Budapest International Research and Critics Institute-Journal (BIRCI-Journal)
Humanities and Social Sciences
ISSN 2615-3076 Online)
ISSN 2615-1715 (Print)
www.bircu-journal.com/index.php/birci
Budapest Institute

Autogenic Relaxation on Cardiac Pain in Patients with Acute Coronary Syndrome

(Palliative Review Study of Patients with Acute Coronary Syndrome after a Heart Attack at Margono Sokarjo Hospital, Purwokerto)

Supadi[1], Widjijati[2], Welas Haryati[3]
[1,2,3] *Poltekkes Kemenkes Semarang, Indonesia*
supadispd73@gmail.com

Abstract

Every year more than 36 million people die from non-communicable diseases (NCD), which is about 63% of deaths caused by NCDs. Globally, NCD which is the number one cause of death each year is cardiovascular disease that can occur before the age of 60 years, and 90% of these premature deaths occur in low and middle income countries. Central Java Province data based on reports from hospitals, the highest cases of coronary heart disease were in the city of Semarang, amounting to 4,784 cases (26.00%) compared to the total number of cases of coronary heart disease in other districts/cities in Central Java. When viewed based on the total number of other NCD cases in Klaten Regency, it was 3.82%. Meanwhile, the second highest case was in Banyumas Regency, which was 2,004 cases (10.89%) and when compared to the total number of other NCDs in Banyumas Regency, it was 9.87%. The fewest cases were found in Tegal Regency, namely 2 cases (0.01%) (Health Profile of Central Java Province, 2014). Pain managementis part of the discipline of medical science related to efforts to relieve pain or pain relief. Autogenic relaxation technique, which is a non-pharmacological therapy, will increase the supply of oxygen to the tissues, thereby reducing the level of pain experienced by individuals. This research is a quantitative quasi-experimental without control group Pre post test design. This study used a cross-sectional observational analytic design, namely to analyze the effect of autogenic relaxation on the degree of chest pain of clients with Acute Coronary Syndrome (ACS) after an acute heart attack at the hospital. The sample obtained 18 respondents with details of 14 male and 4 female. The sampling technique in this study was purposive sampling. Characteristics of respondents in this study the majority of men (77.8%). Based on the age characteristics, it was found that the age range of the respondents was 51-69 years with a mean of 59.8 years. The results of the study showed that autogenic relaxation had a significant effect on reducing the chest pain scale in respondents after ACS (p = 0.000)

Keywords
ACS chest pain;
autogenic relaxation

I. Introduction

Every year more than 36 million people die from non-communicable diseases (NCD), which is about 63% of deaths caused by NCDs. Globally, NCD which is the number one cause of death every year is cardiovascular disease that can occur before the age of 60 years, and 90% of these premature deaths occur in low and middle income countries (Kemenkes RI, 2014).

Besides that, cardiovascular disease in which there is coronary heart disease (CHD) has become a problem both in developed countries where treatment and disease prevention services are also more advanced. Similar problems are currently happening in developing countries, so it is projected that in the future cardiovascular disease will become the main cause of death in developed and developing countries (Kemenkes RI, 2014).

Data from Cipto Mangunkusumo Hospital (RSCM) in 2008-2012 showed that 1,289 patients were treated for chest pain and about of them were due to ACS. ACS is the main cause of death in the arteries of the heart, with a mortality rate of 30% in the first 24 hours (Semi Journal of Pharmacy and Medicine, ethical digest:http://ethicaldigest.com/album/relation-high-blood-sugar-with-mace-pada-ska accessed on 13 January 2018).

Central Java Province data based on reports from hospitals, the highest cases of coronary heart disease were in Semarang city, amounting to 4,784 cases (26.00%) compared to the total number of cases of coronary heart disease in other districts/cities in Central Java. When viewed based on the total number of other NCD cases in Klaten Regency, it was 3.82%. Meanwhile, the second highest case was in Banyumas Regency, which was 2,004 cases (10.89%) and when compared to the total number of other NCDs in Banyumas Regency, it was 9.87%. The fewest cases were found in Tegal Regency, namely 2 cases (0.01%) (Health Profile of Central Java Province, 2014).

