

ORIGINAL RESEARCH

# Emotion Regulation and Self-Injury Status among Nursing Students: A Cross-Sectional Study



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## Abstract

**Background:** One of the factors associated with the incident of self-injury among college students is emotion dysregulation, but many factors, namely self-criticism, daily guilt, and social factors are associated with emotion dysregulation as well. However, little is known about how the process happens and how the emotion regulation relates to other factors associated with the incident of self-injury.

**Purpose:** This study aimed to identify the relationship between emotion regulation and self-injury status among nursing students.

**Methods:** A descriptive correlational study was conducted among 783 nursing students in a public university in Indonesia. Stratified random sampling was used to recruit the samples. The data were collected online using the Difficulties of Emotion Regulation Scale (DERS) and Deliberate Self-Harm Inventory (DSHI). The univariate analyses in the form of percentage and bivariate analyses with the Point Biserial test were performed for data analysis.

**Results:** The results showed that the minimum and maximum scores of emotion regulation in nursing students were 41 and 163, respectively. The mean score and standard deviation of emotion regulation were 96.75 and 20.948, subsequently. As many as one-third (32.6%) of students committed self-injury. The Point Biserial test showed a relationship between emotion regulation and self-injury status (sig. 2-tailed = 0.000).

**Conclusion:** There is a relationship between emotion regulation and self-injury status among nursing students. This study suggests the importance of health promotion and nursing intervention regarding emotion regulation as a prevention and treatment of self-injury among nursing students.

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## 1. Introduction

Emotion regulation is an attempt to influence the emotion within themselves and redirects the flow of emotions that people experience spontaneously (Koole & Aldao, 2015; McRae & Gross, 2020). According to Lear et al. (2019), a lack of ability to regulate emotions can lead to negative emotions. Negative emotions that are uncontrolled can cause self-criticism, daily guilt, and punishment-deservingness (Lear et al., 2019). Self-criticism, daily guilt, and punishment-deservingness are the impacts of the lack of ability to regulate emotions and they can lead to self-injury. In addition, a person who has impaired emotion regulation is also likely to experience anxiety and depression (Young et al., 2019).

In a study by Heath et al. (2009), emotional and social factors that influenced students in Canada who engaged with self-injury were 91% and 65.2%, respectively. In that study, it was mentioned that emotional factors were the inability of students to regulate their emotions, while social factors included friendship circles and social media. A study showed that, in Malaysian students, there are four main factors associated with self-injury; they were the inability to regulate emotions, the use of self-injury as a form of emotion regulation, the fact that students who did self-injury often perceived negatively on themselves, and students who struggled to deal with the negative impact of self-injury (Tan et al., 2018). However, the research conducted by Peterson et al. (2019) in the United States proved that the worse the difficulty in emotion regulation, the higher the risk of a college student to be engaged in self-injury. It was also supported by the research conducted in Canada by Yurkowski et al. (2015) that the inability to regulate emotions in college students was related to self-injury. Inability to regulate emotions can also affect the frequency of self-injury in students (Zelkowitz et al., 2017).

A previous study showed that the period of study being undertaken by college students is a period that has a high risk of the phenomenon of non-suicidal self-injury (Kiekens et al., 2019). In Belgium, 10.3% of first-year college students and 6% of second-year college students committed self-injury (Kiekens et al., 2019). In the research conducted by Tresno et al. (2012) in Indonesia, the phenomenon of self-injury in college students reached 38%. College students with a history of self-injury have a predisposition to attempt suicide (Hamza & Willoughby, 2016). The first onset of suicidal thoughts and behaviors at the university level is greater than in the general population (Mortier et al., 2017). This proves that self-injury in college students during this pandemic is very worrying and although self-injury was initially done without any intention of suicide, over time the act will have a terrible impact, namely suicide attempt.

