CARING:
Indonesian Journal of Nursing Science

The Effect of Jamu on Joint Pain in Medan Sunggal, Indonesia

Eqlima Elfira

Lecturer of Surgical-Medical Nursing Department. Nursing Study Program, Universitas Sumatera Utara, Medan - Indonesia

Abstract. Jamu is a traditional medicine with nutritious plants that can reduce joint pain. The purpose of this study was to determine the effectiveness of Jamu to reduce joint pain. This research design uses pre-experimental with one-time case study. The research samples involved ten women with different age groups in consecutive months consuming Jamu. Data analysis using observation sheet VAS (Visual Analog Scale) and binomial test with IBM SPSS 26. The results of the binomial test showed a p-value of .021 < alfa .05 which means that *H0* is rejected and *H*1 is accepted. It's showed that there is an effect of Jamu on joint pain reduction. The findings of this study found that within three days, the respondents felt changes in their joints and their bodies felt healthier It is concluded that Jamu contains herbs in maintaining health and relieving pain.

Keywords: Human, Female, Joint, Pain, Health Status

Received 10 October 2020 | Revised 18 November 2020 | Accepted 26 November 2020

1. Introduction

Joint pain is a common problem that often occurs in one-third of adults followed by shoulder and hip pain. Damage to the joints can interfere with movement and cause pain (David Zelman, 2019). This joint pain is most often experienced by women; this is evidenced by the data that is 29.2 percent higher than men by 22.7 percent. From 2002 to 2014 in the United States, adults with joint pain aged 45 to 64 years amounted to 30.7 percent, while those aged 18 to 44 were 24.9 percent and over 65 years old was 24.3 percent (Report & Bridgman, n.d.). National Health Interview Survey data shows 52.5 million (22.7 percent) adults have doctor-diagnosed arthritis, and 22.7 million (9.8 percent) have arthritis. It's estimated that by 2030, 67 people in the United States will develop arthritis. European Health Interview Survey data in seven countries that 5 percent to 25 percent of joint pain occurs in the knee and hand area (Neogi, 2016). The Basic Health Research (RISKESDAS, 2018) data states that the prevalence of joint pain in Indonesia reaches 7.3 percent and osteoarthritis (OA) is a disease that often occurs.

*Corresponding author at: Jl. Prof. Maas no. 3 Kampus USU, Medan - Indonesia
Corresponding email: eqlima.elfira@usu.ac.id

Journal Homepage: https://talenta.usu.ac.id/IJNS

The age range for the occurrence of joint disease is 15-24 years old (1.3 percent), the prevalence continues to increase between the ages of 24-35 years (3.1 percent) and the age range 35-44 years (6.3 percent) (Firdaus, 2019). Data analysis Basic health research in 2010 shows that Indonesians use their own herbal medicine at the age of 15 and over and have used traditional medicine for 177,927 people in 33 provinces in Indonesia. Data collected by interviews using a questionnaire including age, gender, marital status, education, occupation, monthly household expenses, place of residence, province, and use of homemade herbal medicine shows that 9.53 percent of households use homemade herbal medicine. The proportion is greater than using kencur, ginger in liquid form, and taste. The provinces of North Maluku, Bali, and Nusa Tenggara use homemade herbal medicine by 17.4 percent (Supardi, Herman, & Yuniar, 2012).

Ginger is one of the medicinal herbs included in the Zingiberaceae family, first cultivated in Asia (Indonesia and Malaysia). This herb is one of the herbal supplements most often used by many patients to treat various conditions. This ginger has three varieties of size, rhizome color, and constituent chemicals, namely. Z. officinale var. Officinale (large white or giant ginger, rhino or elephant ginger), Z. officinale var. amarum (small white ginger, emprit), and Z. officinale var. rubrum (small red, red or beureum ginger). The medicinal properties of red ginger are known, further trials in humans are needed to determine the efficacy of red ginger (or one or more of its ingredients) and to determine, if any, any side effects were observed (Supu, Diantini, & Levita, 2019). Jamu is part of Indonesia's culture that provides great health benefits. The use of herbal medicine in Indonesia reaches more than 50 percent and its use is an alternative to modern medicine in low-middle and upper economic communities (Andriati & Wahjudi, 2016).

