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The Effectiveness of Spiritual Emotional Freedom Technique (SEFT) on Chest Pain in Patients with ST-Elevation Myocardial Infarction: A Quasi-Experimental Study

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Abstract:
Introduction: *Spiritual emotional freedom technique (SEFT) is a non-pharmacological intervention that combines spiritual, emotional, and physical aspects through tapping techniques at the body's meridian points to create relaxation and reduce stress. This study aims to analyze the effectiveness of SEFT on chest pain in ST-Segment Elevation Myocardial Infarction (STEMI) patients at dr. Zainoel Abidin Regional General Hospital Banda Aceh.* ***Method:*** *This study was a quasi-experiment with pretest-posttest control group design, namely the intervention group and the control group consisting of 17 respondents each.* ***Results and Discussion****: The results of the analysis using the wilcoxon Signed-Rank test showed that there was a statistically significant difference in chest pain p=0.001 after the intervention. The analysis of the Mann-Whitney U-test on chest pain also showed a significant difference of p=0.045. These results suggest that SEFT interventions contribute to lowering the physiological response of stress and pain perception in STEMI patients.* ***Conclusions:*** *SEFT is effective in lowering chest pain in STEMI patients, which shows an increased relaxation response of the body so that this technique can be used as a holistic nursing approach. For health workers, especially nurses, the SEFT technique can be an alternative to non-pharmacological interventions that are easy to apply.*

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Introduction

Cardiovascular diseases, including heart and blood vessel disorders, are still the leading cause of death in the world, both in developed and developing countries (Ahmad, Jafar, & Patimah, 2023); (Hinga et al., 2025). WHO (2023) notes that as many as 17.9 million deaths annually are caused by this disease, with acute myocardial infarction (STEMI) being one of the deadliest forms, especially in developing countries (Fauzia & Khumaeroh, 2023).

In the United States, one person is estimated to have a cardiovascular disorder every 40 seconds (WHF, 2023). In Indonesia, the prevalence of high blood pressure increased to 34.1%, with the incidence of acute myocardial infarction at 1.5%, especially in the elderly age group (Riskesdas, 2018). An unhealthy lifestyle is a major risk factor, so it is important for people to implement a healthy lifestyle as a preventive measure (Handayani, 2025).

Data from the Aceh Health Office (2022) shows that hypertension is still a major health problem, experienced by 38.29% of the population, with the highest prevalence in Langsa Regency (86.98%) and the lowest in Aceh Singkil (2.07%). In addition, around 1.6% of the people of Aceh or around 41,596 people were detected to have heart disease. Nationally, cardiovascular diseases such as heart disease, stroke, and kidney failure continue to increase and are the highest cause of death. The prevalence of heart disease in Indonesia was recorded at 1.5%, including STEMI, with the highest rates in North Kalimantan (2.2%), DIY (2%), and Aceh at 1.6% (Amrullah et al., 2022).

SEFT therapy, which is included in the management of non-pharmacological pain in patients with STEMI, focuses on achieving relaxation through the power of prayer, psychological exploration, and a spiritual approach (Fatmasari, Widyana, & Budiyani, 2019). This technique has a positive effect on reducing chest pain by creating a feeling of comfort and improving the patient's ability to withstand pain (Sari & Sari, 2024). This holistic approach provides emotional and spiritual support that is considered effective in reducing pain intensity in patients with STEMI (Refnandes, 2023).

Research conducted by Rumambi et al. (2024) shows that the application of the SEFT technique is able to significantly reduce pain intensity in advanced breast cancer patients. Before the intervention, the average patient's pain intensity was in the range of a score of 5-6 (on a scale of 0-10). However, after the SEFT technique was performed, the average pain intensity was reduced to 3-4, which described a 46.15% reduction in pain. These findings reinforce that SEFT can be an effective complementary method in managing pain in cancer patients (Rumambi, Suprapti, & Susilo, 2024).

