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Influencing Factors of Recovery of Non-Suicidal Self-Injurious Behavior in Adolescents

Anlan Song[1,a,*]

[1]*Wang Yanan Institute for Studies in Economics, Xiamen University, Xiamen, 361005, China*
a. 20203151@stu.hebmu.edu.cn
**corresponding author*

Abstract: Background: Non-suicidal self-injury (NSSI) refers to self-directed, intentional behavior that injuries the individuals while no suicidal intent emerges. Over the past few decades, concern about NSSI's impact on adolescents is widespread. Former research shows that NSSI is related to a series of mental disorder, increased suicidal risk and may cause lasting effects on adolescents, however, research on treatment of NSSI is still insufficient.Method: This research hopes to gain an insight into the subject by evaluate method of treatment through literature review.Result: Study shows that NSSI is effected by a multitude of risk factors, including biological, neurological, psychological, cultural and social factors. Several treatment has been proven to be effective, such as CBT, DBT and physical exercise. Conclusion: This paper conclude that various factors could contribute to NSSI. This study helps family and school gain more insight into adolescent NSSI and develop supporting systems. The present study emphasizes the necessity of multi-pronged approach for intervention.

Keywords: Non-suicidal self-injurious, Impact factors, Intervention

1. Introduction

1.1. Contexts

Results from prior research indicate that approximately 10% of teenagers report engaging in self-harm, with some indicating that their actions were motivated by suicidal thoughts [1]. Cross national data of freshman survey showed that lifetime prevalence of NSSI is near 18% while 12-month prevalence of NSSI is near 10% [2].

Adolescent NSSI is receiving more and more attention in the clinical and scientific domains. In China, this phenomenon is increasingly raising public concern, and there is an increasing trend in the amount of published litterateurs in recent years [3]. However, the assessing of the effectiveness of treatment to NSSI is still insufficient and needs further investigation.

1.2. Significance

Adolescence is a susceptible period for NSSI, perhaps because the adolescent brain is not yet fully developed, and the ability to control emotions, self-regulation, and social adaptation is still limited. While NSSI may provide short-term relief, its negative effects are emphasized including stigma due

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to scarring, interpersonal stressors about self-injury reported academic failure and impaired psychological functioning.

Furthermore, there is a chance that they will have higher rates of suicide ideation and actions. Teenagers with NSSI are more probably to commit suicide in the future and have a higher chance of dying by suicide [4]. However other research evidence reveals that NSSI may reduce suicide attempt. This suggests that NSSI may function as coping strategy for suicidal attempt which is maladaptive.

Adolescents receiving mental health treatment are more likely than the general public to experience NSSI; in fact, up to 60% of teenagers admitted that they at least experience one NSSI period in their lifetime, and nearly half of them report repeated NSSI. NSSI has a strong correlation with many different types of mental illnesses in adults [5].

Taken all together, evidence suggests that NSSI's impact is complicated considering its role as a maladaptive coping strategy.

1.3. Aim and Method

This research hopes to gain an insight into the treatment of NSSI and provide useful method for improving the current conditions by evaluate method of treatment through literature review.

2. Research Subject

2.1. Concept

The intentional, self-inflicted mutilation of bodily tissues for predetermined reasons and without any suicidal intent is known as NSSI. [6].

The most popular theories of NSSI conceptualize it as an emotional coping strategy.

Prior studies confirmed that negative emotions' reduction is the most common reason for NSSI. In addition, researchers suggest that NSSI temporarily reduces negative emotions. Thus, NSSI could be useful in short term; however, if NSSI continues, negative outcomes would emerge [7].

2.2. Risk Factors

2.2.1. Biological Risk

Various biological risk factors could contribute to NSSI [3].

Previous research shows gender is closely related to NSSI. Comparing to male female conduct more self-harm bahavior [1]. Result also reveals that compared with community samples, the gender difference (GD) is more significant clinical samples Moreover, GD is larger in younger groups. The findings of this study stress that gender is an influential factor that deserves to be focused on, provided that the effect of age differences is not significant. This also suggests that therapists should pay extra attention to gender-specific strategies when developing intervention strategies for NSSI.

For sleep dysfunction, greater insomnia symptoms is significantly associated with more NSSI engagement while overall sleep quality appears to be irrelevant. However, association between sleep variables and NSSI is not significant [8].

