

Aurecular Acupressure Therapy in Reducing Pain Levels: Literature Review

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Abstract

Background Pain is an unpleasant sensory and emotional experience due to actual or potential tissue damage. Pain management can be done either pharmacologically or non-pharmacologically. However, pharmacologic pain management is known to have side effects such as gastric mucosal irritation, constipation, nausea, vomiting, addiction and others. Therefore, it is important to carry out non-pharmacological therapy as a complementary and alternative therapy for pain management. Aurecular acupressure is a non-pharmacological technique that has been proven based on research to reduce the level of pain in various pain complaints. **Aim** The aim of writing this article is to investigate the effect of aurecular acupressure as an alternative complementary therapy on reducing pain levels in various clinical conditions. **Method** The method used is a literature review from pubmed, scientdirect and google scholar. Articles in English and article publishing restrictions from 2009-2019. **Result** There is a decrease in pain levels and decreased analgesic consumption in subjects receiving aurecular acupressure therapy in various pain complaints such as low back pain, dysmenorrhea pain, Post TKR pain and Breast cancer pain.

Keywords: Complementary alternative medicine, Aurecular acupressure, pain management.

Introduction

Pain can be interpreted as an unpleasant emotional or sensory experience due to tissue damage (Wardani, 2014). Tissue damage that occurs can occur due to injury, accident or due to medical action (Kurniawan, 2016). Pain is a common complaint felt by patients who undergo treatment in the hospital (You, Kim, Harris, & D'Alonzo, 2019). Pain is a common complaint that can be found in various clinical conditions that cause a person to attend health services (Velissaris et al., 2017). According to Godberg & Mcgee (2011) 1 in 10 adults suffer from chronic pain every year. In America it is estimated that more than 100 million people suffer pain from the disease process and cause treatment costs to range between \$ 650 billion to \$ 635 billion (You et al., 2019).

Pain management can be done either pharmacologically or non-farmacologically (Brent, 2000). Pharmacological management with analgesics is the first choice for pain management in patients (Brent, 2000). However, pharmacologic pain management is known to have side effects such as drowsiness, addiction, gastric bleeding, gastrointestinal damage and kidney disorders (Kurniawan, 2016; You et al.,

2019). Therefore it is important to develop non-pharmacological therapies for pain management both as independent and collaborative interventions that are complementary.

Non pharmacological pain management can be done with several techniques, namely peripheral or physical therapies and cognitive behavioral therapies (Demir, 2012). Peripheral or physical therapies can be done in several ways such as Hot-cold treatment, Exercise, Positioning, Movement restriction resting, Acupuncture, Acupressure, Hydrotherapy, TENS, Massage and Therapeutic touch. Whereas cognitive behavioral therapies can be done by means of Relaxation or respiration techniques, Distraction, Praying, Meditation, Yoga, Hypnosis, Bio feedback, and Behavioral therapy (Demir, 2012). Acupressure is a form of peripheral therapy. Acupressure is a traditional Chinese medicine technique that is performed by applying physical pressure to several points on the surface of the body which is a place of energy circulation and balance in various cases of pain symptoms. The acupressure point in the human body consists of more than 360 scattered points (Hosbach, 2008). Emphasis on these

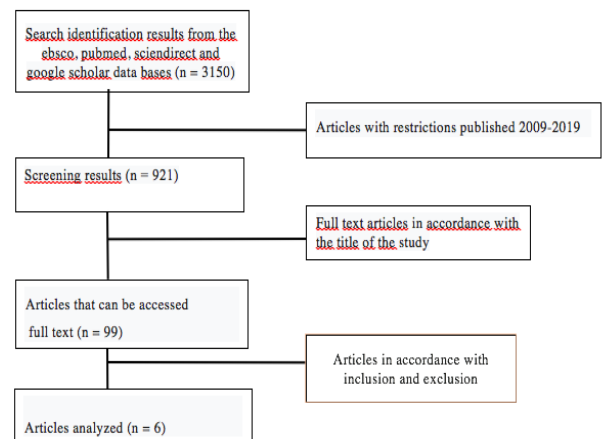
points can reduce the intensity of pain in various conditions (Hosbach, 2008).

