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Effectiveness of Ear Acupoint Pressure Bean Care in Reducing Postoperative Pain After Debridement and Suturing Procedure

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Abstract

Background: Postoperative pain is a common and distressing symptom after debridement and suturing procedures. Non-pharmacological nursing interventions have gradually gained attention in postoperative pain management. In China, due to trauma-related injuries caused by traffic accidents, work-related injuries, and accidental trauma, the number of such injuries has been increasing year by year, resulting in a large number of patients requiring debridement and suturing procedures in emergency departments. Postoperative pain is closely related to the patient's recovery, wound healing, and overall physical and mental health. Severe pain can affect sleep quality, delay functional recovery, increase discomfort, and have a negative impact on the patient's postoperative quality of life. Moreover, due to tissue damage, inflammatory response, anesthetic effects, and psychological stress, the intensity of pain may vary at different times after the operation.

Purpose: The study aimed to determine the effectiveness of Ear Acupoint Pressure Bean Care (EAPBC) in reducing postoperative pain among patients undergoing debridement and suturing procedures. Specifically, the study compared pain levels between patients receiving routine nursing care alone and those receiving routine nursing care together with Ear Acupoint Pressure Bean Care (EAPBC).

Methodology: The study utilized a quasi-experimental research design involving a control group and an experimental group. Pain scores were assessed using the Changhai Pain Scale preoperative, at 1 hour after surgery, and at 6 hours after surgery to observe changes in pain intensity during the recovery period. The study also explored whether pain reduction patterns differed across selected demographic characteristics.

Result: The result shows that the level of postoperative pain declined for both groups over time. At 1 hour after surgery, both groups were experiencing moderate pain, but the experimental group had lower pain. At 6 hours after surgery, both groups experienced mild pain, but the experimental group experienced more pain reduction. In terms of Differences in Pain Levels Across Time Between the Control and Experimental Groups Pairwise comparisons showed no significant difference between groups before surgery, but significant differences were found at 1 hour and 6 hours after surgery.

Conclusion: Based on the findings of this study, Ear Acupoint Pressure Bean Care (EAPBC) was effective in reducing postoperative pain after debridement and suturing procedures. Patients who received EAPBC together with routine nursing care experienced better postoperative pain relief compared with those who received routine nursing care alone. It may serve as a safe, simple, non-invasive, and complementary nursing intervention for postoperative pain management after debridement and suturing procedures.

Keywords: Bean Care, Debridement, Ear Acupoint Pressure, Postoperative Pain, Suturing Procedure

1. Background

Postoperative pain remains one of the most common and challenging issues for patients undergoing debridement and suturing procedures. These surgeries are typically performed in emergency departments and surgical wards to remove contaminated or necrotic tissues, prevent infection, control bleeding, and promote wound healing in patients with traumatic soft tissue injuries. In China, due to trauma-related injuries caused by traffic accidents, work-related injuries, and accidental trauma, the number of such injuries has been increasing year by year, resulting in a large number of patients requiring debridement and suturing procedures in emergency departments (National Health Commission of the People's Republic of China, 2022) [37]. Although debridement and suturing procedures are generally regarded as minor surgical procedures, many patients still experience moderate to severe pain during recovery. According to the definition of the International Association for the Study of Pain,

pain is "an unpleasant sensory and emotional experience associated with actual or potential tissue damage" (Raja *et al*., 2020) [44]. Therefore, effective postoperative pain management is considered an important component of quality nursing care and postoperative recovery.

Postoperative pain is closely related to the patient's recovery, wound healing, and overall physical and mental health. Severe pain can affect sleep quality, delay functional recovery, increase discomfort, and have a negative impact on the patient's postoperative quality of life. Moreover, due to tissue damage, inflammatory response, anesthetic effects, and psychological stress, the intensity of pain may vary at different times after the operation. For patients undergoing debridement and suturing procedures, as the anesthetic effect gradually weakens and tissue sensitivity increases, early postoperative pain may become more pronounced. Therefore, continuous pain assessment is crucial for identifying changes in pain intensity and improving the comfort of patients during their recovery. Currently, postoperative pain is usually managed through routine nursing care, psychological support, and analgesic drugs. Although these methods help alleviate pain, certain analgesic drugs may cause side effects such as nausea, vomiting, dizziness, drowsiness, and urinary retention (Tang & Zhu, 2020) [49]. Due to these limitations, non-pharmacological nursing interventions are increasingly gaining attention in clinical practice. Nurses are encouraged to explore safe, simple, and cost-effective methods to help relieve postoperative pain and reduce patients' reliance on drugs.

