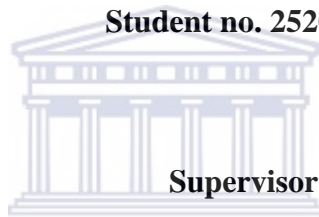


**Evaluating the knowledge, attitudes and beliefs about the prevention
and self-treatment principles for low back pain among nursing staff in
Cecilia Makiwane Hospital, East London Hospital Complex.**

**A mini thesis submitted in partial fulfillment of the requirements for the degree of
Masters in Public Health in the School of Public Health, Faculty of Community
and Health Sciences, University of the Western Cape, Bellville**

LIEZEL CILLIERS

Student no. 2520432



Supervisor

Ms. Suraya Mohamed
UNIVERSITY OF THE WESTERN CAPE

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Evaluating the knowledge, attitudes and beliefs about the prevention and self-treatment principles for low back pain among nursing staff in Cecilia Makiwane Hospital, East London Hospital Complex.

KEYWORDS

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and

beliefs

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ABSTRACT

Evaluating the knowledge, attitudes and beliefs about the prevention and self-treatment principles for low back pain among nursing staff in Cecilia Makiwane Hospital, East London Hospital Complex.

Liezel Cilliers (May 2007)

ABSTRACT

Nursing is a high-risk profession for the development of musculoskeletal problems and low back pain (LBP) in particular. Currently there is limited information available for the prevalence of LBP among the South African nursing population and no evidence on knowledge, attitudes and beliefs about the prevention and self-treatment principles for LBP among this group.

The aim of this study is to evaluate the knowledge, attitudes and beliefs about the prevention and self-treatment principles for LBP among nursing staff in Cecilia Makiwane Hospital, East London Hospital Complex. A cross sectional survey with a purposive convenience sampling method was used in this study. The study population consisted of all qualified nurses employed permanently at the hospital at the time of the study. A questionnaire was designed using literature from established sources

The study found that the majority of the participants experienced LBP on a regular basis. The participants could identify the most important physical risk factors associated with the development of LBP, but neglected the psychological risk factors. Action taken after the development of LBP included professional consultations as well as medication and bed rest. The participants identified the different components of a preventative exercise programme but only focused on the physical and not psychological components associated with LBP.

Policy guidelines and a comprehensive prevention and treatment programme needs to be designed and implemented to address the serious issue of LBP in nurses.

DECLARATION

I declare that *Evaluating the knowledge, attitudes and beliefs about the prevention and self-treatment principles for low back pain among nursing staff in Cecilia Makiwane Hospital, East London Hospital Complex* is my own work, that it has not been submitted before for any degree or examination in any other university, and that all the sources I have used or quoted have been indicated and acknowledged as complete references.

Liezel Cilliers

May 2007

Signed:



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CHAPTER 1

INTRODUCTION

1.1 Introduction

This chapter begins with an explanation of the relationship between LBP and the nursing profession. Previous literature is used to explain the risk factors associated with LBP and nurses. Background is provided about the hospital, surrounding areas and population it serves. The nursing staff situation, referring specifically to vacancies, is also highlighted. The rationale and significance of the study is explained. The chapter ends with the definition of terms used in the study and a summary of the chapters.

1.2 Background

Literature provides evidence that nursing is a high-risk profession for the development of low back pain (LBP). Various risk factors, ranging from physical to psychological indicators, have been identified for the development of LBP among nursing personnel in previous studies. Studies investigating LBP among nurses focus on risk factors or interventions to reduce the risk for the development of LBP. Only a limited number of studies could be found that evaluated the knowledge of nurses about the prevention and self-treatment principles for LBP (Mounce, 2002, Shoko, Ono, Shimaoka, Shuichi, Hattori, Hori, Takeuchi, 1999). This knowledge is important as nurses can then take responsibility for their own health through the prevention of injury, or in case of injury, treatment of symptoms. If the current knowledge and beliefs surrounding this problem among nurses is not known, any intervention planned cannot be effective, as it will not address the appropriate issues.

Cecilia Makiwane Hospital, the physiotherapy department reported that 80% of orthopaedic patients treated at the outpatient service during 2005 experienced LBP. Of

these, 30% were staff members with the majority being from the nursing profession. No official data is available on absenteeism of nursing staff due to LBP, but most of the nurses treated at the physiotherapy department reported that they had received sick leave from the medical doctor attending them. These statistics reveal that LBP among nursing staff is a problem in Cecilia Makiwane Hospital.