The prevalence of high hospitalization rates requires the role of nurses as health workers to be able to manage the severe pain felt by patients with ACS. Severe pain experienced by ACS patients is described by Patient complaints can be in the form of paintypical chest (typical angina) or atypical (equivalent angina). The typical complaint of angina is a feeling of pressure/heaviness in the retrosternal area, radiating to the left arm, neck, jaw, interscapular area, shoulder, or epigastrium. These complaints can last intermittent / several minutes or persistent (> 20 minutes). Typical angina complaints are often accompanied by accompanying complaints such as diaphoresis, nausea/vomiting, abdominal pain, shortness of breath, and syncope (Indonesian Cardiovascular Specialist Doctors Association, 2015).

Chest pain in ACS occurs suddenly. The reason is that the oxygen supply to the myocardium has decreased which results in the death of heart cells. Clinical symptoms of chest pain in ACS cases appear suddenly and continuously and do not subside. If this pain is left unchecked, the severity of the pain will increase so that the pain is unbearable. The pain can radiate to the neck, shoulders and continue to the arms. This pain is accompanied by shortness of breath and pale (Aspiani, 2014).

A person who experiences chest pain in ACS will have an impact on their daily activities. The person will be disturbed in fulfilling the need for rest and sleep, individual fulfillment, as well as aspects of social interaction which can be in the form of avoiding conversation, withdrawing, and avoiding contact. In addition, someone who experiences severe pain and the pain is continuous, if not treated immediately, it can eventually lead to neurologic shock in that person (Agung, Andriyani, & Sari, 2013). Furthermore, to prevent this it is necessary to do pain management.

Pain managementis part of the discipline of medical science related to efforts to eliminate pain or pain relief (Pratintya, Harmilah, & Subroto, 2014). Some non-pharmacological therapeutic nursing pain management include adjusting the physiological position and immobilizing the extremity experiencing pain, resting the client, environmental management, compresses, deep breathing relaxation techniques, distraction techniques, and touch management (Muttaqin, 2011). Autogenic relaxation technique, which is one of the non-pharmacological therapies, will increase the supply of oxygen to

the tissues thereby reducing the level of pain experienced by individuals (Agung, Andriyani, & Sari, 2013).

Autogenic relaxation which is one of the relaxation therapies can have an effect in increasing long-term survival and physical function including pain reduction (Sherrod, Pipi, & Seale, 2016). Autogenic relaxation is relaxation with self-regulation. Autogenics is an example of a relaxation technique based on passive concentration using body perception (eg, hands feel warm and heavy) facilitated by self-suggestion (Kanji, et al, 2006; Saunders, 2007).

In autogenic relaxation, the patient is no longer dependent on the therapist but through self-suggestive techniques (Auto suggestive), a person can make changes in himself, can also regulate the appearance of his emotions (Saunders, 2007). Widyastuti (2004) adds that autogenic relaxation helps individuals to be able to control several body functions such as blood pressure, heart rate and blood flow.

II. Research Methods

This research is a quantitative quasi-experimental without control group Pre post test design. This study used a cross-sectional observational analytic design, namely analyzing the effect of autogenic relaxation on the degree of chest pain of ACS clients after an acute heart attack in the hospital.

The population is a large number of subjects who have certain characteristics (Sastroasmoro & Ismael, 2002). The sample is part of the number and characteristics possessed by the population (Sugiono, 2004) or the sample is part or representative of the population under study. The sampling technique in this research is purposive sampling. The number of samples was 18 respondents with 14 men and 4 women.

III. Results and Discussion

The research data regarding the characteristics of the respondents are shown in table 1 below:

Characteristics of respondents in this study include age and gender.

Table 1. Distribution of respondents' age characteristics

	Age (years)
mean	59.8
Minimum	51
Maximum	69

The results showed that when viewed from the age characteristics, the average age was 59.9 years, the minimum age was 51 years and the maximum age was 69 years.

Table 2. Characteristics of respondents by gender.

Variable	n	Male	Female
Gender	18	14 (77.8%)	4 (22.2%)

Based on Table 2 above, it is known that by gender, the majority of respondents are male as much as 77.8% and female minority are 22.2%.

Characteristics of respondents in this study were analyzed because they affect the response to pain. Individual assessment of pain is very subjective which is influenced by

factors of age, gender, environment and experience (Hidayat, 2006). The more mature a person's age, the more mature the development of his mindset in dealing with pain (Potter & Perry, 2005). Someone who is more mature will be able to control the pain that is felt, this is a result of experience and mental maturity in perceiving pain (Hurlock, 1990 in Price, 2005).

3.1 Univariate Analysis

Univariate analysis aims to describe the characteristics of each variable studied in the form of a frequency distribution. Univariate analysis was used to determine the scale of chest pain before and after autogenic relaxation.

