

The Effect of Emotion Regulation on Post-Traumatic Stress Disorder among Student Victims of Sexual Harassment: The Mediating Role of Self-Esteem

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ABSTRAK

Pelecehan seksual merupakan salah satu permasalahan global yang sering menimpa mahasiswi baik di dalam maupun di luar lingkungan kampus. Korban pelecehan seksual dapat beresiko mengalami post-traumatic stress disorder (PTSD). Penelitian ini bertujuan untuk menginvestigasi pengaruh regulasi emosi dan self-esteem terhadap PTSD, serta menganalisis peran self-esteem untuk memediasi hubungan antara keduanya. Peneliti menggunakan desain cross-sectional secara online untuk mengurangi pertemuan tatap muka dengan responden. Populasi penelitian ini terdiri dari mahasiswa S1 dari berbagai universitas di Indonesia. Teknik pengambilan sampel dengan menggunakan quota sampling, sehingga diperoleh 1.439 mahasiswa. Namun hanya 170 orang yang mengaku pernah menjadi korban pelecehan seksual. Peneliti mengadaptasi tiga skala penelitian yakni PTSD CheckList - Civilian Version (PCL-C), the Difficulties in Emotion Regulation Scale: The DERS-16, dan Rosenberg Self-Esteem Scale. Teknik analisis data menggunakan Partial least squares structural equation modeling (PLS-SEM). Temuan penelitian membuktikan bahwa, regulasi emosi dan self-esteem memberikan pengaruh yang signifikan terhadap PTSD pada korban pelecehan seksual. Selain itu self-esteem memberikan efek mediasi di antara hubungan regulasi emosi dan PTSD. Informasi terbaru pada penelitian ini berimplikasi pada pencegahan dan penanganan kasus pelecehan seksual di kampus. Pimpinan perguruan tinggi perlu membuat regulasi khusus terkait kasus pelecehan seksual. Selanjutnya perlu adanya pelayanan bimbingan dan konseling yang terprogram bagi mahasiswa yang menjadi korban pelecehan seksual.

ABSTRACT

Sexual harassment is a global problem that often affects female students both inside and outside the campus environment. Sexually aware victims can be at risk of experiencing post-traumatic stress disorder (PTSD). This study aims to investigate the influence of emotional regulation and self-esteem on PTSD, and analyze the role of self-esteem in mediating the relationship between the two. Researchers used an online cross-sectional design to reduce face-to-face meetings with respondents. The population of this study consisted of undergraduate students from various universities in Indonesia. The sampling technique used quota sampling, so that 1,439 students were obtained. However, only 170 people who said they had been victims came forward. Researchers adapted three research scales, namely the PTSD CheckList - Civilian Version (PCL-C), the Emotion Regulation Difficulties Scale: The DERS-16, and the Rosenberg Self-Esteem Scale. The data analysis technique uses Partial Least Squares Structural Equation Modeling (PLS-SEM). Research findings prove that emotional regulation and self-esteem have a significant influence on PTSD in open victims. In addition, self-esteem provides a mediating effect between the relationship between emotion regulation and PTSD. The latest information in this research has implications for preventing and handling cases of sexual disclosure on campus. University leaders need to make special regulations regarding open cases. Apart from that, there is a need for programmed guidance and counseling services for students who are victims of sexual thoughts.

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1. INTRODUCTION

Sexual harassment remains a prevalent issue among college students (Wilhite et al., 2018; Bhilwar et al., 2015). It encompasses non-consensual sexual activities and is also referred to as sexual assault or sexual violence, including unwanted sexual touching and forced acts like oral sex or rape. Sexual harassment involves explicit sexual behavior, such as direct contact, simulated contact, or visual representations (Danaher, 2018; Henry & Powell, 2018). Sexual violence to include inducing or coercing a child into unlawful or psychologically harmful sexual activity, using children in commercial sexual exploitation, using children in audio or visual child sexual abuse, child prostitution, sexual slavery, sexual exploitation in transit, human trafficking, and forced marriage (Mathews & Collin-Vézina, 2019; Glaser, 2015). Sexual violence is a serious issue involving power abuse and human rights violations. Its accurate measurement is challenging due to underreporting. This problem is not limited to Indonesia but occurs worldwide. Based on previous research, it was stated that there were many cases of sexual disclosure among children and adolescents in Mexico City (Frías & Erviti, 2014; Mendoza-Meléndez et al., 2018). Similarly, in Indonesia, sexual violence is also prevalent among female students, both on and off campus (Riwanto et al., 2023; Sujadi et al., 2023). Other research finds that there are many cases of sexual abuse of children and it is a big problem (Solehati et al., 2022; Almuneef, 2021).

