

Standardized Acupressure to Improve Sleep Quality in Older Adults with Insomnia: A Qualitative Case Study

Kade Ngurah Dwi Putra Negara¹, Endah Sulistyani², Firgilia Itu³, Lusia Magdalena Bevita⁴

¹⁻⁴St. Elisabeth Health College, Diocese of Maumere, East Nusa Tenggara, Indonesia

Corresponding author:

Name: Kade Ngurah Dwi Putra Negara

E-mail: kadengurastikeskum@gmail.com

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Abstract

Background: Insomnia is prevalent among older adults and is associated with physical discomfort, emotional distress, and diminished quality of life. Although acupressure is commonly used as a complementary physiotherapy intervention to promote relaxation and sleep comfort, existing evidence has predominantly emphasized quantitative outcomes, with limited attention to older adults' lived experiences.

Objective: To explore the lived experiences of older adults with insomnia who underwent a standardized acupressure protocol in a community-based physiotherapy setting.

Methods: A qualitative case study design was employed. Two older adults with insomnia received a standardized six-day acupressure intervention targeting HT7, PC6, SP6, and KI1. Data were collected through in-depth interviews, observations during therapy sessions, and sleep diaries. Reflexive thematic analysis, following Braun and Clarke's approach, was conducted. Methodological rigor was enhanced through data triangulation, independent coding, member checking, and confirmation of data saturation.

Results: Three themes emerged: (1) physical and emotional discomfort prior to therapy, (2) relaxation experienced during acupressure, and (3) improved subjective sleep experiences following therapy. Participants reported reduced sleep latency, fewer nocturnal awakenings, enhanced relaxation, and decreased pre-sleep anxiety. Observational findings corroborated these self-reported experiences.

Conclusion: Standardized acupressure was perceived as a safe and acceptable physiotherapy intervention that promoted relaxation and improved the subjective sleep experience among older adults with insomnia. These findings support the integration of acupressure into holistic, community-based physiotherapy care.

Keywords

Acupressure; Insomnia; Sleep Quality; Aged; Complementary Therapies

Introduction

Sleep is a fundamental biological process that plays a critical role in maintaining physiological regulation, cognitive performance, emotional stability, and overall functional independence, particularly in older adults. Age-related changes in sleep architecture—such as reduced slow-wave sleep, increased sleep fragmentation, prolonged sleep latency, and earlier awakenings—predispose older individuals to insomnia and other sleep disturbances.^{1,2} Insomnia in later life is not merely a benign consequence of aging but a clinically relevant condition associated with impaired physical function, emotional distress, cognitive decline, and diminished quality of life.³

Globally, the prevalence of insomnia among older adults ranges between 30% and 50%, making it one of the most frequently reported health complaints in this population.⁴ In Indonesia, epidemiological data indicate that approximately 40–45% of older adults experience sleep disturbances, yet many cases remain underrecognized and undertreated, particularly in community and primary healthcare settings.⁵ In rural and resource-limited regions such as Eastern Indonesia, structural barriers to healthcare access and a predominant focus on curative services further contribute to the neglect of sleep-related problems among older adults.⁵ Consequently, insomnia in this population often persists untreated, negatively affecting daily functioning and psychosocial well-being.

Pharmacological management remains commonly used in older adults with insomnia; however, it is associated with well-documented risks, including excessive sedation, cognitive impairment, dependency, and increased fall risk.⁶ For these reasons, international clinical guidelines increasingly recommend non-pharmacological interventions as first-line therapy for chronic insomnia, particularly in older populations.⁷ Complementary and integrative approaches, including relaxation techniques and touch-based interventions, have gained attention due to their safety, feasibility, and potential to address both physiological and emotional aspects of sleep disturbance.

