Patient Handling Experiences in Relation to Back Pain among Trainee Nurses in Bahrain

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Abstract
Back pain and associated sickness absence is common among nurses. Nurses experiencing pain may influence rates of patient injuries such as falls whilst in hospital. Specifically training student nurses in safe patient transfer techniques may potentially reduce the prevalence of back pain. However, this requires tailored training curricula which are relevant and appropriate. Bahrain is unique among Arabian Gulf states in its move to increase the numbers of locally trained Bahraini nationals thus reducing reliance on nurses that were trained outside The Gulf region.

Student nurses, involved in their clinical practicum, were surveyed regarding episodes of self-reported back pain and their clinical experiences of patient handling. Fewer than four out of ten students considered their clinical exposure to be a pain-free experience. Episodes of back pain were strongly linked to an attitude of acceptance of unsafe patient transfer techniques thus demonstrating a theory-practice gap in Bahrain.

Method
This was a cross-sectional survey. The study was undertaken at a university specialising in health science (medicine and nursing) in the year 2015 in Bahrain. The participants consisted of 230 student nurses, studying on a degree programme. Participants were selected through convenience sampling and were included only if they had completed one block period of clinical practice in a healthcare setting. Nursing practicums were carried out in three different teaching hospitals in Bahrain. A formal course in safe manual handling training was included as a module on the degree programme. The course delivered theory on the safe moving and handling of patients, and included practical aspects involving the use of mechanical patient transfer equipment. The course ran for a total of 12 hours spread over two weeks.

The data collection instrument consisted of a 25-item questionnaire. This questionnaire focused on incidence of back pain experience since starting clinical practicum, identifying the types of techniques for safe patient transfer studied at university, identifying the types of techniques for safe patient transfer practiced in the work place and reasons as to why certain types of mechanical patient transfers were sometime not used, plus basic demographic data. The questionnaire was in English and all of the students had met the institute’s minimum standard of English as an entry requirement.

The study received approval from the local Research Ethics Committee and all participants gave informed consent. Data were inputted directly into the software SPSS version 22 for descriptive and inferential statistical analysis. Comparisons of ratio were performed using chi-squared and Fisher's exact tests, with a significance level set at α= 0.05.

Results
205 questionnaires were returned, giving a response rate of 89%. 193 questionnaires were completed with all key questions answered. Four participants were aged 24 – 29 years and all others were aged 18 – 23 years. They were drawn from years 2 to 4 of the degree course.

The majority of the participants reported no history of back pain before starting their nursing degree programme; 132 (64.4%) had no back pain previously, 42 (20.5%) reported previous episodes of back pain and 31 (15.1%) were unsure if they had ever had back pain. On commencement of clinical attachments 119 (61.7%) participants experienced back pain
Introduction

The prevalence of back pain among nurses is high [1], as is the level of sickness absence related to it [2]. This has wide implications, as back pain among nurses is associated with patient falls whilst in hospital and medication errors [3]. Falls in particular are increasingly being recognized as important quality of care indicators [4]. Mechanized methods of patient transfer may reduce the incidence of reported back pain correlating with an increase in the number of years of study. This higher incidence of pain may be related to a longer duration of clinical exposure. One item of the questionnaire asked “Have you ever been asked to physically lift / move a patient without using equipment?” There was a very significant association between the frequency of reported back pain and the number of participants that replied “yes” to this item referring to an unsafe patient transfer procedure. This gave an odds ratio (95% C.I.) of 12.07 (5.75-25.32).

Participants reported the frequent use of outmoded and unsafe methods of patient transfer. These included: 34 (16.6%) reporting the use of the drag lift method, 51 (24.9%) reported the through arm lift method and 130 (63.4%) reported the use of the draw sheet for positioning patient on in bed.

Students underwent training in a broad variety of wards and departments. The largest number of students spent time on the general medical and general surgical wards. Fewer than ten participants spent time in the more specialist departments of ophthalmology, plastics, interin care and rehabilitation.

Discussion

There was a significant increase in the incidence of reported back pain among nursing students once they had started the clinical components of their university education as compared to the period prior to starting their clinical experience. A large proportion of participants reported having practiced and performed patient transfers in a manner that differed from the theory that they were taught in the classroom. Techniques for patient transfer that are considered unsafe, with regards the developments of back pain, were commonplace in the hospitals and clinics where they worked. A similar disparity between classroom and clinic has been previously reported (6).

Despite a move towards staffing wards with proportionally more Bahraini nurses as compared to foreign-trained nurses our data highlight the potential problem of back pain in the nursing profession in the Bahrain. This problem of back pain among nurses is not confined to Bahrain; rather it is a major worldwide concern (7, 8). The high incidence of back pain among nurses has been reported to be a problem within the Arab world (9, 10) although the number of reports from the Arabian Gulf region is limited.

