Prevalence of Work-Related Low Back Complaints among Healthcare Professionals- A Cross-Sectional Study

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INTRODUCTION

There is a large body of evidence indicating that musculoskeletal disorders constitute a major health problem among health professionals. A work-related musculoskeletal disorder (WRMD) is defined as a musculoskeletal injury that results from a work-related event, and back pain is defined as pain in the lumbar, lumbosacral, or cervical regions of the back, varying in sharpness and intensity. Worldwide estimates of lifetime prevalence of low back pain (LBP) vary from 50 to 84\%.\textsuperscript{1} Occupational LBP relates to exposure to workplace hazards and incurs high costs to society in terms of health care, loss of productivity, workplace and family stress, as well as individual pain and suffering.\textsuperscript{2} Thus prevention of occupational LBP is a key research concern. Back pain is a leading cause of work absenteeism among employees worldwide. Persistent back pain seriously compromises the quality of work and life.

Health problems related to physical work represent a major economic burden on society. The associated costs in terms of decreased productivity, health insurance costs and personal suffering are becoming extremely high.\textsuperscript{3} One of the most important and commonly occurring musculoskeletal problems in the work place is LBP.\textsuperscript{4-7} There are several factors that contribute to the development of LBP but trunk loading caused by physical work is believed to be the major cause for incidence of LBP and back dysfunction.\textsuperscript{8-9} Persistent back disorders seriously compromise the quality of work and life. Healthcare professionals are affected by several painful problems in the vertebral column mainly low back pain. Physical therapists are professionals who often present this type of disorder.

ABSTRACT

Objective: To investigate the prevalence of low back dysfunction in health professionals, and its relation to the nature of work and identify the risk factors associated.

Methods: Subjects: 309 health professionals from Ajman and Fujairah participated in this study. Each subject was asked to complete a self-administrated questionnaire. 192 questionnaires were returned (n =192). Information on low back dysfunction and other factors were gathered, outcome measures of low back dysfunction were used followed by detailed physical examination of the low back in all participants.

Results: Data was analyzed using both descriptive and inferential statistics to estimate the prevalence of low back dysfunction in health professionals and to investigate relation between back dysfunction and hospital work. It was found that health care professionals whose nature of work involves more of trunk bending and manual lifts who reported of low back dysfunction were the same compared to health care professionals whose nature of work involved sitting and its variation and standing and its variation. While some differences have been noticed, statistically significant differences in low back dysfunction were not found among gender, age and also educational opportunities availed in back care.

Conclusion: In contrast to the information found in the literature review this finding is vital. Earlier studies have showed that professional involved in trunk bending and manual lifts were more prone to develop back dysfunction. But in this study there were no statistically significant number of individual who had reported back dysfunction due to the nature of work. The variation of such finding could be attributed to reduced work span of individuals who were involved in this study as compared to other studies. Further research with larger sample size will be required before any generalizations can be made.

Key words: Low Back Dysfunction, Prevalence, Occupational health, Physical Examination, Health professionals.

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These types of injuries are common among hospital nurses, dentists, laboratory technicians, pharmacists, doctors, and physiotherapists. Lifting is an occupational task performed commonly by health workers especially nurses. Improper lifting techniques and movements associated with lifting are known to trigger the onset of low back dysfunction. Physical therapists routinely perform manual therapy, such as soft-tissue mobilization, transferring a patient (from exercise mat to chair, to parallel bar etc), assisting with activities on the exercise mat, lifting and using cumbersome equipment, which means that the low back is of the physical therapist are exposed to risk factors. The risk factors associated with occupational LBP are commonly cited as physical (workplace) and personal (individual). Physical factors are proposed as heavy physical work, lifting, bending, twisting and static postures, whilst personal factors are described as non-modifiable (age, gender, anthropometry etc) and potentially modifiable (physical fitness, motor control, strength etc) which are associated with musculoskeletal and neuromuscular disorders. Work tasks put health professionals at risk for both acute and cumulative back pain. This group has moderately high prevalence of low back dysfunction, and the risk of low back disorders is due to the posture adapted during patient care. Most of the published research has focused on the prevalence of back pain in nursing and physiotherapy professionals. There is a paucity of published research in other health professionals with regard to the prevalence and causative factors of back dysfunction. There is no published data on the prevalence of back pain in health professionals in UAE. Manual Material Handling (MMH), being one of the most common types of activities among workers in the workplace or even as a routine daily living activity of a non-working person, has been found to have huge effects on trunk mechanics including low back loads and electrical activity of back muscles. This study aims to estimate the prevalence of back dysfunction in health professionals and the relationship between their nature of work and back pain. The study also identifies the risk factors associated with back dysfunction.