Cecilia Makiwane Hospital, together with Frere Hospital, is part of the East London Hospital Complex (ELHC) in the Eastern Cape. The Complex serves 3 million people in the surrounding areas (Njamela, 2006). Statistics shows that the Eastern Cape Province has the greatest shortages of nurses and doctors. For every 8 825 people there is one doctor (national average 3 928) and for every 1 278 people there is one professional nurse (national average 916) (Cullinan, 2004). A report in 2006 stated that 30% of doctor's posts, 28% of nursing posts, and an astonishing 80% of specialists' posts were vacant in Cecilia Makiwane Hospital (Kohler-Barnard, 2005). It went on to say that morale amongst the nurses was low because of poor salaries and working conditions due to staff shortages (Njamela, 2006).

“Nurse” in this study is defined as all professional nurses and enrolled nursing assistants, but not student nurses, working in a hospital environment with patients. This definition will apply to wherever the word “nurse” or “participant” appears in the thesis.

“Treatment” in this study refers to any actions taken by the participant or a trained medical professional to prevent or alleviate low back pain.

1.3 Summary of the chapters

Chapter one describes the basis of the current study. This includes the relationship between LBP and nurses and the risk factors that are associated with LBP. The hospital setting and work environment is described and a rationale is made for why LBP among nurses in Cecilia Makiwane Hospital was studied. The chapter ends with a definition for terms used in the text.

In chapter two, the literature reviewed highlights essential issues that need to be focused on. The impact of LBP on nurses is examined. This includes the statistics of how many nurses are suffering from LBP and the economic impact that LBP has. It is established that there is very little literature available on nurses and LBP in the South African context. Risk factors, both physical and psychological, are identified for the development of LBP among nurses. The knowledge, attitude and behaviour of nurses towards LBP is examined. The concepts of fear avoidance, coping strategies and self efficacy are described. Different interventions that have been implemented internationally to address LBP among nurses are explored as well as the effectiveness of these different interventions.

In chapter three the aim and objectives of the study is described. The study milieu, study population and sampling are also explained. Essential methodological issues are explained including what methods of data collection and study procedure was used in the current study. A self administered questionnaire survey was used to collect data. Quantitative data analysis was performed. Issues of reliability and validity are explained. Ethical considerations and the limitations of the study are also mentioned.

In chapter four, the results of the study are presented. Means and percentages are used to present descriptive statistics while the chi-square tests were used to test associations between certain variables.

In chapter five, the discussion attempts to interpret the current study findings and compare it to the results found in similar studies. Both the knowledge and lack thereof concerning LBP among nurses are highlighted.

The final chapter conclusions are drawn and recommendations made on how to prevent LBP among nurses in Cecilia Makiwane and how to improve the treatment of these nurses.



CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

This chapter begins with the definition of LBP. The prevalence of LBP in the nursing profession both internationally and in Africa is described. Thereafter follows a discussion of the various physical and psychological risk factors that contribute to the development of LBP among nurses. Different attitudes, knowledge and behaviours towards LBP are explained including fear avoidance beliefs, coping strategies and self efficacy. This is followed by a discussion of the impact of LBP both on the individual and the economic situation of the sufferer. The last section explores the different interventions that have been implemented internationally to prevent and treat LBP among nurses. This also includes the success rates of these interventions and reasons for failure.

2.2 Definition

Punnet, Pruss-Ustun, Nelson, Fingerhut, Leigh, Tak and Phillips (2005:2) defines LBP as follows:

“Any non-traumatic musculoskeletal disorder affecting the low back which includes all back pain, regardless of diagnosis, that was not secondary to another disease or injury cause.”

2.3 Prevalence of low back pain in nurses in Africa

Maul, Laubli, Klipstein and Krueger (2003) found a lifetime prevalence of 56-90% for the development of LBP among nurses. A study done in the United States of America found that 12% of nurses leave the profession every year because of back injuries (Vaughan, 2005). In Africa similar findings are being reported. Clarke (2003) found that nurses in Ghana were 21.5 times more likely to develop LBP than teachers. Omokhodion, Umar and Ogunnowo (2000) conducted a cross sectional study among Nigerian nurses of whom 69% reported experiencing LBP. In a study done by Wallner-Schlotfeldt and Stewart (2000), it was reported that information on the prevalence and factors associated

with the development of LBP among the general population in South Africa is not available. No studies could be found about the knowledge of self-treatment or ergonomical prevention principles for LBP among nurses in South Africa.

2.4 Risk factors associated with low back pain

Studies to identify the risk factors for the development of LBP among nursing personnel have identified two broad categories: Psychological and physical risk factors.

2.4.1 Psychological risk factors

Psychological factors can be used as a strong predictor for the development of new LBP symptoms (Mounce, 2002). This is illustrated by Bigos, Battié and Spengler's (1991) findings that psychological factors have consistently been found to be associated with both the disability arising from and the treatment outcomes for LBP. Feyer, Herbison, Williamson, de Silva, Mandryk, Hendrie and Hely (2000) argued that because the early development of LBP can be influenced by acute psychological factors, it means that LBP can partly reflect the somatic component of psychological distress. This is supported by Mounce (2002) who found that psychological distress might be expressed as bodily symptoms such as LBP.

