



The Effect of Trauma Healing (Mindfulness) Therapy on Psychological Trauma Due to the Eruption of Mount Marapi West Sumatra

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ARTICLE INFO

Keywords: Eruption, Mount Marapi, Psychological Trauma, Trauma Healing, Mindfulness

Received : 3 May

Revised : 20 June

Accepted : 22 July

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ABSTRACT

Since 2023, Mount Marapi has erupted 116 times. There were 36 heads of families who were victims of eviction due to the eruption of Mount Marapi. The aim of this research is to determine the impact of mindfulness therapy on psychological trauma due to the eruption of Mount Marapi at the X Koto Tanah Datar Community Health Center in 2024. This type of quantitative research with a quasi-experimental design (one group pretest-posttest design). The sample for this research consisted of 12 people. This research was conducted in March - July 2024. The results of the research showed that the average level of psychological trauma in the intervention group before and after trauma healing (mindfulness) treatment was 1.008 with a standard deviation of 0.174. With statistical tests obtained a p-value of 0.000, so it can be concluded that There is an influence of providing mindfulness therapy on the level of psychological trauma due to the eruption of Mount Marapi in the work area of the Community Health Center. X Koto, Tanah Datar in 2024. It is recommended that the disaster working group at the Community Health Center create a trauma healing program because this Community Health Center is prone to disasters

INTRODUCTION

Indonesia is a country formed along the equator, located between two continents and two oceans. Its geographical position on a tectonic plate surrounded by active volcanoes means that Indonesia is on the path of the most active earthquakes in the world, making Indonesia vulnerable to various natural disasters (Latif, 2020). There are 128 mountains in Indonesia that are still active (Syahrul, K & Darma, 2022). West Sumatra has 4 active volcanoes including Mount Marapi, Mount Tandikat, Mount Talang and Mount Kerinci. Marapi volcano is classified as a mountain that frequently erupts, its eruptions have been recorded since 1807 with the shortest rest period being less than 1 year and the longest 17 years (average rest 3.5 years). Eruptive activity is usually accompanied by roaring sounds with eruptive output in the form of ash, sand, lapilli and sometimes also followed by the ejection of incandescent material and volcanic bombs (Gentur Dwi Teguh Santoso, 2024).

During the eruption of Mount Marapi on December 3 2023 the BKSDA (Resource Conservation Center) team Alam) reported that the number of victims recorded at that time was 75 climbers with 23 climbers declared dead (Gentur Dwi Teguh Santoso, 2024). In January 2024, Mount Marapi erupted again 46 times over two days. A number of points at the foot of Mount Marapi were hit by volcanic ash rain. There are 14 sub-districts whose areas were affected by volcanic ash rain. This shower of volcanic ash was so sudden that it caused panic among local residents as they evacuated (BNPB, 2024).

When Mount Marapi erupted on January 11 2024, several residents were evacuated to the nagari prayer room in Koto Baru village, As is known, Mount Marapi in West Sumatra has increased its status from alert level II to alert level III. The increase in status is due to increased activity of the mountain which has continued to erupt since last December (Kompas.com, 2024).

The implications felt due to the eruption of Mount Marapi not only resulted in loss of life, environmental damage and loss of property, but also psychological impacts on both children and adults. Survivors of volcanic eruptions are likely to experience psychological stress as a result of the eruption. The symptoms of trauma experienced by the individual are a normal reaction if the individual has just experienced a traumatic event (Trihantoro & dkk., 2016). The characteristics of psychological trauma caused by unexpected events that can put pressure on the soul are psychological disorders and sensitivity to stimuli that resemble the original event. (Rahmat & Alawiyah, 2020). Feelings of unease, anxiety, trauma and fear are the results of the psychological impact after a natural disaster occurs, especially for young children. The implications experienced by victims can continue to become trauma, and trauma in early childhood often recurs during adolescence (Kurniati & Dkk., 2022). The psychosocial impact of volcanic eruptions can cause trauma for victims who are in evacuation posts or not (Muhammad & dkk., 2022).

