

# Pain Management in the Community: The Empowerment of District on Collaboration of Complementary Nursing at Bukittinggi, West Sumatera

Imelda Rahmayunia Kartika\*, Fitrianiola Rezkiki, Cory Febrina, Cindy Wahyu Khairunnisa

University Fort De Kock, Bukittinggi, Sumatera Barat, Indonesia

Corresponding Email: [imelda.rahmayunia@fdk.ac.id](mailto:imelda.rahmayunia@fdk.ac.id)

**Abstract.** Pain is a global health issue. It is estimated that every year 20% of the world's population experiences pain and half of this is chronic pain. In Indonesia there has been no large-scale research discussing the prevalence and quality of all types of pain. Indonesia also does not yet have practical parameters for assessing pain, patient comfort levels, and the effect of pain on the quality of life of the Indonesian people. This Community Service (PKM) seeks to provide training and raise information about pain treatment in one of the districts of Bukittinggi, West Sumatera, through socializing and outreach to the community. The strategy employed in this PKM includes counseling about pain management in the community and how to handle it. This PKM obtained an increase in the knowledge and skill of community members in controlling their pain. According to the findings of monitoring and analyzing PKM activities, the community health service was ready to improve people's pain management strategies. It is believed that this activity will be beneficial in enhancing the knowledge and experience of pain management that may be used in the community health service by individuals and their families, particularly in non-pharmacological approaches as complementary pain management nursing.

**Keywords:** Community, Complementary Nursing, District, Empowerment, Pain Management

## 1 Introduction

Pain is the most complicated symptoms as human experience that impacted by interactions between emotions, behavior, cognitive, and physiological sensory aspects. Pain, as a subjective sensory and unpleasant emotional experience, is associated with existing or potential tissue damage or is felt in events described as harm [1]. Pain is a protective mechanism that alerts us to the fact that tissue damage is happening or will happen. *Nociceptors* (pain receptors) do not adapt to repeated or extended activation since they are important for survival. Keeping traumatic memories helps us avoid potentially perilous circumstances in the future. Pain is a type of sensory and emotional suffering associated with the possibility or actual damage to human tissue. It happens when the tissue is damaged and leads the person to react in order to relieve discomfort [2]. Pain patients require adequate therapy not only to reduce pain but also to improve their quality of life. As a result, pain treatment is required. Pain management is the identification and management of sensory or emotional experiences connected to tissue or functional damage that have a sudden or slow onset, a mild to severe severity, and a consistent intensity [3]. The goal of pain management is to decrease pain that interferes with the sufferer's daily activities. When a person is in considerable or chronic pain, pain management will be administered. Pain management goals include lowering discomfort, enhancing function of the damaged bodily part, and improving quality of life. Pain can be controlled using both pharmacological and non-pharmacological methods. There are non-pharmacological methods of pain management, such as music, relaxation, and massage, to assess and evaluate the current situation of one setting (labor wards), then to suggest an action plan in order to apply the best selected non-pharmacological methods in real life [4]. This method was given the moniker complimentary in nursing. Herbal medications and other complementary and alternative therapies are not currently part of the standard medical system [5]. Nurses are vital pillars of healthcare because they administer and coordinate care for the ill and try to fulfill the needs of patients and their families. The nurse's role is becoming more crucial, particularly as chronic disease and an aging population underpin Europe's

present and future public health challenges. While drug treatments remain the primary approach for managing pain, anxiety, sleep disturbances, and discomfort, their increased use brings the risk of more side effects and opioid dependence [6]. As a result, both healthcare professionals and patients increasingly advocate for de-medicalization and greater interest in complementarily using non-drug interventions [7]. Community need the integrated information about complementary nursing as it contributed to the increasing level of satisfaction. It almost done to improve in concerns of people quality of life and well-being in using non pharmacological methods to reduce pain [8].

Non-pharmacological pain approaches have very low risks or side effects even though they are not a replacement for drugs, but they are necessary or appropriate to shorten pain episodes [9]. Non-pharmacological pain relief techniques can be carried out by nurses independently without depending on other medical staff, where in their implementation the nurse uses her own considerations and decisions to fulfill basic human needs [10]. The goal of pain management is to reduce or eliminate the patient's pain and discomfort with as few side effects as possible. When nurses are faced with complaints of pain, most of the initial steps they take are collaborating with doctors to administer analgesic drugs, but rarely use non-pharmacological techniques.