Ear Acupoint Pressure Bean Care (EAPBC) is a traditional Chinese medical nursing intervention method that helps relieve pain and enhance comfort by stimulating specific auricular acupoints using vaccaria seeds. In this study, the Shenmen, Sympathetic, and Subcortex auricular acupoints were used during the intervention process. According to traditional Chinese medicine theory, stimulating these auricular acupoints helps regulate blood and qi circulation, restore body balance, and improve physical comfort. Compared to drug-based analgesia, EAPBC is considered non-invasive, safe, convenient, and relatively cost-effective (Yang & Tu, 2025) [56]. Moreover, this intervention has been applied in various clinical fields such as gastrointestinal surgery, gynecological surgery, and orthopedic care (Yang, 2016). Liu *et al*. (2021) [31] conducted a systematic review, and the results showed that ear acupressure effectively relieved pain in various clinical settings. Similarly, You *et al*. (2019) [58] found that ear acupressure helped reduce pain intensity, improve patient comfort, and reduce reliance on analgesic drugs.

These findings suggest that Ear Acupoint Pressure Bean Care may serve as a beneficial complementary nursing intervention for postoperative pain management.

Although previous studies have shown that Ear Acupoint Pressure Bean Care (EAPBC) has a positive effect on postoperative pain, most of the existing studies mainly focus on orthopedic, gastrointestinal or gynecological surgeries. Only a few studies have explored its effectiveness in patients undergoing debridement and suturing procedures. Moreover, there are few studies that use repeated pain assessment methods to evaluate the changes in pain levels at different postoperative time points. Due to this gap in the literature, further research is needed to determine whether Ear Acupoint Pressure Bean Care (EAPBC) can effectively alleviate postoperative pain in patients undergoing debridement and suturing procedures.

Therefore, this study aimed to determine the effectiveness of Ear Acupoint Pressure Bean Care (EAPBC) in reducing postoperative pain among patients undergoing debridement and suturing procedures. Specifically, the study compared pain levels between patients receiving routine nursing care alone and those receiving routine nursing care together with Ear Acupoint Pressure Bean Care (EAPBC). The findings of this study may contribute to evidence-based nursing practice by providing nurses with a safe, non-invasive, and low-cost complementary nursing intervention for postoperative pain management after debridement and suturing procedures. Furthermore, the study may support the integration of Traditional Chinese Medicine nursing care into modern clinical nursing practice and help improve patient comfort, postoperative pain management, and recovery outcomes.

2. Methodology

Research Design

This study utilized a quantitative quasi-experimental research design to determine the effectiveness of Ear Acupoint Pressure Bean Care (EAPBC) on postoperative pain among patients undergoing debridement and suturing procedures. The study involved two groups of participants: a control group and an experimental group. Both groups received routine basic nursing care, while the experimental group additionally received EAPBC intervention after the procedure.

Preoperative pain assessment was conducted using the Changhai Pain Scale to establish baseline comparability between the two groups before the intervention. Postoperative pain assessments were subsequently conducted at 1 hour and 6 hours after surgery (within a 6-hour observation period) using the same pain scale.

The quasi-experimental design was considered appropriate for this study because it allowed the researcher to examine the effect of the nursing intervention on postoperative pain outcomes under a clinical setting. The independent variable of the study was the nursing intervention, while the dependent variable was postoperative pain scores. Demographic characteristics were also examined as possible influencing factors on pain responses. The study utilized comparative analysis between the control and experimental groups to determine whether EAPBC contributed to postoperative pain reduction among patients undergoing debridement and suturing procedures.

Research Locale

This study was conducted at the People's Hospital of Wucheng County, Dezhou City, Shandong Province, China. Based on hospital records, the hospital is a recognized "Dezhou Municipal County-level Trauma Center" and has 51 clinical departments, 530 beds, over 300,000 outpatient and emergency visits annually, more than 20,000 inpatients per year, and over 4,000 surgical procedures annually (People's Hospital of Wucheng County, 2025) [43]. This site was chosen because the departments of surgery and traditional Chinese medicine are both key departments in the hospital. It provides an adequate source of eligible participants requiring debridement and suturing. The hospital is more suitable for collecting Ear Acupoint

Pressure Bean Care (EAPBC) nursing care data.

Population and Sample

The target population was trauma patients with open soft tissue wounds requiring debridement and suturing. A purposive sampling method was used to recruit eligible participants, followed by random assignment into the control and experimental groups. All participants were recruited from the People's Hospital of Wucheng County, Shandong Province, China. The sample size was set at 60 participants (30 per group).

The inclusion criteria were as follows: (1) patients who needed and would undergo surgical debridement and suturing; (2) aged 20 to 50 years old, excluding pregnant women; (3) conscious, with normal communication skills, and able to complete the assessment; (4) had not used painkillers within 24 hours before the procedure; and (5) able to cooperate with Ear Acupoint Pressure Bean Care (EAPBC). The exclusion criteria included: (1) patients with cognitive dysfunction, mental illness, or communication disorders who could not cooperate with the assessment or nursing care; (2) patients with alcohol or drug dependence; (3) patients with combined organ injury or multiple systemic injuries who might require surgery in the near future; (4) patients with hemorrhagic shock; (5) patients with systemic infection; and (6) patients with obvious auricular injury or inflammation who could not tolerate local ear acupoint pressure.

