

# Relationship Between Cognitive Distortion and Life Event with NSSI Thought on Secondary School Students

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## Abstract

Non-suicidal self-injury (NSSI) is a form of self-injurious behaviours with no intention of committing suicide. These behaviours are seen to be increasingly evidenced among secondary school students, which can affect their lives. This study aims to look at the relationship between cognitive distortion, life events and NSSI thoughts of secondary school students. This study uses survey method by administration a set of questionnaires. The respondents (n=1021) were recruited from secondary schools in the Klang Valley using random sampling. The findings of the study indicate that there is a significant positive relationship between cognitive distortion and life events with students' NSSI thoughts. Students think of injuring themselves without the intention of committing suicide due to negative life events and their distorted thinking. The results of this study have implications increasing mental health awareness and preventive measures on NSSI behaviours. The preventive measures should address issues related to life events and cognitive distortion of students in order to prevent the occurrence of NSSI behaviours among secondary school students.

**Keywords:** Cognitive Distortion, Life Event, Non-Suicidal Self-Injury, Secondary School, Student

## Introduction

Injury oneself without the intention of suicide or non-suicidal self-injury (NSSI) is a mental health issue that is gaining attention in society (Mental Health First Aid Australia, 2014). Non-suicidal self-injury (NSSI) is commonly used to describe self-injury, self-harm, deliberate self-harm, parasuicide and self-mutilation (Klonsky *et al.*, 2011). According to Whitlock (2010), self-harm usually refers to various types of behaviour in which individuals intentionally cause harm to their respective bodies and this act violates social norms and does not intend to commit suicide. Nock *et al.* (2006) describes NSSI as a deliberate, socially unacceptable

behaviour and without intent to commit suicide, which causes direct damage to a person's body tissues.

Attempts to injure oneself are defined as non-lethal but deliberate intent to cause harm, including cutting, burning, overdose of therapeutic drugs, taking illegal drugs in dangerous quantities, or harmful substances that the stomach cannot digest (Hawton *et al.*, 2002). Self-harm is also associated with behaviours such as cutting, burning, and punching and is often associated with depression, anxiety, substance abuse, and suicide (Wilcox *et al.*, 2012). NSSI most often involves cutting oneself with a knife or razor, usually starting in early adolescence, occurring among people with various psychiatric disorders, associated with an increased risk of suicide attempts, and regardless of sex, ethnicity, or socio- status economics (Din *et al.*, 2018; Taliaferro & Muehlenkamp, 2014; Nock *et al.*, 2006). However, Hooley, Boccagno & Fox (2020) highlight that acts such as piercing and tattooing do not belong to the NSSI behaviour because it does not bring harm to the body as these acts have been accepted in a certain social context. There have been previous studies stating that individuals with a history of NSSI have a higher risk of thinking and attempting suicide (Nock *et al.*, 2006; Noordin *et al.*, 2020). The number of suicides among high school students in Malaysia is still under control although so many cases have been reported in other Asian countries especially Japan and Korea (Kim *et al.*, 2011).

Previous studies have found that various factors play a role in contributing to adolescents to engage in NSSI behaviour. Generally, these factors consist of psychological, social, environmental and clinical factors (Idris *et al.*, 2019; Hillaluddin *et al.*, 2019; Ibrahim *et al.*, 2014). However, in this article, only the psychological factors of cognitive distortion and life events that lead to NSSI thinking will be discussed. Barriga *et al.* (2000) describe cognitive distortion as an inaccurate way of giving meaning to an experience. Similarly, Liu *et al.* (2014) explain cognitive distortion is described as an error in making a statement or claim. Guglielmo (2015) agrees that the concept of cognitive distortion can be defined as a type of clinically problematic cognition that is relevant to a specific status and scope of operation. According to Rohany *et al.* (2016), cognitive distortion is the way the mind convinces us of something that is not true as true. These inaccurate thoughts are usually used to reinforce negative thoughts or emotions by telling yourself things that seem rational and accurate, but really only serve to prevent someone from feeling bad about themselves.