Likewise, in the district of Sungai Pua as a target area on collaboration of complementary nursing in Bukittinggi, Sumatera Barat which consists of approximately 3 large villages, many residents say that when they experience pain, whether headache, joint pain, or pain due to surgery, many do not know how to properly manage pain other than taking medication. Most residents, when asked how to deal with the pain they experience, answer by taking medication to relieve the pain they experience. Dependence on drugs to treat pain will also cause problems in the future. Based on the data we obtained, the proposing team wants to help the residents of Sungai Pua to gain knowledge about pain management by providing education about pain management, training in non-pharmacological pain management methods and forming health cadres. The long-term goal of this program is to create physical health for the residents of Sungai Pua District in Bukittinggi, West Sumatra in general.

This PKM aims to provide training and increase knowledge through socialization and outreach to the community in managing their pain with complementary ways as a non-pharmacological method of pain management. From this explanatory background, we wish to dig deeper into the effectiveness of pain management in the ward of one of the government hospitals in Bukittinggi. On this occasion, we carried out Knowledge Dissemination and Outreach activities for people in the community health service on one district area of Bukittinggi, West Sumatera in order to retrain pain management. This Community Service (PKM) has the goal of providing training and increasing knowledge through social outreach to the community regarding pain management in a district in Bukittinggi, West Sumatra. The methods utilized in this PKM include counseling pertaining to pain management for the community, as well as how to manage pain through non-pharmacological approaches. Hopefully this activity can be useful for the experience and increasing the knowledge of pain management that can be used in the community health service by personal on their family, especially on non-pharmacological ways as a complementary nursing of pain management.

## 2 Method

The work procedures for implementing the community service in this program were the demonstration/training/assistance and socialization of the pain management that can be used in the community health service by personal on their family, especially on non-pharmacological ways as a complementary nursing of pain management. They are as follows:

The dissemination and knowledge transfer of pain management in community as the empowerment of district on collaboration of complementary nursing at Bukittinggi, West Sumatera, which are: 1) obtaining permits and consultation with the authorities in this case on Sungai Pua District in Bukittinggi, Sumatera Barat regarding community service activities for the implementation of PKM activities by the implementing team; 2) Prepare activity material and media communication also media presentation about pain management. 3) implementation of knowledge transfer, training and socialization about the nursing quality indicators including the knowledge about pain management on complementary nursing ways, which include some methods of pain management 4) monitoring the evaluation of activities carried out in the PKM program to the community.

In this PKM, we introduce and demonstrate several kinds of non-pharmacological methods of pain management. First, we get the mapping of disease that often happen on the community. Then, we used the non-pharmacological methods in managing the pain that was suitable for them. There are many cases of hypertension in the community on this district of Bukittinggi. Hypertension is the abnormal increase of blood pressure. Hypertension causes various symptoms including pain. Because of the diseases on hypertension, we actually made the pain management that can be used to reduce their pain. One of the pain management in the patient with hypertension is non-pharmacological

therapy by using Slow Stroke Back Massage therapy. The therapy is one of the massage action on the patient's back with rhythmic and slow hand movements, and taken 3 times a day [11]. We used back massage and also acupressure to manage the pain.

Evaluation of program implementation and program sustainability after the completion of the implementation of these PKM activities was using assessment tools of quality indicators which can be assessed using measuring instruments to gain the pain scale of people in the community. The people were elderly and complained some of various pains as the chronic disease. Assessment was use pain assessment by using NRS (Numeric Rating Scale) to measure pain scale. Pain measurement was carried out using the Numeric Rating Scale pain questionnaire. The numeric pain scale (NRS) is the simplest and most commonly used scale to measure a patient's pain. There are eleven number options on this numerical scale, ranging from 0 to 10, with 0 being “no pain” and 10 being “the worst pain imaginable.” The patient selects (verbal version) or draws circles the number that best describes the intensity of the pain felt. The advantages of this pain scale are reproducibility, easy understanding, and sensitivity to small changes in perceived pain. This scale is more likely to be used in adults [12].

