

Section: General Nursing

Utilizing guided imagery accompanied by music to alleviates pain in patients with vertigo

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Abstract

Vertigo is a sensory disorder characterized by a perceived sensation of movement of the body or the surrounding environment. Often involving the autonomic nervous system, it is primarily caused by vestibular system dysfunction. This condition is categorized into two types: peripheral vertigo, resulting from end-organ disorders, and central vertigo, caused by impairments in the central nervous system, such as the vestibular nerves or their connections to the brainstem and cerebellum. While vertigo can stem from middle ear issues or visual disturbances, it may also be triggered by systemic diseases or brain-related conditions. One of the most common causes is cervical disorder, specifically the calcification of the cervical vertebrae. The objective of clinical intervention is to support patients in achieving health restoration, disease prevention, and effective coping. In addressing sleep pattern disturbances, clinical data indicated significant progress: the patient reported sleeping soundly without frequent interruptions and could rest comfortably. Furthermore, the patient successfully demonstrated non-pharmacological Guided Imagery relaxation techniques, showed an improved appetite, and maintained safety by avoiding falls. Based on these observations, it can be concluded that the patient's coping mechanisms reached an adaptive level, leading to their discharge in stable condition.

Keywords: Complementary nursing, guided imagery, nursing care, pain, vertigo

Introduction

Vertigo is a debilitating clinical symptom characterized by a false sensation of movement or spinning, often resulting from vestibular system dysfunction or neurological imbalances (Tarnutzer et al., 2025). Beyond the physical instability and dizziness, patients frequently experience secondary symptoms such as tension headaches, neck pain, and significant emotional distress that exacerbate their overall suffering (Sudhakar, 2025). The complexity of vertigo lies in its multifaceted impact on the sensory system, which can lead to a vicious cycle of anxiety and heightened pain perception (Kozak et al., 2018). Traditional pharmacological treatments often focus on suppressing the vestibular system, yet they may not fully address the somatic pain or the psychological toll of the condition. Consequently, there is a growing clinical interest in integrative therapies that target both the physiological and psychological dimensions of the patient's experience (Koukoulithras et al., 2022). Chronic vertigo often leads to social isolation and a diminished quality of life, making effective symptom management a priority for healthcare providers (Wassermann et al., 2022). Understanding the underlying mechanisms of vertigo-related discomfort is essential for developing comprehensive care plans that go beyond simple medication. By addressing the patient's pain through a holistic lens, clinicians can better mitigate the long-term impact of this sensory disorder.

The use of non-pharmacological interventions, particularly guided imagery and music therapy, has shown remarkable potential in modulating the human pain response through cognitive and sensory pathways (Story et al., 2022). Guided imagery involves the use of directed mental visualizations to induce a state of deep relaxation and distract the brain from noxious stimuli (Alam et al., 2016). When paired with music, this intervention leverages the rhythmic and melodic properties of sound to lower cortisol levels and stimulate the release of endorphins. This combination works on the principle of neuroplasticity, essentially retraining the brain's focus away from the sensation of vertigo and toward a peaceful, controlled internal environment. Music acts as a powerful anchor for the mind, providing a structured sensory input that can stabilize the erratic feelings associated with vestibular episodes (Cordi et al., 2019). Research suggests that these mind-body techniques can significantly lower heart rates and reduce the sympathetic nervous system's "fight or flight" response (Thoma et al., 2013). For patients with vertigo, who often feel a loss of control over their physical space, guided imagery provides a sense of agency and mental grounding (Jain & Fonagy, 2020). This dual-modal approach offers a low-risk, cost-effective adjunct to standard medical care that can be easily personalized to the patient's needs. The synergy between auditory stimulation and mental visualization creates a therapeutic sanctuary that promotes healing at a cellular and emotional level.

This case study aims to document the efficacy of guided imagery accompanied by music in alleviating the specific pain markers associated with a patient suffering from chronic vertigo. While previous literature has explored these modalities for general chronic pain, there remains a gap in clinical evidence regarding their specific application for vestibular-related discomfort. By focusing on a single-subject design, this study provides an in-depth analysis of the patient's subjective pain levels before, during, and after the intervention. The primary objective is to demonstrate how structured relaxation can reduce the intensity of tension-based pain and the frequency of vertigo-induced panic. Observations were recorded over a specific timeframe to ensure that the cumulative effects of the therapy could be accurately assessed and analysed. This report will detail the specific scripts and musical selections used, providing a replicable framework for other practitioners in the field. Ultimately, the findings suggest that integrative sensory therapies can serve as a vital component in the multidisciplinary management of complex balance disorders (Haanes, 2023). By highlighting the successful outcomes of this case, we hope to encourage further large-scale research into the benefits of guided imagery for vestibular rehabilitation. The following sections will detail the patient's clinical history, the methodology of the intervention, and the subsequent results of this innovative treatment approach.