Sexual abuse can result in shock, fear, sadness, and in some cases, anxiety disorders or depression (Sujadi et al., 2023; Sigurdardottir & Halldorsdottir, 2021). The research shown that sexual violence has an impact on mental health disorders (Khalifeh et al., 2015; Rai & Rai, 2020). Child sexual abuse is independently associated with an increased risk of psychological distress, greater health service utilization, and heightened health risk behaviors (Hébert et al., 2021; Hébert et al., 2019). Specifically, sexual harassment experienced by college students has an impact on PTSD (Glaser, 2015; Hannan et al., 2015). The lack of preventive efforts and psychological intervention programs for victims exacerbates the problem of sexual harassment on campus (Sujadi et al., 2023; Bonar et al., 2020).

PTSD is a prevalent mental health disorder associated with significant psychiatric morbidity (Qassem et al., 2020; Sareen, 2014). Although PTSD has been recognized throughout history, it was first introduced in the third edition of the DSM in 1980, and since then, extensive literature has been published on the topic. Multiple factors influence the development of PTSD, including emotion regulation (Pugach et al., 2020; Tull et al., 2020; Chang et al., 2018). Emotion regulation, the ability to influence the experience and expression of one's emotions, is a complex skill that develops throughout life (Putra et al., 2022; Rutherford et al., 2015). It involves various strategies to effectively control and manage emotions, including awareness, understanding, and acceptance of one's emotions, impulse control during negative emotional experiences, and adaptive modification of emotion regulation strategies based on situational demands and goals (Kobylynska & Kusev, 2019; Gross, 2015). Maladaptive emotion regulation strategies, such as emotional avoidance, have been associated with PTSD (Tull et al., 2020; Short et al., 2018). Difficulties in emotion regulation are thought to underlie various maladaptive behaviors commonly observed among individuals with PTSD. Additionally, another study revealed that individuals with PTSD scored significantly higher on measures of worry, expressive suppression, disturbed thoughts, rumination, and general emotion dysregulation (Nagulendran & Jobson, 2020; Seligowski et al., 2016).

Self-esteem also directly influences PTSD (Wolf & Elklit, 2020; Ekinci & Kandemir, 2015). High self-esteem is crucial for individuals as it can contribute to their self-success, while low self-esteem may hinder the expression of their potential (Sujadi et al., 2022). Studies have shown that social support, physical health, and self-esteem are factors that influence PTSD (Viskarini & Suharsono, 2023; Zhang et al., 2020). The onset of PTSD leads to a decline in memory and attentional function, disrupting one's life and resulting in reduced self-esteem among individuals with a high tendency to experience PTSD (Roberts et al., 2022; Omasu et al., 2018). Furthermore, self-esteem is predicted to mediate the relationship between emotion regulation and PTSD. Effective emotion regulation leads to higher self-esteem, which, in turn, reduces the level of PTSD. A study by Weindl, Knepfel, Glück, & Lueger-Schuster demonstrated that self-esteem mediates the relationship between emotion regulation and anger (Weindl et al., 2020). Research on PTSD in victims of sexual harassment is crucial for developing prevention and intervention programs. Previous studies examining self-esteem as a mediator between emotion regulation and PTSD are limited. Some studies have explored self-compassion and trauma, mindfulness and PTSD, adverse childhood experiences and PTSD, and social support and PTSD (Cloitre et al., 2019; Huang et al., 2019; Scoglio et al., 2015; Zhou et al., 2017). Additionally, the structural model developed has not been studied in the context of the campus environment in Indonesia.