Acupressure is a non-invasive complementary therapy derived from traditional East Asian medicine and is increasingly applied within physiotherapy practice to promote relaxation, autonomic regulation, and symptom relief. Quantitative studies and systematic reviews published between 2020 and 2025 have reported that acupressure may improve sleep quality by modulating autonomic nervous system activity, enhancing parasympathetic dominance, and reducing psychological arousal.^{8–12} Specific acupressure points such as Shenmen (HT7), Neiguan (PC6), Sanyinjiao (SP6), and Yongquan (KI1) have been associated with anxiolytic and sleep-promoting effects in older adults.^{13,14} Despite these promising findings, most existing studies have adopted experimental or quasi-experimental designs and have primarily focused on measurable sleep outcomes, such as sleep duration or sleep quality scores.

While quantitative evidence is essential for evaluating effectiveness, it provides limited insight into how older adults subjectively experience acupressure, therapeutic touch, and perceived changes in sleep. Sleep is a deeply personal and meaning-

laden experience, shaped not only by physiological processes but also by emotional, psychological, and cultural factors. Qualitative inquiry is therefore crucial to capture these experiential dimensions, which are often overlooked in outcome-driven research.¹⁴ Recent qualitative studies conducted in non-Indonesian contexts have demonstrated that older adults perceive improvements in sleep not solely in terms of duration, but also through feelings of bodily comfort, emotional calmness, and a restored sense of control over sleep.¹⁵ However, such evidence remains scarce in low- and middle-income countries, including Indonesia, where cultural values surrounding touch, interpersonal care, and holistic health may shape therapeutic experiences differently.

Moreover, within the field of community physiotherapy, there is limited patient experience-based evidence to support the integration of acupressure as a complementary intervention for sleep disturbances in older adults. Most physiotherapy research in this area has emphasized biomechanical or functional outcomes, while subjective experiences and meaning-making processes have received less attention. This gap is particularly relevant in community-based settings, where interventions are often delivered within familiar social and cultural environments and where patient perceptions play a key role in acceptability and adherence.

Therefore, there remains a clear research gap regarding how older adults with insomnia experience acupressure when delivered as part of physiotherapy care in community contexts, particularly in Indonesia. Existing literature predominantly answers the question of *whether* acupressure works, but insufficiently addresses *how* and *why* it may be meaningful to older adults. Addressing this gap is essential to inform holistic, patient-centered physiotherapy practice and to complement existing quantitative evidence with experiential insights.

This study aimed to explore the lived experiences of older adults with insomnia undergoing a standardized acupressure protocol within a community physiotherapy setting using a qualitative case study approach. By focusing on subjective experiences before, during, and after acupressure therapy, this study seeks to provide contextualized, patient-centered evidence that may support the integration of complementary interventions into community physiotherapy programs for older adults with sleep disturbances.

Methods

Study Design

This study employed a qualitative approach using a qualitative case study design to explore in depth the lived experiences of older adults with insomnia who received acupressure as part of physiotherapy care. A qualitative case study design was selected because it allows for an intensive, context-sensitive examination of a phenomenon within real-life settings, with a focus on understanding subjective experiences, perceptions, and meaning-making processes rather than generating theory or statistical generalization. This design was considered appropriate given the exploratory aim of the study and the limited existing qualitative evidence on acupressure experiences among older adults in community physiotherapy contexts.

Research Team and Reflexivity

Data collection was conducted by a licensed physiotherapist with prior training and experience in qualitative health research. The researcher had no therapeutic relationship with the participants before the study commenced and was not involved in their routine clinical care. This positioning minimized potential power imbalances and role confusion between researcher and participant. The researcher's gender and professional background were disclosed to participants at the outset of the study, and all participants were informed of the study objectives, procedures, and the researcher's role as an independent investigator.

Researcher reflexivity was maintained throughout the study through the use of reflective field notes and regular analytic discussions among the research team. These strategies were employed to identify and bracket pre-existing assumptions regarding acupressure and sleep, thereby reducing their influence on data interpretation and enhancing analytical transparency.

Participants and Sampling

Participants were older adults aged 60 years or above who reported experiencing sleep difficulties consistent with insomnia for at least three weeks prior to recruitment. Purposive sampling was used to select participants who were able to provide rich and relevant information aligned with the study objectives. Inclusion criteria included adequate verbal communication skills, willingness to participate in the full intervention and interview process, and stable general health status. Individuals with severe cognitive impairment, acute psychiatric conditions, or unstable medical conditions were excluded.