MATERIALS AND METHODS

This is a cross-sectional study and was approved by the Ethics Committee of Gulf Medical University, Ajman, UAE. The research population was selected health professionals like doctors, dentists, physical therapists, nurses, dental assistants, nursing aides, pharmacists, lab technicians who were employed in a broad spectrum of practice settings in Gulf Medical College Hospital and Research Center, Ajman and Gulf Medical College Hospital, Fujairah UAE. All data were collected by hand given questionnaire that consisted of 15 close-ended questions. All subjects were approached during their working hours, they were informed of the purpose of the research project, and subjects who were willing to participate were involved in the study. A self Assessment Manniche et al. back pain Questionnaires’ were distributed to all Health professionals (n=309) consenting. Further subjects were asked to complete the self-administered questionnaire. One hundred and ninety two questionnaires were filled and returned, the data entered were further analyzed.

Low back pain rating scale adapted from Manniche et al. was utilized for the physical examination on those who had self-reported back pain to objectively determine the back pain and its severity. This scale includes measurement of back and leg pain, disability index and physical impairment. This data was analyzed using both descriptive and inferential statistics to estimate the prevalence of back pain in health professionals and to investigate whether back pain is directly related to their hospital work. Predictive factors for back pain were identified utilizing regression analysis.

Inclusion criteria:
1. Individual of age between 18-60 years
2. Individuals with low back pain more than three months previously (to exclude first episodes)
3. Current pain for three or more weeks (to exclude recurrence of short duration)

Exclusion criteria:
1. History of back dysfunction (complaining of pain episodes)
2. Current nerve root pain (below knee in dermatome distribution), previous spinal surgery.
3. Post pregnancy
4. History of any precious medical condition that can lead to back pain.

RESULTS

A self-assessment back pain Questionnaires were distributed to all health professionals willing to participate (n=309) employed at GMCHRC Ajman and Fujairah of which 192 were filled and returned and six were excluded due to incomplete data, the sample was consolidated to (n=186) for further analysis and was scaled further down to three main categories; 116 nurses, 39 doctors and 31 other health professionals. Of all the nurses in the study, 48 have presented with symptoms of back dysfunction and 68 have presented no symptoms of back pain. Among doctors, only 13 of them complained of back pain and 26 had no back pain. The group consisting of all other allied health professionals had 31 participants of which only 9 complained of back pain. Overall, out of all 186 active participants, 70 were filtered to constitute symptoms of back pain and 116 were without any back pain. Details are given in table-1.

Table 1: Details of sample profession and back pain

<table>
<thead>
<tr>
<th>Profession</th>
<th>Back pain</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
</tr>
<tr>
<td>Nurses</td>
<td>68</td>
<td>58.6</td>
</tr>
<tr>
<td>Doctors</td>
<td>26</td>
<td>66.7</td>
</tr>
<tr>
<td>Other Health Professionals</td>
<td>22</td>
<td>71.0</td>
</tr>
<tr>
<td>Total</td>
<td>116</td>
<td>62.4</td>
</tr>
</tbody>
</table>

Gender distribution showed, 70 were males and 116 were females. Of the whole sample size 72.8% fell under the age group of above 35 years of whom only 35% complained symptoms of back pain. In the age group of 36-50, 20.6% of the sample individuals complaining of back pain 45.9% were almost equal to those complaining of no back pain 54.1%. In age group of above 50, 6.7% and among them, 41.7% complained of symptoms and 58.3% showed no symptoms. Six of the subjects did not reveal the age. On an over all basis it can be observed that age in particular did not show much relevance for back pain in the study sample (Table 2).

