

**ASSESSING THE EFFECTIVENESS OF ERGONOMICS
INTERVENTIONS TO REDUCE MUSCULOSKELETAL
DISORDERS AMONG NURSES IN SURGICAL UNITS
IN SRI LANKA**

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Degree of Master of Science in Occupational Safety and Health
Management

Department of Building and Economics

University of Moratuwa
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DECLARATION PAGE OF THE CANDIDATE & SUPERVISOR

I declare that this is my own work and this dissertation does not incorporate without acknowledgement any material previously submitted for a Degree or Diploma in any other University or institute of higher learning and to the best of my knowledge and belief it does not contain any material previously published or written by another person except where the acknowledgement is made in the text. Also, I hereby grant to University of Moratuwa the non-exclusive right to reproduce and distribute my dissertation, in whole or in part in print, electronic or other medium. I retain the right to use this content in whole or part in future works (such as articles or books).

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The above candidate has carried out research for the Masters dissertation under my supervision.

Name of the supervisor: Prof. Nayanthara de Silva

Signature of the supervisor:

Date :

Abstract

Nurses in surgical units are particularly vulnerable to musculoskeletal disorders (MSDs) due to the physically demanding nature of their work, including repetitive tasks, prolonged standing, and awkward postures. This study aimed to evaluate the effectiveness of ergonomic interventions in reducing MSDs among nurses in surgical units in Sri Lanka.

Descriptive analytical cross-sectional study was conducted. Data were gathered from 55 surgical unit nurses in both private and government hospitals in the Colombo South area, Sri Lanka during May and June of 2024 using a self-administered survey that was made available via Google Forms. The questionnaire covered socio-demographic data, MSDs, risk factors for MSDs, and the impact of ergonomic interventions. Statistical SPSS software tool was used to carry out both descriptive and inferential statistical analysis.

The prevalence of MSDs among the surveyed nurses was alarmingly high at 90.9%, with back pain being the most prevalent (85.0%). Prolonged standing (85.6%), manual patient handling (78.5%), and inadequate rest breaks (72.3%) were identified as key risk factors. Adjustable bed/plumb heights and other ergonomic solutions have been shown to considerably reduce MSDs, including back discomfort. The biggest barriers to ergonomic procedures were a lack of management support (76.0%) and inadequate resources (68.5%).

The research highlights how critical it is to put effective ergonomic treatments into practice in order to reduce the high rate of MSDs among surgical nurses in Sri Lanka. boosting management support, expanding instruction and training, boosting ergonomic tools, and promoting frequent breaks are among the recommendations. By addressing these issues with focused solutions, surgical nurses' occupational health and well-being can be significantly improved.

Keywords: Musculoskeletal disorders, Surgical nurses, Ergonomic interventions, Nursing ergonomics, Occupational health

DEDICATION

This research is dedicated to all nurses in the surgical units Sri Lanka who tirelessly provide compassionate care. Despite the everyday physical and mental hurdles you confront, your constant dedication to patient care is extremely impressive. Your strength, dedication, and resilience inspire us all, and it is our hope that this study will contribute to improving your working conditions and well-being.

This effort is also dedicated to all healthcare professionals who work tirelessly to make their workplaces safer and healthier. Your relentless efforts to enhance patient care while maintaining your health and safety do not go unnoticed.

May this study be a beginning towards acknowledging your priceless contributions and resolving the difficulties you encounter, which will ultimately improve your well-being and professional lives.

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LIST OF ABBREVIATIONS

Abbreviation	Description
ICU	Intensive Care Unit
MSD	Musculoskeletal Disorders
NIOSH	National Institute for Occupational Safety and Health
PPE	Personal Protective Equipment
WHO	World Health Organization