

**An Investigation of the Prevalence, Correlates and Potential
Intervention Strategies for Musculoskeletal Disorders among
School Teachers in Botswana**

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Statement of Originality

The thesis contains no material which has been accepted for the award of any other degree or diploma in any university or other tertiary institution and, to the best of my knowledge and belief, contains no material previously published or written by another person, except where due reference has been made in the text. I give consent to the final version of my thesis being made available worldwide when deposited in the University's Digital Repository**, subject to the provisions of the Copyright Act 1968.

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I hereby certify that this thesis is submitted in the form of a series of published papers of which I am a joint author. I have included as part of the thesis a written statement from each co-author; and endorsed by the Faculty Assistant Dean (Research Training), attesting to my contribution to the joint publications.

Patience N. Erick

Date

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List of publications included as part of the thesis

Paper 1: Erick PN, Smith DR. A systematic review of musculoskeletal disorders among school teachers. *BMC Musculoskeletal Disorders*. 2011;12(1):260.

Paper 2: Erick PN, Smith DR. Musculoskeletal disorder risk factors in the teaching profession: a critical review. *OA Musculoskeletal Medicine*. 2013 Dec;1(3):29.

Paper 3: Erick PN, Smith DR. The prevalence and risk factors for musculoskeletal disorders among school teachers in Botswana. *Occupational Medicine & Health Affairs*. 2014;2(4).

Paper 4: Erick PN, Smith DR. Low back pain among school teachers in Botswana, prevalence and risk factors. *BMC Musculoskeletal Disorders*. 2014;15(:359).

Paper 5: Erick PN, Smith DR. The development of an ergonomic training manual to help prevent work-related musculoskeletal disorders in the teaching profession. *Safety and Health at Work*. (Under review).

Paper 6: Erick PN, Smith DR. Musculoskeletal disorders in the teaching profession: an emerging workplace hazard with significant repercussions for developing countries. *Industrial Health*. 2015 Mar 26.

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**STATEMENTS
OF
CONTRIBUTION
OF
OTHERS**

Statement of Contribution: Paper 1

I, Derek R. Smith, attest that Research Higher Degree candidate Patience Erick contributed in terms of study concept and design, data collection and analysis, preparation of the manuscript to the publication:

Erick PN, Smith DR. A systematic review of musculoskeletal disorders among school teachers. BMC Musculoskeletal Disorders. 2011;12(1):260.

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List of additional publication

Erick PN, Smith DR. Prevalence of tobacco smoking among school teachers in Botswana. Tobacco induced diseases. 2013;11(1):24.

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Abstract

Musculoskeletal disorders (MSD) represent a common occupational problem for working populations throughout the world. Despite their large demographic and associated potential for occupational health problems, few epidemiological studies have investigated MSD among teachers. Hence the overarching aim of this thesis was to investigate the prevalence and risk factors of MSD among school teachers in Botswana.

To address this aim the thesis presents five papers. Paper 1 describes a systematic review of previous research investigating prevalence and risk factors of MSD among teaching staff. Paper 2 describes a critical review of previous literature which investigated risk and protective factors of MSD among school teachers. These reviews were aimed at gaining insight of MSD among school teachers which was eventually used to inform some parts of the thesis. Paper 3 and Paper 4 describe a study of MSD among school teachers in Botswana. Using a cross-sectional study with anonymous self-administered questionnaire, this study aimed to investigate the prevalence and risk factors for MSD among school teachers in Botswana. The study also aimed to investigate the level of low back disability and associated risk factors. The study further investigated the impact of MSD among school teachers in Botswana. Paper 5 describes the development of an ergonomic training manual to help reduce the prevalence, progression and impacts of MSD among teachers. The study was aimed at determining the effectiveness of the training manual and to highlight any areas for improvement. Paper 6 summaries the findings of the study.

The concluding chapter of this thesis reviews and brings together the main findings of these six papers and makes recommendations for future research. The results of this thesis suggest that MSD is reasonably common among school teachers in Botswana, particularly MSD of the back, shoulder and neck. The study also suggests that MSD is complex and multifactorial in nature, and therefore, no single, specific intervention strategy alone would be entirely effective at reducing these disorders among teachers. The development of an ergonomic training manual for teachers as developed in the current study represents a positive step forward in the prevention and management of these disorders especially in developing countries. The results of this study also offer a significant contribution to the existing knowledge of MSD in the teaching profession.