Article

Effectiveness of Acupuncture Therapy Combination of Ginger Patch on Changes in Pain Scale in Cases of Knee Pain in Tempak Village, Candimulyo District

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ABSTRACT

Knee pain is a common complaint in the pre-elderly group and can be caused by various factors, such as osteoarthritis, strenuous physical activity, or degenerative processes. Knee pain management can be from pharmacological and non-pharmacological therapies, such as acupuncture and herbal administration. This study aims to determine the effectiveness of acupuncture therapy combined with the provision of patches (Ginger Patch) on changes in the pain scale in cases of knee pain. This study used a quasi-experimental research design with a nonequivalent control group design with a purposive sampling technique. The research subjects consisted of 32 pre-elderly people of females gender. Pain measurements were taken using the Numeric Rating Scale (NRS) before and after the intervention. The points used were EX LE-2 Heding, ST 36 Zusanli, LV 7 Xiaguan, and SP 6 Sanyinjiao. Pain measurement used the Numeric Rating Scale (NRS). The results of the Wilcoxon and Mann-Whitney tests showed a significant change in the pain scale in the experimental group compared to the control group (p<0.05). the combination of acupuncture and patch therapy (Ginger Patch) is more effective in changing the pain scale in cases of knee pain.

I. INTRODUCTION

Pain is an unpleasant sensory and emotional experience for sufferers. Pain is associated with actual or potential tissue damage [1]. The most common pain experienced by people is musculoskeletal pain [2]. Knee pain is a growing health problem that occurs in the knee or around the knee that arises due to damage to the tissues or components of the knee joint [3]. According to Traditional Chinese Medicine (TCM), knee pain includes Bi syndrome. Bi syndrome is a syndrome due to exogenous pathogenic factors characterized by obstruction of Qi and Xue in the meridians due to invasion of external pathogens such as wind, cold, and dampness. Knee pain can occur due to endogenous pathogens such as improper diet, trauma, and fatigue [4].

Knee pain can be caused by several risk factors, including age, gender, obesity, genetics, activities that affect the knee joint, weakness of the muscles around the

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knee joint, and knee alignment[5]. Knee pain is a disease often experienced by the pre-elderly group[6]. Pre-elderly is someone who experiences the aging process in various aspects, such as health, social, and economic[7]. A person who is 45 years old or older can be categorized as pre-elderly or pre-elderly. Pre-elderly are vulnerable to various non-communicable/ degenerative diseases such as parkinson's, alzheimer's, huntington's, sclerosis, and joint pain[8]. Joint pain can be caused by strenuous physical activity, infrequent knee movement, injuries such as sprains and muscle strains[9].

Based on 2018 data, the prevalence of those suffering from knee pain disease in Indonesia reached 7.3%. At the age of 45-55 years reached 11.1%. Knee pain in Indonesia is quite high, reaching 6.1% in men and 8.5% in women. The percentage results show that the highest incidence of knee pain is experienced by women[10]. The high prevalence of knee pain, especially in women, warrants further research. The group aged 41-59 years mostly suffers from knee pain[11]. Women have a higher risk of developing knee pain. Factors that can affect women include postmenopausal hormonal changes, obesity, and advanced age. Someone still able to work is prone to knee pain [12]. This research is expected to be an illustration for the handling of knee pain cases in women.

In Central Java in 2018, knee pain patients amounted to 6.78%. The percentage of knee pain in Magelang reached 3.44%. The highest percentage of employment is laborer (farmer) at 9.78% [13]. Based on the description above, the researcher is interested in conducting research with the title "The Effectiveness of Acupuncture Therapy Combination of Ginger Patch on Changes in Pain Scale in Cases of Knee Pain in Tempak Village, Candimulyo District" because knee pain is a disease that is often encountered, especially in villages and people have not used acupuncture therapy with a combination of giving patches (Ginger Patch) on changes in pain scale".

II. METHODS

Based on the objectives of this study, the research method entitled "The Effectiveness of Acupuncture Therapy Combination of Ginger Patch on Pain Scale Changes in Knee Pain Cases in Tempak Village, Candimulyo District" is quantitative research. The research design used in this study is Quasy Experimental with a research design of nonequivalent control group design. In this study, researchers divided into 2 groups. The experimental group was given acupuncture therapy treatment with a combination of patches (Ginger Patch) as X1 and the control group was given acupuncture therapy treatment as X2.

This research was conducted in Tempak Village, Candimulyo District, Magelang. The time of this research began in October 2024 - March 2025. The sampling technique used in this study was purposive sampling method. Statistical test data in this study were processed using Shapiro-Wilk test for normality test, homogeneity test using Levene Test, and hypothesis testing using Mann-Whitney and Wilcoxon tests.

III. RESULT

This research begins with a preliminary study conducted in October 2024 to determine the number of research subjects who experience knee pain. The results of the preliminary study obtained 32 research subjects who met the inclusion criteria. The research subjects were divided into two groups, and each group consisted of 16 research subjects. All research subjects received therapy for 8 times therapy.