Several other studies have also reported that dissatisfaction with the working environment or job dimensions of nurses can attribute to LBP (Simon, 1992; Hoogendoorn, Bongers, de Vet, Ariens, van Mechelen and Bouter, 2002; Eriksen, Bruusgaard and Knardahl, 2004). Factors that can contribute to this dissatisfaction include a lack of social or managerial support at work (Eriksen, Bruusgaard and Knardahl, 2004 and Bigos, Battié and Spengler, 1991). Lepore, Evans and Schneider (1991) described the concept of social support as resources provided by a network of

individuals, institutions, policies and social groups. Other factors associated with the development of LBP identified by Ahlberg-Hultèn, Theorell and Sigala (1995) include psychological demands, authority over decisions and skill utilization and a perceived lack of a pleasant/relaxing, supporting or encouraging culture in the work unit. Hartvigsen, Lings, Levoeuf-Yde and Bakketeig (2004) also suggested that secondary implications of dissatisfaction within the working environment can be a decrease in pain tolerance, which translates into a higher absenteeism rate.

According to Mounce (2002) psychological factors can be used as predictors for the development of chronicity among LBP sufferers. Burton, Tillotson and Main (1995) found that the factors used to predict prolonged disability/chronicity and work absence are generally psychological in nature. Grotle (2005) and Burton, Tillotson and Main (1995) reported a significant association between chronic LBP and distress (depression/anxiety symptoms), fear avoidance beliefs, work status, job dissatisfaction, work content, coping strategies and locus of control on health.

The impact of LBP on the sufferers' life, whether real or perceived, can play a major role in the development of chronicity. The impact can present itself in many ways which include reduction in income, alteration of life style, inability to perform reinforcing activities, marital conflict, depression and insomnia (Doleys, 2002).

Social factors contributing to the development of LBP include education level, gender (Grotle, 2005), smoking, social status and previous sexual or physical abuse (Mounce, 2002) and age (Thomas, Silman, Croft, Papageorgiou, Jayson and Macfarlane, 1999).

2.4.2 Physical risk factors

Shoko, Ono, Shimaoka, Hiruta, Hattori, Hori and Takeuchi (1999) found in their study that the physical condition of the general nursing staff, and not any individual nurse, contributed to the prevalence of LBP. They argued that if nurses are sick or in poor physical condition, the rest of the staff has to take on more responsibility leading to an increased risk of LBP. The study did not find a link between the physical condition of an individual nurse and the development of LBP. Mounce (2002) similarly found that obesity of a nurse is not a risk factor for the development of LBP. This finding is supported by Lebeouf-Yde (2000) that concluded after undertaking a systematic review of 65 studies that body weight is not a risk factor for the development of LBP.

Specific physical risk factors associated with LBP have been identified in several studies. These can be divided into external and internal factors.

External factors include transferring or lifting patients; moving beds (Shoko et al, 1999); heavy or repetitive lifting (Mounce, 2002); not using lifting aids when transferring patients (Engkvist, Hagberg, Wigaeus, Menckel and Ekenvall, 1998) and positioning of patients in bed (Eriksen, Bruusgaard and Knardahl, 2004).

Internal factors include work posture (Shoko, et al, 1999); prolonged standing; static postures; forward bending; half sitting postures (Mounce, 2002); high energetic work load and fatigue of nurses (Eriksen, Bruusgaard and Knardahl, 2004; Vingard and Josephson, 1998).

2.5 Knowledge, attitudes and behaviour about low back pain

Research has shown that behaviour is associated with knowledge and attitudes.

Attitudes that are built on a knowledge base are more likely to be relevant to behaviour.

If knowledge and attitudes are matched one could use this method to influence behaviour (Fabrigar, Petty, Smith and Crites, 2006). There are certain factors and behaviours that can influence a person's response to LBP. These include the experience of pain, fear avoidance, coping strategies and self efficacy.

2.6 Experience of pain

Falk (2006) showed that there are quite a few factors that can influence the experience of pain. These include psychological factors such as fatigue, depression and anxiety. Expectations, whether internal or external (told by a medical professional or family), expectation of or focus on pain and stress also contributes to the experience of pain.