Nurses as health workers have a role and function to improve the level of health of the individuals, groups, and communities. This level of health does not only focus on the physical aspects, but also the psychological aspects, or it can be said as holistic health care (Nurhalimah, 2016). According to Wolff et al. (2019), as an effort in the prevention of self-injury, it is necessary to understand the treatment of emotion dysregulation. Learning to manage oneself' emotions, patients' emotions, and unpredictable work environment while learning to make the best clinical decisions is an essential need for nursing students (Dubert et al., 2016). Nursing students in the future will become professional nurses who serve and care for many kinds of individuals with different traits, so there is a need to be able to regulate their emotions to deal with that condition. Nurses also need to have the ability to regulate emotions because they work in the area that is always related to other people, prioritizing the interests and welfare of others (Rahayu & Fauziah, 2019). Nurses with high emotional regulation ability have a sense of control and confidence in the emotional context, therefore, they have high motivation and personal well-being so that they can improve the quality of service at work (Donoso et al., 2015). One of the efforts to produce professional nurses is to ensure that students studying in universities have a healthy mentality by avoiding self-injury and being able to properly regulate their emotions. However, little is known about how the process happens and how the emotion regulation relates to other factors associated with the incident of self-injury. Accordingly, this study attempted to identify the relationship between emotion regulation and self-injury status in nursing students.

## **2. Methods**

### *2.1 Research design*

This study used a descriptive correlational design to seek for the relationship between emotion regulation and self-injury status among nursing students.

### *2.2 Setting and samples*

This study was conducted in the faculty of nursing in a university in Bandung, Indonesia. The research population was 849 active students of nursing from the first year to the fourth year. The stratified random sampling was used to recruit the samples. There were four levels in the 849 active students, namely first year, second year, third year, and fourth year. Each level was calculated using the Slovin formula with a margin of error of 0.01 to determine the number of samples for each level, so that 783 students were obtained. The inclusion criteria were students of the undergraduate program at the faculty of nursing and administratively active in the academic semester. Students who were undergoing the student exchange program or being on an academic leave were excluded.

### *2.3 Measurement and data collection*

This study utilized the Difficulties of Emotion Regulation Scale (DERS) developed by Gratz and Roemer (2004) to collect data of emotion regulation variable. In DERS, there are 36 statements classified into six dimensions of emotion regulation that have the potential to be difficult, namely non-acceptance of emotional responses, difficulty in engaging in goal-directed behavior, impulse control difficulties, lack of emotional awareness, limited access to emotion regulation strategies, and lack of emotional clarity. The instrument was developed to measure difficulties in emotion regulation. The statements in DERS are answered by selecting one of 5 options: (5) almost always, (4) often, (3) about half the time, (2) sometimes, and (1) rarely. Of the 36 statements, 11 statements are reversed scoring, including item 1, 2, 6, 7, 8, 10, 17, 20, 22, 24, and 34. The data generated on this instrument were included in the continuous variable. The

interpretation of the 36 statements resulted in a minimum score of 36 and a maximum score of 180. Higher scores indicate more difficulty in emotion regulation which can affect the ability of emotion regulation. After the data had been obtained, the researchers conducted normality tests with Kolmogorov-Smirnov and Shapiro-Wilk. The result showed a normal data distribution so that the mean value was analyzed. The mean value was obtained from the total number of respondents' scores divided by the total number of respondents.

Another instrument used in this study was the Deliberate Self-Harm Inventory (DSHI) for self-injury variable developed by Gratz (2001). The instrument consists of 17 questions with 16 closed questions with two answer options namely (1) Yes and (0) No. If the respondent answered at least one of the first 16 questions with a "Yes" answer or answered the question at number 17 with an answer that matches the definition of self-injury, then he/she committed self-injury. Whereas if the respondent answered "No" on the first 16 questions or answered the question at number 17 with an answer that was not suitable to the definition of self-injury, then he/she did not commit self-injury.

DERS and DSHI have been tested for their reliability. DERS showed a test-retest reliability score of 0.80 ( $p < 0.01$ ) (Gratz & Roemer, 2004). Meanwhile, DSHI showed a Cronbach's alpha of 0.82, indicating a high internal consistency, and test-retest reliability score of  $r = 0.92$  ( $p < 0.001$ ) (Gratz, 2001). Also, both DSHI and DERS had undergone validity test. In DERS, the items of the statement are associated with other factors related to emotion regulation, namely negative mood regulation, avoidance of emotion expression, and expression of emotions. The items in DERS were tested with these factors and the result was that DERS was positively related to NMR and emotion avoidance, while only 3 DERS items were related to emotional expression (Gratz & Roemer, 2004). This proves that DERS instruments have been tested for validity using construct validity. Meanwhile, DSHI also had been tested for validity using construct validity. The construct validity used items in the DSHI that were related to the other self-injury factors, namely suicide attempts, frequency of self-injury, and borderline personality organization. The result was that DSHI related to all factors tested, so the DSHI instrument had been tested for validity (Gratz, 2001).