Psychological trauma experienced by individuals has different effects, some are able to manage their emotions, others are unable, thereby disrupting their activities. Events that cause psychological trauma can be experienced once and then persist for a long time, or experienced many times by sufferers. The causes of psychological trauma are quite varied, such as: natural disasters, violence and abuse. Psychological trauma due to natural disasters can last for 3 months to 1 year after experiencing a traumatic event (Santoso, 2009 in Agustina, 2016).

Efforts to increase trauma recovery due to natural disasters, one of which is trauma healing therapy, is effective in reducing the impact of psychological trauma on victims of natural disasters (Simon & Al, 2021). Trauma healing therapy is carried out to restore the psychological condition of victims of natural disasters so that they become stable again and are able to forget the events that have happened to them and are able to overcome the trauma of victims of natural disasters (Hatta, 2016). One of the trauma healing therapies to reduce psychological trauma resulting from natural disasters is trauma healing mindfulness therapy.

Mindfulness therapy exercises, individuals are asked to always be aware of their breathing, research results show that doing this exercise can reduce anxiety (Toneatto et al (2007) in (Agustin & Kusnadi, 2019)). Apart from that, Afandi (2007) in (Triman & Dkk., 2017) also obtained the same results, where earthquake survivors who experienced anxiety could experience a reduction in anxiety through training using mindfulness. During an interview with the Community Health Center on March 6 2024, data was obtained on the number of victims of the Mount Marapi eruption totaling 117 victims from the Koto Baru district. After the Mount Marapi eruption subsided, the Community Health Center said it had not carried out any further intervention for the victims affected by the eruption. Results of an initial survey conducted on March 14 2024 on 10 people in Nagari Koto Baru.

Based on short interviews, researchers identified 5 out of 10 people who expressed what they felt after the eruption of Mount Marapi, concerns about the future of their family's economy, tried to avoid places around Mount Marapi, often felt earthquakes and heard the sound of the volcano erupting even though there was none, difficulty concentrating, experience sleep disturbances, often feel as if the eruption is happening again, and when it happens, 5 out of 10 people feel their heart is beating faster than usual, feel unsafe at home, and are anxious when going to sleep at night. Based on the above, researchers are interested in discussing research on "The Effect of Trauma Healing Therapy on Psychological Trauma Due to the Eruption of Mount Marapi in the Work Area of Puskesmas X Koto Tanah Datar in 2024".

LITERATURE REVIEW

The results of research conducted by Nasution et al (2023) with the title "Mindfulness Overcomes psychological trauma for Women Victims of the Cianjur Earthquake" where the results were that, mindfulness therapy given to 10 respondents as an intervention group obtained an average score of 92.00 with a standard deviation of 18.788 before intervention was given to an average value of 52.86 with a standard deviation of 11.568 after intervention was given. The Z value in the experimental group was -2.371 with a significance of $p < 0.05$. The average (mean) level of psychological trauma showed a decrease, namely 92.00 (pretest) to 52.86 (posttest), which means there was an influence of trauma healing therapy on psychological trauma in Cianjur earthquake survivors.

Results of research conducted by Prinanda (2023) on Mindfulness-Based Cognitive Therapy Groups to Reduce Rumination in Adolescents with Depressive Symptoms. There were 14 respondents divided into 2 groups (experimental group and control group). The research results showed that the MBCT group was able to reduce rumination in adolescents with depressive symptoms as shown by the Wilcoxon test results in the experimental group with a value of $Z = -2.371$ and $p = 0.018 < 0.05$, whereas in the control group the value of $Z = -0.018$ and $p = 0.914 > 0.05$ with the control group and there was a difference in posttest rumination scores based on the Mann-Whitney test ($Z = -2.747$, $p = 0.006 < 0.05$), so the hypothesis in this study was accepted.

METHODOLOGY

This research uses a quantitative type of research with a quasi-experimental design (one group pre-test and post-test). This research was conducted to determine the effect of trauma healing (mindfulness) therapy on psychological trauma due to the eruption of Mount Marapi in affected communities in the work area of the Community Health Center. X Koto Tanah Datar in 2024.