2.6.1 Fear avoidance

For many patients LBP is an intense and overwhelming experience that is strongly associated with anxiety, distress and fear avoidance behaviour (Roberts, Little, Chapman, Cantrell, Pickering and Langridge, 2002). Both Waddell, Newton and Henderson (1993) and Lethem, Slade, Troup and Bentley (1983) identified a strong relationship between fear avoidance beliefs and the development of chronic LBP. Waddell, Feder, McIntosh, Lewis and Hutchinson (1996) found that chronic pain sufferers have a negative and distorted pattern of thinking that is based on fear avoidance beliefs. These beliefs negatively influence the response to any treatment and rehabilitation.

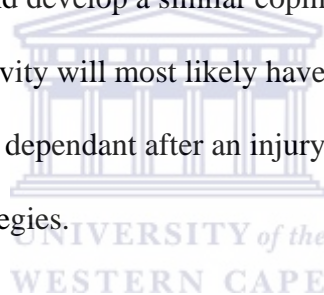
To objectively measure fear-avoidance beliefs and avoidance of work related activities of patients the Fear Avoidance Belief Questionnaire (FABQ) was developed. Fritz and Steven (2002) advocate that the use of this screening tool, the FABQ, can be used to

assess a particular patient's risk for the development of chronic LBP and to identify the patient's needs during treatment.

2.6.2 Coping strategies

Jensen, Turner, Romano and Karoly (1991) found chronic LBP patients can also exhibit maladaptive behaviours which are associated with a lack of coping styles, low self-efficacy beliefs and perceived control.

Doleys (2002) argued that family members who have experienced medical problems will most likely be adopted as role models by patients with LBP. As coping strategies are considered to be a learned response, the patient suffering from LBP will learn from these family members and develop a similar coping strategy of their own. Individuals who returned to productivity will most likely have developed adaptive coping strategies while those who became dependant after an injury or illness will be seen to have maladaptive coping strategies.



2.6.3 Self efficacy

Bandura, O'Leary, Taylor, Gauthier, and Gossard (1987) found that participants with strong self efficacy beliefs will, regardless of their physical condition, have a higher pain tolerance threshold. Bandura (1986) described self-efficacy as the level of confidence that patients have in their ability to perform activities of daily living.

Bandura (1986) found that those with weak self-efficacy beliefs would be expected to give up easily when faced with obstacles and to discontinue their coping efforts, whereas individuals with strong self-efficacy would persist when encountering obstacles. This is supported by Jensen, Turner, and Romano (1991) who found that

patients with chronic pain who used a variety of coping strategies tended to have greater self-efficacy beliefs. Supporting this is Anderson, Dowds, Pelletz, Edwards and Peeters-As-dourian (1995) who found that chronic LBP patients who had higher levels of self-efficacy reported less pain, higher activity levels, greater perceived life control and less interference in activities of daily living due to pain.

2.7 Impact of low back pain

2.7.1 Impact on nursing

Hignett (2003) reported that work related musculoskeletal disorders are one of the main health problems among health care workers. This is supported by Li, Wolf and Evanoff (2004) and Eriksen, Bruusgaard and Knardahl (2004), who reported that back injuries are the most common and costly musculoskeletal injury among nurses.



2.7.2 Economic impact

An important outcome measure for patients with LBP is their successful return to work as this will directly impact on both the quality of life and the economic situation of the sufferer (Bombardier, 2000). This is noted by Mitchelmore (1996) who found that health professionals tend to underestimate the effect of LBP on employment and self-esteem.

Sixty to eighty percent of the general population will suffer from LBP during their lifetime (Biering-Sorensen, 1983), while the rate and degree of disability related to LBP are on the increase worldwide (Frymoyer and Cats-Baril, 1991). Hashemi, Webster and Clancy (1998) found that 66% of LBP sufferers returned to work within 4-8 weeks after the onset of the injury. After 1 year, 95% of the sufferers had returned to work. The

remaining 5% accounted for 65% of the total medical costs incurred. Frank, Brooker, DeMaio, Kerr, Maetzel and Shannon (1996) support this when they estimated that if a person does not return to work within 6 months of the injury, the likelihood of returning to work becomes 20%. This means that those people who are unable to return to work soon after the LBP episode not only become increasingly unlikely to ever return to work, but will also account for the majority of the costs associated with occupational LBP (Hashemi, Webster and Clancy, 1998). In the United States of America back pain accounts for \$25 billion in overall annual medical costs and is the second leading cause of workdays lost (Mikhail, Korner-Bitensky, Rossignol, Dumas, 2005).

2.7.3 Impact in South Africa

In South Africa 80% of the work force will suffer from severe discomfort and disability caused by LBP at some point in their working life. It is one of the most common conditions treated by health professionals and also the main reason for absenteeism from work. It is estimated that worker disability due to back pain cost the economy more than R6 billion a year (Berlot, 2005).