Aurecular acupressure is an acupressure technique performed on the ear (Mehta et al., 2017). A pressure point or acupoint on aurecular acupressure can use a stimulant media with a size of 2 mm made of metal or magnetic seeds, emphasis on the acupressure point in the ear can be stimulated by attaching the stimulator media to the acupressure point in the ear or directly with pressure from the finger at the acupressure point in the ear (Mehta et al., 2017). Benefits that can be obtained by using aurecular acupressure techniques in treating patient pain include increasing patient independence because this technique can be taught to patients, reducing medical costs associated with treatment costs or drug consumption and minimizing the risk of infection because this technique is carried out with invasive methods. (McDonough et al., 2008; Singh & Chaturvedi, 2015). The aim of this review literature is to determine the effect of acupressure aurecular therapy to reduce pain intensity by identifying research studies related to the use of aurecular acupressure as a therapy to reduce pain intensity.

Methods

This writing is done by searching literature review methods obtained through the internet. The keywords used in a search or search are Complementary alternative medicine, Aurecular acupressure, pain management. Literature is traced through data-based pubmed, scient direct and google scholar. The inclusion criteria used were full text articles in English, articles with limitation of publication in the last 10 years or from 2009 to 2019, RCT research design, the intervention given was Aurecular acupressure, the results measured were pain intensity. Journals obtained from the search results as many as 3150 journals, after analysis was obtained 6 journals in accordance with the inclusion criteria which then further examined

Figure 1. Flow of article search



Results and Discussion

In this review literature discusses the effect of aurecular acupressure on pain reduction. From the search results, the authors get 6 articles that are suitable for analysis about the effects of auricular acupressure. From the results of the study it can be concluded that the use of aurecular acupressure therapy can reduce the level of pain in patients with complaints of dysminorrhea, postoperative pain, low back pain and breast cancer pain. The table below presents a summary of the 6 articles analyzed.

Table 1. Summary of article search results

No	Author	Country	Title	Design	Sub ject	Result
1	Cha & sok (2016)	South korea	Effects of auricular acupressure (AA) therapy on primary dysmenorrhea for female high school students in south korea	RCT	91	There was a significant difference between the AA intervention group and the control group in abdominal pain (p <0.001), back pain (p <0.001) and Primary dysmenorrhea (p <0.001)
2	Chang et al (2012)	Taiwan	Auricular acupressure (AA) for managing postoperative pain	RCT	62	There was a significant difference between analgesic use in the AA intervention

			and knee motion in patients with total knee replacement			group compared with the control group (p <0.05)
3	Chung et al (2014)	Taiwan	Integrative acupoint stimulation to alleviate postoperative pain and morphin related side effects	RCT	82	Interventions with AA can significantly reduce the intensity of postoperative lumbar spine pain (p <0.05)
4	Yeh et al (2015)	USA	Pilot randomized controlled trial of auricular point acupressure to manage symptom cluster of pain, fatigue and disturbed sleep in breast cancer patient	RCT	31	There was a 71% decrease in intensity in the AA intervention group compared with the control group with a significance of p <0.02
5	Yeh et al (2013)	USA	A randomized clinical trial of auricular point acupressure for chronic low back pain	RCT	19	There was a significant decrease in pain between the AA intervention group compared with the control group (p <0.01)
6	Lin et al (2015)	USA	The anti-inflammatory actions of auricular point acupressure for chronic low back pain	RCT	51	Respondents in the AA intervention group showed a significant reduction in pain by 56%

From the 6 articles analyzed, the research conducted by (Cha & Sok, 2016) used 91 high school student respondents which were divided into two namely the intervention group as much as 45 respondents and the control group as many as 46 respondents. Interventions were given for 3 days during the menstrual period. In the

intervention group therapy was given at the corn, sinmun, gyogdam and naebunbi points with stimulator media. The measured results are abdominal pain and back pain using Visual analogue scale (VAS) and primary dysmenorrhea using menstrual distress syndrome. The results of this study report that there are significant differences in abdominal pain (p <0.001), back pain (p <0.001) and primary dysmenorrhea (p <0.001).

While subsequent studies conducted by (Chang et al., 2012) try to apply aurecular acupressure therapy to reduce pain in patients with postoperative total knee replacement (TKR). The study subjects used were 62 patients who were divided into two intervention and control groups. The acupressure points used are the shenmen and subcortex points. The intervention was given 3 times at 9 AM, 1 PM and 5 PM for 3 days with the time of giving each intervention for 3 minutes. This study reported a decrease in analgesic consumption between the two groups (p <0.05). The results of this study are also in line with the results of a study conducted by (Chung et al., 2014) where there was a significant reduction in pain between the intervention and control groups in post lumbar spine surgery patients (p <0.05).