Research Intervention

All participants were inpatients admitted to the surgical ward after undergoing debridement and suturing procedures. The participants were divided into a control group and an experimental group. Both groups received routine basic postoperative nursing care, including: (1) wound observation and dressing changes; (2) medication administration as prescribed, with both groups following the same postoperative analgesia protocol; (3) positioning guidance and assistance; (4) health education on wound cleaning and keeping the wound dry; and (5) psychological support and environmental adjustment, such as maintaining proper indoor ventilation, suitable room temperature, and emotional reassurance.

The experimental group additionally received Ear Acupoint Pressure Bean Care (EAPBC). The intervention was initiated immediately after surgery and continued throughout the 6-hour postoperative observation period.The ear acupressure intervention was administered by bedside nurses who had received unified training. They followed a standardized procedure to position the beads at the corresponding acupoints on the ear, Shenmen, Sympathetic, and Subcortex. This procedure helped maintain consistency of the intervention. The seeds remained in place during the postoperative observation period, providing continuous stimulation to the acupoints.

During the retention period, nurses performed regular pressing sessions to reinforce the stimulation effect. Each pressing session lasted 5 minutes per acupoint using the thumb and index finger, applying moderate pressure until the patient felt a normal response such as soreness, numbness, distension, or warmth. Pressing was performed immediately after surgery, then every 2 hours (at 2 hours and 4 hours after surgery). If the patient experienced significant discomfort or pain, pressing was stopped immediately.

Pain assessments were conducted by the researcher using the standardized Changhai Pain Scale at three time points: before surgery (baseline), 1 hour after surgery, and 6 hours after surgery. The 1-hour and 6-hour postoperative assessments were selected based on previous postoperative pain studies, as these time points represent the early and intermediate postoperative pain periods and are appropriate for observing short-term postoperative pain changes following the intervention.

3. Result

Table 1: Level of Preoperative Pain Between the Control and Experimental Groups Before Intervention

Group	*n*	*M*	*SD*	Remark
Control Group	30	5.77	0.9	Moderate Pain
Experimental Group	30	5.63	1.0	Moderate Pain

Note. *M* = mean; *SD* = standard deviation. Pain was assessed using a numerical pain rating scale ranging from 0 to 10, where 0 = no pain, 1.00-3.99 = mild pain, 4.00-6.99 = moderate pain, and 7.00-10.00 = severe pain. Mean preoperative pain scores for both groups fall within the moderate pain range, indicating comparable pain intensity prior to treatment.

Table 1 presents the pain scores of patients in the control group and the experimental group before nursing interventions. It is mainly used to determine whether the pain levels of the two groups were similar before surgery and whether the baseline was comparable. This is important because there should be no difference in the baseline of both groups when conducting an experiment.

The mean pain scores among the subjects in the control and experimental groups are 5.77 (SD = 0.90) and 5.63 (SD = 1.00), respectively. Both these mean scores lie within the range 4.00-6.99, indicating moderate pain. Considering how close the mean scores are, it can be concluded that participants in both the groups had similar pain scores before the intervention.

The presence of moderate pain before intervention is supported by recent studies which reveal that people who undergo less invasive surgical or medical treatment tend to experience moderate pain before the process begins (Horn *et al*., 2020) [17]. Moreover, poor management of pain at an early stage can contribute to the development of moderate pain levels in patients admitted to hospitals (Chou *et al*., 2021) [5]. Based on the demographic characteristics presented in Table 1, most participants were young to middle-aged adults with relatively similar educational and income backgrounds. The similarity of the preoperative pain scores between the control and experimental groups suggests that the participants had comparable baseline pain conditions prior to the intervention. This supports the comparability of the two groups before the implementation of Ear Acupoint Pressure Bean Care (EAPBC).

In addition, the lack of significant difference between the two groups before the experiment shows that the grouping process was successful in ensuring equal distribution among the participants based on their pain experience. The effectiveness of the study is thus ensured internally, making sure that the results generated after the intervention were due to Ear Acupoint Pressure Bean Care (EAPBC) and not other factors.

Table 2: Level of Postoperative Pain Between the Control and Experimental Groups After Intervention

Time After Surgery	Group	*n*	*M*	*SD*	Remark
1 hour	Control Group	30	4.77	0.86	Moderate pain
1 hour	Experimental Group	30	4.20	0.96	Moderate pain
6 hours	Control Group	30	3.60	0.67	Mild pain
6 hours	Experimental Group	30	2.80	0.71	Mild pain

Note. *M* = mean; *SD* = standard deviation. Pain was assessed using a Changhai Pain Scale ranging from 0 to 10, where 0 = no pain, 1.00–3.99 = mild pain, 4.00–6.99 = moderate pain, and 7.00–10.00 = severe pain. Mean pain scores were interpreted according to the interval in which they fall.

