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Knowledge of low back pain by selected demographic variables among clinical students

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Abstract
Background: Knowledge held by healthcare providers constitute part of the major determinants of the complex recovery of a patient with low-back pain. Good knowledge of low back pain among clinical students is very crucial as they are also part of the general population susceptible to experience low back pain at a point in their lifetime and, also take the responsibility of looking after patients with low back pain upon qualification.
Aim: The aim of this study was to investigate the levels of knowledge of low back pain effects of selected sociodemographic variables on the knowledge of low back pain among clinical students
Methods: 340 clinical students at the College of Medical Sciences of University of Maiduguri completed the survey. Levels of knowledge of Low back pain was assessed using Low back pain knowledge Questionnaire.
Results: 340 0f 450 questionnaires were completed and return given a response rate of 75.6%. 5 [1.5%] of the students were completely knowledgeable about low back pain while 323 [95.5%] and 12 [3.5%] were partially knowledgeable and unknowledgeable respectively. Age and gender did not have any significant effects of the level of knowledge of low back pain [P >0.05]. Only 1 medical student and 4 physiotherapy students were completely knowledgeable about low back pain. Academic departments/students' area of learning showed statistically significant effects on the level of knowledge of low back pain [χ^2 = 20.06, P= 0.04]. Number of years/ Level of study did not show significant effects on the level of knowledge of low back pain [P >0.05].
Conclusion: Findings from this study indicated that the majority of the student has partial knowledge of low back pain. Medical and physiotherapy students showed better knowledge of low back pain than students in Nursing, Medical laboratory, dental surgery and radiography.

Keywords: knowledge, low back pain, Clinical students.

1. Introduction
Lower back pain is ranked first as a cause of disability and inability to work, and expected to affect up to 90% of the world's population at some point in their lives [1]. Cross-sectional data demonstrate that the initial onset of lower back pain is expected to occur around the mean age of 30 [2], and peaking in occurrence between the ages of 45 and 60 years [1, 2]. However, lower back pain is common in both older and younger adults. Brennan *et al*, [3] investigated which of the health care professionals have been consulted by patients with low back pain and reported that physiotherapists were the most frequently attended professionals (26%), followed by general practitioner (13%), chiropractor (8%) and 'other' (10%). Interestingly, 43% reported attending no medical professional for their low back pain condition. Knowledge of the clinicians involved in the management of low back pain is part of the complex recovery of a patient who has LBP [3].
Despite the high incidence and prevalence of LBP, the associated costs of diagnostic imaging and management, and the frequency of health care visits in this clinical population, studies of provider practice patterns have consistently shown high use of interventions poorly supported by evidence and lower use of interventions well supported by evidence [4]. Rehabilitation and care seeking habits of low back pain patients can be poor and often affected by many non-treatment factors and even a simple lack of knowledge. When a patient with low back pain were asked if enough information was provided within their program regarding lower back pain, 65% of those suffering from lower back pain confirmed that enough information about low back pain was not provided during their course of their visits to health care providers and further, 64% were interested in getting more information [2, 4].

Inability to provide information on LBP might be partly due to deficiency in the knowledge of low back pain by the health care providers. Treatment intervention, rehabilitation, recommendations, advice and education offer by health care providers to patients with low back pain depends largely on their knowledge of back pain and which in turn may influence on the recovery of a patient [4, 5, 6]. Coudeyre *et al* [7] and Buchbinder *et al* [8] in their studies reported that there is evidence that educational strategies towards changing patients' and health professionals' beliefs about low back pain can reduce pain and disability. The outcome of their study also showed that primary prevention strategies that focus on enhancing population knowledge of low back pain can be an effective form of preventing high levels of disability in patients with low back pain.

It appears that studies have been carried out on the level of knowledge of low back pain and influence that healthcare practitioners have on low back pain patient's recovery. However, there has been relatively little study of the knowledge of low back pain among clinical students in the healthcare professions. Nyland and Grimmer *et al* [9] [2003] and Brennan *et al.* [2007] reported that clinical students in health care professions indicate high interest in lower back pain management and back care [3, 9]. Studies have shown a lifetime prevalence of LBP amongst student physiotherapists to be between 19% and 65% [3, 9]. Studies on the influence of previous experience of low back pain on the level of knowledge of low back pain appeared not to have been widely reported. Mitchell *et al*. [10] found that there were no significant differences in beliefs and attitudes between undergraduate nurses who did, or did not, have current LBP. Additionally, the effect of gender on LBP knowledge is unclear. The level of knowledge of back pain of undergraduate clinical students who routinely work with patients with low back pain appeared not to have been widely reported. Therefore, the primary aim of this study was to measure the level of knowledge of low back pain of clinical students who might be routinely involved in patient with low back pain management. A secondary aim of this study was to determine which demographic characteristics would be associated with their level of knowledge.