Another mixture of herbal medicine is cardamom (Amomum compactum Sol. Ex Maton) which has been tested as an antibacterial which contains ethyl acetate extract which inhibits the growth of staphylococcus aureus and E. coli with inhibition zone diameters of 15.15 ± 1.34 and respectively. 13.50 ± 0.70 mm at a concentration of 3200µ/mL (Sukandar, Hermanto, Amelia, & Zaenudin, 2016). Cardamom (Amomum compactum soland ex. Maton) is a plant commonly used as a cooking spice and has the property of curing Trichophyton rubrum fungal disease which causes tinea pedis, tinea ungujum, tinea koporis, and others. (Sukandar et al., 2016). The ingredients that are often used as a mixture of traditional medicines are ginger, turmeric, and ginger which contain bioactive compounds and are anti-inflammatory and have flavonoids that can lower blood sugar, lower blood pressure, antibacterial, improve sexual function, protect organs, antioxidants, and can be used as identification. hypoglycemic (Widia I., marline A., 2018). Jamu is a mixture of herbal plants that have been used since ancient times. One of the herbal mixtures is turmeric, which comes from a plant that has the power to reduce inflammation caused by infection and tissue injury. Several studies related to turmeric (Curcuma Longa Linn) have shown that curcumin has a very high pleiotropic molecule capable of various molecular properties that reduce damage. (Yuliana, 2019).

Jamu is a mixture of nutritious plants such as red ginger, turmeric, kencur which is often used and has risks and side effects if you use it too much. Excessive use of herbal medicine not according to the dose will cause allergies and other problems in the body (Ni Nyoman Wira, 2020). The side effects of using excessive jamu that are not by the dosage will cause dizziness, skin irritation, and diarrhea.

During the Covid-19 pandemic, the Ministry of Health asked people to consume jamu to increase their immune immunity. Therefore, the Indonesian Ministry of Health provides a reference guide for the dosage of jamu. Good jamu must come from natural ingredients and not artificial, and chemicals because the results obtained will be different (Kemenkes RI, 2020b). even the use of inappropriate dosage will cause allergies, skin irritation, and digestive disorders (Fadila, 2020). This is what makes me interested in researching jamu during the Covid-19 pandemic.

2. Research Method

The purpose of this study was to determine the effectiveness of jamu in joint pain. This research design uses pre-experimental with one-time case study where the pre-experimental research design either groups or various dependent groups is observed to see the effect of applying independent variables that are thought to cause change. In this experimental study, only one group or dependent variable is considered. The research was carried out after the treatment that was thought to cause changes to become a posttest study (Formpl, 2020). The inclusion criteria in this study were women aged 26 to 50 years, able to cooperate, willing to become respondents, and suffer from joint pain in the waist. The jamu maker is the researcher himself who uses the dosage according to standard operating procedures. The making of jamu is observed by researchers directly from the aspect of selection, washing, production to the respondents. The researcher made observations after the respondent drink the herbal medicine given after the respondents had breakfast, and in the afternoon with a dose of 100 ml of jamu (one glass). Researchers conducted this intervention on 10 women for 2 weeks because it was sufficient to see the changes that occurred during the intervention and the administration of this jamu was carried out every day and was always monitored regularly. Data analysis used observation VAS (Visual Analog Scale) after consuming herbal ingredients for 2 consecutive weeks. This scale uses values from 0 to 10 to describe pain relief (Tjahya, 2017). Analysis of the research data using the binomial test with IBM SPSS 26. Use of herbal ingredients after breakfast and in the evening. The sample in this study had inclusion criteria were women who experienced joint pain.

The herbal ingredients are formulated using natural herbal ingredients, namely: red ginger (red zingiber officinale var rubrum), single turmeric (curcuma longa linn), cardamom (amomum compactum), and palm sugar. These natural ingredients are mixed in a 1: 1 ratio and cooked until boiling (Kemenkes RI, 2020a). When drunk in the morning, first it is filtered so that the dregs of the material. Respondents will report the results after the herbs are consumed for approximately 24 hours.

3. Result and Discussion

Table 1. Demographic data on the effects of herbal jamu on joint pain in Medan Sunggal village, Indonesia. (n=10)

Characteristic Data	Amount (n)	Percentage (%)
Age		
(12-25 years)	4	40
(26 - 45 Years)	5	50
(46 - 65 years)	1	10
Reproduction Period		
Menstruation	6	60
Fertile time	3	30
Menopause Period	1	10
Profession		
College student	4	40
Entrepreneur	5	50
Retired	1	10

Table 2. The results of the effects of herbal jamu on joint pain based on observations

	Exact. Sig. (2-tailed)
Jamu - Joint Pain	.021

The results of the binomial test showed a p-value of .021 < Alfa .05 which means that H0 is rejected and H1 is accepted, which means that there is an effect of medicinal herbs on joint pain.