This study aims to investigate the influence of emotional regulation and self-esteem on PTSD, and analyze the role of self-esteem in mediating the relationship between the two. It is hoped that the information in this research can better prevent and handle open cases on campus. Apart from that, it is also hoped that it can provide information to university leaders to make special regulations regarding

sexually open cases. Apart from that, it is also necessary to provide programmed guidance and counseling services for students who are victims of disclosing things of a sexual nature.

2. METHOD

This research adopts a quantitative survey design, a scientific method used to measure and evaluate specific characteristics of the community. The target population for this study consists of undergraduate students from various universities in Indonesia. To minimize face-to-face interactions, an online cross-sectional survey was conducted, enabling a larger number of respondents to participate. In Indonesia, victims of sexual harassment often face stigma, which can damage their self-esteem. Therefore, online methods were employed to distribute the questionnaire link through WhatsApp and Telegram groups. Within a span of 3 months, 1,439 students completed the research scale, with 170 students admitting to being victims of sexual harassment. The demographic characteristics and special attributes of the respondents can be served on [Table 1](#).

Table 1. The Demographic Characteristics and Special Attributes of The Respondents

Characteristics	Category	Frequency	Percentage
The frequency of violence experienced	1 – 2 Times	60	35.29
	3 – 5 Times	85	50.00
	> 5 Times	25	14.71
The identity of the perpetrators	Lecturer	44	25.88
	Student	104	61.76
	Administrative officer/other	22	12.94
The forms of harassment	Verbal	107	62.94
	Physical	44	25.88
	Specific organ attention	19	11.18
The current status of the harassment	Ongoing	90	52.94
	Concluded	80	47.06

We used three scales to collect research data in this study: the PTSD Checklist - Civilian Version (PCL-C), The Difficulties in Emotion Regulation Scale: The DERS-16, and the Rosenberg Self-Esteem Scale. First, PTSD Checklist - Civilian Version (PCL-C) is a self-assessment questionnaire developed to evaluate symptoms of post-traumatic stress disorder (PTSD) in civilian populations ([Bressler et al., 2018](#)). It is based on the diagnostic criteria for PTSD outlined in the Diagnostic and Statistical Manual of Mental Disorders (DSM). The scale consists of 17 items that correspond to the main symptoms of PTSD, with response options ranging from "Not at All" to "Extremely." The scores range from 17 to 85, and a cut-score of 30 was used in this research ([Bressler et al., 2018](#)). The PCL-C demonstrates excellent internal consistency (Cronbach's alpha =0.97) and a test-retest reliability of 0.92 ([Bressler et al., 2018](#)).

Second, the DERS-16 is a shortened version of the original Difficulties in Emotion Regulation Scale (DERS). It assesses various dimensions of emotion regulation difficulties, including non-acceptance of negative emotions, inability to engage in goal-directed behavior when distressed, difficulty controlling impulsive behavior when distressed, limited access to adequate emotion regulation strategies, and lack of emotional clarity ([Bjureberg et al., 2016](#)). Respondents rate each item on a 5-point Likert-type scale, with total scores ranging from 16 to 80. Higher scores indicate higher levels of emotion dysregulation ([Bjureberg et al., 2016](#)). The DERS-16 demonstrates excellent internal consistency (Cronbach's alpha = 0.92), good test-retest reliability, and good convergent and discriminant validity ([Bjureberg et al., 2016](#)).

Third, the Rosenberg Self-Esteem Scale is a questionnaire consisting of 10 items used to measure an individual's level of self-esteem ([Gnambs et al., 2018](#)). It is designed to assess self-esteem, self-confidence, and self-acceptance. The scale demonstrates excellent internal consistency with a Cronbach's alpha coefficient of 0.92. Test-retest reliability over a two-week period showed correlations of 0.85 and 0.88, indicating excellent stability. Additionally, the Rosenberg Self-Esteem Scale exhibits significant correlations with other self-esteem measures, such as Coopersmith's Self-Esteem Inventory ([Gnambs et al., 2018](#)).

We employed the Partial Least Squares Structural Equation Modeling (PLS-SEM) method to examine the structural model. The process involved several steps conducted in SmartPLS. Initially, all variables and possible relationships, including both direct and indirect effects, were included in the model. During the measurement model evaluation phase, only indicators with values above 0.60 were retained. The model's quality was assessed by examining convergent validity, where Cronbach's alpha, rho_A, composite reliability (CR), and average variance extracted (AVE) values were expected to be at least 0.5.