Table 2 shows the pain scores of the two groups of patients at 1 hour and 6 hours after surgery, used to observe the changes in pain in the two groups after receiving different interventions. The comparison between the two groups is critical in assessing the success of the Ear Acupoint Pressure Bean Care (EAPBC) in pain reduction.

From the results in the table, at 1 hour after surgery, the control group had a pain score of 4.77±0.86, still at a moderate pain level; the experimental group had a score of 4.20±0.96, indicating a lower level of pain compared to the control group. Even though the two groups' postoperative pain scores were within the moderate level, it is important to note that the experimental group recorded lower pain scores. It is possible that Ear Acupoint Pressure Bean Care (EAPBC) had an early analgesic effect on the patients, a notion that supports research conducted by (Zhang *et al*., 2025; Zhou *et al*., 2025) [59, 62]. Pain scores of both control and experimental groups decreased further 6 hours after surgery to become classified under mild pain group. Nevertheless, an even larger reduction was observed in experimental group (M = 2.80, SD = 0.71) when compared to the control group (M = 3.60, SD = 0.67). The findings suggest a greater reduction in pain scores in the experimental group compared with the control group. The findings support the effectiveness of Ear Acupoint Pressure Bean Care (EAPBC) in relieving postoperative pain. These findings were consistent with the studies conducted by Zhang *et al*. (2025) [59] and Zhou *et al*. (2025) [62].

This decline in pain levels in both groups is a part of the natural healing process after surgery. Nevertheless, the more pronounced decline in the experimental group suggests that Ear Acupoint Pressure Bean Care (EAPBC) serves as an additional nursing care intervention. In fact, there are several recent systematic reviews and randomized controlled trials showing that Ear Acupoint Pressure Bean Care (EAPBC) is effective for reducing the severity of pain and improving postoperative results (Zhang *et al*., 2025; Zhou *et al*., 2025; Li *et al*., 2025) [59, 62, 30].

In summary, the results show that despite pain reduction in both groups, patients in the experimental group benefited more from the intervention with reduced pain levels.

Table 3: Comparison of Pain Levels Across Time Between the Control and Experimental Groups

Time Point	*Control Group (M ± SD)*	*Experimental Group (M ± SD)*	*F (df)*	*p*	η^2p
Preoperative	5.77 ± 0.90	5.63 ± 1.00	-	-	-
1 hr after surgery	4.77 ± 0.86	4.20 ± 0.96	-	-	-
6 hrs after surgery	3.60 ± 0.67	2.80 ± 0.71	-	-	-
Time Effect	-	-	665.07 (1.65, 95.60)	< .001	0.92
Group Effect	-	-	5.82 (1, 58)	0.020	0.09
Time × Group	-	-	12.18 (1.65, 95.60)	< .001	0.17

Note. Values are presented as mean ± standard deviation. Pain scores were measured using a numerical pain rating scale ranging from 0 to 10. A two-way mixed-model ANOVA with **Time** (preoperative, 1 hour, 6 hours) as the within-subjects factor and **Group** (control vs. experimental) as the between-subjects factor revealed a **significant main effect of Time**, $F(1.65, 95.60) = 665.07$, $p < .001$, $\eta^2_p = .92$, a **significant Time × Group interaction**, $F(1.65, 95.60) = 12.18$, $p < .001$, $\eta^2_p = .17$, and a **significant main effect of Group**, $F(1, 58) = 5.82$, $p = .02$, $\eta^2_p = .09$. Greenhouse–Geisser correction was applied due to violation of the sphericity assumption.

The study used a two-way mixed-design ANOVA to examine differences in pain levels across time between the control and experimental groups.This approach is particularly appropriate for repeated-measures clinical data because it captures both within-subject changes over time and between-group differences simultaneously, providing a more comprehensive evaluation of treatment effectiveness (Field, 2020; Lakens, 2021). It is more suitable for this study design. The 1-hour and 6-hour postoperative assessments were selected because they represent the early and short-term postoperative pain periods and are appropriate for observing changes in pain after the intervention.

To answer this question, use Table 4 and Table 5 together. As shown in Table 4, there was a significant main effect of time, F(1.65, 95.60)=665.07, p < .001, η^2p = .92, indicating that pain levels significantly decreased over time in both groups. In practical words, it can be interpreted that the time progression alone can have a decisive impact on alleviating the pain, which is primarily because of the natural recovery process (Chou *et al*., 2021; Gan *et al*., 2020) [5, 11].

There was also a significant main effect of group, F(1,58)=5.82, p = .020, η^2p = .09, indicating a significant difference in overall pain levels between the control and experimental groups. This means that Ear Acupoint Pressure Bean Care (EAPBC) adds some extra decrease in pain besides the regular treatment procedure (Gao *et al*., 2024; Zhang *et al*., 2024) [12, 60].

