

EFFECTIVENESS OF ACUPRESSURE THERAPY IN REDUCING PAIN AND IMPROVING QUALITY OF LIFE AMONG OLDER ADULTS WITH LOW BACK PAIN: A QUASI-EXPERIMENTAL STUDY

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ABSTRACT

Low back pain is a common condition among older adults and significantly affects functional ability and quality of life. Non-pharmacological interventions such as acupressure therapy have been increasingly explored as complementary approaches for pain management. This study aimed to examine the effect of acupressure therapy on pain intensity and quality of life among elderly individuals with low back pain. A quasi-experimental study with a one group pre-test and post-test design was conducted among elderly participants diagnosed with low back pain. A total of 30 respondents were selected using purposive sampling. Participants were assigned to an intervention group receiving acupressure therapy. The acupressure intervention was given for 15 minutes, 3 times a week for 2 weeks. Pain intensity was measured using the Numeric Rating Scale (NRS), while quality of life was assessed using WHOQOL-BREF. Data were analysed using paired and independent t-tests. The results showed a significant reduction in pain levels in the intervention group compared to the control group ($0.001 < 0.05$). Additionally, quality of life scores significantly improved following the intervention ($0.001 < 0.05$). In conclusion, acupressure therapy is an effective complementary intervention for reducing pain and improving quality of life among elderly patients with low back pain. This therapy can be considered as part of holistic nursing care to enhance patient outcomes.

Keywords: Acupressure; Elderly; Low Back Pain; Pain Management; Quality of Life

INTRODUCTION

Population aging represents a global demographic transformation characterized by a rapid increase in the proportion of older adults, driven by improvements in life expectancy and declining fertility rates, with significant implications for health systems worldwide. In Indonesia, this trend is increasingly evident, as the proportion of older adults rose from 10.82% in 2022 to 11.01% in 2023, reflecting a steady transition toward an aging society (Marpaung, 2024). Aging is a complex and multifactorial biological process involving progressive decline in physiological function across multiple systems, particularly the musculoskeletal system, which predisposes older individuals to chronic conditions, functional limitations, and decreased independence (Noto, 2023). Among these conditions, low back pain (LBP) is one of the most prevalent and disabling disorders affecting older adults, contributing substantially to global years lived with disability and reduced quality of life (Hartvigsen et al., 2018; A. Wu et al., 2020).

Low back pain is defined as pain localized in the lumbar region, often associated with degenerative changes in spinal structures, reduced muscle strength, and impaired neuromuscular control. The condition frequently manifests as persistent or recurrent pain accompanied by muscle stiffness, spasms, and radiating discomfort to the lower extremities, which collectively limit mobility and physical functioning (Maher et al., 2017). Beyond its physical impact, chronic LBP is strongly associated with psychological distress, including anxiety, depression, and social withdrawal, thereby affecting multiple domains of quality of life (Alfalogy et al., 2023; Balajti et al., 2024). In older populations, these effects are particularly pronounced, as decreased physical capacity combined with chronic pain increases the risk of falls, dependency, and reduced participation in daily and social activities (Laubenstein & Beissner, 2016).

Effective pain management in older adults remains a clinical challenge, especially given the risks associated with long-term pharmacological therapy, such as gastrointestinal complications, dizziness, polypharmacy, and dependency (Kartika, 2019; Malec & Shega, 2015). Consequently, there is growing emphasis on non-pharmacological and complementary therapies that are safe, cost-effective, and feasible within community and primary care settings. Acupressure therapy has emerged as a promising intervention in this context, involving the application of manual pressure to specific acupoints (Ghanbari et al., 2022) to stimulate physiological responses that promote pain relief and relaxation (Chen & Wang, 2014; Mahanani et al., 2023).

The analgesic effects of acupressure can be theoretically explained through the Gate Control Theory of Pain proposed by Melzack and Wall, which posits that non-painful stimuli, such as mechanical pressure, can inhibit the transmission of pain signals at the spinal cord level by "closing the gate" to nociceptive input (Treede, 2016). Stimulation of large-diameter nerve fibres through acupressure activates inhibitory interneurons in the dorsal horn, thereby reducing the perception of pain. In addition, acupressure is associated with increased release of endogenous opioids, such as endorphins, and improved blood circulation, which further contribute to pain modulation and muscle relaxation (Lee & Frazier, 2011; Movahedi Najafabadi et al.,



2020). Empirical studies have demonstrated that stimulation of specific acupoints, including Shensu (BL23), Dachangshu (BL25), and Yaoyangguan (DU3), can effectively reduce pain intensity and enhance physical comfort in individuals with LBP (Kurniati et al., 2020).