In this study, the researchers used the Indonesian version of the questionnaires. Permission to use the instrument from each instrument developer was obtained. After that, the researchers did a back-translation from English to Indonesian with the assistance of a translation agency. The external validity test was also conducted. External validity test or face validity test is the method of comparing the criteria in the instrument with the real circumstances in the field (Allen, 2017). This face validity test was conducted online using Google form among 15 students of nursing students from the first year to the fourth year in approximately 10-20 minutes. The result showed that all students understood all items of the instruments.

For this study, the researchers also identified demographic data of the respondents and things related to self-injury. In the demographic data, researchers identified gender, year level, and campus region. Meanwhile, in the things related to self-injury, the question items used were the things the researchers found during the preparation of the article. These items were used to strengthen data related to the risk of self-injury in the respondents.

The COVID-19 pandemic prevented the researchers and respondents to meet in person, so that the data collection was conducted online using Google form. The link to the questionnaires was distributed to each level of student with the assistance of the class leaders through Line/WhatsApp application from 15 to 26 April 2021. The research instrument started with informed consent and approval of each respondent. Students who agreed to participated were requested to fill out the questionnaires honestly. The researchers also examined the entirety of the data to ensure the suitability and completeness of the response on every aspect of the question or statement. If the respondent's answers were incomplete or inappropriate, then the researchers re-contacted the respondents personally to get appropriate and more complete answers.

#### *2.4 Data analysis*

The data collected in this study were analyzed using the univariate and bivariate analyses. In the univariate data analysis, both data processing results from DSHI and DERS instruments were presented in percentage. Meanwhile, in the bivariate analysis, a correlation test was conducted using the Point Biserial test to know whether the two variables were related or unrelated. These variables consisted of interval variables (DERS) and ratio variables (DSHI).

### 2.5 Ethical considerations

This study obtained ethical approval from the Ethics Committee for Research of Universitas Padjadjaran with a reference number of 208/UN6.KEP/EC/2021. This study had also obtained permission from the university where the study took place. Respondents were informed of the purpose of the study and estimated time to participate in this research as well as the guarantee of the confidentiality of the identity and personal data. They also had the right to choose to participate or not in this study. Such information was provided online via Whatsapp and Google form. The respondents could complete the questionnaires any time within the study timeframe so that this participation would not interfere with respondents' activities. The questionnaires had been made as appropriate so as not to cause negative effects on respondents at the time of completion. There was a trigger warning before the respondents filled out the questionnaires that the topic was sensitive. If the respondents felt that this topic was dangerous for themselves, they were not allowed to fill out the questionnaires.

## 3. Results

### 3.1 Characteristics of the respondents

The majority of the respondents were female nursing students (90.5%). Most of them were from Jatinangor/Garut campus (85.4%) and the third year became the most participating group (29.5%) than others. The detail result is presented in Table 1.

**Table 1.** Demographic frequency distribution of respondents (n=783)

Demographic Data	f	%
Gender		
Male	74	9.5
Female	709	90.5
Year Level		
Fourth-year	228	29.1
Third-year	231	29.5
Second-year	148	18.9
First-year	176	22.5
Campus Region		
Jatinangor/Garut	669	85.4
Pangandaran	114	14.6

Table 2 shows that the majority of respondents (92%) were living with parents but some had difficulty communicating with their parents (19.7%) and had a history of mistreatment in childhood though the number belonged to a minority (30%). Almost half of the respondents (49.4%) had a feeling that they deserved to be punished in certain conditions, and then more than half of the respondents (54.9%) had a self-criticism habit in certain conditions too. Then, feeling guilty continuously in certain conditions (daily guilt) and feeling sensitive to the emotion feelings had a majority number with 60.3% and 74.8%, respectively. Some respondents (15.5%) often took a look at something related to self-injury on social media and had friends/families who had done self-injury (33.8%).