Fewer than four out of ten students reported that their clinical experience was pain-free. There are clearly multiple factors contributing to the high prevalence of musculoskeletal pain among nursing practitioners. Having a workforce that is well informed of the dangers of unsafe patient transfers seems like a reasonable approach to reducing the incidences of back pain. However our findings suggest that the benefits of student education on this issue may be offset by the actual practices in the real world workplace. Inadequately equipped clinics and an attitude of acceptance of unsafe patient transfer techniques are important factors leading to the non-implementation of manual handling theory in hospitals and clinics. This sector of the workforce is central to guarding the health of the general population. It is important for the health systems that incidents of back pain are kept to a minimum among this group.

Keywords

Lifting; Occupational Disease; Musculoskeletal Pain; Manual Handling; Back Pain; Spine

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the risk of developing back pain, but require extensive training. It has been suggested that student nurses in particular should be specifically targeted to teach safe patient transfer techniques as a means of reducing the prevalence of back pain within the nursing profession [5]. Training programs vary from country to country and in the globalised employment market many nurses often end up practicing in countries other than the one in which they trained. This potentially creates a knowledge and attitude gap between classroom and clinic. The Arabian Gulf is a region that has historically drawn qualified nurses from their country of training. However, in Bahrain there has been a trend towards increasing numbers of Bahraini nationals practicing and training to become nurses. This should result in less reliance on expatriate nurses and a switch to nurses that are more culturally attuned to the patient population within the state. In this respect Bahrain is relatively unique among the countries of the Gulf Cooperation Council. This increase in locally-trained nurses allows for training with contemporary methods, which at the same time also include regionally appropriate patient moving and handling techniques. Local training colleges have the opportunity to tailor nursing curricula to the needs of the country. The adoption of modern training methods, combined with an influx of locals into the profession, has the potential to bridge the training-practice gap associated with employing expatriate nurses. The continuity of care, local shared experiences between nurses and patients and the absence of language barriers within healthcare delivery should bring about stability in the system. This may have the indirect effect of reducing the incidence of back pain in the profession. However for this to occur graduating nurses should enter a workplace environment that incorporates the same techniques and attitudes that they were taught in the classroom.

The aim of this study was to survey the patient moving and handling experiences of pre-registered student nurses and assess episodes of self-reported back pain experienced during their exposure to clinical practice.

Method

This was a cross-sectional survey. The study was undertaken at a university specialising in health science (medicine and nursing) in the year 2015 in Bahrain.

The participants consisted of 230 student nurses, studying on a degree programme. Participants were selected through convenience sampling and were included only if they had completed one block period of clinical practice in a healthcare setting. Nursing practicums’ were carried out in three different teaching hospitals in Bahrain.

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There was a small but statistically significant difference between male and female trainees with regards to the percentage that reported back pain. Proportionally more females reported back pain. There was an increase in the incidence of reported back pain correlating with an increase in the number of years of study. This higher incidence of pain may be related to a longer duration of
clinical exposure. One item of the questionnaire asked “Have you ever been asked to physically lift / move a patient without using equipment?” There was a very significant association between the frequency of reported back pain and the number of participants that replied “yes” to this item referring to an unsafe patient transfer procedure. This gave an odds ratio (95% C.I.) of 12.07 (5.75-25.32).

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Table 1: Number of Student Nurses Experiencing Episodes of Back Pain during their Clinical Practicum Placement. Ratios between Groups were Compared Using Chi-Squared Analysis

<table>
<thead>
<tr>
<th>Reporting of pain during clinical placement</th>
<th>Pain (n=119)</th>
<th>No Pain (n=74)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sex</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>10</td>
<td>14</td>
<td>0.043</td>
</tr>
<tr>
<td>Female</td>
<td>109</td>
<td>60</td>
<td></td>
</tr>
<tr>
<td><strong>Year of study</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2nd</td>
<td>18</td>
<td>60</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>3rd</td>
<td>46</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>4th</td>
<td>55</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td><strong>Have you ever been asked to physically lift/ move a patient without equipment?</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>81</td>
<td>12</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>No</td>
<td>33</td>
<td>59</td>
<td></td>
</tr>
<tr>
<td><strong>Was equipment available?</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>32</td>
<td>22</td>
<td>0.013</td>
</tr>
<tr>
<td>No</td>
<td>60</td>
<td>24</td>
<td></td>
</tr>
<tr>
<td>Unsure</td>
<td>24</td>
<td>28</td>
<td></td>
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References