The study included two participants. The number of cases was determined based on the concept of information power, which suggests that smaller sample sizes may be sufficient when the study aim is narrow, the sample is specific, the quality of dialogue is strong, and the analysis is in-depth. Within the context of an exploratory qualitative case study, two cases were considered adequate to achieve meaningful experiential insight. No participants declined participation, and no drop-outs occurred during the study.

Study Setting

The study was conducted in a community-based setting in East Nusa Tenggara, Indonesia. Acupressure interventions and interviews were carried out either in participants' homes or in a quiet community health environment, depending on participant preference and convenience. No other individuals were present during the interviews or intervention sessions, ensuring privacy and minimizing external influence on participants' responses.

Intervention Description

The intervention consisted of a standardized acupressure protocol for sleep improvement, delivered by a trained physiotherapist. The protocol was developed in accordance with the Template for Intervention Description and Replication (TIDieR) guidelines to ensure clarity and replicability. The acupressure intervention targeted four points commonly associated with relaxation and sleep regulation: Shenmen (HT7), Neiguan (PC6), Sanyinjiao (SP6), and Yongquan (KI1). These points were selected based on prior evidence indicating their role in autonomic modulation, anxiety reduction, and sleep facilitation. Each session lasted approximately 20–25 minutes and was administered once daily over six consecutive days. The intervention was delivered in a one-to-one, hands-on manner.

For each point, moderate manual pressure was applied using the therapist's thumb for approximately 1–2 minutes per point, following a consistent sequence. Pressure intensity was adjusted according to participant comfort and maintained within a light-to-moderate range. Participants were positioned comfortably in a supine or semi-reclined position, and guided slow breathing was encouraged throughout the session. Intervention fidelity was maintained by adhering to a standardized protocol checklist for each session.

Data Collection

Data were collected using multiple qualitative methods to enhance depth and credibility. Semi-structured, in-depth interviews were conducted before and after the intervention period to explore participants' sleep experiences, perceptions of acupressure, and perceived changes following therapy. An interview guide was used to ensure consistency while allowing flexibility to probe emerging topics. Key interview domains included sleep initiation and continuity, physical relaxation, emotional comfort, acceptance of therapeutic touch, and perceived meaning of sleep.

Each interview lasted approximately 15–25 minutes and was conducted in a private setting. All interviews were audio-recorded with participant consent and transcribed verbatim. Non-participant observation was conducted during intervention sessions to document physical and behavioral responses, such as facial expression, muscle tension, breathing patterns, and signs of relaxation. Observational field notes were recorded immediately after each session.

Participants also completed simple sleep diaries throughout the six-day intervention period to document sleep routines, perceived sleep quality, nocturnal awakenings, and morning refreshment. As supplementary descriptive data, blood pressure was measured before and after the intervention period using a calibrated digital sphygmomanometer, following standardized measurement procedures. These physiological data were analyzed descriptively and were not intended for inferential analysis.

Data Analysis

Qualitative data analysis was conducted using reflexive thematic analysis following the six-step approach proposed by Braun and Clarke. The analysis process included data familiarization, initial coding, theme development, theme review, theme definition, and reporting. All interview transcripts, observational notes, and sleep diary entries were read repeatedly to achieve immersion in the data. Initial codes were generated inductively without a predetermined coding framework. Codes with conceptual similarity were grouped into categories, which were subsequently synthesized into overarching themes representing participants' experiences before, during, and after acupressure therapy. Coding and theme development were initially performed independently by two researchers and subsequently discussed to achieve consensus. Data analysis was conducted manually using Microsoft Word and Microsoft Excel to organize codes and maintain an audit trail.

Trustworthiness and Rigor

Methodological rigor was ensured through several strategies. Method triangulation was applied by integrating data from interviews, observations, and sleep diaries. Member checking was conducted by sharing summarized findings with participants to confirm the accuracy of interpretations. Independent coding and peer discussion enhanced analytical credibility. Data saturation was considered achieved when no new codes or themes emerged from the final analysis.