In addition, the interaction effect between time and group was significant, F(1.65, 95.60)=12.18, p < .001, η^2p = .17. This finding indicates that the pattern of pain reduction over time differed between the two groups, with the experimental group showing greater pain reduction compared with the control group. So the intervention not only reduces pain but also accelerates the rate at which pain decreases over time, highlighting its added clinical benefit (Zhang *et al*., 2025; Zhou *et al*., 2025) [59, 62]. Therefore, Ho1 was rejected, indicating that there was a significant difference in pain levels across time between the control and experimental groups.

Table 4: Mean Differences in Pain levels Between Control and Experimental Groups at Each Time Point

Time Point	Mean Difference (Control − Experimental)	*SE*	*t*	*p*
Preoperative	0.14	0.25	0.54	0.59
1 hour after surgery	0.57	0.24	2.41	0.02
6 hours after surgery	0.80	0.18	4.46	< .001

Note. Mean differences represent **Control Group minus Experimental Group** pain scores; positive values indicate higher pain in the control group. Simple main effects of **Group** were examined at each level of **Time** following a significant Time × Group interaction in the two-way mixed-model ANOVA. The simple main effect of group was **not significant at the preoperative assessment**, $F(1, 58) = 0.30$, $p = .59$, but was **significant at 1 hour**, $F(1, 58) = 5.80$, $p = .02$, and **6 hours after surgery**, $F(1, 58) = 19.89$, $p < .001$. *SE* = standard error.

As shown in Table 4, further analyses found that the two groups showed no significant difference before surgery (p = 0.59), confirming baseline comparability; one hour after surgery, pain in the experimental group was significantly lower than in the control group (p = 0.02); six hours after surgery, the difference between the groups was even more significant (p < 0.001). These findings indicate that the difference in pain scores between the two groups became greater over time, with the experimental group showing lower pain scores at both postoperative assessments. This result is consistent with the sustained analgesic effect of auricular acupressure (EAPBC) (Gao *et al*., 2024; Zhou *et al*., 2025) [12, 62]. Overall, while time accounts for the largest proportion of pain reduction (92%), the intervention provides an additional moderate effect (9%) and significantly enhances the pattern of pain relief over time (17%), supporting its value as a complementary nursing intervention. These findings suggest that Ear Acupoint Pressure Bean Care (EAPBC) was associated with greater pain reduction after debridement and suturing compared with routine nursing care alone.

4. Conclusion

Based on the findings of this study, Ear Acupoint Pressure Bean Care (EAPBC) was effective in reducing postoperative pain after debridement and suturing procedures. Patients who received EAPBC together with routine nursing care experienced better postoperative pain relief compared with those who received routine nursing care alone. It may serve as a safe, simple, non-invasive, and complementary nursing intervention for postoperative pain management after debridement and suturing procedures.

5. Recommendations

For Nursing Clinical Practice

1. Medical staff should consider using Ear Acupoint Pressure Bean Care (EAPBC) as a complementary nursing intervention for patients undergoing debridement and suturing.
2. Clinical staff should undergo standardized training on Ear Acupoint Pressure Bean Care (EAPBC) and follow standardized pressure ways to ensure consistency of the intervention and enhance postoperative pain management.
3. Hospitals may consider incorporating Ear Acupoint Pressure Bean Care (EAPBC) into postoperative nursing care plans to support pain management after debridement and suturing procedures.

For Nursing Management and Nursing Education

4. Nursing management may promote patient-centered care by incorporating non-pharmacological interventions, such as Ear Acupoint Pressure Bean Care (EAPBC), into routine nursing practice.
5. Nursing education programs may include Ear Acupoint Pressure Bean Care (EAPBC) and other Traditional Chinese Medicine (TCM) nursing interventions to help future nurses provide holistic pain management and support the appropriate use of postoperative analgesic measures.

For Future Nursing Research

6. Future studies may consider the following recommendations:
   - Increase the number of participants to improve the generalizability of the findings.
   - Conduct further observation for 24-72 hours to determine long-term impact.
   - Compare Ear Acupoint Pressure Bean Care (EAPBC) with alternative therapies.
   - Further investigate the physiological mechanisms underlying the analgesic effects of Ear Acupoint Pressure Bean Care (EAPBC).
   - Evaluate the effectiveness of Ear Acupoint Pressure Bean Care (EAPBC) under different surgical conditions.

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7. Conflicts of Interest

The authors declares there are no significant competing financial, professional, or personal interests that might have influenced the performance or presentation of the work described in this manuscript.

8. Ethical consideration

Ethics approval at Far Eastern University, Manila.