While previous studies have demonstrated the potential of acupressure to reduce pain and improve functional outcomes in individuals with low back pain, important gaps remain regarding broader patient-centred outcomes. A recent randomized controlled trial of auricular point acupressure in older adults with chronic low back pain primarily evaluated pain intensity and physical function, demonstrating significant improvements in both outcomes. Similarly, a recent systematic review of trials involving older adults with non-specific low back pain found that pain and physical functioning were the most frequently assessed domains, whereas health-related quality of life was evaluated in only 23% of studies. In contrast, the present study specifically examines both pain intensity and overall quality of life using the WHOQOL-BREF among community-dwelling older adults with low back pain. In addition, this study evaluates a structured, practitioner-delivered acupressure protocol applied to specific lumbar-related acupoints (BL23, BL25, and DU3) over six sessions across two weeks. By simultaneously assessing symptom relief and a broader patient-centred outcome, this study extends previous evidence by examining whether acupressure may provide benefits beyond short-term pain reduction in older adults with low back pain. Quality of life is a multidimensional construct encompassing physical health, psychological well-being, social relationships, and environmental factors, all of which are significantly affected by chronic pain conditions (Kalfoss et al., 2021). In older adults, maintaining quality of life is a central goal of healthcare, as it reflects not only the absence of disease but also the ability to function independently and engage meaningfully in daily life (Marpaung, 2024). However, there remains a lack of integrated research examining the simultaneous impact of non-pharmacological interventions, such as acupressure, on both pain reduction and quality of life improvement, particularly in community-based elderly populations.

Preliminary observations in community health settings in Indonesia further highlight this gap, where older adults frequently report persistent low back pain that interferes with daily activities and emotional well-being, yet rely predominantly on pharmacological treatments despite concerns regarding side effects and long-term use. Additionally, awareness and accessibility of complementary therapies such as acupressure remain limited, suggesting an unmet need for safe and practical interventions that can be implemented within routine nursing care.

Therefore, this study addresses a critical research gap by evaluating the effectiveness of acupressure therapy on both pain intensity and quality of life among older adults with low back pain using a quasi-experimental design in a real-world community setting. The novelty of this study lies in its dual-outcome approach, integrating clinical and holistic patient-centred measures, as well as its application of a low-cost, nurse-delivered intervention that is feasible for primary healthcare implementation. Furthermore, by grounding the intervention within the Gate Control



Theory of Pain, this study provides a stronger theoretical and physiological basis for understanding the mechanisms underlying acupressure therapy.

The objective of this study is to determine whether acupressure therapy significantly reduces pain intensity and improves quality of life among older adults with low back pain. It is hypothesized that participants receiving acupressure therapy will experience a significant decrease in pain levels and a corresponding improvement in quality of life following the intervention period. The findings of this study are expected to contribute to the evidence base supporting holistic, non-pharmacological pain management strategies and inform nursing practice and health policy in aging populations.

METHODS

Study Design

This study employed a quasi-experimental design using a one-group pretest–posttest approach to evaluate the effectiveness of acupressure therapy on pain intensity and quality of life among older adults with low back pain. The study design followed the principles of the TREND Statement to ensure transparency and methodological rigor in reporting nonrandomized interventions.

Setting and Samples

The study was conducted at a community health center (Puskesmas Pasar Baru) in Pesisir Selatan Regency, Indonesia. The target population consisted of older adults aged 60 years and above who were diagnosed with low back pain. Participants were recruited using purposive sampling based on predefined inclusion and exclusion criteria.

The inclusion criteria were: (1) age ≥ 60 years, (2) experiencing low back pain for at least three months, (3) able to communicate effectively, and (4) willing to participate in the study. Exclusion criteria included: (1) severe cognitive impairment, (2) presence of severe comorbid conditions, and (3) current participation in other structured pain management programs. A total of 30 participants met the eligibility criteria and were enrolled in the study.