Cognitive distortion, as well as other cognitive impairment factors, has been shown to precede and maintain different forms of psychopathology (Beck *et al.*, 1985). Cognitive errors (e.g., over-generalization, disaster, selective abstraction) and cognitive triads (i.e., negative views of self, the world, and the future) are two types of cognitive distortion that have been associated with depression among youth (Jacobs *et al.*, 2008). There is also evidence to suggest that cognitive impairment is associated with anxiety among adolescents (Weems *et al.*, 2001). According to Weismore and Esposito-Smythers (2010), adolescents who injure themselves and suffer from psychiatric disorders or have a high risk of getting involved in the onset of any disorder, show a higher tendency to experience cognitive impairment. Similar to psychiatric disorders, cognitive distortion can play an important role in NSSI involvement and maintenance. Cognitive distortion usually occurs with high frequency and can be difficult to control. With recurrent negative behavioural events, the process of distortion of thinking can become more stable and comprehensive (Kendall & Dobson, 1993). Furthermore, among

adolescents with depression, those who have the intention to commit suicide show higher levels of cognitive distortion (e.g., personalization and abstract selection) than depressed adolescents do who do not wish to commit suicide (Brent *et al.*, 1990).

Adolescents may be more likely to engage in maladaptive behavioural behaviors such as NSSI, as a way to regulate or control negative effects (Weismore & Esposito-Smythers, 2010). Their escape from aversive thinking and feelings has been identified as a major reason for engaging in NSSI, and the tendency to suppress unwanted thoughts has been linked to the existence and frequency of NSSI among adolescents (Nock, 2010). NSSI is a negative coping strategy to respond to external stresses involving life events. Life events are significant experiences that can lead to increased levels of stress in life where adolescents may feel frustrated and depressed with the situation he experiences every day in the environment. Significant things that happen in life such as losing a loved one or moving house are believed to be less significant factors in causing stress but contribute to disturbing things in daily life as adolescents need to adapt to the events that occur (Tang *et al.*, 2016).

Past studies have shown that self-injuring adolescents report higher subjective stress in response to stressful and aversive experiences and show low levels of tolerance to stress (Najmi *et al.*, 2007); Nock 2010). Sources of stress may be due to peer factors, poverty, schooling and low religious beliefs. This NSSI behaviour helps them to escape negative thoughts or emotions where Hornor (2016) stresses the feelings the stabbing physical pain caused by the NSSI can help to divert attention from unbearable feelings or stress. Thus, this paper aims to investigate on how adolescents' cognitive distortion and life events contribute to having NSSI thoughts among adolescents in secondary schools

## **Methodology**

This study uses quantitative approach in the form of a survey the respondents (n=1021) aged between 13 years to 17 years were recruited using simple random sampling. To measure cognitive distortion a set of questionnaires containing three instruments, namely Cognitive Distortion Scale, Social Readjustment Rating Scale and NSSI Thinking Scale were administered to the respondents. The Cognitive Distortion Scale (Briere, 2000) was used to measure cognitive distortion. It contains 40 items using a five-point Likert scale, namely 1 = Never, 2 = Occasionally, 3 = Occasionally, 4 = Often and 5 = Very often. Among the items found in this scale are such as 'I am guilty when something happens to me' and 'I think I am not attractive'. In addition, there are five dimensions in this test tool that is self-criticism, self-blame, helplessness, despair and tendency or preoccupation with danger. The way to determine the level of cognitive distortion of the respondents is the higher the score obtained shows that the respondents have a high level of cognitive distortion. The Cronbach's Alpha value for this instrument is 0.96. Life events were measured using Social Readjustment Rating Scale (SRRS) developed by Holmes and Rahe (1967). This instrument contains 16 items related to the stress of life events experienced by the respondents. Among the items in this instrument are related to parental divorce, death of close friend and problems with teacher. The answer choices for in this scale are either 'Yes' or 'No'. The Cronbach's Alpha value for this instrument is 0.67. The NSSI Thinking Scale is a self-constructed instrument by the researchers based on literature studies related to NSSI behaviour. It contains 20 items regarding thinking on NSSI behaviour to measure the rationality on whether the respondents know that self-harm is a wrong act and has a negative impact in any aspect of life. It consists of a five-point Likert scale which is 1 = Strongly Disagree, 2 = Disagree, 3 = Unsure, 4 = Agree and 5 = Strongly Agree. If

the respondents got a high total score in this section, it indicates that they have irrational thoughts on NSSI behaviour. The Cronbach's Alpha value for this instrument is 0.96.