9. References

1. Brummett CM, Waljee JF, Goesling J, Moser S, Lin P, Englesbe MJ, *et al*. New persistent opioid use after minor and major surgical procedures in US adults. JAMA Network Open. 2021; 4(4):e213783. Doi: https://doi.org/10.1001/jamanetworkopen.2021.3783
2. Chen LJ. The role of auricular point bean pressing in reducing post-operative incision pain in patients undergoing emergency debridement and suture. Chinese Journal of Practical Nursing. 2025; 31(18):1402-1405.
3. Chen SY, Wang L, Zhang H. Effect of Chinese herbal plaster combined with auricular point pressing bean on pain and functional recovery in patients after total knee arthroplasty. Journal of Integrated Traditional Chinese and Western Medicine Nursing. 2023; 9(4):53-57.
4. Chinese Society of Anesthesiology Pain Group. Adult postoperative pain management clinical practice guidelines (2024 edition). Chinese Journal of Anesthesiology. 2025; 45(9):1045-1079. Doi: https://doi.org/10.3760/cma.j.cn131073-20250414-00902
5. Chou R, Gordon DB, De Leon-Casasola OA. Management of postoperative pain: A clinical practice

guideline update. The Journal of Pain. 2021; 22(1):1-80. Doi: https://doi.org/10.1016/j.jpain.2020.08.001
6. Clark A. Health literacy, race, and understanding health information. (Doctoral dissertation). Walden University, 2023. https://scholarworks.waldenu.edu/cgi/viewcontent.cgi
7. Djordjevic C, Saab CY. Beyond pain privacy and pain meters: A new vision for pain biomarkers. Frontiers in Pain Research. 2024; 5:1397645. Doi: https://doi.org/10.3389/fpain.2024.1397645
8. Expert Consensus Group on Standardized Wound Treatment. Expert consensus on standardized wound management and dressing change procedures. Heilongjiang Traditional Chinese Medicine. 2025; 4.
9. Farrar JT, Polomano RC, Berlin JA, Strom BL. A comparison of change in pain intensity measures. The Journal of Pain. 2021; 22(2):157-166. Doi: https://doi.org/10.1016/j.jpain.2020.08.004
10. Faul F, Erdfelder E, Lang A-G, Buchner A. G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. Behavior Research Methods. 2007; 39(2):175-191. Doi: https://doi.org/10.3758/BF03193146
11. Gan TJ, Belani KG, Bergese S, Chung F, Diemunsch P, Habib AS, *et al*. Fourth consensus guidelines for the management of postoperative nausea and vomiting. Anesthesia & Analgesia. 2020; 131(2):411-448. Doi: https://doi.org/10.1213/ANE.0000000000004833
12. Gao J, Zhang L, Wang Y. Auricular point acupressure for postoperative pain management: A randomized controlled trial. Explore. 2024; 20(5):103020. Doi: https://doi.org/10.1016/j.explore.2024.103020
13. Ghanbari F. Comparative effectiveness of ear and body acupressure for postoperative pain in elderly women following knee arthroplasty: A randomized trial. Journal of Integrative and Complementary Medicine. 2025; 31(4):312-320. Doi: https://doi.org/10.1177/27683605251377400
14. Golinelli D. Gender differences in healthcare utilization across Europe. Health Policy, 2025. Doi: https://doi.org/10.1016/j.healthpol.2025.104000
15. Heilongjiang Traditional Chinese Medicine. Study on the application of comfort nursing in surgical debridement. Heilongjiang Traditional Chinese Medicine. 2024; 4.
16. Hernández C, Díaz M, Rojas F. Postoperative pain trajectories under standardized care pathways: A multicenter cohort study. Journal of Clinical Anesthesia. 2023; 87:111091. Doi: https://doi.org/10.1016/j.jclinane.2023.111091
17. Horn SD, Gassaway J. Pain management in acute care: Determinants and outcomes. Pain Medicine. 2020; 21(2):273-283. Doi: https://doi.org/10.1093/pm/pnz219