**Table 2.** Respondents' specific characteristics related to self-injury and emotion regulation (n=783)

Characteristics of Respondents	f	%
Living with parents		
Yes	720	92
No	63	8
Difficulty communicating with parents		
Yes	154	19.7
No	629	80.3
Childhood abuse		
Yes	235	30
No	548	70

**Table 2.** Continued

Characteristics of Respondents	f	%
Punishment deservingness		
Yes	387	49.4
No	396	50.6
Self-criticism		
Yes	430	54.9
No	353	45.1
Daily Guilt		
Yes	472	60.3
No	311	39.7
Emotionally sensitive feelings		
Yes	586	74.8
No	197	25.2
Taking a look at things related to self-injury on social media		
Yes	121	15.5
No	662	84.5
Friendship/family circle committing self-injury		
Yes	265	33.8
No	518	66.2

### 3.2 Emotion regulation scores and self-injury status among nursing student

Table 3 shows that the minimum and maximum scores of the emotion regulation in nursing student were 41 and 163, subsequently. The mean score was 96.75 and 20.948 was the standard deviation. In the dimension of difficulties in emotion regulation, limited access to emotion regulation strategies had the highest mean score (M=20.52) compared to other dimensions.

**Table 3.** Emotion regulation in respondents (n=783)

Variable	Mean(SD)	Min-Max
Emotion regulation	96.75 (20.948)	41 – 163
Dimension of Difficulties in Emotion Regulation		
1. Non-acceptance of emotional responses	18.65 (5.56)	6 – 30
2. Difficulty engaging in goal-directed behavior	16.26 (4.17)	5 – 25
3. Impulse control difficulties	14.98 (5.42)	6 – 30
4. Lack of emotional awareness	13.58 (3.55)	6 – 26
5. Limited access to emotion regulation strategies	20.52 (6.29)	8 – 40
6. Lack of emotional clarity	12.74 (4.12)	5 – 25

Furthermore, this study also showed that one-third of students committed self-injury (Table 4).

**Table 4.** Self-injury status in respondents (n=783)

Variable	f	%
Self-injury Status		
Commit	255	32.6
Did not commit	528	67.4

### 3.3 The correlation between emotion regulation and self-injury status

Based on Table 5, the significant value in this study was 0.000. The significant value was less than 0.05, so it could be interpreted that there was a relationship between emotion regulation and self-injury status in nursing students.

**Table 5.** Relationship between emotion regulation and self-injury status (n=783)

Variable	n	r	p-value
Emotion Regulation	783	0.337	0.000
Self-Injury Status			

#### **4. Discussion**

This study showed that there is a significant relationship between emotion regulation and self-injury status. There are six dimensions in difficulties in emotion regulation. They are non-acceptance of emotional responses, difficulty engaging in goal-directed behavior, impulse control difficulties, lack of emotional awareness, limited access to emotion regulation strategies, and lack of emotional clarity (Gratz & Roemer, 2004). Based on this study, limited access to emotion regulation strategies dimension has the highest mean score compared to other dimensions. That result indicates more difficulty to access emotion regulation strategies (Gratz & Roemer, 2004). Furthermore, according to Gratz (2007), the ability to regulate emotions will reduce the need to perform maladaptive behaviors such as self-injury. In addition, identifying and managing emotions is also one of the efforts that can be made to prevent self-injury (Muehlenkamp & Cauley, 2016). Emotion regulation is also one of the strategies to minimize negative emotions related to self-injury (Zelkowitz et al., 2016).

This study showed that one-third of students committed self-injury. Silva et al. (2017) said that more than half of college students that committed self-injury needed professional help, but only 18.1% were looking for professionals to deal with their problems. A college student who commits self-injury can lead thoughts or actions to end his/her life if there is no effort for furthermore (Hamdan-Mansour et al., 2021). Self-injury can also improve a person's ability to commit suicide attempts (Van Orden et al., 2010). In a study by Kiekens et al. (2018), self-injury by college students was a risk factor for attempted suicide. According to Klonsky et al. (2013), self-injury is not only a sign of the severity of a mental illness but it is more than that. It is because self-injury is not based on mental illness and it remains a risk of suicide attempts.

The researchers in this study identified some risk factors and causes of self-injury that had been presented. According to Klonsky et al. (2011), most of the causes of self-injury are influenced by childhood experiences and family environments where there is a very close relationship between self-injury with family violence, poor communication between parents and their child, and lack of emotional validation. When the child is emotionally harmed by the primary caregiver, the bonding relationship with each other will be disrupted and will extend to the disruption of interpersonal abilities which will trigger self-injury. In addition, a pattern of relationships in children is established with the primary caregiver that affects the ability in emotion regulation where it is associated with self-injury (Yates, 2009).