Ethics Statement

The study was conducted in accordance with the principles of the Declaration of Helsinki. Ethical oversight was provided by STIKES St. Elisabeth Keuskupan Maumere. Given the non-invasive nature of the intervention and the minimal risk to participants, formal ethical approval was waived by the institution. All participants received detailed verbal and written information regarding the study objectives, procedures, potential risks, and their right to withdraw at any time. Written informed consent was obtained prior to participation, and confidentiality and anonymity were strictly maintained throughout the research process.

Results

Qualitative analysis of data obtained from in-depth interviews, non-participant observations during therapy sessions, and sleep diaries identified three overarching themes representing older adults' experiences before, during, and after receiving the standardized acupressure intervention. Findings are reported descriptively to reflect participants' subjective experiences and observed responses over the six-day intervention period. The relationship between themes and subthemes is summarized in Table 1.

Table 1. Themes and Subthemes of Older Adults' Experiences With Acupressure Therapy for Insomnia

Main Theme	Subtheme	Condensed Description
Theme 1: Physical and Emotional Discomfort Before Therapy	Muscle tension	Persistent bodily stiffness and difficulty achieving relaxation before sleep
	Recurrent sleep disturbances	Prolonged sleep latency and frequent nocturnal or early-morning awakenings
	Feelings of anxiety	Restless thoughts and emotional unease prior to bedtime
Theme 2: Relaxation Experience During Acupressure Therapy	Warm and comfortable sensation	Local and generalized warmth during acupressure stimulation
	More regular breathing	Slower, deeper, and more rhythmic breathing patterns
	Body feels more relaxed	Reduced muscle tension accompanied by drowsiness
Theme 3: Changes in the Meaning of Sleep After Therapy	Improved sleep quality	Sleep perceived as deeper, longer, and more restorative
	Feeling refreshed upon waking	Increased freshness and reduced fatigue in the morning
	Reduced anxiety	Decreased bedtime worry and improved emotional calmness

Theme 1: Physical and Emotional Discomfort Before Therapy

As summarized in Table 1, both participants reported experiencing considerable physical and emotional discomfort prior to receiving acupressure therapy. Sleep difficulties were consistently described as involving prolonged sleep onset, frequent nighttime awakenings, and non-restorative sleep. Participants associated these disturbances with persistent muscle tension and heightened emotional unease before bedtime.

One participant described a constant sense of bodily stiffness that made relaxation difficult: *"Before the therapy, my body always felt tense, especially at night. Even when I lay down, I couldn't really relax."* (P1) Emotional discomfort was also prominent. Participants reported intrusive thoughts and worry at bedtime, which further delayed sleep initiation: *"When I was about to sleep, my mind kept thinking. I felt anxious, and that made it harder to fall asleep."* (P2) Observational notes recorded before the intervention supported these accounts, documenting rigid body posture, shallow breathing, and restlessness during pre-intervention interactions.

Theme 2: Relaxation Experience During Acupressure Therapy

During the intervention period, participants described a gradual shift toward physical and emotional relaxation, as reflected in Theme 2 (Table 1). Acupressure sessions were commonly associated with sensations of warmth and comfort, both locally at the stimulation sites and throughout the body. Participants frequently noted changes in their breathing patterns during therapy: *"While the therapist was pressing, my breathing became slower. I felt calmer without trying."* (P2) Non-participant observations corroborated these reports, revealing visibly reduced muscle tension, softened facial expressions, and slower, more regular breathing rhythms during and immediately after sessions. Participants also reported increasing drowsiness following therapy, indicating readiness for sleep: *"After the session, my body felt lighter and more relaxed. I didn't feel tense anymore."* (P1) These relaxation responses were observed consistently across sessions for both participants.

