

EFFECTIVENESS OF AN E-MODULE ON REHABILITATIVE NURSING CARE FOR ENHANCING THE QUALITY OF LIFE IN AMPUTATED TRAUMA PATIENTS

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Abstract

The rehabilitation of amputated trauma patients remained a critical healthcare challenge, particularly in regions with high incidence rates such as Madinah, Saudi Arabia. This study evaluated the effectiveness of an e-module intervention designed to improve the quality of life (QoL) across physical, mental, and spiritual domains in amputated trauma patients. A quasi-experimental design was employed, recruiting 104 participants through convenience sampling, with 52 allocated to an experimental group receiving the e-module intervention and 52 to a control group. Data collection involved a newly developed questionnaire incorporating the Prosthesis Evaluation Questionnaire (PEQ) and the Trinity Amputation and Prosthesis Experience Scales (TAPES). Statistical analyses, including paired t-tests and ANOVA, demonstrated significant improvements in the experimental group's QoL compared to the control, particularly in the physical domain. The findings suggested that an e-module can be an effective rehabilitative tool for enhancing post-amputation outcomes, advocating for its integration into standard nursing care protocols.

Keywords: Quality of life, amputated, rehabilitation, e-module, Saudi

Introduction

Traumatic limb amputation leads to profound physical, emotional, and social implications, requiring robust rehabilitation frameworks to support patients' overall quality of life (QoL) (Maciver et al., 2023). In Saudi Arabia—especially in the Madinah region—the growing number of trauma-related amputations signals an urgent demand for more innovative and holistic rehabilitative strategies (Alshehri et al., 2022). Traditional rehabilitation methods often emphasize physical recovery; however, the integration of modern technology introduces new tools like e-modules, which offer patient-centered, structured, and easily accessible educational platforms (Alshehri et al., 2022). This study investigates the impact of an e-module as part of rehabilitative nursing care on the QoL of trauma-related amputees, focusing particularly on improvements in physical, mental, and spiritual well-being (Alasiri & Mohammed, 2022).

Methodology

A quasi-experimental research design was utilized, employing convenience sampling to enroll 104 participants who met the established inclusion and exclusion criteria. The sample was divided into two equal groups: one received the e-module intervention, while the other continued with standard rehabilitation care. Data were collected using a customized tool that incorporated elements from both the Prosthesis Evaluation Questionnaire (PEQ) (Safer et al., 2015) and the Trinity Amputation and Prosthesis Experience Scales (TAPES) (World Physiotherapy, 2024). These instruments were

adapted for the study's context to measure pre- and post-intervention outcomes. To analyze the results, paired t-tests and ANOVA were conducted, enabling a robust comparison of QoL scores across and within groups.

Results

Analysis of the data showed a statistically significant improvement in the experimental group's QoL from pre- to post-intervention ($t(52) = 9.45$, $p < 0.001$), whereas the control group showed no significant difference ($t(52) = 1.24$, $p = 0.22$). ANOVA results revealed substantial differences across QoL dimensions, specifically in the physical, mental, and spiritual domains ($F(2,153) = 12.34$, $p < 0.001$). The greatest improvement was noted in the physical domain, indicating that the e-module had a particularly strong effect on enhancing physical function, mobility, and daily living activities.

Discussion

These results underscore the value of digital platforms in enhancing rehabilitative nursing care (Abdulrashid et al., 2023). The marked improvements in the physical domain suggest that e-modules can effectively complement traditional rehabilitation by providing targeted guidance on prosthetic adaptation, mobility techniques, and self-management practices (Min et al., 2023). Although gains were also seen in the mental and spiritual areas, their relatively smaller improvements point to the need for integrating psychological and community-based interventions alongside digital tools (Puranik et al., 2021). The findings are consistent with current literature advocating for a hybrid rehabilitation model that combines digital education, clinical expertise, and peer support to achieve comprehensive recovery after amputation (Özdemir, 2023).

Conclusion

This study provides evidence that e-module-based interventions can significantly improve the quality of life for trauma-induced amputees, particularly with regard to physical recovery. The results advocate for the inclusion of digital learning modules in routine rehabilitative nursing practices, offering a flexible and scalable solution to patient education. Further studies should investigate the long-term effectiveness of these interventions and assess their role in promoting broader mental and social well-being.

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