Data in this study were statistically analysed using descriptive and inferential analysis. Descriptive analysis was used to obtain the frequency and percentage of demographic profiles of respondents. Inferential analysis involved two forms of tests, the t-Test to see the difference between the variables and the Pearson Correlation Test to see the relationship between the variables studied.

## Results

This section presents the descriptive statistics findings on prevalence of NSSI behaviours among the respondents, the inferential statistics findings related to differences between cognitive distortion, life events and NSSI behaviour, and the relationship between cognitive distortion and life events with NSSI behaviour.

### *Prevalence of NSSI behaviours among the respondents*

Table 1 shows the prevalence for students who have and have never been involved in NSSI behaviours. Out of 1021 respondents, the highest prevalence for NSSI involvement involved students aged 13 years with a rate of 16.3% while the lowest percentage were students aged 14 years with a rate of 11.9. The findings in Table 1 showed that 154 (15.1%) of the respondents have injured themselves while 867 (84.9%) stated that they have never injured themselves. Based on gender, a total of 555 (14.2%) male respondents and 466 (16.1%) female respondents, reported that they had injured themselves. In terms of the ethnic group, 16.2% Indian respondents, 15% of Malay respondents, 11.6% of the Chinese respondents and 28.9% of other ethnic group reported that they have injured themselves. Table 1 also shows that 114 (17.7%) representing Muslim respondents indicated that they had injured themselves while 40 (18%) Muslim respondents reported that they had been involved in NSSI at least once.

Table 1.

*Descriptive analysis results for frequency and percentage distribution based on demographic information by NSSI behavioural category*

Demography	NSSI Behavioural Category			
	Yes		Never	
	Frequency (n)	Percentage (%)	Frequency (n)	Percentage (%)
<b>Gender</b>				
Male	79	14.2	476	85.8
Female	75	16.1	391	83.9
<b>Age (year)</b>				
13	25	16.3	128	83.7
14	10	11.9	74	88.1
15	73	15.7	393	84.3
16	39	14.7	226	85.3
17	7	13.2	46	86.8
<b>Ethnic</b>				
Malay	112	15.0	633	85.0
Chinese	19	11.6	145	88.4
Indian	12	16.2	62	83.8
Others	11	28.9	27	71.1
<b>Religion</b>				
Muslim	114	17.7	645	82.3
Non Muslim	40	18.0	222	82.0
<b>Total</b>	<b>154</b>	<b>15.1</b>	<b>867</b>	<b>84.9</b>

*n= 1021*

#### *Differences between Cognitive Distortion, Life Events and NSSI Thoughts with NSSI Behaviours*

A *t* -test analysis was used to see the mean score difference between respondents who had and never intentionally injured themselves. The findings in Table 2 show that there was a significant difference between students who had injured themselves and students who had never injured themselves with a value of  $t = 7.163$ ,  $p <.001$ . Cognitive distortion for respondents who have injured themselves shows a mean score of 102.26 while respondents who have never injured themselves have a mean score of 84.04. This indicates that students who have ever injured themselves have a higher cognitive distortion than those who have never injured themselves.

Table 2:

*Differences between NSSI behavioural categories and variables*

No	Variables	NSSI behavioural categories	N	Mean	SD	T value	df	Sig level
1	Cognitive Distortion	Yes	154	102.26	29.59	7.163	197.524	.00**
		No	867	84.04	26.09			
2	Life Events	Yes	154	96.05	83.72	2.532	1019	.012*
		No	867	76.70	88.03			
3	NSSI thoughts	Yes	154	40.61	15.76	6.540	199.571	.00**
		No	867	31.73	14.19			

\*p&lt;.05, \*\*p&lt;.001

There is a significant difference in the level of life events between students who have and never hurt themselves with a value of  $t = 2.532$ ,  $p < .05$ . Life events for students who have injured themselves show a mean score of 96.05 while students who have never injured themselves have a mean score of 76.70. This shows that students who have never injured themselves have a lower level of life events than students who have injured themselves.