The population is 117 people, who are refugees from X Koto. The sample was determined using a simple random sampling technique, namely 12 respondents. This study used the Harvard Trauma Questionnaire (HTQ) to measure the level of psychological trauma with 2 treatments in 4 meetings consisting of 8 sessions. Implementation of the intervention from June 25 - June 26. 2024.

RESULTS

1. Univariate Analysis

A. Average Level of Psychological Trauma Due to the Eruption of Mount Marapi Before Being Given Trauma Healing (Mindfulness) Therapy

Table 1. Average Level of Psychological Trauma Due to Eruption Before Being Given Trauma Healing (Mindfulness) Therapy

Variable	Mean	Std. Deviation	Min.	Max.
Pre	2,58	0,07	2,42	2,71

Table 1. shows that the average (mean) level of psychological trauma before being given trauma healing mindfulness therapy was 2.58 with a standard deviation of 0.07, a maximum value of 2.71 and a minimum value of 2.42 in the work area of the X Koto Tanah Datar health center in 2024 .

B. Average Level of Psychological Trauma Due to the Eruption of Mount Marapi After Being Given Trauma Healing (Mindfulness) Therapy

Table 2. Average Level of Psychological Trauma Due to Eruption After Being Given Trauma Healing (Mindfulness) Therapy

Variabel	Mean	Std. Deviation	Min.	Max.
Post	1,57	0,15	1,19	1,78

Table 2. shows that the average (mean) level of psychological trauma after being given trauma healing (mindfulness) therapy is 1.56 with a standard deviation of 0.15 then the maximum value is 1.78 and the minimum value is 1.19 in the work area of the X Koto Tanah Datar health center in 2024.

2. Bivariate Analysis

Table 3. The Average Psychological Trauma of Respondents Before and After Giving Trauma Healing (Mindfulness) Therapy

Variabel	N	Mean	SD	SE	P-value
Pre	12	2,58	0,07	0,02	0,000
Post	12	1,57	0,15	0,04	

Table 3. shows that there is a difference in the average psychological trauma in the intervention group before and after being given trauma healing (mindfulness) therapy treatment with an average value of 2.58 with a standard deviation of 0.07 to an average value of 1.57 with a standard deviation 0.15 with a difference of 1.01. The statistical test results obtained a p-value = 0.000 ($p < 0.05$), which means that there is an influence of providing trauma healing (mindfulness) therapy on the level of psychological trauma due to the eruption of Mount Marapi in the working area of the X Koto Community Health Center, Tanah Datar in 2024.

DISCUSSION

1. Univariate Analysis

A) Level of Psychological Trauma Before Being Given Trauma Healing (Mindfulness) Therapy Treatment

This research shows the level of psychological trauma of respondents due to the eruption of Mount Marapi was obtained by giving questions in the form of a questionnaire and then the results were scored. The research results in table 4.1 show that the average level of psychological trauma before being given trauma healing (mindfulness) therapy due to the eruption of Mount Marapi was 2.58 with a standard deviation of 0.07. The highest level of psychological trauma was 2.71 and the lowest was 2.42.

The results of this research are in accordance with research conducted by Dwiyanti et al (2017) with the title Mindfulness Caring in the Stress of Lombok Disaster Victims with a total of 88 respondents, of which 75 people (85.2%) experienced symptoms of neurosis, 26 people (29.5%) experienced psychotic symptoms, 57 people (64.7%) experienced symptoms of post-disaster psychological trauma and 13 people did not experience any risk of psychological disorders. The results of a systematic review research conducted by the Pacific Northwest Evidence-based Practice Center (2023) which investigated 496 articles on Pharmacologic and Nonpharmacologic Treatments for Posttraumatic Stress Disorder: 2023 update of the evidence based for PTSD Trials Standardized Data Repository concluded that the intervention used an Non-pharmacological approaches (44%) are used more often than pharmacological approaches (19%), with descriptions that psychotherapy is more widely applied (40%) followed by complementary and health integration (10%). The results of this research confirm that a psychotherapy approach is appropriate to help treat trauma.