Distribution of chest pain scalerespondents before and after autogenic relaxation are seen in the following table:

Table 3. Distribution

Chest pain scale	Before n (%)	After n (%)
Medium (Scale 4-6)	10 (55.5%)	2 (11.1%)
Mild (Scale 1-3)	8 (44.4%)	16 (88.9%)
Total	100	100

Based on table 3, it is known that in the majority, the respondents' chest pain scale before autogenic relaxation was in the medium range as much as 55.5%. After autogenic relaxation, the respondents' chest pain scale was mostly on a mild scale of 88.9%. The results showed that the respondent's chest pain scale decreased after autogenic relaxation.

3.2 Bivariate Analysis

Bivariate analysis is an analysis conducted on two variables that are suspected to be related or correlated, and in this analysis using a paired t test, namely tocomparing data before and after giving relaxation autogenic.

Differences in chest pain scalebeforeand after autogenic relaxation can be seen in the following table:

Table 4. Differences of pain scale autogenic relaxation

Variable	*mean*		*Sig. (2-tailed)*
Chest pain scale	Before	After	
	3.6667	2.3333	0.000

Based on table 4 the results showed that the average value of the respondent's chest pain scale before autogenic relaxation was 3.6667, then after being given autogenic relaxation education the average value of the chest pain scale became 2.3333. This shows that autogenic relaxation has an effect on decreasing the scale respondent's chest pain. This result is also strengthened by the results of statistical tests which show the value of p = 0.000, which means the value of $p<\alpha$ (0.05) so it can be concluded that statistically autogenic relaxation has an effect on decreasing the scale of chest pain in respondents.

The results showed that the meanthe value of the respondent's chest pain scale before autogenic relaxation was 3.6667. Then there was a decrease in the mean value after autogenic relaxation, which was 2.3333. This shows that the autogenic relaxation performed on the respondent's chest pain scale has an effect on decreasing the respondent's chest pain.This result is reinforced by the results of statistical analysis with a paired t test

which shows a p value = 0.000, which means a significance value <α (0.05) so it can be concluded that statisticallythere is an effect of autogenic relaxation on decreasing the scale of chest pain in respondents.

The results of this study are in accordance with the results of research conducted by Fithriana, Marvia, and Putra (2016). In the research of Fithriana, et al (2016), autogenic relaxation has an effect on reducing menstrual pain. The body will become more relaxed, relieve tension when experiencing stress and free from threats. Kusmiran, Manalu, and Umanah (2014) in their research stated that there was a statistically significant difference between the average pain response before and after the autogenic relaxation intervention. There is a significant difference in the mean pain response between the groups of mothers with deep breathing relaxation treatment with autogenic relaxation, where the pain response score (1.143) in the group of mothers with deep breathing relaxation is lower than the pain response score (1.905) in the group of mothers with autogenic relaxation.

Medium pain is characterized by hissing, grinning, indicating the location of pain, discussing pain and being able to follow commands well. This situation shows that pain that arises is a warning sign that tissue damage has occurred so that pain is a physiological mechanism that aims to protect oneself and should be the main consideration for nursing when assessing pain (Perry & Potter, 2005).When someonefeel discomfort or pain, relaxation helps to refresh the body. The mind will be calmby diverting one's attention to relaxation that comes from oneself so that it can make you feel no painDuring relaxation, this frees a person from various daily anxieties (Perry & Potter, 2005).

Auogenic relaxation also affects depression in the elderly.Research conducted by Supriadi, Hutabarat and Putri (2015) concluded that there was an effect of autogenic relaxation therapy on depression in the elderly (p = 0.0001). Respondents said they felt more comfortable with themselves and their environment. While other respondents said that they began to take part and participate in activities at the orphanage. According to Supriadi, et al (2015) relaxation techniques help the body to carry commands through autosuggestion so that it stimulates peripheral arteries and then increases blood flow so that blood flow to the brain stem is sufficient and stimulates the hypothalamus to affect the work of the autonomic nerves so that it stimulates the sympathetic and parasympathetic nerves then causes the body to produce beta-endorphin hormones. So that a feeling of relaxation and pleasure arises and can reduce stress and tension. Autogenic relaxation is an exercise that can be created by yourself by empowering an individual's power to carry out self-care. Other studies have shown that autogenic relaxation also has an effect on lowering blood pressure in cases of hypertension. In Mardiono's research (2016), it was found that autogenic relaxation had a significant effect on reducing blood pressure in respondents with hypertension (p = 0.000).