For thinking about NSSI, the findings in Table 2 show that there is a significant difference in thinking about NSSI between students who have and never hurt themselves ( $t = 6.54$ ,  $p < .001$ ). Thoughts on NSSI for students who have injured themselves show a mean score of 40.62 while students who have never injured themselves have a mean score of 31.73. This shows that students never hurt themselves show more rational thinking in determining everything that happens does not allow a person to hurt himself compared to students who have ever hurt themselves.

#### *The Relationship between Cognitive Distortion and Life Events with NSSI Thoughts*

Pearson correlation analysis was carried out to investigate the relationship between cognitive distortion, life events and NSSI thoughts. Specifically, cognitive distortion had a significant positive relationship with life events ( $r = .162 **$ ,  $p < 0.001$ ) and NSSI thoughts ( $r = .315 **$ ,  $p < 0.001$ ). Meanwhile, life events had a significant positive relationship with thinking on NSSI ( $r = .151 **$ ,  $p < 0.001$ ).

#### **Discussion and Implications of the Study**

There is similar trend in the prevalence of NSSK behaviours in the study with that reported internationally (Hornor, 2016). This study found that 15.1% secondary school students tend to have NSSI behaviour and this represent how adolescents deal with the stress they are facing. Comparing to the reported findings on NSSI behaviours against the demographics data, female students have a higher percentage of NSSI prevalence compared to male students. These results are in line with previous studies of Baetens *et al.* (2014), Muehlenkamp & Gutierrez (2007) and Ross & Heath (2002). Interestingly, the younger adolescents of 13 year old in the study are fund to have injured themselves compared to other senior adolescents. These findings are quite different from previous studies, which stated that senior students aged 15-17 years had higher percentages in NSSI prevalence (Hornor, 2016). From the aspect of race, other races are found to have the highest percentage of NSSI behaviour compared to other races. A unique finding in this study is that the percentage of students of other races involved in NSSI behaviours is higher than the other groups although

the number of respondents of the groups is smaller than the other three main ethnic groups. It would be interesting such situation to be looked into on reasons for more adolescents' involvement in NSSI behaviours. Although the difference in percentages on NSSI behaviours between religious groups, the percentage of non-Muslim students is seen to be higher than Muslim students involved in NSSI behaviours.

The significant difference between the three variables, cognitive distortion, life events and NSSI thoughts with NSSI behaviours supported previous findings of Bauer and Cannon's study (2018). Students who have involved in NSSI behaviours have a higher mean score for cognitive distortion, life events and NSSI thoughts compared to other students who have never done so. Bauer and Canon (2018) stated that students aged 11 to 15 years have a much higher level of cognitive distortion than other students. The three variables too were found to have significant positive relationships with each other. This proves that the three variables were found to be closely related to the NSSI behaviours of secondary school students. The results of this study are in line with NSSI studies abroad (Liu *et al.*, 2014; Weismore & Esposito-Smythers, 2010; Tang *et al.*, 2016).

Given such psychological issues is on the rise among students, special attention need to be given by the schools. Schools, especially the counsellors, need to explore the life experiences of students that lead them to NSSI thinking and NSSI behaviours. If it can be identified earlier, NSSI behavioural prevention measures can be implemented through counselling and mental health services. In designing the NSSI behavioural prevention intervention measures, the three variables should be included. It is pertinent that such measure ensures students mental health is in positive note. If the school fails to identify students' NSSI thoughts and behaviours, it will increase the risk of more chronic mental disorders. Students are more likely to take extreme measures like committing suicide due to mental stresses. The promotion of healthy mental health among students should be increased to prevent the occurrence of NSSI behaviours in schools. The government, on the other hand, plays a role in ensuring that the influence of the mass media, including television programs and online dramas, does not promote NSSI behaviours as an alternative in dealing with the stress. This is because the public especially adolescents or students who are vulnerable to the influence of mass media and peer influence will resort to NSSI behaviours (Belfort, 2017; Wolff *et al.*, 2013).

## **Conclusion**

This study has shown that NSSI behaviours are on the rise. Past studies have reported that NSSI usually occurs in the early stages of adolescence and it transcends gender, ethnicity and religion. Preventive measures are warranted and this can take place by exploring adolescents' cognitive distortion, life events and NSSI thoughts. The findings of this study have implications on enhancing mental health awareness among students and school programmes on prevention of NSSI.

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