2.8 Interventions

2.8.1 Education on prevention of low back pain

The aim of health education should be to influence health behaviours of individuals and groups as well as to address factors that influence these behaviours. Health education should provide information and instruction on illness, exercises and provide counseling on psychological issues such as stress related problems and coping styles (Sluijs, van der Zee and Kok, 1993). This is supported by Claiborne, Vandenburg, Krause and

Leung (2002) who described the aim of educational content was to provide information about pain control, improved functioning and reducing absence from work.

Stuifbergen, Seraphine and Gregg (2000) discussed that health education in rehabilitation should focus on self care and promote an active and independent approach toward health care. The way information is communicated can determine whether the messages will be accepted or not.

2.8.2 Means of communication

The brain uses 'senses' and 'beliefs' to identify danger. While the 'senses' are limited in scope and range, the 'belief' system complements and augments danger identification. This explains why a 'belief' is so difficult to change or why it persists despite evidence to the contrary. (*Lestor, 2000*).

Interventions that target society's views and perceptions of LBP may be an effective way of changing negative attitudes and beliefs around the issue. This is because it can target and change the beliefs among high risk groups which may be hard to identify as well as medium and low risk groups at the same time. If the information presented is commonly accepted it also becomes easier to persuade an individual to adopt them (Buchbinder, Jolley and Wyatt, 2001).

An example of this is a media campaign that was held in Australia with the aim to provide evidence-based advice about LBP to citizens. A significant improvement in population beliefs about back pain 3 years after the campaign was found. Linton (1986) found that a primary preventative intervention to provide information about LBP in the general population can influence knowledge and attitudes among citizens and medical health professionals. This is supported by Buchbinder, Jolley and Wyatt in their 2001 study that demonstrated that a primary preventive strategy to alter beliefs

about LBP in a population is an effective way of reducing back related disability and decrease back claim compensation.

If the knowledge of the user is increased, it will also impact on behaviour, perception of control, anxiety and satisfaction (Roberts *et al*, 2002). Burton, Waddell, Tillotson and Summerton (1999) demonstrated this principle in a study where some participants received educational material and other none. Those participants who received the material showed an improvement in beliefs, including fear avoidance beliefs, as well as in self reported disability in activities of daily living. One of the vital factors for success when developing educational material is to include the views of the potential users.

Roberts *et al* (2002), however, found that the priorities of the patient and health professional differed when developing education material. Glenton (2002) explains this is because information presented to patients' presenting with LBP is compiled by the medical professional without any inclusion of the patients' views or needs in any way. In an article by May (2001), the researcher similarly found no evidence to prove that patients' views were included in the decision making process when deciding on the structure of education programmes. Where studies have attempted to determine the individual's educational needs concerning LBP, the researcher's pre-imposed categories onto the participants and simply measured the importance of these categories (Wensing, Grol and Smits, 1994).

Payton, Nelson and Hobbs (1998) found in their study that although half of the participants wanted to be directly involved in their treatment and decision making, only one in four knew how to do so. The reason for this was found to be a communication gap between the patient and medical professional. The medical professional could not communicate the information to the patient in lay language (Glenton, 2002). To close the communication gap organizations can use easy to read materials (Centre for Health

Care Strategies, 1998). A leaflet given to patients act as a reminder after the consultation has ended and allows the patient to absorb the content at their own pace. Patients can use the information to identify or develop their own health beliefs. Other benefits of leaflets include a decrease in anxiety, reduction of medico legal problems and an increase in cooperation of the patient. This is supported by Roberts *et al* (2002) who found that patients with LBP who are given information during their first visit is more satisfied with their treatment and require less health care.

However, education alone is not always successful in the prevention of LBP. Cohen, Goel, Frank, Bombardier, Peloso, and Guillemin (1994) did a review of studies that provided patients with education about LBP and only found short term effects such as a decrease in pain intensity and duration. No evidence of benefits for group education in the long term was found. Harber (1990) argued that despite teaching nurses the correct lifting/transfer technique, it has not been successful in the past because of the following reasons:

- The technique if incorrectly taught can actually increase stress on the back,
- Activities such as moving equipment or prolonged standing may also contribute to the problem
- Training can create the attitude among nurses that they are responsible for their own health regardless of external factors
- Lifting equipment may be heavy and cumbersome to use
- Understaffing may not permit two person lifts and can contribute to musculoskeletal stress.
- It has also been found that leaving the responsibility to the workers to change their work practices to prevent injury is less effective than modifying the environment to prevent injury.

Mosley (2002) suggested that the reason why health education programmes have not been successful is because of the type of education presented to patients. May (2002) argued that over the last few decades no new efforts had been made to explore the needs of the individuals who will access health care and health education programmes. Gahimer and Domholdt (1996) found that few studies have been done to examine the needs of individuals with LBP about their health education needs.