### 3 Results and Discussion

Implementation of PKM Activities related to Pain Management in the Community: The Empowerment of District on Collaboration of Complementary Nursing at Bukittinggi, West Sumatera received a positive response from the community especially elderly people in the community health services on the district. The following is an overview of this empowerment activities in which there are activities:

1. Survey of initial demographic data on people in the community and surveys related to the pain problem and health problem on the people of the district area on Collaboration of Complementary Nursing to ensure they gain the information of pain management
2. Health education regarding pain management strategies
3. Giving Information that can be used in the community health service by personal on their family, especially on non-pharmacological ways as a complementary nursing of pain management Role playing activities to whole nurses
4. Role playing about how to manage the pain by using non-pharmacological methods as a complementary nursing
5. Evaluation and monitoring of the results of PKM activities

The results of the implementation of activities and discussed in detail are as follows:

Generally, community service activities in the form of PKM run streamlined. Activities carried out in accordance with the mapping of activities that have been planned. An initial survey characteristics was gained in terms of age, gender, illness and how the level of pain on the people of the health community. The data is presented in the following table:

**Table 1.** Characteristic of PKM Participants (N=30)

<b>Variable</b>	<b>f</b>	<b>%</b>
<b>Age</b>		
41-50 yo	5	16.7
51-60 yo	12	40
Over 61	13	43.3
<b>Gender</b>		
Female	25	83.3
Male	5	16.7
<b>Illness</b>		
Hypertension	19	63.3
Vertigo	3	10
Diabetic	3	10
Low Back Pain	5	16.77
<b>Level of Pain</b>		
Mild	3	10
Moderate	16	53.3
Severe	11	36.7

From the table, it is known that the average age of most participants is in the age range of over 61 years old (43.3%) where this age category is the elder people category. Furthermore, most of the nurses were female (83.3%) and they were mostly suffered by the hypertension diseases (63.3%). These results also show that participant mostly reported the moderate level of pain.

The implementation of PKM was continued by providing health education regarding pain management. In these activities, people are given some material and methods about pain management such as relaxation, acupressure, mc. *canzie* exercise, herbal and cupping therapy. Non-pharmacological pain management is an approach to easing pain without medication, but rather through caring behavior. In real-world practice, non-pharmacological pain relief is challenging for nurses. This is especially true given patients' differing perceptions of the pain they are experiencing. These differences make it difficult for nurses to accurately diagnose and treat a patient's pain. As such, it is essential that nurses continuously build their competence and grasp of non-pharmacological pain management. There are several types of non-pharmacological techniques, including: relaxation methods, distraction, massage, hot and cold therapy, transcutaneous electrical nerve stimulation, hypnosis, guided imagery, and music [13]. By using some of complementary nursing as to managing pain it will become innovative strategies of teaching and approaches to the problem of evidence-based practice in approach to pain management in the community. The head of district have to promote these issues in the community [14].

Participants looked enthusiastic about participating in activities and actively asked questions related to the material provided. The following is a picture of the outreach activities that have been carried out at the community health services:



**Figure 1.** Activities to Provide Dissemination of Knowledge to People in Community

Effective pain management is not just give the right medicine on great timing that management effective pain relief also with combining management pharmacological and non-pharmacological which approach was selected based on needs and goals individual patient success greatest is often achieved if intervention this is done simultaneously. Non-pharmacological pain management is the efforts made to overcome or eliminate pain with non-pharmacology. Non-pharmacological measures can be taken used as an internal complement giving analgesics, but non-action pharmacological is not intended as analgesic substitute [15]. Specific non-pharmacological pain management strategies that nurses can use to relieve patient suffering in healthcare settings include music therapy and acupuncture, turtleneck/warm application, exercises, positioning therapy, massage therapy, social support, spiritual emotional and religious support, hot and cold therapy, relaxation therapy, deep and slow breathing therapy with physical exercise and distraction [14]. Nurses are one of the healthcare professionals who can do this feel what pain patients suffer and who can control the patient's suffering themselves. Therefore, their correct and accurate expertise is very important in non-pharmacological settings also in pharmacological methods for pain relief [16].

