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Submission date: 26-Aug-2022 03:10PM (UTC+0700)

Submission ID: 1887351333

File name: Spiritual_Distraction_Therapy_on_Chronic_Joint_Pain.pdf (352.29K)

Word count: 5879

Character count: 31439

Spiritual Distraction Therapy on Chronic Joint Pain Among Elderly in Coastal Area

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Keywords:

Joint Pain, Chronic, Elderly,
Spiritual Distraction, Therapy

ABSTRACT

This aim research was to determine the effect of spiritual distraction therapy in reducing chronic joint pain among elderly living in coastal area. This study was quantitative with quasi-experiment and pre-post-test control group design. The number of respondents was 70. Spiritual distraction therapy was given during seven days. The data collection used observation sheet which contain PQRST pain assessment and the VAS pain scale. Statistical test using the Wilcoxon and Mann-Whitney tests. The study results of the Wilcoxon rank test showed that there was a significance difference in pain area (p-value<0.000) and the time of pain (p-value <0.000) in the treatment group. The Mann Whitney test results showed that there was a significance difference between control and treatment group in pain area (p-value=0.038) and the time of pain (p-value=0.45). The spiritual distraction therapy was effective in reducing the pain area and time of pain occurrence of joint pain in the elderly who live in coastal area. Further study needs to explore the effect of spiritual distraction on pain in other population.



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1. Introduction

Elderly is the age group of a person which classified to the final stage of the human life phase. The aging process is a normal or physiological development process that occurs in the elderly in the final stages of the human life cycle which is a natural fact that cannot be avoided by the elderly [11]. The decline of physiological functions due to the aging process induced several diseases caused by degenerative processes in the elderly. Health problems often experienced by the elderly include non-communicable diseases, namely hypertension, arthritis, cerebrovascular accident (CVA), and diabetes mellitus [28]. Decreased musculoskeletal organ function in elderly for example is arthritis. Arthritis is a joint inflammation which can affect multiple joints [16]. The two most common types of arthritis are osteoarthritis (OA) and rheumatoid arthritis (RA). Pain is the most common complaint for the elderly who experience arthritis [14].

According to the World Health Organization (WHO) in 2016, there were 335 million people in the world

who experience joint pain. Arthritis is a common musculoskeletal health problem. The prevalence of knee rheumatoid arthritis in the world is 3.8% and hip osteoarthritis is 0.85%. And the prevalence of rheumatoid arthritis in the world is 0.24% and there has been no significant change in the last 20 years. Joint pain is mostly experienced by women [29].

Physiologically, arthritis pain often experienced by elderly. The pain is mostly caused by inflammation caused by chemical mediators in the body, where other chemical mediators can cause pain. Pain stimulation plays a role in increasing prostaglandins [2]. Degenerative diseases including arthritis are related to the lifestyle of the elderly. A high intake of purine protein diet can increase pain intensity felt by the elderly. The elderly who live in coastal area seem to have low intake of fruits and vegetables. This condition also exacerbates pain, which appears as a clinical manifestation of arthritis [7].

As a nurse, pain management can be provided with a non-pharmacological approach. This pain relief intervention is one of the independent nursing interventions. Pain management includes relaxation, guided imagery, music therapy, distraction, play therapy, biofeedback techniques, massage, and hypnosis. Distraction is conducted by focusing the patient's concentration on a specific object to avoid pain, which is a part of effective cognitive technique. Distraction reduce the occurrence of pain perception by stimulating the descending system which stimulates pain [23].

A good relaxation state causes cell in the body experience natural healing, which will result in refreshing and restoring that are produced by hormones in the human body. Likewise, the benefits of dhikr relaxation will provide a calm response in the individual and peace that can improve the physical and spiritual health conditions of the individual [15]. Spiritual therapy can be used as a form of spiritual treatment which is a form of praying consisting of the subcategories "worship and prayer", "resorts" and "beliefs" and "religious beliefs" with the subcategories of "divine provision" and "divine blessings", so that Spirituality increases elderly's comfortable [5].