Discriminant validity was assessed using Heterotrait-Monotrait (HTMT) values, with indicators below 0.90 meeting the criteria (Hair et al., 2017). In the second step, path coefficients and total effects were tested after meeting all requirements. This analysis allowed us to understand the direct effects between variables and the indirect effects, such as the influence of emotion regulation on PTSD, either directly or through self-esteem.

3. RESULTS AND DISCUSSION

Result

The first criterion commonly assessed is internal consistency using Cronbach's Alpha (Hair et al., 2017). After that, a convergent validity analysis is conducted to examine the correlation between a measure and other measures of the same construct. Parameters evaluated for assessing convergent validity include outer loading and average variance extracted (AVE) values. Convergent validity is considered satisfactory if the outer loading value is ≥ 0.7 , although values between 0.4 and 0.7 are acceptable if the composite reliability meets the recommended level (Hair et al., 2017). Furthermore, convergent validity is deemed adequate if the AVE value is ≥ 0.5 (Hair et al., 2017). The loading, Cronbach' alpha, Rho_A, composite reliability (CR), and AVE can be served on Table 1.

Table 2. Loading, Cronbach' alpha, Rho_A, composite reliability (CR), and AVE

Variables	Code	Loading	Cronbach	Dijkstra & Henseler's rho_A	CR	AVE
PTSD	PTSD1	0.831	0.977	0.961	0.981	0.810
	PTSD2	0.886				
	PTSD3	0.967				
	PTSD4	0.945				
	PTSD5	0.947				
	PTSD6	0.965				
	PTSD7	0.950				
	PTSD8	0.552				
	PTSD9	0.963				
	PTSD10	0.886				
	PTSD11	0.962				
	PTSD12	0.898				
	PTSD13	0.858				
	PTSD14	0.911				
	PTSD15	0.613				
	PTSD16	0.799				
	PTSD17	0.813				
Emotion Regulation	RE1	0.851	0.929	0.888	0.934	0.537
	RE2	0.920				
	RE3	0.908				
	RE4	0.754				
	RE5	0.790				
	RE6	0.857				
	RE7	0.774				
	RE8	0.457				
	RE9	0.416				
	RE10	0.787				
	RE11	0.644				
	RE12	0.716				
	RE13	0.684				
	RE14	0.748				
	RE15	0.789				
	RE16	0.656				
Self-Esteem	SE1	0.806	0.955	0.981	0.960	0.590
	SE2	0.462				
	SE3	0.716				
	SE4	0.815				

Variables	Code	Loading	Cronbach	Dijkstra & Henseler's rho_A	CR	AVE
	SE5	0.768				
	SE6	0.849				
	SE7	0.829				
	SE8	0.654				
	SE9	0.876				
	SE10	0.839				

Based on the findings presented in Table 2, all variables in the study demonstrate composite reliability and Cronbach's alpha values that exceed the threshold of 0.7. This suggests that the indicators used in this research are reliable. Additionally, the validity test analysis using average variance extracted (AVE) reveals that the values for each variable in the table surpass 0.5, indicating that all indicators and variables can be considered valid. It is worth noting that indicators with factor loadings lower than 0.6 were eliminated from the analysis. In addition to the aforementioned findings, the results from the Heterotrait-Monotrait Ratio (HTMT) analysis indicate that the measurement model demonstrates acceptable discriminant validity. This is evidenced by the fact that the diagonal elements in Table 3 have values lower than the recommended threshold of 0.9 (Henseler et al., 2015). The HTMT analysis provides further support for the discriminant validity of the variables in the study. Heterotrait-Monotrait Ratio (HTMT) data and direct and indirect effects between variables can be served on Table 3 and Table 4.