Method

This study uses a quasi-experimental design using the pre-test and post-test control group design methods, at the dr. Zainoel Abidin Regional General Hospital Banda Aceh.This research was carried out after completing the ethics review process, which has been approved by the Research Ethics Committee at the dr. Zainoel Abidin Regional General Hospital, Banda Aceh, with approval number 340/ETIK-RSUDZA/2024.

Result and Discussion

1. Results

Descriptive Analysis

Table 1
Sociodemographic data and clinical characteristics in intervention groups and control groups (n=34)

Respondent Characteristics	Intervention (n=17)		Control (n=17)	
	f	%	f	%
Age				
Mean ± SD	62.35 ± 4.595		62.71 ± 5.157	
Min-Max	55-70		55-72	
Gender				
Man	10	58.8	9	52.9
Woman	7	41.2	8	47.1
Marital Status				
Marry	14	82.4	12	70.6
Widower/Widow	3	17.6	5	29.4
Education				
Basis	3	17.6	3	17.6
Intermediate	7	41.2	9	52.9
University	7	41.2	5	29.4
Work				
CIVIL SERVANT/Army/Police	5	29.4	6	35.3
Self employed	4	23.5	4	23.5
Retired/House wife/Out of Work	8	47.1	7	41.2
Religion				
Muslim	17	100	17	100
Smoking History				
Smoke	10	58.8	9	52.9
No Smoking	7	41.2	8	47.1
Authoritative Diseases				
DM	8	47.1	7	41.2
Hypertension	8	47.1	9	52.9
Heart Failure	1	5.9	1	5.9

Based on Table 1, the average age of the respondents was in the early age range, namely 62.35 ± 4.60 years in the intervention group and 62.71 ± 5.16 years in the control group. The majority of respondents were male, 58.8% in the intervention group and 52.9% in the control group, respectively. Most of the respondents were married and married. In terms of education, the intervention group respondents had a balanced proportion between the middle and high levels (41.2%, respectively), while the control group was dominated by secondary education graduates (52.9%). The most common types of jobs in both groups are retired, housewives, or not working.

All respondents adhere to Islam. Smoking history was more common in the intervention group (58.8%) than in the control group (52.9%). Meanwhile, the comorbidities most suffered by respondents in the intervention group were diabetes mellitus and hypertension (47.1% each), while in the control group, hypertension dominated (52.9%).

Table 2
Differences in Chest Pain Scales Before and After Intervention in the Intervention Group

Variable	Intervention Groups (n=17)		Wilcoxon	
	Pre-test (Mean ± SD)	Post test (Mean ± SD)	z	p
Chest Pain	4.94 ± 0.75	2.88 ± 0.60	-3.779	0.001

The results of the Wilcoxon Signed-Rank Test showed that the SEFT intervention had a significant impact on the chest pain scale with a value of p = 0.001. These results suggest that *SEFT* interventions contribute to lowering physiological responses to stress and pain perception in STEMI patients in the intervention group.

Table 3
Differences in Chest Pain Scales Before and After Intervention in the Control Group

Variable	Control Group (n=17)		Wilcoxon	
	Pre-test (Mean ± SD)	Post-test (Mean ± SD)	z	p
Chest Pain	3.59 ± 0.618	3.41 ± 0.870	-1.732	0.083

The results of the Wilcoxon Signed-Rank Test show that the chest pain scale has not undergone significant changes. With a value of p = 0.083. These results showed that the control group did not experience significant changes.

Table 4
Comparison of Hemodynamic Status and Chest Pain in the Intervention Group and Control Group Before and After SEFT Intervention

Variable		Intervention Group n=17 Mean Rank	Control Group n=17 Mean Rank	z	(p-value)
Chest Pain	Pre-test	19.71	15.29	-1.411	0.158
	Post-test	14.32	20.68	-2.003	0.045

Furthermore, the difference in chest pain between the intervention and control groups with a value of p = 0.045, it can be concluded that there is a difference in chest pain in the intervention group and the control group. Thus these results show that the SEFT intervention contributed significantly to lowering chest pain in the intervention group compared to the control group.