The results of the study were based on the age of women aged 26 years to 45 years as many as 5 people were more dominant aged 45 years. Because this age is the onset of joint pain and will get worse when he is over 50 years old with calcification of the bones (Irma Lidia, 2020). At the age of 30 years is very likely to experience joint pain due to fatigue, overtime, lack of rest, and injury (Tika Anggreni Purba, 2019). The dominant menstrual reproductive period occurred in 6 women (60 percent) so that when the intervention was carried out the benefits of herbal Jamu were very effective. The most dominant occupation of respondents is entrepreneur, amounting to 5 people (50 percent).

The respondents with self-employment jobs dominate, but at the time of the research, the respondents were at home due to Covid-19. So that it will greatly affect the quality of life of respondents in increasing their immune immunity (Kemenkes RI, 2020b). Complaints about menstrual periods in women about reproductive health are often found in the community. The use of herbal Jamu is an alternative to reduce pain (Supardi et al., 2012). Research from (Hasanah & Widowati, 2015) with observative and descriptive methods of complementary herbal medicine practices in 9 out of 12 provinces in the development, application and traditional medicine (SP3T) centers in Indonesia for 6 months it was found that there was an increase in the quality of life after therapy by 79 percent with the disappearance of clinical disease symptoms, namely the symptom system. neurology (33 percent), musculoskeletal system (31 percent), and general symptoms (23 percent) in 63 arthritis patients. One of the ingredients of this herbal medicine contains red ginger. Research showing the effectiveness of ginger on osteoarthritis shows a significant effect in reducing osteoarthritis symptoms in patients' knees (Mashhadi et al., 2013). Curcumin-enriched turmeric extract is used for the treatment of arthritis after a randomized clinical trial (RCT) meta-analysis and a search of 12 pieces of literature stated that turmeric was able to relieve symptoms of arthritis (Daily, Yang, & Park, 2016). Research from

(Ramadhani, Iskandar, & Husodo, 2020) showed that the Cinta karya Village Community used ginger (Zingiber of icinale), red ginger (Zingiber of icinale var. Rubrum), coconut root (Cocos nucifera), moringa leaves (Moringa oleifera), soursop leaves (Annona muricata), cherry leaves (Muntingia) calabura), and bay leaves (Sysygium polyanthum) in treating rheumatic disease. Giving red ginger spread is an alternative action given to the elderly to reduce complaints of joint pain and contains oleracin or zingerol which can inhibit prostaglandin synthesis so that pain or inflammation can be reduced.

4. Conclusion

This study has a significant effect on women who experience joint pain after being given regular herbal interventions for 2 weeks.

5. Acknowledgement

Thank you to the Universitas Sumatera Utara research institute and the respondents who participated in this research.

6. Conflict of Interest

There is no conflict of interest in this research result.

REFERENCES

[1] Andriati, A., & Wahjudi, R. M. T. (2016). Tingkat penerimaan penggunaan jamu sebagai alternatif penggunaan obat modern pada masyarakat ekonomi rendah-menengah dan atas. *Masyarakat, Kebudayaan Dan Politik*, *29*(3), 133. https://doi.org/10.20473/mkp.v29i32016.133-145

[2] Daily, J. W., Yang, M., & Park, S. (2016). Efficacy of Turmeric Extracts and Curcumin for Alleviating the Symptoms of Joint Arthritis: A Systematic Review and Meta-Analysis of Randomized Clinical Trials. *Journal of Medicinal Food*, Vol. 19, pp. 717–729. https://doi.org/10.1089/jmf.2016.3705

[3] David Zelman. (2019). Why Do My Joints Hurt? Causes of Joint Pain & Pain Relief Options. Retrieved September 6, 2020, from https://www.webmd.com/pain-management/guide/joint-pain#1 Fadila, I. (2020). Apakah Boleh Minum Jamu Setiap Hari? Retrieved November 17, 2020, from https://hellosehat.com/hidup-sehat/minum-jamu-setiap-hari/#gref

[4] Firdaus, A. (2019). Osteoarthritis termasuk kategori penyakit yang menghambat aktivitas bekerja - Medcom.id. Retrieved September 7, 2020, from https://www.medcom.id/rona/kesehatan/nbwQXA5K-osteoarthritis-termasuk-kategori-penyakit-yang-menghambat-aktivitas-bekerja

[5] Formpl. (2020). Experimental Research Designs: Types, Examples & Methods. *Formpl*. Retrieved from https://www.formpl.us/blog/experimental-research

[6] Hasanah, S. N., & Widowati, L. (2015). MODEL ANALYSIS OF HERBAL AS A COMPLEMENTARY THERAPY FOR REPAIR COMPLAINTS ON ARTHRITIS PATIENTS. *MEDIA PENELITIAN DAN PENGEMBANGAN KESEHATAN*, *25*(3), 177–184.