Table 3. Heterotrait-Monotrait Ratio (HTMT)

	1	2	3
PTSD			
Emotion Regulation	0.783		
Self-Esteem	0.621	0.689	

Table 4. Direct and Indirect Effects between Variables

Path	Direct Effect		Total Effect		Indirect Effect	
	β	t-value	B	t-value	B	t-value
Emotion Regulation → PTSD	-0.315	3.978**	-0.315	3.978**		
Self-Esteem → PTSD	-0.388	5.667**	-0.388	5.667**		
Emotion Regulation → Self-Esteem	0.399	5.088**	0.311	4.228**		
Emotion Regulation → Self-Esteem → PTSD					0.177	3.886**

Significant at $p < 0.05$, **significant at $p < 0.01$.

The findings presented in Table 4 indicate several significant relationships between variables. Firstly, emotional regulation has a negative effect on PTSD ($\beta = -0.315$, $p = 0.000$), suggesting that higher levels of emotional regulation are associated with lower levels of PTSD. Similarly, self-esteem also has a negative effect on PTSD ($\beta = -0.388$, $p = 0.000$), indicating that higher levels of self-esteem are linked to lower levels of PTSD. Additionally, there is a positive effect of emotional regulation on self-esteem ($\beta = 0.399$, $p = 0.000$), suggesting that higher levels of emotional regulation are associated with higher levels of self-esteem. Furthermore, when considering the total effect, significant influences are observed between variables, both positive and negative. Moreover, the effect of emotional regulation on PTSD is found to be mediated by the self-esteem, as indicated by the significant mediation effect ($\beta = 0.177$, $p = 0.000$). This suggests that the relationship between emotional regulation and PTSD is partially explained by self-esteem.

Discussion

Sexual harassment involves the use of power, threats, manipulation, or coercion to create adverse and traumatic sexual situations for the victims (Mainiero, 2020; Sanjeevi et al., 2018). This problem is severe and violates individuals' rights to respect, safety, and freedom from unwanted sexual interference (Morrison et al., 2018). Research indicates that victims of sexual abuse have a higher risk of developing post-traumatic stress disorder (PTSD) compared to the general population. Traumatic experiences associated with sexual harassment, such as loss of security and humiliation, can be significant risk factors (Hébert & Amédée, 2020; Rinne-Albers et al., 2020; Wagenmans et al., 2018). PTSD symptoms can

manifest within months of the sexual abuse experience, with variations in timing. Some victims may experience immediate symptoms, while others may experience them years later (Bucich et al., 2022; Fletcher et al., 2017).

This study specifically aimed to investigate the direct effect of emotion regulation on PTSD in victims of sexual abuse, finding a strong relationship between the two. Prior research has shown that individuals with poor emotion regulation skills, such as difficulty in coping with or avoiding unwanted emotions or limitations in coping with negative emotions are at higher risk of developing PTSD after experiencing a traumatic experience (Pan & Yang, 2021; Pugach et al., 2020). Additionally, a separate study explored the effects of interventions focusing on emotion regulation as part of PTSD treatment, demonstrating that therapies teaching emotion regulation skills can reduce PTSD symptoms and improve psychological well-being (Ford, 2017; Schnyder et al., 2015).

The individual's response to the sexual abuse event at the time can potentially influence the development of PTSD. For instance, individuals who have difficulty dealing with feelings of fear or anger and difficulty dealing with emotions such as guilt and shame when experiencing abuse are more vulnerable and have worsening PTSD symptoms (Russo et al., 2023; Jones et al., 2018). Moreover, the victim's ability to manage their emotions during the recovery process after experiencing sexual abuse can also impact the development of PTSD. The emotional coping strategies may also influence their experience of PTSD. Healthy coping strategies, such as seeking social support, internalizing emotions, or engaging in therapy, can help alleviate PTSD symptoms.

Furthermore, this finding supports the assertion that self-esteem plays a role in PTSD among victims of sexual harassment. The relationship between self-esteem and PTSD in victims of sexual abuse has been a crucial area of research in the mental health field. High self-esteem can serve as a protective factor against the development of PTSD (Sujadi et al., 2023; Hébert et al., 2014). Individuals with strong self-esteem may possess better psychological resources to cope with traumatic experiences and feel more equipped to manage them, thus reducing the risk of developing PTSD (Tavakoli & Wu, 2024; Brooks et al., 2020; Dégeilh et al., 2017). Robust self-esteem can act as a protective factor against the development of PTSD. Conversely, low self-esteem may affect victims' perceptions of themselves after experiencing sexual abuse. They may tend to blame themselves or feel worthless, which can exacerbate PTSD symptoms. Shame, guilt, or negative feelings about oneself are symptoms commonly associated with low self-esteem and PTSD (David et al., 2019; Kizilhan & Noll-Hussong, 2018).

