

Risk Factors Associated with Back Pain among Post Graduate Nursing Students

Thesis

Submitted for Partial Fulfillment of Master Degree In
Community Health Nursing

By

Amany Lotfy Ahmed
(B.Sc Nursing Sciences, 2008)

Under Supervision of

Dr. Sabah Abd El Mobdy Radwan

Professor of Community Health Nursing
Faculty of Nursing
Ain Shams University

Dr. Hemat Abd El-Moneem El-Sayied

Assistance Professor of Community Health Nursing
Faculty of Nursing
Ain Shams University

**Faculty of Nursing
Ain Shams University**

(2015)



Acknowledgment

Praise be to **ALLAH**, The Merciful, The Compassionate, for all the gifts I have been offered; One of the gifts is accomplishing this research work.

Words cannot adequately assure my deepest thanks and gratitude to **Dr. Sabah Abd El Mobdy Radwan**, Professor of Community Health Nursing, Faculty of Nursing, Ain Shams University, for her motherly care, constructive criticism, continuous encouragement, continuous assistance and continuous guidance that this work has come to light.

I would like to express my deepest thanks and gratitude to **Dr. Hemat Abd El-Moneem El Sayied**, Assistant Professor of Community Health Nursing, Faculty Of Nursing, Ain Shams University, for her unlimited help, valuable guidance, continuous encouragement and forwarding her experience to help me to complete this `work.

Also, I would like to thank all post graduate nursing students who participated in this work.

 **Amany Totfy Ahmed**



My sincere tribute and gratitude to my husband **Mohamed** who helped me a lot in completing this work and my Son **Mostafa** for their great support.

Particular gratitude goes to my **Mother, Father, Brothers and all my Family** who paved my way through their tolerance and devotion.

List of Contents

<i>Subject</i>	<i>Page No.</i>
List of Tables.....	i
List of Figures	iv
List of Abbreviations.....	vi
Abstract	vii
Introduction	1
Aim of the Study	6
Review of Literature	
Chapter (I): Early Adulthood	7
Introduction about Early Adulthood.....	7
Characteristics of Early Adulthood	7
Developmental Changes during Early Adulthood.....	12
Nutrition during Early Adulthood.	13
Chapter (II): New Technology in Nursing Education	15
Overview	15
The Potential Health Problems Associated with Computer Use.	19
Computer- Related Health Issues Solely Related to Workplace Computer Use	23
Challenges Facing Nursing Education.	24
Chapter (III): Back Pain	27
Prevalence of Back Pain	27
Anatomy and physiology of the back	30
Types of back pain	35
Etiology of back pain	38
Risk factors of back pain	41
Clinical Manifestation and potential complications of back pain ...	42
Diagnosis of back pain	43

List of Contents (Cont...)

<i>Subject</i>	<i>Page No.</i>
Chapter (IV): Role of Community Health Nurse in Relation to Prevention and Treatment of Back Pain.....	46
Subject and Methods.....	63
Results.....	70
Discussion	103
Conclusion.....	118
Recommendations	119
Summary	120
References	126
Appendices	I
Protocol.....	
Arabic Summary	—

List of Tables

<i>Table No.</i>	<i>Title</i>	<i>Page No.</i>
Table (1):	Relation of (Master&Doctorate) post graduate nursing students according to their socio-demographic characteristics (N=257).	71
Table (2):	Relation of (Master&Doctorate) post graduate nursing students according to their lifestyle (N=257).....	72
Table (3):	Relation of(Master&Doctorate) studied sample according to their occupation conditions (N=257).	73
Table (4):	Relation of post graduate nursing students according to their knowledge about back pain (N =257).....	75
Table (5):	Realation of (Master&Doctorate)post graduate nursing students according to the back pain scale (N=257).	77
Table (6):	Prevalence of back pain among (Master&Doctorate) Post graduate nursing students (N=257).....	80
Table (7):	Relation of (Master&Doctorate) post graduate nursing students with lower back pain according to frequency and duration of back pain (n=169).....	81
Table (8):	Relation of (Master&Doctorate)post graduate nursing students with upper back pain according to frequency and duration of back pain (n=88).....	82

List of Tables (Cont...)