There are some specific characteristics in respondents related to self-injury, one of which is having a habit of self-criticism in certain conditions. In this study, more than half of the respondents had a habit of criticizing themselves continuously under certain conditions. It is in line with the research conducted by Lear et al. (2019) that self-criticism is indirectly related to self-injury. The indirect relationship between self-criticism and self-injury will lead to the feeling that one deserves a punishment caused by negative emotions and thoughts (Lear et al., 2019). This is in line with the results of the present research in which almost half of the students had the feeling in certain conditions that they deserved to punish themselves. In addition, this study proves that more than half of the students had a persistent feeling of guilt in certain conditions (daily guilt). A previous study by Lear et al. (2019) showed that feelings of guilt that were continuous (daily guilt) were related to self-injury in college students because negative thoughts and emotions in college students resulted from daily guilt could cause self-injury.

The lack of ability to regulate emotions can cause intense negative emotions that become a characteristic in a person who commits self-injury (Davis et al., 2014). The relationship between emotion regulation and self-injury status was also proven in a study by Zelkowitz et al. (2016), that emotion regulation in college students had a significant relationship with self-injury. While in a study by Ewing et al. (2019), the inability to regulate their emotion which was related to self-injury in students was based on stressful experiences. Increased stress experience will increase the risk of self-injury in students through the inability to regulate emotions (Ewing et al., 2019). Hasking and Claes (2019) also stated that the inability to regulate emotions was a risk factor of maladaptive behavior within the university sphere, one of which was self-injury. According to Miller and Racine (2020), the dimension of difficulties in emotion regulation that influences impulsive behavior the most is the lack of emotional clarity. The lack of the ability to understand emotional clarity indicates the risk of self-injury (Miller & Racine, 2020). However, based on the present study, the lack of emotional clarity dimension has the lowest mean score compared to other dimensions.

Academics and university staffs and mental health practitioners have a responsibility to maintain student welfare and minimize the occurrence of self-injury (Hamdan-Mansour et al., 2021). Efforts to prevent and handle the phenomenon of self-injury in college students can be identified from the specific characteristics of respondents related to self-injury that have been previously presented. These characteristics are related to negative emotions that can affect the ability to regulate emotions. Self-criticism, daily guilt, and punishment-deservingness will occur if a person has been overcome by negative emotions and thoughts that negative emotions can control one's mind due to the lack of ability to regulate emotions (Lear et al., 2019).

As an effort to prevent maladaptive behavior, such as self-injury, it is important to conduct assessments and treatments related to risk factors in the maladaptive behavior within the university (Hasking & Claes, 2019). It is a consideration to involve knowledge related to emotion regulation for self-injury treatment in college students due to the relationship between emotion and self-injury regulation (Yurkowski et al., 2015). In the research conducted by Turner et al. (2014), therapy with emotion regulation was effective for reducing self-injury. The therapy of emotion regulation is to focus the client on the development of emotion regulation and the ability for acceptance (Turner et al., 2014). Meanwhile, Miller and Racine (2020) also stated in their research that the ability to understand emotion clarity that was part of the emotion regulation could be a way to handle, reduce, and prevent self-injury that exists in the university sphere. Besides that, according to Dubert et al. (2016), mindfulness therapy can affect the ability to regulate emotions. Therefore, mindfulness therapy can be an option to be a psychotherapy applied to nursing students (Munif et al., 2019).

## **5. Implications and limitations**

This study provides the empirical evidence on emotion regulation and self-injury status in nursing students. The results of this study implicate the importance of health promotion on self-injury's prevention and treatment. It is important to conduct assessments and treatments related to risk factors in the maladaptive behavior within the university to prevent and handle the phenomenon of self-injury in college students by identifying emotion regulation among student and how they manage their emotions. After that, promoting the importance of emotion regulation and how to use emotion regulation at the right moment is necessary.

The researchers realize that this study also has a limitation. Self-injury has several types and each type of self-injury requires different treatments, but this study only identified self-injury in general.

## **6. Conclusion**

This study reveals the relationship between emotion regulation and self-injury status in nursing students. This study proves the importance of nursing implication in terms of health promotion and education that it is necessary for nursing students regarding emotion regulation as a prevention and treatment of self-injury in general. Further study is recommended to identify the types of self-injury committed by nursing students and the factors related to each type of self-injury to be more specific in the prevention and treatment efforts.

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## **Author contribution**

All the authors have each substantial contribution to drafting the manuscript. All authors (DANS, NOH, CWMS) were involved in the conception of the study, design of the study, data collection, analysis, and manuscript writing.

## **Conflict of interest**

The authors have no conflict of interest

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