2. Discussion

Differences in chest pain scale values in patients after SEFT intervention in the intervention group and control group

The results showed that SEFT therapy had a significant influence on reducing the intensity of chest pain in STEMI patients**.** In the intervention group, the pain score decreased from 4.94 to 2.88 $p = 0.001$ (Wilcoxon test), while in the control group, the reduction in pain was not statistically significant $p = 0.083$. This decrease indicates that SEFT is effective in reducing the perception of pain**,** which not only reflects physiological changes, but also reactions to increased emotional and spiritual comfort.

In the perspective of Kolcaba's Comfort Theory**,** this significant reduction in pain can be categorized as a result of *comfort interventions* that provide calm**,** both physically and psycho-spiritually. When the patient achieves comfort*,* the body's systems are in a more optimal condition to carry out the natural recovery process. In this context, reduced

chest pain not only indicates success but also signifies the fulfillment of comfort needs in the physical, psycho-emotional, and spiritual domains**,** which Kolcaba categorizes as *comfort needs***.**

The SEFT therapy used in this study is Non-pharmacological which combines positive affirmation, prayer, emotional exploration, and tapping techniques at the meridian points of the body. This approach has an effect neuromodulation of the nervous system**,** that affects Sympathetic-Parasympathetic Activities and decreased pain perception. Refnandes (2023) states that SEFT effectively enhances relaxation and strengthens the patient's subjective ability to deal with pain. This is in line with Mavrocordatos et al. (2020) which affirms that spiritual and emotional approaches can suppress Sympathetic activation and lowering the transmission of pain impulses through the regulation of the central nervous system (Mavrocordatos, Lages, & Macrea, 2019).

The effectiveness of SEFT in reducing pain is also reflected in studies Rumambi et al. (2024) in cancer patients, where the intensity of pain decreased by 46.15% after the SEFT technique, from a score of 5–6 to 3–4. These results strengthen the validity of SEFT as a complementary therapies that can be widely applied in the context of acute and chronic pain (Rumambi et al., 2024).

The results of the research conducted by Fitriani and Fadilla. (2020) showed that SEFT therapy is effective in reducing pain in cervical cancer patients. In the study, SEFT interventions helped patients achieve better emotional and physical relaxation, resulting in a significant decrease in the intensity of pain. This confirms that SEFT can be used as a non-pharmacological therapy that supports holistic pain management.

These findings are in line with Comfort Theory Kolcaba**,** as explained by Wahyudi & Romiko (2023), which examined the effect of SEFT therapy on fatigue levels in patients with cardiovascular disease using the Kolcaba Comfort Theory approach. This approach emphasizes the importance of physical, emotional, and spiritual comfort in the recovery process, which is in line with the goal of SEFT therapy as a holistic method that not only relieves physiological symptoms, but also restores the patient's psychological calm (Wahyudi & Romiko, 2023)

The effectiveness of SEFT in reducing pain is reinforced by Johnson et al. (2014) who found that relaxation and integrative interventions such as reflexology and EFT techniques are able to significantly lower the chest pain scale**,** especially when measured by the Numeric Rating Scale (NRS).

Conclusion

The results of this study confirm that the Spiritual Emotional Freedom Technique (SEFT) is an effective non-pharmacological intervention in reducing the intensity of chest pain in patients with ST Elevation Myocardial Infarction (STEMI). The significant decrease in the intervention group reflects not only the success of the physiological aspect, but also the important contribution of SEFT in establishing the emotional and spiritual comfort of the patient. This approach is in line with Kolcaba's Comfort Theory framework, which places comfort at the core of the holistic recovery process.

SEFT, which integrates elements of tapping, positive affirmation, and spiritual power, shows great potential for widespread application in nursing practice. This technique is easy to learn, does not require special tools, and can complement conventional therapies in the management of acute pain. Thus, SEFT deserves to be considered as an alternative intervention that supports the role of nurses in providing

services that not only touch the physical, but also psycho-social and spiritual aspects of the patient as a whole.

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