Intervention

The intervention consisted of a structured acupressure therapy protocol administered by trained healthcare personnel who had received competency-based training in acupressure techniques prior to the study. The intervention was developed in accordance with established reporting recommendations for non-pharmacological treatments, including the Template for Intervention Description and Replication (TIDieR) and the Standards for Reporting Interventions in Clinical Trials of Acupuncture (STRICTA), to ensure transparency, reproducibility, and methodological rigor (Hoffmann et al., 2014; MacPherson et al., 2010).

Acupressure was applied to three specific acupoints commonly associated with the management of low back pain: Shensu (BL23), located at the level of the second lumbar vertebra approximately 1.5 cun lateral to the posterior midline; Dachangshu (BL25), located at the level of the fourth lumbar vertebra; and Yaoyangguan (DU3), located on the posterior midline below the spinous process of the fourth lumbar vertebra. These acupoints were selected based on traditional Chinese medicine meridian theory and supported by contemporary clinical evidence demonstrating their effectiveness in reducing lumbar pain and improving musculoskeletal function (Ghanbari et al., 2022; Kurniati et al., 2020).

Each session lasted approximately 15 minutes and was conducted three times per week over a two-week period, resulting in a total of six sessions per participant. Participants were positioned comfortably in a prone or lateral position to allow optimal access to the lumbar region, and the intervention was delivered in a quiet environment to facilitate relaxation and minimize external distractions. The acupressure technique involved the application of moderate, sustained pressure using the pads of the thumb or index finger on each acupoint. Pressure was applied in a circular motion at a frequency of approximately 2–3 cycles per second, with each point stimulated for 2–3 minutes. The intensity of pressure was individualized to achieve a tolerable sensation described as mild soreness, warmth, or heaviness (Deqi sensation), which is considered an indicator of effective acupoint stimulation (Ghanbari et al., 2022; Kurniati et al., 2020). Brief rest intervals of 30–60 seconds were provided between stimulation of each acupoint.

To ensure intervention fidelity, all procedures were standardized using a written protocol, and the same trained personnel administered the intervention throughout the study. Adherence to the protocol was monitored using a session checklist, and participants' responses were continuously observed during each session. Safety was carefully monitored, and participants were instructed to report any discomfort during the procedure. No adverse events were reported during the intervention period, consistent with previous studies indicating that acupressure is a safe and low-risk therapy (Tick et al., 2018).

Variables and Measurement

The primary outcomes of this study were to obtain the score of pain intensity and the quality of life on the same times. Pain intensity was measured using the Numeric Rating Scale (NRS), a validated instrument ranging from 0 (no pain) to 10 (worst possible pain). The NRS has demonstrated strong reliability and validity in assessing pain among older adults. Then, the variable of quality of life was assessed using the World Health Organization Quality of Life instrument (WHOQOL-BREF), which evaluates four domains: physical health, psychological well-being, social relationships, and environmental conditions. The WHOQOL-BREF has been widely validated across different populations, including elderly individuals. The measurements were taken at baseline (pre-test) and immediately after the completion of the intervention (post-test).

Instruments

Pain Intensity

The Numeric Rating Scale (NRS) is a widely used, unidimensional measure for assessing pain intensity, typically ranging from 0 (no pain) to 10 (worst imaginable pain). It is considered one of the most practical and reliable tools for evaluating pain in both clinical and research settings, particularly among adult and older populations. The validity of the NRS has been well established through strong correlations with other validated pain assessment tools, such as the Visual Analog Scale (VAS) and the Verbal Rating Scale (VRS), demonstrating excellent convergent validity (Hjermstad et al., 2011). The NRS is also sensitive to changes in pain over time, supporting its responsiveness and construct validity in intervention studies, including those involving chronic pain conditions such as low back pain (Karcioglu et al., 2018). In older adults, the NRS has been shown to maintain good face validity and usability, as it is simple to administer and requires minimal cognitive burden compared to more complex multidimensional instruments. In terms of reliability, the NRS demonstrates high test-retest reliability, with reported intraclass correlation coefficients (ICC) typically exceeding 0.80, indicating strong stability of measurements over time when pain levels remain unchanged (Hawker et al., 2011).