Furthermore, counseling activities were also carried out regarding relaxation and acupressure. The activity took place enthusiastically and ran smoothly. The following is the activity documentation:



**Figure 2.** The Activity of Providing Knowledge Dissemination to the Elder People About Relaxation to Reduce the Pain

### 3.1 Evaluation of Activities and Follow-Up Plans

Based on the results of the counseling, it was found that before the health education on pain management was carried out, the average percentage of correct answers was obtained 58.4% while the average wrong answer was 41.6%. After being given counseling for approximately 45 minutes regarding pain management, posttest 1 was then carried out with results obtaining an average of 71.6% correct answers and an average of 28.4% incorrect answers. There was an increase in the average correct answer in posttest 1 of 13.3% from the pretest and a decrease in the average incorrect answer of 13.2%.

The increase in knowledge that occurred among the residents of Sungai Pua, Bukittinggi, West Sumatra occurred due to exposure to information provided by the community service team, and also the supporting factors that existed within the residents of Sungai Pua, including internal factors such as: age, the more mature the level of maturity. It showed that a person's strength will be more mature in thinking and working in terms of trust. People who are more mature will trust more than people who are not mature enough, especially knowledge about pain [17].

The results of reducing pain intensity after providing information related to pain management about relaxation and acupressure as measured using the Numeric Rating Scale (NRS) can be seen in the following results table:

**Table 2.** Pain Intensity Reduction Table (N=30)

No	Variable	Mean	Mean Different	p-value
1	Pre	5.40		
2	Post	3.25	2.15	0.0001*

\* $\alpha = 0.05$

From table 2, the results of reducing pain intensity were obtained by measuring the pain scale before and after being given relaxation and acupressure interventions. The results showed a reduction in the average pain before and after, with a mean difference of 2.15. Additionally, the dependent t-test bivariate analysis yielded a p-value of 0.0001 at a significance level of  $\alpha = 0.05$ . Therefore, it can be concluded that there is a significant effect of using relaxation therapy and acupressure in decreasing pain in the community.

The Follow-Up Plan for pain management activities, it is hoped that in the future people in community can use more non-pharmacological treatment in managing their pain. Increased knowledge would be better if followed by increased psychomotor skills related to pain management, but this has not been measured so that in the future it is necessary to consider measuring knowledge and measuring skills, so that the knowledge gained can be applied more

lastingly or more consistently by residents of the Sungai Pua district, Bukittinggi, West Sumatra. Exposure to knowledge to the participants shows that their knowledge has increased, so exposure to other health knowledge is needed which can increase knowledge and be able to change unhealthy behavior into healthy behavior.

## 4 Conclusion

Community Service Activities with the theme Pain Management in the Community: The Empowerment of District on Collaboration of Complementary Nursing at Bukittinggi, West Sumatera received a positive response from the community and people in community health service who suffered pain. This PKM activity ran clearly and obtained various benefits for both the hospital and educational institutions. Learning and educational experiences as well as role plays given to people about pain management in reducing their pain were effectively accepted. This activity can also increase the knowledge of the community about managing the pain. It is believed that by generating this activity can be useful for increasing the knowledge and experience of pain management that can be used in the community health service by personal on their family, especially on non-pharmacological ways as a complementary nursing of pain management.