18. Hossain B. Marital status, sex and utilisation of healthcare services among the elderly in India, 2021.
19. Hu P, Li Y, Wang X. High-quality nursing benefits patients with emergency trauma undergoing surgical debridement and suturing and helps relieve pain. American Journal of Translational Research. 2023; 15(2):1355-1364.
20. Huang JH, Zhang WY, You XF, Xiao J, Zheng LR, Liu JL, *et al*. Effect of auricular point pressing on gastrointestinal function and gastrointestinal hormone levels after laparoscopic hysteromyomectomy. Journal of Chongqing Medical University. 2025; 50(4):456-461.
21. Jin Y, Zhao X, Li H, Wang Z. Trajectories of acute postoperative pain and associated factors: A longitudinal study. Pain Research and Management, 2021, 1-9. Doi: https://doi.org/10.1155/2021/6690512
22. Jiao YJ. Auricular point pressing bean method: Small ear acupoints contain great mysteries. Dazhong Health News, January 30, 2024. https://www.dzjkb.org.cn/dazhongkepu/53055.html
23. Karcioglu O, Topacoglu H, Dikme O, Dikme O. A systematic review of pain scales in adults: Which to use? The American Journal of Emergency Medicine. 2020; 38(4):707-714. Doi: https://doi.org/10.1016/j.ajem.2019.06.008
24. Kehlet H, Joshi GP. Enhanced recovery after surgery: Current controversies and concerns. Anesthesia & Analgesia. 2021; 132(6):1623-1630. Doi: https://doi.org/10.1213/ANE.0000000000005419
25. Kim HJ, Yang GS, Park SY. Age-related differences in acute postoperative pain: A retrospective cohort study. BMC Anesthesiology. 2022; 22(1):1-9. Doi: https://doi.org/10.1186/s12871-022-01675-4
26. Kwon S, Thompson R, Florence M, Glasgow R. Patient and procedural predictors of postoperative pain outcomes: A contemporary review. Annals of Surgery. 2021; 273(2):252-260. Doi: https://doi.org/10.1097/SLA.0000000000003894
27. Lee HY. Gender differences in health literacy among Korean adults. American Journal of Men's Health. 2015; 9(5):370-379. Doi: https://doi.org/10.1177/1557988314545485
28. Lee SY, Park JH, Kim EJ. Early postoperative pain patterns and associated factors in surgical patients. International Journal of Surgery. 2022; 104:106782. Doi: https://doi.org/10.1016/j.ijsu.2022.106782
29. Li P. Clinical effects and safety of auricular acupressure as an adjunct therapy on postoperative pain among patients with hip fracture: A meta-analysis. Pain Research and Management, 2023, 5077772. Doi: https://doi.org/10.1155/2023/5077772
30. Li WX, Chen X, Liu Y. Acupuncture and auricular therapy for postoperative pain: A network meta-analysis. Medicine, 2025. Advance online publication.
31. Liu M, Tong Y, Chai L, Chen S, Xue Z, Chen Y, *et al*. Effects of auricular point acupressure on pain relief: A systematic review. Pain Management Nursing. 2021; 22(3):268-280. Doi: https://doi.org/10.1016/j.pmn.2020.07.007
32. Liu YY. Effectiveness of auricular acupressure on improving pain and heart rate variability in patients after cervical spine surgery. Holistic Nursing Practice. 2024; 38(5):267-274.
33. Martínez V, Beloeil H, Marret E, Fletcher D, Ravaud P. Non-opioid analgesics in the perioperative period: A systematic review of efficacy and safety. Pain. 2021; 162(Suppl 1):S22-S31. Doi: https://doi.org/10.1097/j.pain.0000000000002207
34. Mi W, Liu Y, Ma Y, Jiang Y, Duan C, CAPOPS Study Group. Postoperative pain-related outcomes and perioperative pain management in China: A population-based study. The Lancet Regional Health - Western Pacific. 2023; 39:100822. Doi: https://doi.org/10.1016/j.lanwpc.2023.100822