Quality of Life

The World Health Organization Quality of Life–BREF (WHOQOL-BREF) is a widely used, cross-culturally validated instrument designed to assess individuals' perceptions of their quality of life across four domains: physical health, psychological well-being, social relationships, and environmental conditions. The instrument has demonstrated strong psychometric properties, including robust validity and reliability across diverse populations, making it particularly suitable for use in elderly and clinical populations. Construct validity of the WHOQOL-BREF has been consistently supported through factor analysis, confirming the stability of its four-domain structure across different cultural contexts and health conditions (Kalfoss et al., 2021). Additionally, convergent and discriminant validity have been established through significant correlations with related health and well-being measures, indicating that the instrument accurately



captures multidimensional aspects of quality of life (Ahmmed et al., 2020). In geriatric populations, the WHOQOL-BREF has shown sensitivity in detecting variations in physical and psychological health status, particularly in individuals with chronic conditions such as musculoskeletal disorders and chronic pain.

Furthermore, the instrument demonstrates good internal consistency, with Cronbach's alpha coefficients typically exceeding 0.70 across domains, indicating acceptable to high reliability (Thompson et al., 2015). Test-retest reliability has also been reported as satisfactory, supporting the stability of the instrument over time. Importantly, the WHOQOL-BREF has been validated in various low- and middle-income countries, including Southeast Asian populations, reinforcing its applicability in community-based research settings similar to the present study, especially in Indonesia (Anisah & Djuwita, 2019). Given its strong psychometric performance, multidimensional structure, and cross-cultural applicability, the WHOQOL-BREF is considered an appropriate and reliable tool for assessing quality of life among older adults with low back pain in this study.

Data Collection Procedures

Data collection was conducted over a two-week period. Baseline assessments were performed prior to the initiation of the intervention. Following completion of the six acupressure sessions, post-intervention assessments were conducted using the same instruments. All data were collected by trained research assistants to minimize measurement bias. Participants were provided with clear instructions and assistance when completing the questionnaires.

Bias Control

Several strategies were implemented to reduce potential bias. Standardized intervention protocols were used to ensure consistency across sessions. The same measurement instruments were applied at both pre-test and post-test to maintain reliability. Additionally, trained data collectors who were not involved in delivering the intervention were assigned to collect outcome data to minimize observer bias.

Sample Size Consideration

The sample size of 30 participants was determined based on feasibility and previous similar quasi-experimental studies evaluating non-pharmacological interventions for pain management. Although no formal power calculation was conducted, the sample size was considered adequate to detect within-group differences using paired statistical analysis.

Statistical Analysis

Data were analysed using statistical software. Descriptive statistics, including means and standard deviations, were used to summarize participant characteristics and

study variables. The normality of the data distribution was assessed prior to inferential analysis. Non-parametric analysis on Wilcoxon signed-rank test were conducted to compare pre-test and post-test scores for pain intensity and Paired t-tests to compare pre-test and post-test scores quality of life. This study was used the significant of p-value by less than 0.05 was considered statistically significant.

Ethical Considerations

This study was conducted in accordance with established ethical principles for research involving human participants. Ethical approval was obtained from the Fort De Kock Health Research Ethics Committee under approval number 259/UFDK.KEPK/2025 prior to the commencement of data collection.

RESULTS

Participant Characteristics

A total of 30 older adults with low back pain were included in the analysis. The mean age was 64.67 years (SD = 3.49), with the majority being female (70%). Most participants had primary-level education (66.7%) and were predominantly housewives (70%). The majority lived with family members or caregivers (73.3%), indicating a socially supported population. This showed in Table 1.

Table 1. Sociodemographic Characteristics of Participants (n = 30)

Variable	Category	n (%)	Mean ± SD
Age (years)			64.67 ± 3.49
Gender	Male	9 (30.0)	
	Female	21 (70.0)	
Education Level	Primary school	20 (66.7)	
	Junior high school	7 (23.3)	
	Senior high school	3 (10.0)	
	Higher education (D3/S1)	0 (0.0)	
Occupation	Farmer	6 (20.0)	
	Small trader	2 (6.7)	
	Retired	1 (3.3)	
	Housewife	21 (70.0)	
Living Status	With caregiver/family	22 (73.3)	
	Living independently	8 (26.7)	

Then this study continues to analysed the normality of data on each variable. The Shapiro–Wilk test indicated that pain scores before and after the intervention were not normally distributed ($p < 0.05$), whereas quality of life scores were normally distributed ($p > 0.05$). Accordingly, non-parametric analysis (Wilcoxon signed-rank test) was applied for pain intensity, and parametric analysis (paired t-test) was used for quality of life. It can show in the Table 2.