2. Materials and Methods

2.1 Study Design

A cross-sectional survey was undertaken in 2013 involving a cross section of students from different departments in the college of Medical Sciences of University of Maiduguri, Maiduguri Nigeria.

2.2 Ethics

Approval to carry out this study was obtained from the Research and Ethics Committee of the University of Maiduguri Teaching Hospital, Maiduguri. Detailed information on the study and what was expected of the participants was provided on the participant information sheet. Participants were given enough time to decide whether they will take part in this study and were required to sign written informed consent prior to participation.

2.3 Participants

A convenience sample of clinical students across all years in the undergraduate courses of College of Medical Sciences University of Maiduguri; i.e. Medical Rehabilitation, Nursing and Midwifery, Medicine and Surgery, Dental Science, Medical Laboratory Science and Radiography participated in the study.

2.4 Procedure

Prior to distribution of the questionnaires to students, a letter was sent to the head of various departments in the students' department/area of study to inform them about the study. The survey was undertaken in the last four weeks in the final semester of the academic year. Students completed the survey at the end of an agreed class time. This agreed time was decided upon in consultation with the students, Head of department and relevant lecturers. Questionnaires were administered by hand and completed questionnaires were also returned by hand on the same day.

2.5 Outcome Measures

Demographic data was collected using a well-structured questionnaire while information on knowledge of low back pain was collected using low back pain knowledge questionnaire [LKQ]. LKQ consist of 16 questions testing of knowledge of low back pain. LKQ questions cover areas such as anatomy of the spine, definition of low back pain, causes of low back pain, classification of low back pain, diagnosis and general management of low back pain. Each Question is followed by the number of responses lettered A-D. Participants were required to indicate the best response of the options A-D. The questionnaire is scored by summing together the total number of correct responses. If a participant fails to answer all the questions correctly, he was considered ignorant if less than sixteen questions is answered correctly, the participants will be considered partially knowledgeable. If all the sixteen questions are answered correctly, the participants will be considered knowledgeable. The Low Back Pain Knowledge Questionnaire was validated and proved to be reproducible, valid and sensitive to changes in patient knowledge Simone CM *et al*. [11].

3. Methods of Data Analysis

Descriptive statistics of means and standard deviation and percentages were used to analyse demographic variables while chi square [χ^2] analysis was used to determine the impact of demographic variables on the level of knowledge of low back pain among clinical students. Level of significance was set at P = 0.05.

4. Results

Four hundred and fifty copies of LKQ were distributed among the participants. Three hundred and forty questionnaires were completed and returned given a response rate of 75.6%. Thus, data analysis was based on 340 questionnaires that were returned. Participants' age ranged from 20-33 years with a mean of 25.38±2.22 years. Demographic information and characteristics per discipline are shown in Table 1.

Levels of knowledge of low back pain of the participants are presented in Figure 1. It shows that of the total participants surveyed, 321 [95%] had partial knowledge of low back pain while 12[3.5%] and 5[5.1%] had no knowledge and complete knowledge of low back pain respectively.

Table 2 shows the level of knowledge of low back pain by selected demographic variables.224 (94.5%] of the male participants and 116 (97.5%) of the participants within the age group of 19-24 years demonstrated partial knowledge of low back pain. Similarly, more than 90% of the participants in all the departments/students' area of learning were

partially knowledgeable about low back pain. 4 (5.3%) of physiotherapy students and 1 (1.2%) of medical student demonstrated complete knowledge of low back pain. Departments/students 'areas learning showed statistical significant effects on low back pain knowledge (P = 0.04) which was not present in other demographic variables investigated (*P*>0.05).