Relaxation with spiritual distraction may be one of the pain management in arthritis. As non-invasive pain relief measures may require some exercise in the elderly. This study was aimed to examine the effect of spiritual distraction therapy to reduce the area and time of joint pain occurrence in elderly who live in coastal area.

2. Method

This study was a quantitative study with quasi-experimental approach with pre-post-test with control group design. The population of this study were all elderly who experienced osteoarthritis pain in the coastal area of the Batang-Batang Health Center Sumenep Madura as many as 124 elderly. The sample in this study were the elderly who experienced osteoarthritis pain in the coastal area of the Batang-Batang Public Health Center Sumenep Madura through the inclusion and exclusion criteria approach. In determining the diagnosis of Osteoarthritis, a clinical examination is carried out to determine the positive respondent suffering from osteoarthritis, that is if it meets at least 3 of the 6 criteria according to the American College of Rheumatology (ACR), including age > 50 years, morning stiffness < 30 minutes, crepitus, tenderness in the knee, bone enlargement, bone enlargement, and unwarm palpation around the joint [4]. The inclusion criteria were 1). Willing to be a research respondent by signing an informed consent. 2). Able to communicate verbally and nonverbally 3). Respondents who during this study experienced joint pain on a scale of 3-10 4). The results of the Mini Mental Status Examination (MMSE) with score 24 – 30, means there was no cognitive impairment 5). The results of the BDI (The Beck Depression Inventory) measurement with a score of 0-7 means there was no or minimal depression and mild depression. The

exclusion criteria are 1). Respondents during the research process did not participate in routine activities for seven days where the intervention was carried out. 2). Respondents were currently hospitalized in a hospital or health center 3). Response Coma.

The sampling technique was purposive sampling which would be divided into 2 groups, namely **treatment group and control group**. The samples were 70 elderly people based on inclusive criteria, exclusion of respondents.

The research procedure included determining the sample according to the inclusion and exclusion criteria in the elderly who experienced osteoarthritis pain in the coastal area of Batang-Batang Public Health Center Sumenep Madura, with purposive sampling technique, as many as 70 samples. Respondents were given *informed consent*, they who were willing and signed the *informed consent* were positioned as research samples, and respondents were grouped into two groups. There were 35 groups of elderly were given Spiritual Distraction Therapy and 35 as control group and researchers conducted an Ethics Test at the Institute of Health Research Ethics Committee of the Republic of Indonesia with result of obtaining ethically appropriate information from the health research ethics committee number 020/KEPK/SDS/II/2021, was declared ethically fit according to the 7 2011 WHO standards.

Study protocol was explained to the elderly before they signed the informed consent. The data collection tools used the pain assessment format (PQRST) and the VAS pain scale and observation sheets [15]. The permission to conduct this study was received from the Institutional Review Board of a university (Approval No. 020/KEPK/SDSII/2021).

Before conducting the intervention, pre-test for pain assessment in the elderly was carried out. The therapy was delivered to the treatment group for 7 days. Statistical test using Wilcoxon and Mann Whitney were performed after the data was collected. Previously, the data normality test was carried out using Kolmogorov-Smirnov because the number of samples was more than 50 respondents.

3. Result

The study result showed that most of the respondents aged 60-74 years (81.4%), female (85.7%), uneducated (64.3%) and work as farmer (51.4%), most of the respondents with marital status were widows/widowers (82.8%) respondents, the independence level of respondents is mostly able to activity as many as (74.3%) respondents, based on cognitive aspects, most respondents in the normal category are (87.1%) respondents and Beck Depression Inventory mostly respondents in category of Depression None/at least as many as (84.3%) respondents.