Theme 3: Changes in the Meaning of Sleep After Therapy

Following completion of the six-day intervention, participants reported noticeable changes in how they experienced and perceived sleep (Table 1). Sleep was no longer described as a stressful or effortful process, but rather as a calmer and more restorative state. Both participants reported shorter sleep latency and fewer nocturnal awakenings: *"Now I fall asleep faster, and I don't wake up as often during the night."* (P2) Morning experiences also changed, with participants describing increased refreshment upon waking: *"When I wake up, my body feels fresher. I don't feel as tired as before."* (P1)

Additionally, participants reported reduced bedtime anxiety and a greater sense of emotional calmness: *"I don't feel worried before sleeping anymore. I feel more peaceful."* (P1) Sleep diary entries across the intervention period supported these subjective reports, showing consistent descriptions of improved sleep comfort and continuity.

Supporting Descriptive Physiological Data

As supplementary contextual data, blood pressure measurements obtained before and after the intervention period showed relatively stable individual variations without extreme fluctuations. These findings were consistent across both participants and were used solely to describe participants' general physiological condition during the study. No inferential analysis was conducted, and these data were not intended to assess clinical effectiveness.

Discussion

This qualitative case study explored the lived experiences of older adults with insomnia undergoing a standardized acupressure protocol within a community physiotherapy context. The findings indicate that insomnia was experienced not merely as a sleep disturbance, but as a multidimensional condition involving physical tension, emotional distress, and altered perceptions of sleep. Following the intervention, participants described a transition toward bodily relaxation, emotional calmness, and a more restorative and meaningful sleep experience. These findings extend existing quantitative evidence by illuminating how acupressure is subjectively perceived and interpreted by older adults.

Consistent with previous qualitative research, participants in this study described insomnia as an exhausting and distressing experience characterized by persistent muscle tension and pre-sleep anxiety.^{16,17} Such experiences suggest that sleep disturbances in older adults are closely intertwined with emotional regulation and bodily comfort rather than being solely attributable to physiological sleep mechanisms. This reinforces the view that effective insomnia management in older populations should address both physical and psychosocial dimensions of sleep. In this regard, qualitative inquiry provides critical insight that complements outcome-focused quantitative studies.

Participants' relaxation experiences during acupressure therapy were marked by sensations of warmth, slowed breathing, and reduced muscle tension. These experiential findings align with neurophysiological explanations proposed in prior studies, which suggest that acupressure may promote parasympathetic nervous system activity and reduce sympathetic arousal.^{18,19} Although physiological parameters were not directly measured in this study, participants' descriptions of calmness and drowsiness are consistent with mechanisms reported in experimental and clinical research on touch-based interventions. Importantly, the present findings demonstrate how these physiological processes are perceived and made meaningful by older adults in real-world settings.

Beyond physical relaxation, emotional calmness emerged as a central component of participants' experiences. Reduced bedtime anxiety and diminished worry were consistently reported after the intervention. Anxiety is widely recognized as both a precipitating and perpetuating factor of insomnia in older adults, often reinforcing maladaptive sleep-related cognitions.²⁰ The perceived anxiolytic effects of acupressure observed in this study support prior evidence linking stimulation of points such as Shenmen (HT7) and Neiguan (PC6) with emotional regulation and stress reduction.²¹ However, rather than confirming efficacy, this qualitative study highlights how participants experienced these emotional changes as a sense of safety and readiness for sleep.

A notable finding of this study is the shift in participants' perceived meaning of sleep. Prior to the intervention, sleep was described as an effortful and distressing process; after acupressure therapy, sleep was reinterpreted as calming and restorative. This transformation aligns with qualitative studies conducted in Europe and East Asia, which emphasize that perceived sleep quality in older adults is strongly influenced by emotional comfort and bodily awareness rather than sleep duration alone.^{14,22} These findings suggest that non-pharmacological interventions may exert meaningful effects by reshaping individuals' relationship with sleep, even in the absence of measurable physiological change.