Other studies reported by (Yeh et al., 2016) about the use of aurecular acupressure in breast cancer patient pain. This study used 31 respondents as respondents and divided into groups Intervention and control with interventions given for 4 weeks. The acupressure points used are shenmen, symaptethic, occiput, nervous subcortex, neurasthenia area, neurasthenia point and anxious. The results of this study reported that there was a decrease in pain level of 71% in the intervention group compared with the control group with a significance of p <0.02.

Subsequent research by (Yeh et al., 2013) reported the use of aurecular acupressure in patients with low back pain. Respondents used were 19 respondents and were divided into two groups, namely intervention and control groups. Interventions were given at the low back,

shenmen, sympathetic and nervous subcortex acupressure points for 4 weeks. The results of this study reported a decrease in pain in the intervention group of more than 70% and there was a significant difference in the difference in pain levels between the intervention and control groups ($p < 0.01$). The same thing was reported by the results of a study conducted by (Lin et al., 2015) where there was a decrease in pain level of 56% between the groups that received aurecular acupressure intervention and the control group.

Acupressure is a derivative of acupuncture techniques originating from China, acupressure is done by applying physical pressure on several surfaces of the body (Hosbach, 2008). Acupressure if done with the right technique can reduce pain levels both acute and chronic (Kurniawan, 2016). In general, the basic mechanism of action of acupressure can be explained based on 3 mechanisms, namely: 1) Emphasis on acupressure points on the surface of the body can stimulate type I and type II afferent nerves or A-delta fibers in the muscles that will send impulses to the anterolateral tract in the spinal cord. In the spinal cord the pain is inhibited by presynaptics by the release of enkephalin and dynorphin, preventing pain messages up the spinothalamic tract. 2) Acupressure stimulates the structure of the midbrain by activating cells in the periaqueductal gray matter and raphe nucleus. Then the signal will be sent down through the dorsolateral tract which causes the release of monoamine norepinephrine and serotonin in the spinal cord. This neurotransmitter will inhibit presynaptic and postsynaptic pain by decreasing signal transmission across the spinothalamic tract. 3) stimulation of the hypothalamic pituitary complex causes systemic release of beta endorphin into the bloodstream of the pituitary gland, release of beta endorphin accompanied by the release of adrenocorticotrophic hormones (Grigory V. Chernyak & Daniel I. Sessler, 2006).

The process of pain reduction with acupressure therapy can also be explained using

holistic teroi, the emphasis on the acupressure point can provide a local effect, namely the reduction of pain in the surrounding area. energy that comes from the emphasis on the acupressure point can flow through the meridian flow and toward the target organ so that it can produce stimulation that gives the effect of biochemical changes (endophrin levels), biological (blood flow and oxygen) and perception (decreased pain level) (Kurniawan, 2016).

Aurecular acupressure is an acupressure technique performed on the ear. The pressure point or acupoint on aurecular acupressure can use a 2 mm reduced stimulator media made of metal or magnetic ore. Emphasis on the acupressure points in the ear can be stimulated by attaching the stimulator media to the acupressure points in the ear or directly with pressure from the finger on the acupressure points in the ear (Mehta et al., 2017). How aurecular acupressure works to reduce pain levels is known through nerve stimulation in the external ear that is connected to specific areas of the brain so that the body can release opioid peptides (endofrin, enkephalin, morphine, dinorphine) and neurotransmitters (serotonin, norepinephrine) (You et al., 2019).

Conclusion

Based on the analysis of the 6 articles used and it was concluded that aurecular acupressure is a therapy that can be used to reduce pain levels in patients with various clinical conditions. The advantage of using aurecular acupressure is that this therapy can minimize the risk of infection because it uses non-invasive measures and can increase the patient's independence in handling pain complaints because this technique can be taught to patients. However, further research is still needed to support the results of this literature review so that there is more strong evidence that can be used to support the use of aurecular acupressure as a therapy to reduce pain intensity.