Although genetic factors are related to several mental disorder including depression, they are not discovered to have a link to NSSI. Results highlight people with inclination to depression show more suicidal behavior while the relation between the inclination and NSSI is not clear [9]. Further investigation is needed in understanding the role of genetic factors on NSSI.

One review confirms the association of biological factors and NSSI. This shows that the primary and most direct level that increase NSSI are biological risks. The role that gene plays needs further investigation. The findings imply that NSSI behaviours may stem from underlying biological or

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neurological abnormalities. Therefore, when recognising NSSI behaviours, people should not simply consider them as impulsive behaviours originating from external stimuli. The comprehensive mechanisms of NSSI should be thoroughly examined [3].

2.2.2. Neurological

NSSI is shown to be linked with poor emotional face recognition and anomalies in brain activity. It can also provide explanation for gender differences.

Research finds that women with NSSI different cortical areas is activated [10]. The neurological evidence can aid researcher in gaining further knowledge regarding the biological mechanisms of gender differences.

Another study finds out that NSSI was related to differential connectivity between regions. Different types of inhibitory control may be the reason for dangerous behavior among individuals with NSSI. Abnormal reward processes are found in youth with NSSI. [11].

Previous studies demonstrated that the above brain regions are associated with abnormalities of behavior, emotion and cognition in individuals. Therefore, NSSI may be an accompanying behaviours to a mental illness or a negative regulation strategy to cope with the negative effects of a mental illness. The neurological experiment of above hypothesis needs to be further conducted [12].

2.2.3. School Environment

Research shows school-related factors such as the relationships between teachers' support (TS), peer climate(PC), and NSSI within the school context can influence NSSI. Ts and positive PC can reduce the likelihood of a student's engagement in NSSI. Hierarchical linear modeling (HLM) was applied in primary analysis and irrelevant variables were controlled. The result indicated that TS positively affect NSSI at the classroom-level but is negatively correlated with NSSI at the student-level. There was a trend toward an association between positive PC and NSSI at the classroom-level, while for student-level, negative PC could contribute to NSSI at the student-level [13].

In another study, the findings demonstrated that participating in bullying increases the risk of committing NSSI; additionally, peer rejection increases the possibility of NSSI usage. The results are consistent with the theory that peer interactions are a major factor in determining NSSI and that it is critical to put programs in place that try to enhance the school environment in order to prevent adolescents from engaging in maladaptive behaviors [14].

2.2.4. Social Network

Social network made online communication more convenient, however the misuse of social media may intensify feelings of anxiety and depression. A purposive sample of 214 teenagers is used to undertake a cross-sectional predictive study. Using the stepwise forward approach, two regression models were also examined. Result indicate that social networking use is a significantly related to NSSI, while Model 2 contends that the combination of social media use and depression significantly increases the incidence of these incidents [15].

2.2.5. Interpersonal Relation

In western countries, family relationship seems to be closely related to NSSI in adolescents. Positive parenting practices reduced the likelihood of NSSI, but negative parental characteristics (such as severe punishment and inadequate supervision) predicted the development of NSSI in this long-term study. In a similar vein, negative peer characteristics raised the likelihood of NSSI. Furthermore, the only factors that were found to be substantially linked to the formation of NSSI were peer factors. In

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light of the onset of NSSI, this study underscores the important nature of peer and parental relationships [16].

Another study investigated a risk model for non-social psychological illness (NSSI) in college students, emphasizing intrapersonal vulnerabilities and parent-child factors that may be exacerbated by the achievement-focused atmosphere typical of college life. Participants report their experiences with past-year NSSI, academic coping, emotion dysregulation, perceived parental pressure, and self- and socially-imposed perfectionism. Higher felt parental pressure was linked to a higher past-year NSSI likelihood among college students, based on structural equation models. Prior study shows parental pressure is positively related to NSSI, however whether it is directly or indirectly related needs further investigation [17].

These studies therefore stress the importance peer and parental relationships considering the NSSI onset in western countries.

Although the above articles examined the factors influencing NSSI from various perspectives. In reality, however, many factors can affect individuals at the same time. Therefore, further research on influencing mechanisms is necessary. Moreover, studies are also needed to identify which of these factors can be dominant.