The studies mentioned above and this study support each other to explore the application of autogenic relaxation therapy in various cases. This benefits the foundation for the broad application of autogenic relaxation so that it is expected to become an applicable evidence based research. The positive effect of autogenic relaxation in this study showed that chest pain after ACS attacks could be reduced by applying autogenic relaxation.

IV. Conclusion

Based on the research objectives, it can be concluded as follows:

1. Characteristics of respondents in this study the majority of male (77.8%). Based on the age characteristics, it was found that the age range of the respondents was 51-69 years with a mean of 59.8 years.
2. Autogenic relaxation had a significant effect on decreasing the chest pain scale in post-ACS respondents (p=0.000)

Suggestions

Based on the conclusions above, the suggestions are as follows:

1. For educational institutions, the results of this research can be used as additional data information and can be used for further research
2. For health institutions, it is hoped that nurses can choose non-pharmacological pain management as an alternative to reducing pain and reducing painsocialize the application of the results of this study.
3. For researchers, it is hoped that they can conduct research on the positive effect of autogenic relaxation on other related variables.

References

Bonow, R. O. & Gheorghiade, M. (2004). The diabetes epidemic: A national and global crisis. *Am J Med, 116 Suppl 5A*, 2S-10S.

Brown, V. L. (2010). The assessment of cardiovascular disease risk in relation to the built environment and race. University of Pittsburgh. *ProQuest Dissertations and Theses.*

Bremer, A., Dahlberg, K., & Sandman, L. (2012). Balancing between closeness and distance: emergency medical service personil`s experinces of caring for families at out of hospital cardiac arrest and sudden death. *Journal Pre Hospital & Disaster Medicine*. 27(1): 42-52

Chobanian, A. V., Bakris, G. L., Black, H. R., Cushman, W. C., Green, L. A., Izzo, J. L., Jr., et al. (2003). Seventh report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure. *Hypertension, 42*(6), 1206-1252.

Fithriana, D., Marvia, E. & Putra, A. A. (2016). Perbandingan pemberian terapi relaksasi autogenik dan aroma terapi terhadap penurunan tingkat nyeri haid (dismenore) pada siswi di MTs NW Samawa Sumbawa Besar. Prima, Vol. 2 No. 2

PP & PL Depkes. (2006). Pedoman Teknis Penemuan Dan Tatalaksana Penyakit Hipertensi. Jakarta : Ditjen PP & PL Depkes

Ditjen PP & PL Kemenkes RI. (2010). *Deteksi Dini Faktor Risiiko Penyakit Jantung dan Pembuluh Darah.* Jakarta : Ditjen PP & PL Kemenkes RI.

Ditjen PP & PL Kemenkes RI. (2011). *Pedoman Pengendalian faktor Risiko Penyakit Jantung dan Pembuluh Darah*. Jakarta : Ditjen PP & PL Kemenkes RI.

Ditjen PP & PL Kemenkes RI. (2011). *Profil Pengendalian Penyakit dan Penyehatan Lingkungan tahun 2010*. Jakarta : Ditjen PP & PL Kemenkes RI.

Framimgham Heart Study. (2012). *General Cardiovascular Disease*. http://www.framinghamheartstudy.org/risk/gencardio.html.

Goldston, K. & Davidson, P. M. (2003). Guidelines for reducing risk in heart disease: Implications for nursing practice and research. *Australian Nursing Journal, 11*(6), C1-C4.

Greenawalt, J. A. (2008). *Modifiable cardiovascular risk factors in the early adolescent period.* University of Pittsburgh). *ProQuest Dissertations and Theses.*

Halcomb, E. J., Davidson, P. M., Yallop, J., Griffiths, R., & Daly, J. (2007). Strategic directions for developing the australian general practice nurse role in cardiovascular disease management. *Contemporary Nurse : A Journal for the Australian Nursing Profession, 26*(1), 125-35.

Hasselquist, I., Riva, RNG., Herlitz., et all. (2015). Early cardiopulmonary resusciation in out – of hospital cardiac arrest. The New England Journal of Medicine. 372 (24): 2307-15.

Kusmiran, E., Manalu, L. O. & Umanah, D (2014). Relaksasi nafas dalam dan relaksasi autogenik terhadap respons skala nyeri pada ibu post seksio sesarea. Jurnal INJEC Vol. 1 No. 1 : 40–44

Kusmana, D. (2008). *Olahraga untuk orang sehat dan penderita penyakit jantung.Ed. 2.* Jakarta : Balai Penerbit FKUI.