Table 1. Characteristics of Respondents

Respondent characteristic		n	%
Age (year)			
1	60-74 (elderly)	57	81,4%
2	75-90 (old)	13	18,6%
3	> 90 (very old)	0	0%
Sex			
1	Male	10	14,3%
2	Female	60	85,7%
Education background			
1	Uneducated	45	64,3%
2	Elementary school	25	35,7%
3	Junior high school	0	0%
4	Senior high school	0	0%

Job			
1	Jobless	17	24,3%
2	Farmer	36	51,4%
3	Merchant	17	24,3%
Marital Status			
1	Married	12	17,2%
2	widows/widowers	58	82,8%
Sulliva Index Katz			
1	Able to make acitivity	52	74,3%
2	Able to do litle assistance	12	17,2%
3	Able to do maxium assistance	6	8,5%
4	No activity	0	0%
Mini Mental Status Examination			
1	Normal	61	87,1%
2	Probable cognitive impairment	9	12,9%
3	Definitive cognitive impairment	0	0%
Beck Depression Inventory (BDI)			
1	No depression	59	84,3%
2	Mild depression	11	15,7%
3	Moderate depression	0	0%
4	Severe depression	0	0%

Table 2. Characteristics of Joint Pain in the Elderly

Pain characteristic	Control group		Treatment group	
	number (Σ)	Percentage (%)	number (Σ)	Percentage (%)
Provocate				
Cold Air (Morning and evening)	23	65.71	20	57.14
Exhaustion	6	17.14	7	20.00
Movement	6	17.14	8	22.86
Total	35	100.00	35	100.00
Quality				
Continously (stabbing)	14	40.00	12	34.29
Vanish-emerge (striking)	21	60.00	23	65.71
Total	35	100.00	35	100.00
Region				
single joint	7	20.00	14	40.00
two joint	19	54.30	17	48.57
> two joint	9	25.70	4	11.43
Total	35	100.00	35	100.00
Scale				
No pain (0)	0	0.00	0	0.00
Mild (1-3)	0	0.00	4	11.43
Moderate (4-6)	3	8.57	22	62.86
Severe (7-8)	31	88.57	9	25.71
Very severe (10)	1	2.86	0	0.00
Total	35	100.00	35	100.00
Time (minutes)				
once a day (10-25)	11	31.40	14	40.00
Twice a day (25-40)	8	22.90	16	45.71
> twice a day (40-55)	16	45.70	5	14.29
Total	35	100.00	35	100.00

Table 2 shows that the cause of elderly pain mostly when the air was cold or in the morning (65.71%), felt like being stabbed and vanish and emerge (60%), two joint areas (54.30%) was mostly complained, mostly

reported severe pain (88.57%), the time the pain occurred was felt more than twice per day (45.70%) with a duration of 40-55 minutes. Most of the pain characteristics in the treatment group were felt when the air was cold or in the morning (57.14%), which felt like being stabbed and vanish and emerge (65.71%). Nearly half of the pain sites felt were complained of in the joint area with the location of the two joints (40%). Most of respondents complained moderate pain scale (62.86%). Almost half of the time the pain occurred (45.71%) was felt twice per day with a duration of 25-40 minutes.

Table 3. Pain Area Differences in Joint Pain Occurrence in treatment group before and after the intervention

Pain Area	(Pre)		(Post)		
	Σ	%	Σ	%	
Treatment group	single joint	7	20.00	14	40.00
	two joint	15	42.90	17	48.57
	>two joint	13	37.10	4	11.43
total	35	100%	35	100	
Control group	single joint	7	20.00	7	20.00
	two joint	21	60.00	19	54.30
	>two joint	7	20.00	9	25.70
Total	35	100%	35	100	

Wilcoxon Rank Test at Pre and Post Test in treatment group =sig. 0.000 (<0,05)
Mann-Whitney U at Post Test between control and treatment group=sig. 0.038 (<0,05)

Table 3, almost half of the data in the treatment group before spiritual distraction therapy (42.90%) complained of pain in two joints, and after being given spiritual distraction therapy, almost half (40%) experienced a reduction in the area of joint pain in only one joint. Whereas in the control group, most (60%) complained of pain in two joints and after spiritual distraction therapy most (54.30%) complained of pain in two joints.

⁴ The results of statistical tests using the Wilcoxon rank test obtained p-value<α, namely ⁹0.000, indicating that there is a significant difference between before and after spiritual distraction therapy. Mann Whitney U with p-value<α, namely 0.038 indicates a difference between the control group and the treatment group. It can be concluded that spiritual distraction therapy is effective in reducing the area of joint pain in the elderly.