35. National Bureau of Statistics of China. China statistical yearbook 2020. China Statistics Press, 2020.
36. National Bureau of Statistics of China. China statistical yearbook 2021, 2021. http://www.stats.gov.cn/tjsj/ndsj/2021/indexch.htm
37. National Health Commission of the People's Republic of China. China health statistics yearbook 2022. Peking Union Medical College Press, 2022.
38. National Library of Medicine. Debridement. In MeSH (Medical Subject Headings), n.d. Retrieved May 26, 2026, from: https://meshb.nlm.nih.gov/record/ui?ui=D003646
39. Oliveira CB, Maher CG, Pinto RZ, Traeger AC, Lin CWC, Chenot JF, *et al*. Clinical practice guidelines for the management of pain: A systematic review. BMJ Open. 2020; 10(1):e033296. Doi: https://doi.org/10.1136/bmjopen-2019-033296
40. Pandey KR. The impact of marital status on healthcare utilization. Journal of Family Medicine and Primary Care, 2019. https://pmc.ncbi.nlm.nih.gov/articles/PMC6709281/
41. Peng S, Wang YL, Zhang SQ, Sun YQ. Analysis of acupoint selection rules of auricular plaster therapy for postoperative pain based on data mining. Journal of Nursing (China). 2021; 28(5):21-25. Doi: https://doi.org/10.16460/j.issn1008-9969.2021.05.021
42. Peng X, Liu Y, Zhang Z, Wang H, Wang Y. Auricular vagus nerve stimulation drives analgesia via an auricle–brain axis in a mouse model of neuropathic pain. Nature Communications, 2026. Advance online publication.
43. People's Hospital of Wucheng County. Hospital profile. Wucheng County People's Government, 2025. https://www.wucheng.gov.cn
44. Raja SN, Carr DB, Cohen M, Finnerup NB, Flor H, Gibson S, *et al*. The revised International Association for the Study of Pain definition of pain: Concepts, challenges, and compromises. Pain. 2020; 161(9):1976-1982. Doi: https://doi.org/10.1097/j.pain.0000000000001939
45. Schug SA, Bruce J. Risk stratification for the development of chronic postsurgical pain. Pain Reports. 2020; 5(2):e842. Doi: https://doi.org/10.1097/PR9.0000000000000842
46. Si GJ. Study on the application value of nursing intervention in emergency debridement and suturing. Medical Food and Health. 2023; 21(35):51-53.
47. Stessel B, Fiddelers AAA, Marcus MAE, Joosten EAJ. Prevalence and predictors of acute postoperative pain after surgery: A prospective observational study. European Journal of Pain. 2021; 25(6):1229-1239. Doi: https://doi.org/10.1002/ejp.1747
48. Sun EC, Darnall BD, Baker LC, Mackey S. Incidence of and risk factors for chronic opioid use among opioid-naïve patients in the postoperative period. JAMA Internal Medicine. 2022; 182(5):559-567. Doi: https://doi.org/10.1001/jamainternmed.2022.0832
49. Tang ZJ, Zhu XL. Application of auricular acupressure in postoperative pain care for anorectal diseases. China Health and Nutrition. 2020; 30(29):13-14.
50. Tencent Medical Dictionary. What does medical debridement mean?, 2021. Retrieved from: https://h5.baike.qq.com/mobile/article.html?docid=qa12816011yqrjgd
51. Titan AL, Naderalvojoud B, Suarez P, Coquet J, Baiu I, Hernandez-Boussard T, Curtin C. Post-operative pain management in elders. Heliyon. 2025; 11(3):e43465. Doi: https://doi.org/10.1016/j.heliyon.2025.e43465
52. Wang HX, Li YL. Research progress and clinical application of surgical suturing techniques. Chinese Journal of Current Advances in General Surgery. 2023; 26(5):401-404.
53. Wang L, Li X, Huang Y. Postoperative pain trajectories and influencing factors in surgical patients: A prospective study. BMJ Open. 2024; 14(8):e085702. Doi: https://doi.org/10.1136/bmjopen-2024-085702
54. Wick EC, Grant MC, Wu CL. Postoperative multimodal analgesia pain management with nonopioid analgesics and techniques. JAMA Surgery. 2020; 155(7):691-692. Doi: https://doi.org/10.1001/jamasurg.2020.0827
55. Wu Y, Yang J, Liu Y, Mi W. Acute postoperative pain in orthopaedic trauma and nontrauma patients: An analysis of the China Acute Postoperative Pain Study (CAPOPS). European Journal of Pain. 2025; 29(10):e70147.
56. Yang JC, Tu L. Research progress of auricular point sticking therapy in patients with postoperative pain. Chinese Journal of Integrative Nursing. 2025; 11(5):106-112. Doi: https://doi.org/10.55111/j.issn2709-1961.20250208003
57. Yong RJ, Mullins PM, Bhattacharyya N. Prevalence of postoperative pain and treatment outcomes in modern surgical care. JAMA Network Open. 2022; 5(3):e222012. Doi: https://doi.org/10.1001/jamanetworkopen.2022.2012
58. You E, Kim D, Harris R, D'Alonzo K. Effects of auricular acupressure on pain management: A systematic review. Pain Management Nursing. 2019; 20(1):17-24. Doi: https://doi.org/10.1016/j.pmn.2018.07.010
59. Zhang G, Xu G, Tang Y. The analgesic effectiveness of auriculotherapy for acute postoperative pain: A systematic review and meta-analysis. Complementary Therapies in Medicine. 2025; 88:103112. Doi: https://doi.org/10.1016/j.ctim.2024.103112
60. Zhang X, Liu H, Chen Y. Effectiveness of auricular acupuncture on postoperative pain: A randomized controlled trial. Frontiers in Neurology. 2024; 15:1275192. Doi: https://doi.org/10.3389/fneur.2024.1275192
61. Zhong Q, Wang D, Bai YM, Du SZ, Song YL, Zhu J. Effectiveness of auricular acupressure for acute postoperative pain after surgery: A systematic review and meta-analysis. Chinese Journal of Integrative Medicine. 2021; 27(3):225-232.
62. Zhou X, Zhang G, Chen D, Yao H, Wang Q. The efficacy of auricular acupressure combined with emotional freedom techniques on the postoperative pain and anxiety state of patients with lower limb fractures: A randomized clinical controlled trial. Medicine. 2025; 104(5):e41401. Doi: https://doi.org/10.1097/MD.0000000000041401
63. Zhu X, Zhang Q, Cao H. Application research of auricular acupressure bean analgesia in perioperative nursing of ophthalmic patients. Advances in Clinical Medicine. 2026; 16(2):1-6. Doi: https://doi.org/10.12677/acm.2026.162625