Although education alone will not prevent LBP it nonetheless has to be an important component of any back pain promotion/ prevention programme.

2.8.3 Promotion/prevention strategies

Hignett (2003) compared studies that implemented different interventions to reduce LBP among nurses. The researcher found that single interventions such as provision of lifting equipment or technique training showed only moderate evidence for changes in the short term, and strong evidence for no impact on working practices or injury in the long term. It was found that multifactor interventions are far more likely to be effective.

Harber (1990) found that while training on how to prevent LBP was the most cost-effective method of addressing LBP among nurses, it had a rather limited impact. The approach that showed the most impact was ergonomical interventions. Single preventative measures such as education programs have largely been unsuccessful in reducing back injuries or back pain among nurses (Feldstein, Valanis and Vollmer, 1993; Maul, Laubli, Klipstein and Krueger, 2003).

Li, Wolf and Evanoff (2004) demonstrated that the availability of lifting equipment can decrease the rate of injury and absenteeism due to LBP. Harber (1990) however argued that equipment is often too cumbersome to use on a regular basis. Troup and Rauhala (1987) also found that the belief amongst nurses was not to use lifting equipment as they preferred the hands-on approach.

Smedley, Poole, Waclawski, Stevens, Harrison, Buckle and Coggon (2005) found that an ergonomic program provided no improvement in patient handling activities or the prevalence of musculoskeletal symptoms. This is supported by Hartvigsen, Lings, Levoeuf-Yde and Bakketeig (2004) who found that an intensive weekly education session on ergonomics was not more effective than a once off instructional meeting. Some success was achieved with physical conditioning programs for staff, but Gundewall, Liljequist and Hansson (1993) found that these were difficult to implement due to logistical problems and a lack of employee participation.

There are several reasons according to Harber (1990) why the above mentioned strategies were not successful. These include not transferring ergonomical skills to other tasks such as pushing equipment, not enough personnel to assist with transfers and a non-ergonomical workplace. Harber (1990) also examined nurses' beliefs about the causes of occupational back pain and found a heavy emphasis placed on the workers' own responsibility for preventing injury. There was also very little emphasis placed on modifying the work environment or job demands.

2.8.4 Impact of treatment

The success rate when treating patients with LBP has been rather disappointing. Skelton, Murphy and Murphy (1996) found in their study that patients with LBP had

dissatisfaction levels as high as 80%. The cause of the dissatisfaction was a lack of explanation on the cause, diagnosis, prognosis and self management of pain.

Falk (2006) proved that medical treatment for pain has been ineffective for 40% of patients suffering from chronic LBP. Alexandre (2000) found in his study that half of the patients following a LBP treatment regime were non/low compliant and dropped out of their physical therapy appointments. The reasons for this were found to be dissatisfaction with care and possible problems in following the treatment regime proposed. Klaber-Moffett (2002) found that often a low adherence rate of patients when embarking on an exercise program is caused by the health professional not explaining to the patient with written information or verbally what the purpose of the exercises are.

According to Mounce (2002) patients with LBP visiting their health practitioner have certain expectations. These include an exact diagnosis, specific treatment and complete relief from pain. The truth however is that the majority of patients with LBP do not have an identifiable cause for their LBP. Once serious pathology has been excluded, and physical as well as psychosocial factors have been assessed, the doctor should explain that patients need to find coping strategies of their own and participate in their health decisions. This will prevent the patient from believing that their pathology has been missed or that the doctor doubts the legitimacy of the symptoms complained about and will decrease the psychological distress experienced.

2.8.5 Policy

Hagberg, Silverstein, Wells, Smith, Carayon, Hendrick, Perusse, Kuorinka, Forcier (1995) suggests that policy to address the problem of LBP in hospitals needs to include multiple interventions to be successful. Policy to prevent LBP should focus on the following: Training to prevent injury, injury reporting system, symptomatic treatment, rehabilitation and limited duty opportunities for nurses with LBP problems. Analyzing

of activities and modification of tasks that carry the highest risks, staffing and work scheduling must also be include in policy intervention (Harber,1990). These policies must be transferred to both management and the labor force and the workers must be empowered to utilize the knowledge they have received (Hagberg *et al*, 1995).

Hospitals in developed countries have adopted various strategies to combat LBP among nurses. These include education about ergonomic principles, equipment to transfer patients or accessibility to treatment for nurses with LBP (Smedley *et al*, 2005).

Smedley *et al* (2005) investigated what impact the above-mentioned strategies have had in hospitals in the United Kingdom using the Manual Handling Risk Controls in Hospital Scoring system. They found that hospitals that performed well had covered all aspects of manual handling risk management with particular emphasis on skills development. Hospitals that did poorly had done the administrative work needed such as a manual handling policy and recording of accidents and sick leave, but had not invested in skills development for staff.