References

- Brent, A. S. (2000). The management of pain in the emergency department. *Pediatric Clinics of North America*, 47(3), 651–679. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/10835996>
- Cha, N. H., & Sok, S. R. (2016). Effects of Auricular Acupressure Therapy on Primary Dysmenorrhea for Female High School Students in South Korea. *Journal of Nursing Scholarship*, 48(5), 508–516. <https://doi.org/10.1111/jnu.12238>
- Chang, L. H., Hsu, C. H., Jong, G. P., Ho, S., Tsay, S. L., & Lin, K. C. (2012). Auricular acupressure for managing postoperative pain and knee motion in patients with total knee replacement: A randomized sham control study. *Evidence-Based Complementary and Alternative Medicine*, 2012. <https://doi.org/10.1155/2012/528452>
- Chung, Y. C., Tsou, M. Y., Chen, H. H., Lin, J. G., & Yeh, M. L. (2014). Integrative acupoint stimulation to alleviate postoperative pain and morphine-related side effects: A sham-controlled study. *International Journal of Nursing Studies*, 51(3), 370–378. <https://doi.org/10.1016/j.ijnurstu.2013.06.007>
- Demir, Y. (2012). *Therapies in Pain Management. Pain Management – Current Issues and Opinions*. <https://doi.org/10.5772/30050>
- Grigory V. Chernyak, M. ., & Daniel I. Sessler, M. (2006). Perioperative Acupuncture and other Techniques. *Anesthesiology*, (102 (5) : 1031-1078), 1031–1049.
- Hosbach, I. (2008). Atlas of Acupuncture. *Atlas of Acupuncture*, 697–722. <https://doi.org/10.1016/B978-044310028-4.50012-6>
- Kurniawan, E. H. (2016). (Complementary and Alternative Medicine Acupressure in Reducing pain intensity : a narrtive review. *Nurse Line Journal*, 1(2).
- Lin, W.-C., Yeh, C. H., Chien, L.-C., Morone, N. E., Glick, R. M., & Albers, K. M. (2015). The Anti-Inflammatory Actions of Auricular Point Acupressure for Chronic Low Back Pain. *Evidence-Based Complementary and Alternative Medicine*, 2015, 1–9. <https://doi.org/10.1155/2015/103570>
- McDonough, S. M., Liddle, S. D., Hunter, R., Walsh, D. M., Glasgow, P., Gormley, Baxter, G. D. (2008). Exercise and manual auricular acupuncture: A pilot assessor-blind randomised controlled trial. (The acupuncture and personalised exercise programme (APEP) Trial). *BMC Musculoskeletal Disorders*, 9, 1–10. <https://doi.org/10.1186/1471-2474-9-31>
- Mehta, P., Dhapte, V., Kadam, S., & Dhapte, V. (2017). Contemporary acupressure therapy: Adroit cure for painless recovery of therapeutic ailments. *Journal of Traditional and Complementary Medicine*, 7(2), 251–263. <https://doi.org/10.1016/j.jtcme.2016.06.004>
- Public, G., & Priority, H. (2011). Pain as a Global Public Health Priority Pain as a Global Public Health Priority. *BMC Public Health*, 0–11. <https://doi.org/10.1186/1471-2458-11-770>
- Singh, P., & Chaturvedi, A. (2015). Complementary and alternative medicine in cancer pain management: A systematic review. *Indian Journal of Palliative Care*, 21(1), 105. <https://doi.org/10.4103/0973-1075.150202>
- Velissaris, D., Karanikolas, M., Pantzaris, N., Kipourgos, G., Bampalis, V., Karanikola, Gogos, C. (2017). Acute Abdominal Pain Assessment in the Emergency Department: The Experience of a Greek University Hospital. *Journal of Clinical Medicine Research*, 9(12), 987–993. <https://doi.org/10.14740/jocmr3206w>
- Wardani, N. P. (2014). *Manajemen Nyeri Akut*.
- Yeh, C. H., Balaban, D., Sponberg, R., Primavera, J., Cohen, S. M., Ren, D., Suen, L. K.-P. (2013). A randomized clinical trial of auricular point acupressure for chronic

low back pain: A feasibility study.
*Evidence-Based Complementary and
Alternative Medicine*, 2013.
<https://doi.org/10.1155/2013/196978>

Yeh, C. H., Chien, L. C., Lin, W. C., Bovbjerg,
D. H., & Van Londen, G. J. (2016). Pilot
randomized controlled trial of auricular
point acupressure to manage symptom

clusters of pain, fatigue, and disturbed sleep in
breast cancer patients. *Cancer Nursing*,
39(5), 402–410.
<https://doi.org/10.1097/NCC.00000000000000303>

You, E., Kim, D., Harris, R., & D'Alonzo, K.
(2019). Effects of Auricular Acupressure
on Pain Management: A Systematic
Review. *Pain Management Nursing*, 20(1),
17–24.
<https://doi.org/10.1016/j.pmn.2018.07.010>