Table 4. Differences in the time of joint pain in respondents

Time of Pain	Before (Pre)		After (Post)		
	Σ	%	Σ	%	
treatment group	Once a day (10-25 minutes)	4	11.40	14	40.00
	Twice a day (25-40 minutes)	15	42.90	16	45.71
	> Twice a day (40-55 minutes)	16	45.70	5	14.29
Total	35	100%	35	100.00	
control group	Once a day (10-25 minutes)	8	22.90	11	31.40

Twice a day (25-40 minutes)	15	42.90	8	22.90
> Twice a day (40-55 minutes)	12	34.30	16	45.70
Total	35	100%	35	100
Wilcoxon Rank Test in <i>Pre</i> and <i>Post Test</i> treatment group =sig. 0,000 (<0,05)				
Mann-Whitney U test in <i>Post Test</i> treatment and control group =sig. 0,045 (<0,05)				

Based on the table 4, almost half of the data in the treatment group before spiritual distraction therapy (45.70%) complained of pain more than twice a day with a duration of 40-55 minutes, and after being given spiritual distraction therapy, almost half (45.71%) experienced decreased joint pain only twice a day with a duration of 25-40 minutes. Whereas in the control group almost half (42.90%) complained of pain twice a day with a duration of 25-40 minutes, and after spiritual distraction therapy, almost half (45.70%) complained of pain more than two times a day with a duration of 40-55 minutes.

Wilcoxon rank test obtained $p\text{-value} < \alpha$, namely 0,000 indicates a significant difference between before and after spiritual distraction therapy in the treatment group. Mann Whitney U indicates that $p < \alpha$ is 0.45 show a difference between the control group and the treatment group. It can be concluded that spiritual distraction therapy is effective in reducing the time of joint pain in the elderly.

4. Discussion

The results showed that most of the respondents (81.4%) were aged 60-74 years. The aging process is not a disease condition, but a process that causes cumulative changes and decreasing internal organ function. The decrease of musculoskeletal function is characterized by joint pain [9]. The living conditions of a person will change due to their old age toward the activity and job. Humans will naturally enter the old age and run new conditions to adapt their environment [30].

Elderly as the final stage of life is a normal developmental stage that will be experienced by every individual, and it is a reality that cannot be avoided, with increasing age causes physiological functions to decrease due to the aging process so that several diseases caused by degenerative processes appear in the elderly [30].

The control group results showed almost a half respondents experienced joint pain in two joints, while the treatment group, experienced the same thing. There was pain in the knee joint area in both groups, which is a degenerative joint disease and a symptom of rheumatoid arthritis [24]. Management in reducing pain in the knee includes spiritual distraction therapy client's sensations, feelings, behavioral responses and physiological activities [13]. Pain experiences can also refer to one or all three pain phases of anticipation, presence, and aftermath of pain. In addition, the pain experience can include the client's actions and the impact that other people have given to the client during pain [12].

In carrying out spiritual therapy it is necessary for nurses to consider the patient's beliefs when planning interventions [17], where the client care model emphasizes teamwork between nurses and spiritual professionals with an existential function view that identifies the role of clinicians in promoting full health, including spiritual well-being and view of open pluralism, which highlights the importance of spiritual healing in improving health [6].

The statistical tests result using Wilcoxon rank test obtained $p\text{-value} < \alpha$, namely 0.000, indicating a

significant difference between before and after spiritual distraction therapy. The statistical result using Mann-Whitney u with $p\text{-value} < \alpha$, it was 0.038, indicating a difference between the treatment and control group. It can be concluded that spiritual distraction therapy is effective in reducing the area of joint pain in the elderly. The occurrence of pain and inflammation in arthritis is due to an immunologic process in the synovia resulting in synovitis and formation of pannus which eventually cause damage to the joints. Meanwhile, if uric acid crystal deposits in the synovial / joint cavity will result in inflammation of gouty arthritis. The knee is a part of the large and complex joints in the body; connects the bones, namely the thigh (femur) and the shin bone (tibia); the joint consists of smaller bone beside the tibia (fibula) and the kneecap or patella [29].