Table 1. Characteristics of Respondents

Syndrome	N	%
Age (years)		
45	3	9.4
46	2	6.3

Syndrome	N	%
47	4	12.5
48	1	3.1
49	2	6.3
50	1	3.1
51	1	3.1
52	1	3.1
53	2	6.3
54	7	21.9
55	8	25.0
Jobs		
Housewife	9	28.1
Merchant	6	18.8
Laborer (Farmer)	11	34.4
Self-employed	5	15.6
Teacher	1	3.1
Differentiation syndrome		
Bi because of the wind	8	25.0
Bi by cold	13	40.6
Bi due to moisture	4	12.5
Qi and *Xue* Stagnation	5	15.6
Qi and *Xue* Deficiency	-	-
Liver and Kidney Deficiency	2	6.3

Based on Table 1, it can be seen that the age frequency of the most research subjects at the age of 55 years as many as 8 research subjects (25.0%). For work, most of the research subjects were laborers (farmers), as many as 11 research subjects (34.4%). The most common syndrome differentiation is Bi syndrome due to cold in as many as 13 research subjects (40.6%).

The results of the Mann-Whitney test for normality test on the pain scale have a significance value of $p < 0.050$. The mean result of the experimental group was 1.25 and the control group was 2.13. Based on these results, it shows that the experimental group has a lower value than the control group. This means that Ha is accepted and H0 is rejected, so that in this study acupuncture therapy with a combination of giving patches (Ginger Patch) is effective on changing the pain scale in cases of knee pain.

Based on Table 2, the Wilcoxon test results in the experimental group have a value (sig.) 0.001 for the pain scale. While in the control group the value (sig.) 0.001 for the pain scale. It can be concluded that the value (sig.) of the pain scale is $p < 0.050$ which means Ha is accepted and H0 is rejected

Table 2. Wilcoxon Test

Group	Mean	p
Eksperiment	1.25	<0.001
Control+	2.13	

IV. DISCUSSION

The results of this study will be interpreted and discussed based on theories related to previous research. The purpose of this study was to determine the effectiveness of acupuncture therapy combined with the provision of patches (Ginger Patch) on changes in the pain scale in cases of knee pain. The results of this study are as follows: This study found that acupuncture therapy and the provision of patches (Ginger Patch) were effective on changing the pain scale in cases of knee pain in Tempak Village, Candimulyo District.

Stabbing the acupuncture points will activate impulses that start from the nociceptors.[14] In previous studies, local point acupuncture with a combination of clove herbs and local point acupuncture alone can reduce the pain scale.[15] This study is in line with previous research that acupuncture therapy in cases of knee pain with points ST 36 Zusanli and EX LE-2 Heading affects the decrease in pain scale and joint range of motion in cases of knee pain.[16] In another study, LV 7 Xiaguan point can reduce the pain scale in knee pain cases.[17] Manual acupuncture therapy can relieve pain and anti-inflammatory against knee pain.[18]

The results of this study are also corroborated by previous research that the combination of ST 36 Zusanli and SP 6 Sanyinjiao points can reduce pain in cases of knee pain. Acupuncture therapy in cases of knee pain can improve blood circulation, improve cartilage, reduce bone and joint constriction, and reduce the pain scale.[19]

Acupuncture is effective as an alternative or complementary treatment for knee pain. Acupuncture can significantly reduce pain.

Ginger patches were effective in this study. The results of this study are corroborated in previous studies that giving patches (Ginger Patch) can change the pain scale, overcome muscle tension, reduce swelling, help relaxation and improve blood circulation.[20] Koyo is a drug adhesive plaster (transdermal patch) used to relieve pain.[21] *Ginger Patch is a product in the form of a plaster or patch containing ginger extract.*[22] Ginger contains oleoresin or gingerol and essential oils that can facilitate blood flow, anti-inflammatory and anti-oxidant. Ginger can inhibit prostaglandins that cause pain to decrease.[23]

V. CONCLUSION

Based on the data analysis above using SPSS Statistic 27, acupuncture therapy combined with the provision of patches (Ginger Patch) on changes in the pain scale in cases of knee pain in Tempak Village, Candimulyo District with the results of the Mann-Whitney test on the knee pain scale has a value (sig.) 0.005 so that p <0.05 and the results of the Wilcoxon test on the knee pain scale before and after therapy in the experimental group and control group obtained a value (sig.) 0.001 so that p <0.05. This shows that acupuncture therapy combined with patches (Ginger Patch) is effective in changing the pain scale in cases of knee pain in Tempak Village, Candimulyo District. Future research is expected to use a larger sample size and control the research subjects thoroughly so that the results obtained are maximized, can use other measuring instruments such as Western Ontario and McMaster University (WOMAC) or Knee Osteoarthritis Outcome Score (KOOS) to assess knee functional ability, and can use points and herbs that have not been done in previous studies.

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