Table 2. Normality Test of Study Variables Using Shapiro–Wilk Test

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Variable	p-value	Interpretation
Pain (Pre-intervention)	<0.001	Not normally distributed
Pain (Post-intervention)	<0.001	Not normally distributed
Quality of Life (Pre-intervention)	0.535	Normally distributed
Quality of Life (Post-intervention)	0.335	Normally distributed

*p-value < 0.05 indicates non-normal distribution

Effect of Acupressure on Pain Intensity

Table 3. Changes in Pain Intensity Before and After Intervention (n = 30)

Variable	Median (IQR)	Mean $\pm$ SD	Min–Max	Mean Difference (95% CI)	p-value	Effect Size (r)
Pre-intervention	7 (6–7)	6.70 $\pm$ 0.70	6–8	–	–	–
Post-intervention	4 (3–5)	3.90 $\pm$ 0.87	3–6	–2.80 (–3.18 to –2.42)	<0.001	0.62

* *Wilcoxon signed-rank test was used. Effect size (r) interpreted as small (0.1), medium (0.3), and large (≥ 0.5).*

Pain intensity showed a statistically significant reduction following the intervention ($Z = -4.78$, $p < 0.001$). The median pain score decreased from 7 (IQR: 6–7) to 4 (IQR: 3–5), indicating a clinically meaningful improvement. The effect size ($r = 0.62$) suggests a large effect, supporting the effectiveness of acupressure therapy in reducing pain among older adults.

Effect of Acupressure on Quality of Life

Table 4. Changes in Quality of Life Before and After Intervention (n = 30)

Variable	Mean $\pm$ SD	Min–Max	Mean Difference (95% CI)	p-value	Effect Size (dz)
Pre-intervention	51.50 $\pm$ 2.00	47–55	–	–	–
Post-intervention	63.77 $\pm$ 2.57	59–69	+12.27 (11.10 to 13.44)	<0.001	2.15

* Paired *t*-test was used. Effect size (dz) interpreted as small (0.2), medium (0.5), and large (≥ 0.8).

Quality of life significantly improved following the intervention ($t(29) \approx 11.77$, $p < 0.001$). The mean score increased from 51.50 (SD = 2.00) to 63.77 (SD = 2.57), with a mean difference of 12.27 (95% CI: 11.10 to 13.44). The effect size (dz = 2.15) indicates a very large effect, suggesting substantial improvement in overall quality of life after acupressure therapy. The results demonstrate that acupressure therapy produced statistically significant and clinically meaningful improvements in both pain intensity and quality of life among older adults with low back pain. The large effect sizes observed across both outcomes reinforce the potential of acupressure as an effective non-pharmacological intervention within community-based geriatric care.

DISCUSSION

The findings of this study demonstrate that acupressure therapy produced a statistically significant and clinically meaningful reduction in pain intensity among older adults with low back pain, which aligns with a growing body of global evidence supporting the effectiveness of non-pharmacological interventions for chronic musculoskeletal conditions. The sociodemographic profile of the participants provides important context for interpreting the observed improvements in pain and quality of life. Most participants were women (70%), had a mean age of 64.67 years (SD = 3.49), and had relatively low educational attainment, with 66.7% completing only primary school; this profile is consistent with the substantial burden of low back pain reported among older adults in Indonesia, for which a recent systematic review and meta-analysis estimated a pooled prevalence of 32.2% (95% CI, 17.6–51.5%) (Susanto et al., 2026). The predominance of women and participants with lower educational attainment may also reflect population characteristics associated with vulnerability to pain-related functional limitations, although these factors were not examined as treatment-effect modifiers in the present study. Importantly, 73.3% of participants lived with a caregiver or family member, which may have provided additional practical and emotional support during the intervention and potentially contributed to perceived quality of life; recent evidence indicates that social support is associated with psychological well-being and life satisfaction among older adults, although its independent contribution to quality-of-life improvement remains context-dependent

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(Sulandari et al., 2024). Therefore, the improvement observed after acupressure should be interpreted within the broader social and demographic context of the participants, rather than being attributed exclusively to the intervention, particularly given the absence of a control group and the limited sample size.