<i>Table No.</i>	<i>Title</i>	<i>Page No.</i>
Table (9):	Relation of (Master&Doctorate)post graduate nursing students with lower back pain according to causes of lower back pain (N=169).....	83
Table (10):	Relation of (Master&Doctorate) post graduate nursing students with upper back pain according to causes of upper back pain (n=88).....	84
Table (11):	Relation of (Master&Doctorate) post graduate nursing students with lower back pain according to the impact of lower back complaints (n=169).	85
Table (12):	Relation of (Master&Doctorate)post graduate nursing students with upper back pain according to the impact of upper back complaints (n=88).	87
Table (13):	Relation of (Master&Doctorate)post graduate nursing students according to their work environment.....	88
Table (14):	Relation of (Master&Doctorate) post graduate nursing students according to presence of lift devices.....	89
Table (15):	Relation of (Master&Doctorate) post graduate nursing students according to duration, frequency and job design.....	90

List of Tables (Cont...)

<i>Table No.</i>	<i>Title</i>	<i>Page No.</i>
Table (16):	Relation of (Master&Doctorate) post graduate nursing students through their physical examination of the back	92
Table (17):	The association of the post graduate nursing students age with the presence of back pain (N=257).	93
Table (18):	The association of the post graduate nursing students gender with the presence of back pain (N=257)	94
Table (19):	The association of the post graduate nursing students marital status with the presence of back pain (N=257).	95
Table (20):	The association of the post graduate nursing students number of children with the presence of back pain (N=257)	96
Table (21):	The association of the post graduate nursing students monthly income with the Presence of back pain (N=257)	97
Table (22):	The association of master students life style and presence of back pain	98
Table (23):	The association of doctorate students life style and presence of back pain	99
Table (24):	The association of the total knowledge score with the presence of back pain (N=257)	100

List of Tables (Cont...)

<i>Table No.</i>	<i>Title</i>	<i>Page No.</i>
Table (25):	The association of the number of the work related risk factors with the presence of back pain (N=257)	101
Table (26):	The association of the post graduate nursing students body mass index and the presence of back pain (N=257).	102

List of Figures

<i>Figure No.</i>	<i>Title</i>	<i>Page No.</i>
-------------------	--------------	-----------------

Figures in Review of Literature

Figure (1):	Spinal column	30
Figure (2):	The Vertebrae.....	32
Figure (3):	Intervertebral disc.....	13
Figure (4):	Normal Spinal Segment	34
Figure (5):	Natural Back Curves	46
Figure (6):	Healthy Back Sleeping.....	47
Figure (7):	Back Exercises	48
Figure (8):	Using Good Body Mechanics	48
Figure (9):	Good Posture.....	49

List of Figures

<i>Figure No.</i>	<i>Title</i>	<i>Page No.</i>
-------------------	--------------	-----------------

Figures in Results

Figure (1):	Relation of (Master&Doctorate) post graduate nursing students according to their past health history (N=257).....	74
Figure (2):	Relation of (Master&Doctorate) post graduate nursing students according to their body mass index (BMI) (N=257).	91

List of Abbreviations

<i>Abb.</i>	<i>Full term</i>
BMI	: Body Mass Index
CPHA	: Canadian Public Health Association
CT	: Computerized Tomography
E-learning	: Electronic Learning
IT	: Information Technology
MRI	: Magnetic Resonance Imaging
NIAMS	: National Institute of Arthritis and Musculoskeletal and Skin Diseases
OOS	: Occupational Overuse Syndrome'
RSI	: Repetitive Strain Injury'
TENS	: Transcutaneous Electrical Nerve Stimulation
TV	: Television
WHO	: World Health Organization