Osteoarthritis is a type of arthritis that is caused by disruption and eventual loss of cartilage from one or more joints [29]. Cartilage is a protein constituent that acts as a "cushion" between the bones of a joint. Osteoarthritis is also known as degenerative arthritis. Joints connect with bones that allow friction to occur, to protect bones from friction is cartilage. The occurrence of erosion of cartilage and reduced fluid in the joints, cartilage consists of soft fluid collagen to strengthen joints, cartilage also consists of proteoglycans that make elastic tissue and water. Chondrocytes' job is to form proteoglycans and collagen, chondrocytes fail to synthesize matrix, fail to maintain a balance between degradation and synthesis of extracellular matrix, excessive collagen production in types I, III, VI, X and short proteoglycan synthesis, causing changes in the diameter and orientation of collagen fibers change the biomechanics of cartilage. Synovitis occurs synovitis causes pain and discomfort, Synoviocytes experience inflammation to produce matrix metalloproteinases, Synovites experience cytokines that will release into the joint cavity and damage the cartilage matrix and activate the chondrocytes [28].

The knee joint supports the weight of human body and affect the elderly daily activities the knee joint is also a pivot to maintain the lower limb remains in place and the leg move flexibly. bones that lose fluid are increasingly experiencing brittleness and kyphosis in the waist, the wrist fingers experience limited motion, and the intervertebral discs thin out and become reduced in height, the enlargement of the tendon joints leads to contraction, cramps become tremors in the muscles [16].

Pain and relief often occurs in rheumatoid arthritis and it is persistent. As a result, it can cause complaints of fatigue due to the need for a lot of physical and emotional energy to overcome the pain [32]. In the control group, half respondents felt pain more than twice a day with a duration of 40-55 minutes, while the treatment group nearly half felt pain twice a day with a duration of 25-40 minutes. Feeling of discomfort or pain is one of the most common chronic conditions experienced by elderly, pain does not heal and continues affecting the majority of the elderly globally around 70% of the elderly population experiencing joint pain [8]. [19] states that comfort is a need for everyone, comfort is physical, psycho-spiritual, environmental and socio-cultural comfort, so that it is free from pain. A person feeling pain means that his/her comfort needs are not met, this is the role of nurse to fulfill the need for comfort, with various pain management provided to assess and treat pain in the elderly [33].

Pain is generally divided into two, namely acute pain and chronic pain. Acute pain occurs in individuals with suddenness and pain is felt quickly disappears being less than six months, while chronic pain occurs slowly and the time of pain is more than 6 months and may occur chronically; pain in a person includes pain tolerance or pain threshold [11]. Pain on a mild and moderate scale can be managed by non-pharmacologically. this is chosen as an effort to reduce pharmacological side effects in the elderly who have decreased organ function so as not to increase the organ workload [27]. Non-pharmacological managements that can be done is to teach the elderly to do spiritual distraction techniques to divert their pain with spiritual

methods, namely remembering God according to their beliefs [12]. Elderly with hip osteoarthritis in Poland who underwent medical therapy were also said that it was more effective to take a religious approach [31].

Therapy using distraction techniques may reduce the feeling of pain and increase tolerance to pain. The gate control theory that underlies the distraction theory explains that in the spinal cord, receptor cells that receive peripheral pain stimulation are inhibited by stimulation from other nerve fibers. When a person receives excess sensory stimuli it blocks pain impulses to the brain and reduce pain. Fun and soothing stimulation carried out by the elderly will stimulate the secretion of endorphins so that there will be a decrease in pain intensity [25]. Clients who believe that participating regularly in religious rituals in the community are more likely to increase their beliefs and become part of a religious coping strategy in dealing with a person's health problems [3].

In general, spiritual distraction techniques can be done by creating calm atmosphere and positioning the elder' comfortably either in a sleeping or sitting position. The position of his legs crossed and his eyes closed to do solemn dhikr which they read either silently or voiced. The respondent focuses on the breathing of the abdominal muscles, by doing deep breathing techniques and focusing on the object in mind so that the body will experience relaxation with ease and calmness of mind; if fails, then it is necessary to repeat it in a relaxed way and stay focused on the object of spiritual distraction [23].