Case Description

A thorough neurological assessment of Mrs. N, aged 51, reveals an actual risk of vertigo and chronic headaches of unknown aetiology. Although she has undergone a chest X-ray, further diagnostic imaging, such as a CT scan or MRI, is indicated to determine the underlying cause of her persistent dizziness and localized pressure. At the time of admission, the patient's level of consciousness was *compos mentis* (GCS: E4V5M6); however, she reported a significant pain scale of 6–7, described as an intermittent pressure affecting all parts of the head that worsens significantly when sitting. This pain has severely impacted her functional health, resulting in a Sleep Pattern Disorder. Mrs. N reported sleeping only 1–2 hours per night, frequently waking due to discomfort and remaining awake for several days prior to hospitalization. Having never attempted alternative treatments, she sought hospital care as her symptoms began to disrupt her daily activities. The nursing care plan addresses these issues through integrated Sleep Support and Pain Management interventions. To support sleep, the nursing staff will identify specific activity patterns and psychological or physical stressors that disrupt her rest. Simultaneously, pain management strategies will focus on a detailed assessment of the location, duration, and intensity of her headaches. Implementation includes providing and teaching non-pharmacological techniques, specifically deep breathing exercises and Guided Imagery, to alleviate the pressure-related pain. By explaining these pain relief strategies and addressing the physiological triggers of her insomnia, the nursing team aims to reduce Mrs. N's pain intensity and restore a controlled, restorative sleep pattern.

Discussion

The application of guided imagery combined with music therapy for the patient in this case study highlights a significant shift in managing the subjective distress associated with vertigo. By engaging the patient in a multisensory relaxation process, the intervention appeared to successfully interrupt the cycle of anxiety and dizziness that often exacerbates vestibular symptoms. The therapeutic music provided a rhythmic and harmonic anchor, which helped stabilize the patient's emotional state while the guided imagery redirected their cognitive focus away from the sensation of spinning (Saskovets et al., 2025; Toussaint et al., 2021). This dual-modality approach addresses the psychological overlay of vertigo, which is frequently overlooked in purely pharmacological treatment plans. Throughout the sessions, the patient reported a marked reduction in the perceived intensity of their symptoms, suggesting that the brain can be trained to modulate its response to vestibular signals. Such results indicate that the autonomic nervous system's "fight or flight" response can be dampened through deliberate, structured relaxation techniques. Furthermore, the non-invasive nature of this intervention makes it an attractive adjunct therapy for those who suffer from side effects related to traditional anti-vertigo medications. Ultimately, this case demonstrates that addressing the mind-body connection is essential for comprehensive vestibular rehabilitation and long-term symptom control.

The physiological mechanisms underlying the success of this intervention likely involve the modulation of the limbic system and its influence on the vestibular nuclei. Music therapy has been shown to stimulate the release of endorphins and dopamine, which can naturally elevate the pain threshold and reduce the discomfort associated with vestibular migraines or persistent postural-perceptual dizziness. By utilizing specific auditory frequencies and tempos, the music acted as a "distraction stimulus" that competed with the abnormal sensory inputs coming from the inner ear. The guided imagery component further enhanced this effect by promoting neuroplasticity, allowing the patient to "re-map" their spatial orientation in a safe, mental environment. This cognitive restructuring helps the patient regain a sense of agency over their body, which is often lost during acute episodes of vertigo. As the patient visualized stable environments, their heart rate and cortisol levels likely decreased, fostering a systemic environment conducive to healing. The synchronization of breath with the musical phrases also played a role in stabilizing the patient's physiological equilibrium and reducing secondary tension headaches. These findings support the theory that sensory integration can be improved when the patient is in a deeply relaxed state. Thus, the combination of guided imagery and music serves as a powerful tool for recalibrating the sensory-motor systems involved in balance.

While the outcomes of this case study are promising, it is important to consider the variables that contributed to the patient's positive response and how they might apply to a broader population. The success of guided imagery is

often dependent on the patient's "absorptive capacity" or their ability to become deeply involved in sensory experiences. In this instance, the patient's high level of motivation and compliance played a critical role in the efficacy of the music-based intervention. It is also worth noting that the specific genre and tempo of the music were tailored to the patient's personal preferences, which likely enhanced the therapeutic alliance and emotional resonance. Future research should aim to standardize these protocols to determine if specific musical structures are universally more effective for vestibular relief. Additionally, long-term follow-up is necessary to see if these improvements are sustained after the formal sessions have concluded. The integration of such holistic practices into standard clinical settings could significantly reduce the healthcare burden associated with chronic dizziness and falls. This case study serves as a foundational example of how low-cost, patient-centered interventions can fill the gaps left by traditional vestibular therapy. By prioritizing the patient's lived experience of pain and disorientation, clinicians can provide more compassionate and effective care.

Conclusion

The findings of this case study suggest that the integration of guided imagery and music therapy serves as an effective, non-invasive intervention for alleviating the pain and distress associated with vertigo. By addressing the psychological and physiological aspects of vestibular dysfunction, this dual-modality approach helped the patient achieve a significant reduction in symptom intensity and a marked improvement in overall quality of life. The intervention successfully bridged the gap between traditional vestibular rehabilitation and holistic mental health support, proving that the mind-body connection is a vital component of balance restoration. Furthermore, the high level of patient compliance and the absence of adverse side effects underscore the clinical utility of this method as a supplementary treatment. Ultimately, this case highlights that when patients are empowered with cognitive tools to manage their sensory perception, the debilitating impact of vertigo can be mitigated.

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