when an individual is involved in direct NSSI; Self-esteem is considered as a mediator leading to NSSI behaviour or act with mediating risk-factors; Self-criticism acted as an intermediate of psychological risk factors associated with NSSI; and Self-esteem acted as an intermediate between childhood abuse and NSSI, especially among females; Low self-esteem is considered as a common feature among adults who are

involved in non-suicidal self-injury; Individual with a history of non-suicidal self-injury seem to exhibit low self-esteem; Adults with no history of NSSI seem to have better self-esteem than with those who have. Future researchers can come up with alternative theories that discuss self-esteem and its relationship with NSSI. They can also examine the role of self-esteem in association with NSSI.

Compliance with Ethical Standards

Conflict of interest

The authors declare that they have no conflict of interest.

Human and Animal Rights

This article does not contain any studies with human or animal subjects performed by any of the authors.

Informed Consent

Informed consent was obtained from all individual participants included in the study.

Data availability statement

Data sharing not applicable to this article as no datasets were generated or analysed during the current study.

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