The substantial decrease in pain scores observed in this study may be explained through the Gate Control Theory of Pain, which posits that mechanical stimulation of peripheral sensory receptors can inhibit nociceptive signal transmission at the spinal cord level by activating large-diameter afferent fibers, thereby “closing the gate” to pain perception (Treede et al., 2019). In the context of acupressure, the application of sustained pressure on specific acupoints likely stimulates mechanoreceptors and modulates neural pathways involved in pain processing, resulting in decreased central sensitization and improved pain tolerance. This mechanism is supported by neurophysiological studies indicating that tactile stimulation can reduce pain perception by altering spinal and supraspinal processing of nociceptive input (Tan et al., 2017). Furthermore, recent systematic reviews have reported that acupressure and related therapies significantly reduce pain intensity in patients with chronic low back pain, highlighting their role as effective adjuncts or alternatives to pharmacological treatment (Ghanbari et al., 2022; Godley & Smith, 2020).

In addition to neural gating mechanisms, the analgesic effect of acupressure observed in this study may also be attributed to the release of endogenous opioids and other neurochemical mediators that contribute to pain modulation. Evidence suggests that stimulation of acupoints can trigger the release of endorphins, serotonin, and dopamine, which not only reduce pain perception but also enhance mood and overall well-being (J. Wu & Zhao, 2024). This biochemical response is particularly relevant in older adults, where chronic pain is often associated with emotional distress and reduced coping capacity. The large effect size identified in this study further supports the hypothesis that acupressure exerts both physiological and psychological benefits, reinforcing its value as a holistic intervention. Comparable findings have been reported in randomized controlled trials demonstrating that acupressure significantly improves pain outcomes and reduces analgesic consumption in patients with musculoskeletal disorders (Kawi et al., 2025). These findings collectively suggest that acupressure not only interrupts pain signalling pathways but also enhances endogenous pain control systems, making it a multifaceted therapeutic approach.

Beyond pain reduction, this study found a significant improvement in quality of life following the acupressure intervention, which underscores the importance of addressing broader patient-centered outcomes in chronic pain management. Quality of life is a multidimensional construct encompassing physical, psychological, and social domains, all of which are negatively affected by persistent pain conditions such as low back pain. The observed improvement in quality of life may be explained by the interrelationship between pain reduction and functional restoration, as decreased pain enables greater mobility, independence, and participation in daily activities. This is consistent with previous research indicating that effective pain management is a key determinant of improved quality of life in older adults (Carty et al., 2019; Dahlhamer et



al., 2018). Moreover, complementary therapies such as acupressure have been shown to enhance relaxation, reduce stress, and improve sleep quality, all of which contribute to better overall well-being (Field, 2016). The findings of this study therefore reinforce the notion that interventions targeting both physical symptoms and psychosocial factors are essential for optimizing health outcomes in elderly populations.

The integration of acupressure into nursing practice is particularly relevant in the context of holistic care, where the focus extends beyond symptom control to include emotional, social, and functional dimensions of health. Nurses play a critical role in delivering non-pharmacological interventions, and acupressure offers a practical, low-cost, and minimally invasive option that can be easily incorporated into routine care. From a global health perspective, the increasing emphasis on integrative and patient-centred care has led to greater acceptance of complementary therapies in clinical practice (Skelly et al., 2020; Tick et al., 2018). The present findings support this paradigm shift by demonstrating that acupressure can effectively address both pain and quality of life, thereby aligning with contemporary models of holistic nursing care. Furthermore, in resource-limited settings such as community health centres, where access to advanced medical treatments may be restricted, acupressure provides a feasible and sustainable alternative for managing chronic pain among older adults.