Trauma is abnormal individual behavior due to experiencing an event that leaves a deep impression, making it psychologically disturbing and difficult to forget (Nihayah & dkk., 2022). Psychological distress studied among volcano evacuees in many countries shows symptoms of anxiety, insomnia, anergia, social dysfunction, and anhedonia persisting even six months after the eruption (Dhillon & Sasidharan, 2021).

Clinical manifestations of psychological trauma in adults include: the emergence of feelings of excessive worry, depression, loss of enthusiasm for life, suspicion, difficulty sleeping, difficulty concentrating, irritability, difficulty interacting, pessimism and worsening of chronic diseases due to traumatic events (Fatmasari, 2018). Trauma also causes debilitating psychological damage and can have lifelong impacts on survivors. If not treated and healed, unhealed trauma can disrupt daily functioning in a variety of ways by affecting the brain, emotions, and body (Van Nuys, 2015).

This research can see the psychological trauma felt by respondents based on respondents' answers to question number 1 where 75% of respondents answered that they very often have recurring thoughts or memories about the eruption of Mount Marapi, then in question number 2 it was found that 41.7% of respondents often felt as if the eruption happened again, and 58.3% of respondents very often felt as if the eruption was happening again. In item number 7 it was found that 58.3% of respondents found it difficult to concentrate,

and in item number 8 it was found that 50% of respondents answered that they sometimes had difficulty sleeping, while 41.7% of respondents answered that they often had difficulty sleeping. Then, in item number 9 it was found that 66.7% of respondents answered that they often felt anxious as if something bad would happen. Therefore, it can be concluded that the eruption of Mount Marapi left psychological trauma for the people who survived the eruption of Mount Marapi.

This research shows the level of psychological trauma due to the eruption of Mount Marapi in the community in the Working Area of Puskesmas what many respondents felt were: recurring memories of the eruption of Mount Marapi, difficulty sleeping, difficulty concentrating, and feelings of anxiety, feeling betrayed, feeling like they don't have anyone they can trust.

B) Level of Psychological Trauma After Being Given Trauma Healing Therapy (Mindfulness)

In table 1.2, it can be seen that the average (mean) level of psychological trauma after being given trauma healing (mindfulness) therapy is 1.56 with a standard deviation of 0.15, then the highest level of psychological trauma is 1.78 and the lowest level of psychological trauma is 1.19.

The results of this research are similar to research conducted by Tentama et al., (2014) regarding the effectiveness of the trauma healing method for reducing psychological trauma in adolescent victims of the eruption of Mount Merapi. Where the results of the t-test analysis obtained a value of $t= 3.842$ and $p=0.001$ ($p<0.01$) which means there is a difference in psychological trauma which is higher before being given trauma healing therapy and lower after being given trauma healing therapy.

Trauma healing therapy is usually used to help disaster victims restore their mental health, help them forget the events that have occurred, and help them overcome the trauma they have experienced (Hatta, 2016 in Harsiti, 2021). Trauma healing therapy is a recovery process that helps individuals overcome traumatic experiences and rebuild a sense of security and well-being (Van Nuys, 2015).

Trauma problems caused by disasters can be resolved with trauma healing. Trauma healing is provided during the post-natural disaster period, namely as a way to protect oneself from stress caused by disasters. Trauma recovery takes time, depending on the trauma healing process undertaken by the individual (Rahmat & Budiarto, 2021).

There are several psychotherapies that can be used to reduce psychological trauma due to natural disasters, namely: Eye Movement Desenziation Reason (EMDR), Cognitive Behavior Therapy, Mindfulness Based Therapy (Fitri & dkk., 2023). Lebih lanjut, dalam Buku Pengelolaan Trauma Psikologis Akibat Bencana menyebutkan terdapat beberapa Trauma healing models for handling psychological trauma in dealing with the mental psychology of victims of natural disasters include: calming technique therapy, mindfulness-spiritual therapy, and play therapy (Tim Trauma Healing FK UNDIP, 2019).

This research shows that psychological trauma can be reduced by providing various efforts in the form of trauma healing therapy consistently and continuously, one of which is trauma healing therapy (mindfulness).