In addition to directly affecting PTSD, this study demonstrates that emotion regulation influences self-esteem. Research indicates that individuals with strong emotion regulation skills tend to have higher self-esteem. This may be because they can effectively cope with negative emotions or limitations, leading to an increase in self-esteem (Khare, 2020; Nam & Hong, 2022). Conversely, individuals who tend to avoid or suppress their negative emotions without addressing or processing them in a healthy manner may experience a decrease in self-esteem. Neglecting emotions can impact their self-perception and self-esteem (Ayhan & Beyazit, 2021; Kim & Seo, 2018). Emotion regulation also plays a role in how individuals cope with life's challenges and accomplishments. Those who can effectively manage their emotions are better equipped to handle stress and overcome obstacles, resulting in increased self-esteem (Behrouian et al., 2020). Therapies like Dialectical Cognitive-Behavioral Therapy (DBT) can be utilized as tools to develop emotion regulation skills. Research indicates that such therapies can help enhance self-esteem in individuals with emotion regulation difficulties (Yazdizadeh et al., 2023; Simon et al., 2022).

We have also established a significant impact of emotion regulation on PTSD in victims of sexual abuse, mediated by self-esteem. Numerous studies have demonstrated that inadequate emotion regulation can lead to low self-esteem. When individuals are unable to cope with negative emotions or suppress unwanted feelings, it can diminish their self-esteem. Consequently, low self-esteem can act as a risk factor for the development or perpetuation of PTSD symptoms (Fasciano et al., 2020; Weindl et al., 2020). Self-esteem serves as a mediator in the relationship between emotion regulation and PTSD, indicating that it plays a role in explaining how emotion regulation affects the severity of PTSD symptoms in individuals. Therapies that address emotion regulation and self-esteem can be relevant in reducing the risk or managing PTSD symptoms. These therapies can assist individuals in developing improved emotion regulation skills, subsequently enhancing self-esteem and reducing PTSD symptoms (Ford, 2017; Schnyder et al., 2015).

The latest information in this research has implications for preventing and handling cases of sexual disclosure on campus. There are several limitations in this study. Firstly, the sample size is small. Out of the 987 students who completed the research scale, only 170 students reported experiencing sexual harassment. Conducting research with a small sample size can result in less reliable and less generalizable findings. Secondly, there are data limitations, including missing relevant information. Some demographic variables were not disclosed. Thirdly, the measurement is limited to examining the

relationships between variables without further analysis. Fourthly, the mediating variable tested in this study is restricted to self-esteem. Future analyses could incorporate a more comprehensive structural model. Fifthly, the measurement of respondents was only performed cross-sectionally, preventing the examination of long-term conditions. Future research should employ a longitudinal approach to measure this model.

4. CONCLUSION

The latest information on this research demonstrates a significant direct effect of emotion regulation and self-esteem on PTSD. Furthermore, self-esteem acts as a mediator in the relationship between emotion regulation and PTSD. Students with strong emotion regulation skills are more likely to have higher self-esteem, reducing their risk of experiencing PTSD following sexual harassment. Students who excel in emotion regulation tend to be more adept at coping with stress and trauma. The ability to regulate emotions plays a crucial role in determining the severity of PTSD symptoms after experiencing a traumatic event. The effect of emotion regulation on PTSD in victims of sexual harassment, mediated by self-esteem, has important implications for understanding, preventing, and intervening in PTSD among student victims. This research can serve as a foundation for developing more effective programs to prevent sexual harassment. By recognizing the mediating role of self-esteem in emotion regulation, these programs can provide training in emotion regulation skills to enhance individuals' resilience and autonomy in the face of sexual harassment. Additionally, university administrators should establish comprehensive regulations regarding the handling of sexual harassment on campus. These regulations must be implemented effectively and accompanied by strict sanctions.

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