Despite these promising findings, several limitations should be considered when interpreting the results. The use of a one-group pretest–posttest design limits the ability to establish causal relationships, as the absence of a control group may introduce potential confounding factors such as placebo effects or natural symptom variation over time. Additionally, the relatively small sample size and single-site setting may limit the generalizability of the findings to broader populations. Future studies employing randomized controlled designs with larger and more diverse samples are needed to confirm the effectiveness of acupressure and to explore its long-term impact on pain and quality of life. Moreover, further research is warranted to investigate the specific mechanisms underlying acupressure therapy, including its effects on neurophysiological and psychosocial pathways, as well as its integration with other non-pharmacological interventions.

In terms of novelty, this study makes a meaningful contribution to the existing literature by simultaneously examining the effects of acupressure on both pain intensity and quality of life among older adults with low back pain in a real-world community setting. While previous studies have largely focused on single outcomes or clinical populations, this study adopts a more comprehensive and holistic approach, reflecting the complexity of chronic pain management in aging populations. The integration of theoretical, physiological, and patient-centred perspectives further enhances the significance of the findings, providing a strong foundation for future research and clinical application. Overall, this study supports the growing body of evidence advocating for the use of complementary therapies as part of integrated, person-centred care strategies aimed at improving the health and well-being of older adults.



Limitations

Several limitations should be considered when interpreting the findings of this study. First, the use of a one-group pretest–posttest design without a control group limits the ability to establish causal inference, as the observed effects may be influenced by external factors such as placebo effects, natural recovery, or temporal changes. Second, the relatively small sample size and the use of purposive sampling may restrict the generalizability of the findings to broader populations of older adults with diverse clinical and socio-demographic characteristics. Third, the short duration of the intervention and follow-up period does not allow for evaluation of the long-term sustainability of the observed effects, particularly in relation to chronic pain management. Fourth, although validated instruments were used, the reliance on self-reported measures may introduce response bias, especially in elderly populations with varying levels of cognitive and perceptual abilities.

Additionally, the study did not control for potential confounding variables such as concurrent treatments, physical activity levels, or psychosocial factors that may influence pain perception and quality of life. Future research employing randomized controlled designs, larger and more diverse samples, and longer follow-up periods is recommended to confirm these findings and to further explore the mechanisms and long-term benefits of acupressure therapy.

CONCLUSION

This study demonstrates that acupressure therapy is an effective non-pharmacological intervention for reducing pain intensity and improving quality of life among older adults with low back pain. The findings revealed a statistically significant decrease in pain levels alongside a substantial improvement in overall quality of life following a structured two-week acupressure intervention. These outcomes support the theoretical basis of pain modulation, particularly through mechanisms consistent with the Gate Control Theory, as well as the broader physiological and psychological benefits associated with complementary therapies. From a clinical perspective, the results highlight the potential of acupressure as a practical, low-cost, and safe intervention that can be integrated into routine nursing care, especially in community and primary healthcare settings. By addressing both physical symptoms and psychosocial well-being, acupressure aligns with holistic nursing principles and contributes to improving functional independence and patient-centred outcomes among older adults. In conclusion, acupressure therapy offers a promising complementary approach for managing chronic low back pain in aging populations, with meaningful implications for nursing practice, health promotion programs, and the development of non-pharmacological pain management strategies in resource-limited settings.



IMPLICATIONS FOR NURSING PRACTICE

The findings of this study suggest that acupressure therapy can be incorporated into nursing practice as a safe, simple, and non-pharmacological intervention for managing low back pain in older adults. Nurses can integrate acupressure into routine pain management strategies to help reduce pain intensity while minimizing dependence on analgesic medications and their potential side effects. In addition, the improvement in quality of life observed among participants indicates that acupressure may support holistic nursing care by addressing both physical comfort and overall well-being. Therefore, nurses should be encouraged to develop competencies in basic acupressure techniques through appropriate training and incorporate this complementary therapy into geriatric nursing care, particularly in community health centers, long-term care facilities, and home-based care settings. Furthermore, nursing practice should promote patient and family education regarding the proper use of acupressure as a self-management strategy to enhance functional independence and improve the quality of life of older adults with low back pain.

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ETHICAL STATEMENT AND CONFLICT OF INTEREST

Ethical approval was obtained from the Fort De Kock Health Research Ethics Committee prior to the commencement of data collection under approval number 259/UFDK.KEPK/2025. The authors declare that there are no conflicts of interest related to this study.

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