2. Bivariate Analysis

The results of the study showed that there was a difference between the level of psychological trauma before and after being given trauma healing (mindfulness) therapy treatment with the average value (mean) before being given trauma healing (mindfulness) therapy treatment due to the eruption of Mount Marapi, namely 2.58 with a standard deviation of 0.07 becomes an average value (mean) of 1.57 with a standard deviation of 0.15 which has a difference of 1.01. The statistical test results obtained a p-value = 0.000 ($p < 0.05$), which means that there is an influence of providing trauma healing (mindfulness) therapy on psychological trauma due to the eruption of Mount Marapi in the work area of the X Koto Tanah Datar Community Health Center in 2024.

The results of this research are in line with research conducted by Nasution & dkk (2023) with the title "Mindfulness Overcomes psychological trauma for Women Victims of the Cianjur Earthquake" where the results obtained were that, mindfulness therapy given to 10 respondents as an intervention group obtained an average value 92.00 with a standard deviation of 18.788 before intervention was given to an average value of 52.86 with a standard deviation of 11.568 after intervention was given. The Z value in the experimental group was -2.371 with a significance of $p < 0.05$. The average (mean) level of psychological trauma showed a decrease, namely 92.00 (pretest) to 52.86 (posttest), which means there was an influence of trauma healing therapy on psychological trauma in Cianjur earthquake survivors.

Mindfulness is an exercise or nursing therapy carried out by individuals with awareness, understanding the problems faced, full of acceptance, to achieve the desired goals (Dwiyanti et al., 2017). The application of psychotherapy in this research uses a group approach with the aim that each individual can learn from each other their methods of adapting to the psychological trauma they have experienced. This is supported by research conducted by (Tempone-Wiltshire, 2024) on the role of mindfulness and embodiment in group-based trauma treatment which has explored the value of group psychotherapy for trauma treatment. The research details that each therapy participant has resources that can help other participants to be able to direct their attention to the current moment and increase physical and affective self-awareness to reduce trauma symptoms. There are three things that are very important so that mindfulness can play a role in overcoming physical and psychological symptoms according to the Kabat-Zinn theory, namely: intention, attention, and attitude (Nasrah, 2015).

Mindfulness can reduce various side effects including eliminating nausea, improving sleep quality, reducing anxiety levels, and providing several additional benefits such as improvements in appetite. Research conducted by Amini et al (2016) also shows that Mindfulness is more efficient than Aerobic exercise for reducing anxiety levels, fatigue and sleep quality (Gong & et al., 2016).

Mindfulness has 5 sessions as important stages in its implementation, namely: Meditation Breathing, Body Sensation, Compassionate Body Scan, Open Awareness & Acceptance, Wanting Release. Mindfulness techniques are interventions that can increase an individual's highest awareness (consciousness) so as to achieve happiness and reduce suffering such as stress, anxiety, depression and behavioral problems (Brown & Ryan, 2003; Carmody & Baer, 2008; Germer, 2005) in (Risal & dkk., 2020).

Providing trauma healing (mindfulness) therapy to people who have psychological trauma due to the eruption of Mount Marapi is a non-pharmacological technique that can be carried out on an ongoing basis and can be applied in everyday life and can be an effort to help reduce the risk of post-traumatic syndrome disease (PTSD).

CONCLUSIONS AND RECOMMENDATIONS

This research that the average level of psychological trauma due to the eruption of Mount Marapi before being given trauma healing (mindfulness) therapy treatment was 2.5842 with a standard deviation of 0.07 and a minimum value of 2.42 and a maximum value of 2.71. It is known that the average level of psychological trauma due to the eruption of Mount Marapi after being given trauma healing therapy (mindfulness) was 1.5758 with a standard deviation of 0.15 and a minimum value of 1.19 while the maximum value was 1.78. There is an effect of trauma healing (mindfulness) therapy on psychological trauma due to the eruption of Mount Marapi before and after being given trauma healing (mindfulness) therapy with a p-value = 0.000. It is recommended that the disaster working group at the Community Health Center create a trauma healing program because this Community Health Center is prone to disasters.

FURTHER STUDY

Future research could continue research into trauma healing Eye Movement Desensitization and Reprocessing (EMDR) therapy for psychological trauma resulting from the eruption of Mount Marapi.

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