From a cultural perspective, the Indonesian context may have influenced participants' experiences and interpretations of acupressure. Therapeutic touch, interpersonal closeness, and holistic approaches to health are generally well accepted within Indonesian communities, particularly among older adults. This cultural congruence may enhance the acceptability and perceived comfort of acupressure as a physiotherapy intervention. However, it also limits the direct transferability of findings to contexts where touch-based therapies are less culturally embedded. Accordingly, caution is warranted when generalizing these results beyond similar sociocultural settings.

Within the scope of community physiotherapy practice, the findings support the use of acupressure as a complementary, patient-centered intervention aimed at enhancing comfort and emotional well-being rather than as a standalone treatment for insomnia. Acupressure is relatively simple to administer, requires minimal equipment, and can be integrated into promotive and preventive programs, such as community health centers and elderly health posts. When combined with sleep education and relaxation strategies, acupressure may contribute to holistic care models that prioritize patient experience and acceptability.

Methodologically, this study demonstrates the value of qualitative case study designs in physiotherapy research, particularly for interventions that involve subjective experiences and therapeutic touch. The use of multiple data sources, including interviews, observations, and sleep diaries, enhanced the credibility of the findings through triangulation. Independent coding, member checking,

and an audit trail further strengthened trustworthiness. Nevertheless, the close involvement of researchers in data collection and analysis may introduce interpretive bias, an inherent characteristic of qualitative inquiry. Reflexive practices were therefore essential to mitigate this limitation.

Several limitations should be acknowledged. The small number of participants restricts generalizability, and the short intervention period limits conclusions regarding long-term effects. Additionally, the absence of objective sleep measures prevents direct comparison between subjective experiences and physiological sleep outcomes. Despite these limitations, the study provides in-depth, contextually grounded insights that address gaps left by quantitative research. Rather than offering definitive conclusions, the findings contribute to a nuanced understanding of how older adults experience acupressure within physiotherapy care.

Future research should consider mixed-methods or longitudinal qualitative designs to integrate experiential findings with objective sleep measures and to examine the sustainability of perceived benefits over time. Studies involving larger and more diverse populations would also help to explore cultural and contextual variations in response to acupressure. Such approaches would strengthen the evidence base for integrating complementary therapies into community physiotherapy practice.

Conclusion

This qualitative case study provides patient experience-based evidence indicating that standardized acupressure is perceived by older adults with insomnia as a safe, comfortable, and acceptable physiotherapy intervention. Rather than emphasizing clinical effectiveness alone, the findings illuminate how acupressure facilitates bodily relaxation, reduces pre-sleep anxiety, and positively reshapes the subjective meaning of sleep. Participants described a transition from experiencing sleep as an effortful and distressing process to perceiving it as calmer and more restorative, highlighting the importance of emotional comfort and bodily awareness in sleep experiences among older adults.

Within the context of community physiotherapy practice, these findings suggest that acupressure may be meaningfully integrated as a complementary, patient-centered approach to support sleep comfort and emotional well-being, particularly in resource-limited settings. The experiential insights offered by this study complement existing quantitative evidence and underscore the value of incorporating patients' perspectives when evaluating non-pharmacological interventions for insomnia. Future research employing mixed-methods or longitudinal qualitative designs is warranted to integrate subjective experiences with objective sleep outcomes and to examine the sustainability and transferability of these findings across diverse cultural and clinical contexts.

Author Contribution

Kade Ngurah Dwi Putra Negara: Conceptualization, Methodology, Data curation, Formal analysis, Writing—original draft.
Endah Sulistyani: Methodology, Writing—review & editing, Supervision.
Firgilia Itu: Data curation, Writing—review & editing.
Lusia Magdalena Bevita: Formal analysis, Writing—review & editing.

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Conflict of Interest Statement

The authors declare no conflict of interest.

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Ethics Statement

This study was conducted in accordance with the principles of the Declaration of Helsinki. Ethical oversight was provided by St. Elisabeth Health College, Diocese of Maumere. Given the non-invasive nature of the intervention and the minimal risk to participants, formal ethical approval was waived by the institution. All participants received comprehensive verbal and written information regarding the study objectives and procedures and provided written informed consent prior to participation. Participant confidentiality and anonymity were strictly maintained throughout all stages of the research.

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