2.2.6. Cultural Factors

Cultural factors are also involved and result in differences of NSSI prevalence and risk factors. As opposed to western countries, family factor is not related with NSSI. research from Western nations have shown a comparable prevalence rate of 23.1% in Singapore, and findings from these research also indicate that cutting is the most prevalent kind of NSSI. NSSI was also associated with alcohol use, gender, and depressive symptoms, but not with familial variables. The reason for this, according to the authors, would be Singapore's pervasive stigma and misunderstandings regarding mental illness, which led some individuals to conceal their NSSI. To learn more about NSSI, further study from Asian nations is necessary [18].

Whether the difference are caused by actual numerical discrepancies, or differences of the culture impact on answers.

2.2.7. Psychological Factors

Negative urgency, the self-reported tendency to act impulsively when distressed is related toNSSI. Reduced negative emotional response inhibition (NERI), more precisely negative emotional action termination (NEAT), is also linked to NSSI. [19].

Other psychological factors involved includes mental illness and malfunction in cognition [3]. Specifically, disorders in mood are a significant predictor of NSSI.

3. Treatment and Effectiveness

3.1. CBT:Level of Evidence

The goal of cognitive behavioral therapy (CBT) is to help patients alter their unhelpful beliefs, attitudes, and actions. For depression and anxiety disorders in people of all ages, including young ones, CBT is considered one of the most effective treatments.

Nonetheless, there is comparatively little research on CBT as a treatment for NSSI in kids and teenagers.

Numerous studies have demonstrated decreases in NSSI after adolescent CBT.

Alavi, for instance, administered CBT to depressed teenagers who had just had a SA. Compared to the wait-list control group (n = 15), participants who were randomly assigned to the CBT

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conditionthat combined conventional CBT with modifications relevant to suicide. The CBT group showed reductions in SI and other symptoms significantly.

In a second instance, Taylor examined the results of treatment before and after it was administered to 25 teenagers who underwent 8–12 CBT sessions, which included problem-solving techniques and motivational interviews tailored to the needs of adolescent SIBs. At the end of treatment and the 3-month follow-up, participants' SIB frequency was significantly lower than at baseline.

According to these findings, CBT can be helpful in treating NSSI and suicidality, particularly when it is adapted to take into account how complicated these problems are in kids and teenagers.

Numerous studies have started to look at school-based CBT programs.

Silverstone conducted an analysis of the effects of the school-based cognitive behavioral therapy (CBT) program Empowering a Multi-modal Pathway Towards Healthy Youth (EMPATHY), which aims to lower teenage depression and suicidality.

In the initial trial, which involved 125 middle school students who were classified as actively suicidal, participants in an eight-session cognitive behavioral therapy program significantly reduced their depression, and at the 12-week follow-up, only 30 of the participants were actively suicidal, compared to the non-participating group.

A second experiment involved assessing teenagers through the EMPATHY program. There were substantially fewer students with SIamong those who engaged in the EMPATHY program than there were at baseline (n = 143, 4.4%).

These findings are significant because they demonstrate that CBT can be taught in schools and they also support the significance of CBT in suicidality. When compared to typical mental healthcare settings, the implementation of CBT in school settings has the advantage of potentially lowering stigma and other treatment hurdles. Although not all CBT trials provide statistically significant improvements in suicidality and NSSI, these findings are encouraging and warrant additional research. CBT can be divided into different subtypes when implemented specifically. Whether family-based or group therapy, for example, can achieve relatively better results can be further confirmed by future stuides. In addition, because campus are the places where students spend the most time on a daily basis, the integration of CBT with school education and the development of school-based interventions can be further investigated.

3.2. Dialectical Behaviour Therapy (DBT)

DBT is a type of psychotherapy that combines elements of CBT with other psychological theories to help patients who are having trouble with dysregulated emotions and dysfunctional coping mechanisms. Utilizing opposites, such as "I can accept some things in my life" is known as the "dialectic."

Miller's DBT for Adolescents (DBT-A) modified DBT, which was first created for borderline personality disorder patients, by adding parent/caretaker sessions to the adolescent-focused treatment.

In comparison to adolescents who got Treatment as Usual (TAU), results show that participants who received the 12-week DBT program showed a less SI and fewer inpatient admissions.

Numerous more research have confirmed these findings.

In order to address SIBs in adolescents with suicide attempts (SA), present and active suicide ideation(SI), and recurrent self-injurious behaviors (SIBs), McCauley, for instance, carried out a 6-month randomized controlled trial (RCT) to compare DBT vs. individual and group supportive therapy (IGST). SAs were lower in DBT participants than in IGST participants. NSSI was also reduced more in DBT participants; after six months, 56.9% (n = 41) reported no NSSI, compared to 40.0%.