Risk Factors Associated with Back Pain among Post Graduate Nursing Students

**By
Amany Lotfy Ahmed**

ABSTRACT

Back pain is an extremely common problem, which most people experience at some point in their life. It has a huge impact on individuals, families, communities, governments and businesses throughout the world. **Research Design:** a descriptive analytic study **aiming to** assess risk factors associated with back pain among post graduate nursing students. **Setting:** The study was conducted on post graduate nursing students at Faculties of Nursing at Ain Shams and Cairo Universities. **Sample:** A purposive sample includes 257 male& female post graduate nursing students. **Tools:** For data collection **three tools** were used, **the first tool:** a self-administered questionnaire for the students was divided into six parts; **part one:** socio demographic data, **part two:** life style and occupational condition, **part three;** past health history of the studied sample, **part four;** knowledge of students regarding back pain, **part five:** Quebec back pain disability scale, **part six:** Standardized Nordic Questionnaire **second tool:** Observational checklist for assessment students' work related risk factors will be filled by the students , and **third tool:** Physical examination assessment sheet **Results:** The study revealed that (56.2%) of master students had mild disability, (37.1%) of them had moderate disability and (6.7%) had sever disability while (48.9%) of doctorate students had mild disability,(38.3%)of them had mild disability and(12.8%) had sever disability. Total score level of the master & doctorate students' knowledge about back pain were incomplete (51.9%) and (83%) respectively. The mean of work related risk factor among master students with lower back pain was (13.1) and upper back pain was (12.4).The study found a significant association between number of work related risk factors, body mass index of master and doctorate students respectively and presence of back pain. **Recommendations:** There is a need for health education about good and correct posture during work condition and computer use for the nursing students to reduce back pain and to promote health and maintain quality of life.

-
- **Key words:** Back Pain, Risk Factor, Post Graduate Nursing Students.
 - **Master Thesis, Faculty of Nursing, Ain Shams University; (2015).**

Introduction

Back pain is one of the most frequent reasons people seek medical care. It is important to remember that back pain is a symptom. Common causes of back pain include nerve and muscular problems, degenerative disc disease, and arthritis. However, pain arising from other organs may be felt in the back. Other medical conditions, such as appendicitis, kidney diseases, pelvic infections, and ovarian disorders, among others, can cause low back pain. Most of the time, back pain is relatively minor, and 80 percent of episodes of acute low back pain will resolve within six weeks, regardless of whether you seek treatment or not (*Lawson and Georgiou, 2014*).

Musculoskeletal disorders are characterized by the presence of discomfort, disability or persistent pain in the joints, muscles, tendons and other soft parts, caused or aggravated by repeated movements and prolonged awkward or forced body postures. Musculoskeletal disorders have increased due to work-related activities. As regard hospital workers seem to have higher rates of low back pain Since college students spend so much time sitting in class, reading, or working on computers, a sizeable number of students will experience back pain by the end of their academic careers (*Shah and Dave, 2012*).

Risk factors for back pain can be either of individual origin or related to the workplace. The main occupational risk factors are lifting and handling of patients, uncomfortable and immobile postures, inadequate equipment, improper workplace design, heavy physical work, and inadequate work organization. Other studies include factors such as physical activity, muscular weakness, smoking, obesity and psychological factors. Back pain can affect anyone; certain risk factors of back pain have been linked to an increase in a person's chance of developing low back pain or sciatica. Risk factors of back pain include age, fitness level, diet, heredity, race, other diseases, occupation, and smoking (*Schoenstadt, 2013*).

The prevalence of back disorders increases markedly with age, and are affected by lifestyle factors, such as obesity and certain types of physical activity. Although the economic and public health effects of back disorders and especially low back pain are enormous, the burden on the individual and society as a whole is expected to increase dramatically (*Abou El-Soud, et al., 2014*).

Upper back pain is pain between neck and low back. Back pain is usually caused when ligaments or muscles attaching to the vertebrae are injured. Upper back pain can come from a twisting motion, poor posture, overuse, or an injury. It is very common for someone to injure their upper