5. Discussion

The present study revealed that the overwhelming majority of the participants (more than 90%) demonstrated partial knowledge of low back pain with less that 10% each were either completely knowledgeable or not knowledgeable. This finding is different from the results of studies carried out by Collinge *et al* [12] on the evaluation of physical therapy students' knowledge and adherence to the ambassador of low back pain guideline, where 88% of physical therapy student who participated in the survey indicated a lack of knowledge of guideline for low back pain management. Conversely, in a study carried out by Cilliers and Maart [13] on the attitude, knowledge and treatment of low back pain among nurses, it was reported that the majority of the participants were able to identify the most important physical risk factors associated with the development of LBP and the different components of a preventative exercise programme for low back pain but only a few of the participants in their study know that LBP could have a psychosocial cause.

The present study evaluated the level of knowledge of low back pain from the point of anatomical structures, aetiology, classifications and general management of LBP. Surprisingly, less than 10% of the participants' demonstrated complete knowledge of low back pain in these areas of assessment. The implication of these findings could be such that if the participants do not understand what the root cause of LBP is, they cannot reasonably be expected to appreciate the need to advise patients on how to avoid or manage the pain properly. They might also not be able to appreciate the need for an integrated treatment programme if they do not understand the biopsychosocial aspect of the causes of low back pain [13].

The overwhelming majority of the participants in our study demonstrated partial knowledge of low back pain. Similar results have been reported in a previous study. The study by Ferreira *et al* [14] measured the attitudes and beliefs of 153 Brazilian physical therapy students, who had not yet taken the subject on low back pain and compared the results to those of 618 Australian physical therapy students. Students' beliefs and attitudes were measured by the Health Care Providers' Pain and Impairment Relationship Scale (HC-PAIRS) [8]. Brazilian physical therapy students showed a stronger belief that low back pain is associated with levels of disability and limitations in daily life and work activities, when compared to Australian students. This finding may reflect portions of the students' education (e.g., curriculum and clinical placements) that correspond to definition, aetiology, classification and management of LBP, rather than direct knowledge acquired from an independent clinical practice. Thus, it could be that providing information and acquiring knowledge via in-service education and/or mass media about LBP might have several benefits such as increasing the knowledge of patients and health care givers of LBP, self-reported disability and the activities of daily living. A number of recent studies have investigated physiotherapy versus educational intervention, and shown that increasing knowledge via education, even alone, may aid the sufferer of LBP as much as physiotherapy. Alston and O'Sullivan [15], Frost *et al*. [16] and Uderman *et al*. [sss] all showed that increasing knowledge via education intervention was as, and even more effective than physiotherapy alone in improving pain management and pain resolution. Information on low back pain and its management can also be extracted and summarized into a one page hand out which could be handed over to patients and students on clinical placement.

Age, gender and years of leaning did not show any statistically significant influence on the level of knowledge of low back pain. The outcome of the present study however showed significant difference in the levels of knowledge among clinical students of different areas of study, with the Medical and Physiotherapy students demonstrated complete knowledge of low back pain which was not present in students from other study areas. Similar results were reported by Rainville *et al*, [1995] who reported differences in the beliefs of healthcare providers with diverse educational training by comparing 150 health professionals (the authors did not specify their professional background) with 66 "functional restoration therapists". The functional restoration therapists score lower on the outcome measure than the other professionals in their knowledge of low back pain. Although, the undergraduates in the current study were not asked if they had received information regarding lower back pain on their academic program of study, differences in the students' level of knowledge might be partly due to the differences in the numbers of patients with low back pain being routinely seen by the health care professionals in these different areas of study. This in turn might have effects on the exposure of students in the respective areas of study and thus influence their knowledge of low back pain and its management. Medical and Physiotherapy students are more likely to have received and retained information on low back pain from sources other than the information contained in the course curriculum and these students may also have received guideline-congruent training from clinical placement supervisors. One of the strengths of our study was the inclusion of students from various departments/ areas of learning and with different levels of academic training.

6. Limitations

The study is cross-sectional and thus gives a weak level of evidence of the association between the measured variables. The reliance on the respondents' self- reporting and recall of events could have led to measurement and recall biases. Lastly, the study used a questionnaire for data-gathering purposes that pre-imposed categories and thus limited the amount of new information that could be produced. Also, the study is not prospective in nature. Although we think that our sample might be represented, there is no available demographic data to determine if our sample is truly representative of all clinical students in Medical schools and schools of Allied health professions in Nigeria.

7. Conclusion

The current study revealed that the majority of the undergraduate clinical students had partial knowledge of low back pain. The Physiotherapy and Medical students demonstrated better knowledge of low back pain than students in Nursing, Dental Surgery, Medical Laboratory Science, and Radiography.

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