Scholars suggested that six months of DBT combined with individual and family psychoeducation about eating disorders are beneficial for NSSI reduction.

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In Katz's study, daily skills training sessions andindividual therapy comprised the 2-week DBT program. Compared to TAU group, DBT group experienced fewer NSSI behaviors [20].

Previous studies regard DBT as a effective tool in helping teenager with NSSI . However, the efficacy of short-term DBT has been confirmed to be unstable by previous studies. The reason for this may be that short-term DBT only resulted in individuals reporting less self-injurious or suicidal behaviour on self-assessment, while their cognitive patterns did not change significantly given a short period of time. As mentioned before, NSSI is associated with physiological and neurological abnormalities in individuals, and short-term DBT might not be significantly beneficial for neurological and physiological component.

3.3. Physical Exercise

It's crucial to remember that there is early data suggesting exercise could be a useful treatment for NSSI behavior urges. Sports or exercise have been found to be among the most effective ways to stifle cravings to partake in NSSI. A teenager with NSSI history was the subject of a single-case, quasi-experimental investigation, which showed that using physical activity greatly reduced NSSI. To fully comprehend the benefits of physical activity and exercise for adolescents with NSSI, more study is required [21].

4. Discussion and Suggestion

This study introduced the background, significance, concept and influencing factors of NSSI in teenagers and evaluated the effectiveness of treatments for NSSI, helping researchers to gain further insight into the subject and develop interventions to treat it.

The past few years witnessed an increase of research and attention on the NSSI among adolescents. More people are becoming aware of the seriousness of this issue in adolescents. Since adolescence is a period when people go through many changes, develop self-identity, build social relationships and make crucial academic and career decisions, they are especially vulnerable to stressful situations, and might develop harmful coping mechanisms, such as NSSI. NSSI may cause lasting damage physically and mentally, therefor it is imperative that researchers gain more knowledge to the formation of this behavior and apply effective treatment.

Adolescent non-suicidal self-injury (NSSI) encompasses various biological, neurological, psychological, social and cultural factors. Research reveals various factors are correlated biological factors. Gender is the most related influencing factor, as proven in previous research globally. In order to understand more clearly how gender affects adolescents, researchers should conduct further research on possible mediating factors involving cultural and family gender perceptions and biological factors. In addition, the influencing role of non-binary gender and sexual orientation have not been well studied, and further research is needed. These individuals also face more negative influences from society and others in most cultural contexts, which may further exacerbate NSSI behavior.

Additionally, neurological studies indicated that NSSI groups shown structural and functional differences in specific region of brains, pointing to potential neurobiological markers for the behavior. Neurological research can help us better understand the physiological manifestations of NSSI in the brain, which can help better understand the mechanism of NSSI and reduce stigmatization.

Psychological, social and cultural factors are also salient in understanding NSSI.

The management and treatment of NSSI is complex and requires a multi-faceted approach. Psychotherapy has been found to be effective in treating NSSI. This study detected the effectiveness of CBT and DBT in controllingNSSI. These therapies have been proven to be useful in improving the conditions of adolescents in treating suicidality, NSSI, and other SIBs. Research shows that

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physical exercise is also an effective treatment for NSSI. These methods of treatment should be further introduced to schools and the community, to enhance the knowledge of this issue and reduce stigmatization.

However, access to mental health resources for adolescents remains limited, especially in underserved communities. This creates a significant barrier to effective treatment. In addition, the stigma surrounding mental illness and NSSI can prevent individuals from seeking and receiving appropriate help. Also, NSSI behavior and treatment effectiveness may vary in different cultural backgrounds, and research in developing countries are still insufficient.

5. Conclusion

In conclusion, adolescent NSSI is a complex behavior that requires a nuanced understanding of its psychological, social, and biological underpinnings. Effective treatment necessitates a multi-pronged approach that addresses the individual's unique needs and circumstances. Future research should focus on improving access to mental health resources, reducing stigma, and developing more tailored interventions for individuals at risk of engaging in NSSI.

The article provides a review of former literature for researchers to conduct further study, help enhance the understanding of influencing factors of adolescent NSSI and contribute to developing effective solutions for treating NSSI in adolescents.

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