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## References

- [1] E. L. Garland, "Pain Processing in the Human Nervous System," *Prim. Care Clin. Off. Pract.*, vol. 39, no. 3, 2012, doi: 10.1016/j.pop.2012.06.013.
- [2] D. De Ridder, D. Adhia, and S. Vanneste, "The anatomy of pain and suffering in the brain and its clinical implications," *Neuroscience and Biobehavioral Reviews*, vol. 130, 2021, doi: 10.1016/j.neubiorev.2021.08.013.
- [3] A. T. Berman, S. Shirlee, and F. Geralyn, *Kozier & Erb's Fundamentals of Nursing*, 10th ed. St. Louis: Pearson, 2016.
- [4] A. El Geziry, Y. Toble, F. Al Kadhi, and M. Pervaiz and Mohammad Al Nobani, "Non-Pharmacological Pain Management," in *Pain Management in Special Circumstances*, 2018.
- [5] B. Jahromi, I. Pirvulescu, K. D. Candido, and N. N. Knezevic, "Herbal medicine for pain management: Efficacy and drug interactions," *Pharmaceutics*, vol. 13, no. 2, 2021, doi: 10.3390/pharmaceutics13020251.
- [6] C. Bosetti, C. Santucci, S. Radrezza, J. Erthal, S. Berterame, and O. Corli, "Trends in the consumption of opioids for the treatment of severe pain in Europe, 1990–2016," *Eur. J. Pain (United Kingdom)*, vol. 23, no. 4, 2019, doi: 10.1002/ejp.1337.
- [7] E. L. Fjær, E. R. Landet, C. L. McNamara, and T. A. Eikemo, "The use of complementary and alternative medicine (CAM) in Europe," *BMC Complement. Med. Ther.*, vol. 20, no. 1, 2020, doi: 10.1186/s12906-020-02903-w.
- [8] M. Stie, L. H. Jensen, C. Delmar, and B. Nørgaard, "Open dialogue about complementary and alternative medicine (CAM) integrated in conventional oncology care, characteristics and impact. A systematic review," *Patient Education and Counseling*, vol. 103, no. 11, 2020, doi: 10.1016/j.pec.2020.06.003.
- [9] M. J. E. van der Heijden, M. Busch, T. J. Gunnarsdottir, A. Lunde, T. Falkenberg, and M. van Dijk, "Educational courses on non-pharmacologic complementary interventions for nurses across Europe: The INES mapping pilot study," *Nurse Educ. Today*, vol. 116, 2022, doi: 10.1016/j.nedt.2022.105419.
- [10] A. Bangun and S. Nur'aeni, "Effect of lavender aromatherapy on pain intensity in postoperative patients at Dustira Cimahi Hospital," *J. Keperawatan Soedirman (The Soedirman J. Nursing)*, vol. 8, no. 2, 2013.
- [11] S. Sormin, D. Susyanti, M. Yuda Pratama, and Kesdam, "Penerapan Teknik Slow Stroke Back Massage (SSBM) Terhadap Penurunan Nyeri Kepala Pada Pasien Hipertensi Di Rumah Sakit Tk II Putri Hijau Medan

- Tahun 2021,” *J. Keperawatan Flora*, vol. 15, no. 1, 2021.
- [12] J. Hansen, S. Mølsted, O. Ekholm, and H. Hansen, “Pain Prevalence, Localization, and Intensity in Adults with and without COPD: Results from the Danish Health and Morbidity Survey (a Self-reported Survey),” *Int. J. Chron. Obstruct. Pulmon. Dis.*, vol. Volume 15, no. 10, pp. 3303–3311, Dec. 2020, doi: 10.2147/COPD.S275234.
- [13] L. Jira, N. Weyessa, S. Mulatu, and A. Alemayehu, “Knowledge and attitude towards non-pharmacological pain management and associated factors among nurses working in Benishangul Gumuz regional state hospitals in western Ethiopia, 2018,” *J. Pain Res.*, vol. 13, 2020, doi: 10.2147/JPR.S265544.
- [14] W. Mędrzycka-Dąbrowska, S. Dąbrowski, A. Gutysz-Wojnicka, and A. Basiński, “Polish nurses’ perceived barriers in using evidence-based practice in pain management,” *Int. Nurs. Rev.*, vol. 63, no. 3, 2016, doi: 10.1111/inr.12255.
- [15] et al Smeltzer, *BRUNNER & SUDDARTH’S TEXTBOOK of Medical- Surgical Nursing*. 2014.
- [16] S. Zeleke, A. Kassaw, and Y. Eshetic, “Non-pharmacological pain management practice and barriers among nurses working in Debre Tabor Comprehensive Specialized Hospital, Ethiopia,” *PLoS One*, vol. 16, no. 6 June, 2021, doi: 10.1371/journal.pone.0253086.
- [17] Nursalam, “MANAJEMEN KEPERAWATAN Aplikasi dalam Praktik Nursalam. (2011),” *Salemba Medika*, 2011.