The spiritual distraction technique is the same as doing the guided imagery distraction technique, namely by positioning comfortably on the client. The client is instructed to concentrate on pleasant images by doing the process of relaxing his body. The duration of time can be done for 10-30 minutes in both elderly or children where religious beliefs and practices positively affect attitudes towards health problems and a personal ability to survive fulfilling his or her comfort needs [22].

The Wilcoxon rank test result obtained $p\text{-value} < \alpha$, namely 0,000 indicates a significant difference between before and after spiritual distraction therapy in the treatment group. The Mann Whitney U showed that $p < \alpha$, namely 0.45, indicates a difference between the control group and the treatment group, it can be concluded that spiritual distraction therapy is effective in reducing the time of joint pain in the elderly.

Pain that occurs in the skin or tissue under the skin tasted like burning as well as being hit by a sharp knife or scissors, while pain that occurs in the ligament, blood vessels and nerves has a diffuse nature and takes longer than the pain underneath. Among these skin on internal organs, namely pain in the abdominal cavity, thoracic and so on. In providing nursing interventions toward the elderly time pain, namely by performing spiritual distraction techniques like doing dhikr is a way to create pleasant state of body relaxation [1]. Spiritual imagination using a specially designed imagination of a person to achieve a positive effect overcoming pain. Imagination creates a mental image of the individual by performing dhikr and submitting to God the creator [15].

In pain management, adaptive coping mechanisms are needed. Providing intervention with spiritual distraction techniques relieves the chronic pain. In all phases of treatment and follow-up care, the spiritual dimension can play an important role in relieving pain [20]. Chronic pain is often being a problem because it is not resolved, then a spiritual crisis accompanies the condition. Spiritual healing and meditation help relieve the suffering of the person [21].

Spiritual distraction techniques increase the psycho-physiological responses such as immune changes function and decreased sympathetic nervous system activity that affects pain [1]. So that it can be used as a

behavioral intervention to deal with anxiety, stress and pain, where therapy based on religion will provide comfort when sadness and misfortune strikes [10]. A way to do spiritual distraction techniques can be done by imagining something positive by surrendering to God and doing dhikr independently according to the respondent's belief so that it can reduce pain, God said, " We send down in the Quran healing and mercy for the believers" (Asra, 82) [18]. Physiologically it can neutralize the mind and give peace. The mind can be trained to focus on the healing imagination. so that positive or calming imagination can reduce symptoms of pain [26].

6. Limitation

This study used a quasi-experimental design by comparing the control group and treatment group. This researcher had limitations. First, respondents focused on the elderly who live in coastal areas so that further research needs to be done in other locations. Second, all respondents were Muslim so that the spiritual therapy given is in accordance with Islamic religious beliefs.

5. Conclusion

Spiritual distraction therapy is effective in reducing chronic joint pain (area and time) in the elderly who lives in the coastal area. Since we only apply a spiritual aspect for joint pain therapy, further research needs to apply other therapies to be used as a comparison or combination so that the most effective therapy can be found to treat joint pain in the elderly.

Source of Funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not for-profit sectors

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Conflict of interest

The authors have no conflict of interest to declare

Ethical approval

This study was approved by the STIKES Dr. Soebandi of Research Ethics committee. Before starting the research, informed consent was obtained from participants. All procedures of the research were conducted according to the World Medical Association (WMA) Declaration of Helsinki on ethical principles for medical research involving human subjects.

8

Authors contributions

SH conceived and designed the study, conducted research, and provided research materials. YSA and SH collected, organized, analyzed the data statistically. SH, YSA and EDM collected and interpreted data. SH, YSA, RI wrote the introduction and collected data. SH, MH, and RI wrote results. All authors have critically reviewed and approved the final draft and are responsible for the content and similarity index of the manuscript.

Acknowledgment

The authors would like to thank all participants of this study for sharing their knowledge, perceptions, and experiences. As the corresponding author, I had full access to all the data in the study and take responsibility for the integrity of the data and the accuracy of the data analysis

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