Kementerian Kesehatan RI. (2014). Situasi kesehatan jantung. Pusat Data dan Informasi Kementerian Kesehatan RI.

Lewis et al. (2007). *Medical Surgical Nursing : Assessment & Management of Clinical Problem.* St.Louis : Mosby.

Libby, P., Bonow, R.O., Mann, D.L., Zipes, D.P., & Braunwald, E. (2008). *Braunwald's heart disease : A textbook of cardiovascular medicine*. Philadelphia : Saunders Elsevier.

Macleod, H. M., & McNally, E. M. (2008). A pilot study of a family history risk assessment tool for cardiovascular disease. *Journal of Genetic Counseling, 17*(5), 499-507. doi:10.1007/s10897-008-9174-z.

Mahar, L.K. & Escott-Stump, S. (2008). *Krauses's food nutrition & therapy nutrition therapy. (12th ed.).* St. Louis : Saunders Elsevier.

Mardiono, S. (2016). Pengaruh relaksasi autogenik terhadap penurunan tekanan darah pada klien hipertensi di Wilayah Kerja Puskesmass 23 Ilir Palembang. Jurnal Keperawatan Soedirman (The Soedirman Journal of Nursing), Volume 11, No.3

Myrta, R. (2013). Estimasi tingkat risiko kardiovaskuler dengan systemic coronary risk estimation (SCORE). Jurnal CDK-201 40(2): 142-144

Myerburg, R.J. & Cassetallanos, A. (2016). Cardiac arrest and sudden cardiac death. Dalam Brauwald`s heart disease. Elseiver Inc. 821-60

Marteau, T. M., & Kinmonth, A. L. (2002). Screening for cardiovascular risk: Public health imperative or matter for individual informed choice? *British Medical Journal, 325*(7355), 78-80.

Nelms, M., Sucher, K., & Long, S. (2007). *Nutrition therapy & pathophysiology*. Belmont, CA : Thomson Brooks/Cole.

Perkumpulan Endokrinologi Indonesia. (2006). *Konsensus Pengelolaan dan Pencegahan Diabetes Melitus Tipe 2 di Indonesia*. Jakarta : Perkeni.

Dinas Kesehatan Prop Jawa Tengah. (2014). Profil kesehatan provinsi Jawa Tengah. Dinkes Prov. Jawa Tengah.

Rehill, N., Beck, C. R., Yeo, K. R., & Yeo, W. W., (2006). The effect of chronic tobacco smoking on arterial stiffness. *British Journal of Clinical Pharmacology, 61*(6), 767-773.

Robinson, F. (2007). New tool to help identify patients at high risk of cardiovascular disease. *Practice Nurse, 34*(2), 11-12.

Riset Kesehatan Dasar. (2007). *Pedoman Pengisian Kuesioner Riset Kesehatan Dasar*. Jakarta : Tim Riset Kesehatan Dasar

Sobbry, K. M. (2011). *Assessment of cardiovascular disease risk in firefighters.* DYouville College). *ProQuest Dissertations and Theses.*

Skor Kardiovaskuler Jakarta. https://sourceforge.net/projects/skorkardiojkt/ diakses 23 September 2016.

Supriadi, D., Hutabarat, E. & Putri, V. P. (2015). Pengaru terapi rlaksasi autgenik terhadap depresi pada lanjut usia di Balai Perlindungan Sosial Tresa Werdha Ciparay Bandung. Jurnal Kesehatan Kartika Vol. 10 No.2.

Waspadji, S & Suyono, S. (2007). *Daftar bahan makanan penukar : Petunjuk praktis perencanaan makan sehat, seimbang, dan bervariasi*. Jakarta : Balai Penerbit FKUI.

World Health Organization. (2003). *Diet, Nutrition and The prevention of Chronic Disease*. Geneva : World Health Organization

World Health Organization (2007). *Prevention of Cardiovascular Disease Guidelines for assessment and management of cardiovascular risk*.

World Health Organization. (2011). *Global atlas on cardiovascular disease prevention and control.* http://www.who.int/cardiovascular_diseases/en/

World Heart Federation. (2012). *Cardiovascular Disease Risk Factors*. . http://www.world-heart-federation.org/cardiovascular- health/cardiovascular-disease-risk factors/