Table 2: Age and back pain

<table>
<thead>
<tr>
<th>Age (years)</th>
<th>Back pain</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
</tr>
<tr>
<td>22-35</td>
<td>85</td>
<td>64.9</td>
</tr>
<tr>
<td>36-50</td>
<td>20</td>
<td>54.1</td>
</tr>
<tr>
<td>50+</td>
<td>7</td>
<td>58.3</td>
</tr>
<tr>
<td>Total</td>
<td>112</td>
<td>62.2</td>
</tr>
</tbody>
</table>

On trying to identify the relationship of work posture on the incidence of back pain the study revealed that only 169 participants answered the questions related to this (Table 3).

From the table 3 it can be identified that individuals involving in sitting and its variation, few had complained of back pain which amounts to 26.9% as compared to those without back pain that amounted to 73%. Only 27 individuals have identified their posture as standing and its variation at work place of which no significant variation was seen in those who complained with or without back pain. Fifty six subjects in the sample identified trunk bending and manual lifting but surprisingly the percentage of population who complained of back pain equaled that without
Table 3: Relation between back pain and work posture

<table>
<thead>
<tr>
<th>Posture</th>
<th>Back pain</th>
<th></th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No</td>
<td>%</td>
<td>Yes</td>
</tr>
<tr>
<td>Sitting and its variations</td>
<td>49</td>
<td>73.1</td>
<td>18</td>
</tr>
<tr>
<td>Standing and its variations</td>
<td>15</td>
<td>55.6</td>
<td>12</td>
</tr>
<tr>
<td>Trunk bending and manual lifts</td>
<td>28</td>
<td>50.0</td>
<td>28</td>
</tr>
<tr>
<td>Combinations</td>
<td>12</td>
<td>63.2</td>
<td>7</td>
</tr>
<tr>
<td>Total</td>
<td>104</td>
<td>61.5</td>
<td>65</td>
</tr>
</tbody>
</table>

back pain. It was noted that there was no significant occurrence of low back pain in any one particular group of professionals. (Only 70 out of 186 were filtered to constitute symptoms of back pain.).

DISCUSSION

Work-Related Back Pain (WRBP) is defined as a back pain that results from a work-related event. Such problems connected to occupational conditions are common among health care workers. This may result in work time loss, work restriction, or transfer to another job and these types of injuries are common among nurses and physiotherapists. Research has shown that musculoskeletal problems are particularly common in health care workers who are in direct contact with patients. In the present study there was no statistical significance in the number of individuals (Health professional) who had reported back pain. Also the nature of work like standing and its variation, sitting and its variations, trunk bending and manual lifts in our study showed no significant number of individuals who companied of back pain. In the study conducted by West DJ et al in Australia fifty-five per cent of individuals had experienced a work-related injury. The most injured body areas were the low back, hands and neck. Over half (56%) of the initial episodes of injury occurred within five years of graduation. The job risk factors of most concern to injured respondents were constant demanding postures, manual therapy techniques, manual lifting and handling techniques, working while injured and excessive workloads. Back injury and Low Back dysfunction incidence and its related health care cost in the modern industrialized world and in healthcare system have escalated a lot during the past two decades. For that and for the sake of reducing the cost and loss of productivity of an injured healthcare profession, many researchers worldwide began to devote more time and effort to explore and investigate the multiple factors that can contribute to the high incidence of back injuries.

In this present study there was no statistical significance in number of individuals who complained of back pain. The study conducted by West DJ et al. in Australia showed 55% of individuals had experienced a work-related injury. The most injured areas were the low back, hands and neck. Over half (56%) of the initial episodes of injury occurred within five years of graduation. The job related risk factors most concern to injured respondents were postures adapted during patient care or patient handling. On an overall it was observed that age in particular did not show much relevance for back pain in the study sample.

Limitation
Since this study has been conducted in two hospitals in Ajman and Fujairah, the results cannot be generalized to the entire UAE.

CONCLUSION
In contrast to the information found in the literature review this finding is vital. Earlier studies have showed that professionals involved in trunk bending and manual lifts were more prone to develop back pain and some differences found. But in this study there were no statistical significance in
reported back pain due to the type of work they do. The variation of such finding could be attributed to reduced work span of individuals who were involved in this study as compared to other studies. Further research with larger sample size will be required before any generalization can be made.

Conflicts of interest:

None identified and/or declared.

REFERENCES