The next chapter describes the methodology of the study.

CHAPTER 3

METHODOLOGY

3.1 Introduction

This chapter describes the methods that were utilized in the study. Information included relates to the research setting, study sample and study designs. The aim and objectives of the study is explained. The pilot study is described as well as how the data was analyzed. The ethical considerations and limitations of the study are also explored.

3.2 Aim of the study

A quantitative, cross sectional survey was used in this study to obtain information about low back pain among nursing professionals at Cecilia Makiwane Hospital. The aim of this study is to determine the knowledge, attitudes and beliefs about the prevention and self-treatment principles for LBP among nursing staff in Cecilia Makiwane Hospital, East London Hospital Complex.

3.3 Objectives of the study

- To determine the prevalence, frequency and duration of LBP among nursing staff at Cecilia Makiwane Hospital, East London Hospital Complex
- To establish the knowledge and beliefs about the risk factors of LBP among nursing staff at Cecilia Makiwane Hospital, East London Hospital Complex
- To establish the knowledge, attitudes and beliefs about the prevention and self treatment principles for LBP among nursing staff at Cecilia Makiwane Hospital, East London Hospital Complex

- To make recommendations to the Senior Management on how to address the problem of LBP among nursing staff in the East London Hospital Complex and nursing colleges.

3.4 Study population and sampling

The study population of this study was defined as all nurses permanently employed in Cecilia Makiwane Hospital at the time of the study. Exclusion criteria included:

- Nursing students
- Nurses not permanently employed by the hospital such as contract workers
- Nurses not available to receive the questionnaire e.g. vacation or prolonged sick leave

A convenience sampling method was used to identify possible participants. Thirty wards in the hospital were identified where nurses are responsible for patient care.

These wards can be grouped according to the departments they belong to: Medical department, Surgical department, Psychiatric department, Pediatric department,

Obstetric and Gynaecology department, Emergency Care Department (which is subdivided into intensive care, high care and casualty wards) and Specialized Clinics.

In each ward the nurse in charge was asked to identify 2 professional nurses and 3 nursing assistants to which questionnaires were delivered. This ratio was chosen to represent the nursing population of the hospital. The majority of nurses working in Cecilia Makiwane are qualified nursing assistants while a smaller percentage has qualified as professional nurses. This ensured that a wide range of nurses of all categories in different settings and with varied work responsibilities was included in the study. After the nurses were identified by the nurse in charge, the researcher explained the purpose and ethical aspects of the study. The nurses were asked to complete the questionnaire and hand it back to the nurse in charge.

3.5 Data collection methods

The researcher could not find a standardized questionnaire after a search of several data bases (Pubmed, Medline, Free medical journal index, UWC databases and WHO). The questionnaire for this study was designed using an informational booklet of the National Institute for Arthritis and Musculoskeletal and Skin Diseases in the United States of America (2004); The Arthritis Research Campaign booklet (2003) for low back pain and literature found during the literature search. The questionnaire was designed to provide information related to all the objectives. The questionnaire explored the knowledge, attitude and beliefs of nurses regarding low back pain and included the following categories: General information of participant, past treatment and self treatment practices, knowledge on the causes and prevention principles of low back pain. It also addresses confounding factors such as gender, age, work place, type of work and duration of career. The questionnaire and a covering letter enclosed in an envelope were distributed by the researcher to the nurses. Nurses were given 2 weeks to complete the questionnaires and hand it back to the nurse in charge for safe keeping. A follow up visit was done after 1 and 2 weeks to all the identified areas in the hospitals by the researcher. After the allocated 2 weeks the researcher visited each area again to find non-respondents. The need to do this is clarified in the next section.

3.6 Validity and reliability

To ensure the validity of the questionnaire a pilot study was conducted two weeks prior to the main study. The questionnaire was distributed to 10 nurses working in the spinal unit to be tested for user friendliness and clarity. This unit makes use of retired nurses on a contract basis for staffing. As these nurses were excluded from the main study,

they were suitable subjects for the pilot study. No changes were made to the questionnaire after the pilot study as all questions were found to be clear.

The questionnaire was compiled in English, translated into isiXhosa, and then re-translated back into English. isiXhosa speaking members of the Physiotherapy staff was responsible for the translations. Adequately translated questions, is important in this study, as isiXhosa is the first language of most of the study population.