[7] Irma Lidia. (2020). Ini Alasan Nyeri Sendi Lebih Sering Terjadi pada Wanita - Jovee.id. Retrieved November 17, 2020, from https://jovee.id/ini-alasan-nyeri-sendi-lebih-sering-terjadi-pada-wanita/

[8] Kemenkes RI. (2020a). *Formularium Obat Herbal Asli Indonesia*. Retrieved from https://ejournal.poltektegal.ac.id/index.php/siklus/article/view/298%0Ahttp://repositorio.unan.edu.ni/2986/1/5624.pdf%0Ahttp://dx.doi.org/10.1016/j.jana.2015.10.005%0Ahttp://

www.biomedcentral.com/1471-2458/12/58%0Ahttp://ovidsp.ovid.com/ovidweb.cgi?T=JS&P

[9] Kemenkes RI. (2020b). Kemenkes Sarankan Dosis Konsumsi Jamu Ditingkatkan Selama Pandemi Covid-19. Retrieved November 17, 2020, from https://www.ajnn.net/news/kemenkes-sarankan-dosis-konsumsi-jamu-ditingkatkan-selama-pandemi-covid-19/index.html

[10] Mashhadi, N. S., Ghiasvand, R., Askari, G., Hariri, M., Darvishi, L., & Mofid, M. R. (2013). Anti-oxidative and anti-inflammatory effects of ginger in health and physical activity: Review of current evidence. *International Journal of Preventive Medicine*, Vol. 4, pp. S1–S7. Retrieved from /PMC/articles/PMC3665023/?report=abstracNeogi, T. (2016). *Joint Pain Epidemiology*. Retrieved from www.eumusc.net

[11] Ni Nyoman Wira. (2020). Consuming "jamu" regularly helps improve your immunity, say experts - Food - The Jakarta Post. Retrieved November 17, 2020, from https://www.thejakartapost.com/life/2020/04/22/consuming-jamu-regularly-helps-improve-your-immunity-say-experts.html

[12] Ramadhani, S., Iskandar, J., & Husodo, T. (2020). Studi etnobotani pemanfaatan tumbuhan obat di Desa Cintakarya, Kabupaten Pangandaran, Jawa Barat. *Pros Sem Nas Masy Biodiv Indon*, *6*(Hidayat 2012), 500–504. https://doi.org/10.13057/psnmbi/m060107

[13] The report, S., & Bridgman, B. K. (n.d.). Joint Pain and Arthritis. Retrieved September 6, 2020, from https://www.cdc.gov/arthritis/pain/index.htm

[14] Sukandar, D., Hermanto, S., Amelia, E. R., & Zaenudin, M. (2016). AKTIVITAS ANTIBAKTERI EKSTRAK BIJI KAPULAGA (Amomum compactum Sol. Ex Maton). *Jurnal Kimia Terapan Indonesia*, *17*(2), 119–129. https://doi.org/10.14203/jkti.v17i2.28

[15] Supardi, S., Herman, M., & Yuniar, Y. (2012). PENGGUNAAN JAMU BUATAN SENDIRI DI INDONESIA (ANALISIS DATA RISET KESEHATAN DASAR TAHUN 2010). *Buletin Penelitian Sistem Kesehatan*, *14*(4 Okt). https://doi.org/10.22435/bpsk.v14i4Okt.1382

[16] Supu, R. D., Diantini, A., & Levita, J. (2019). RED GINGER (Zingiber officinale var. rubrum): ITS CHEMICAL CONSTITUENTS, PHARMACOLOGICAL ACTIVITIES, AND SAFETY. *FITOFARMAKA: Jurnal Ilmiah Farmasi*, *8*(1), 23–29. https://doi.org/10.33751/jf.v8i1.1168

[17] Tika Anggreni Purba. (2019). Penyakit Sendi Rentan di Usia 30-an - Lifestyle Bisnis.com. Retrieved November 17, 2020, from https://lifestyle.bisnis.com/read/20190902/106/1143516/-penyakit-sendi-rentan-di-usia-30-an

[18] Tjahya, A. (2017). Penilaian nyeri. *Academia*, 133–163. Retrieved from https://simdos.unud.ac.id/uploads/file_penelitian_1_dir/0a3e5b2c21e3b90b485f882c78755367.pdf

[19] Widia I., marline A., A. Y. C. dan taufik R. (2018). aktivitas farmakologis zingiber officinale rosc., curcuma longa L., dan curcuma xanthorrhiza roxb.: review. *Farmaka*, *16*, 213–221.

[20] Yuliana. (2019). Wellness and healthy magazine. *Wellness and Healthy Magazine*, *2*(February), 187–192. Retrieved from https://wellness.journalpress.id/wellness/article/view/v1i218wh