Reliability was ensured through the following: Guidelines as set out in the proposal were followed while developing, distributing and analyzing the questionnaire with the aim to improve standardization; frequent cross checks were done to improve the accountability of data entering; a pilot study was conducted to ensure reproducibility of the questionnaire; good definitions for all variables to ensure repeatability of the questionnaire and the questionnaire was translated into isiXhosa, then retranslated into English to minimise translation bias. Questionnaires not returned within the allotted time period was followed up to minimise the “healthy worker effect” (Gebbie, 2003, p. 1). The “healthy worker effect” can create bias when only participants at work are included in the study. Those participants not at work may be absent due to back pain, and if special consideration is not given to this in the study the wrong study population will be included which will affect the final results.

3.7 Analysis

Data was cleaned to ensure completeness and internal consistency was assured by the researcher using the following criteria: data entered into a computer was double checked; while data was being entered it was checked for plausibility e.g. results cannot

be more than 100%; missing values were checked e.g. 0 and zero. The program EPI-INFO was used for analysis.

3.8 Limitations

Studies conducted in other countries provide information from which the questionnaire used in this study was developed. By doing this it pre-imposes categories and limits the amount of new information that can be produced. However, as a well-established topic in international research literature, it is then assumed that this pre-imposed information will be relevant to the South African context.

The questionnaire can introduce recall bias into the study, as the participants had to provide information retrospectively. However as indicated by the literature, low back pain is a common occurrence among nurses which impacts on the physical and psychological wellbeing of an individual and therefore this profound effect is not something that will easily be forgotten. Some of the disadvantages of a cross sectional study includes confounders influencing the results, lack of a standardised survey tool and recall bias. Confounders in this study that must be considered include age and gender of the participants as well as work environment (ICU vs. general wards) and duration of career. Disadvantages of using a questionnaire for data gathering purposes also includes that it is superficial, non-participative and imposes structure rather than exploring it.

3.9 Ethics

Permission to conduct this study was obtained from both the Ethical committee of the University of the Western Cape and the management of the East London Hospital Complex. Each participant was asked to sign a letter of consent before completing the

questionnaire. Confidentiality of each participant was assured in this letter. Participants were made aware that if they were not willing to participate in the study, they did not have to complete the questionnaire, but did have to return it to the researcher. They were also made aware that they could withdraw from the study at any stage.

The next chapter will focus on the findings of the study.

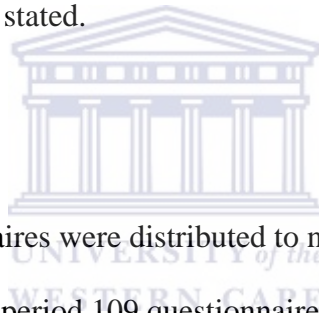


CHAPTER 4

RESULTS

4.1 Introduction

In this chapter, the quantitative results of the study are described. These include the socio-demographic characteristics of the sample and the prevalence, duration and frequency of LBP among nurses at Cecilia Makiwane Hospital. The absenteeism rate of participants is described as well as where the participants received information about LBP. Statistical analysis is done to explore the relationship between different factors associated with LBP. The participants' knowledge of a number of risk factors that can cause LBP is described and finally the perceived elements of what should be included in an back programme is stated.



4.2 Response rate

A total of 150 questionnaires were distributed to nurses working in Cecilia Makiwane Hospital. After a 2 week period 109 questionnaires were collected representing a 73% return rate.

The findings can be grouped into the following categories: General information of participants; prevalence, frequency and duration of LBP; past treatment and course of action taken, knowledge on the causes and prevention principles of LBP.

4.3 Socio-demographic characteristics of participants

The sample consisted of 108 females and 1 male. The marital status of the participants can be broken down as follow: 48% were married, 37% were single, 12% were widows and 4,6% were divorced.

More than half (51%) of the participants indicated that they were in the 40-49 year age group. The mean age of the participants was 42.5 years. The Paediatric and Medical wards and the Specialized Clinics were the only departments where participants were older than 60years. Paediatrics was also the only department where the participants were younger than 30 years of age (0.9%). Refer to Table 1.

Table 1: Age of participants

Department in hospital (total number of participants in each dept)	Age groups of participants				
	20-29 Years n (%)	30-39 Years n (%)	40-49 Years n (%)	50-59 Years n (%)	60-69 Years n (%)
Emergency	0	2 (1.8)	7 (6.4)	4 (3.7)	0
Theatre	0	2 (1.8)	1 (0.9)	0	0
Surgical	0	5 (4.6)	15 (13.8)	5 (4.6)	0
Medical	0	5 (4.6)	13 (12)	1 (0.9)	1 (0.9)
Pediatric	1 (0.9)	2 (1.8)	9 (8.2)	3 (2.8)	2 (1.8)
Obstetric + Gynecology	0	1 (0.9)	4 (3.7)	1 (0.9)	0
Psychiatric	0	2 (1.8)	1 (0.9)	0	0
Specialized Clinics	0	2 (1.8)	6 (5.5)	13 (12)	1 (0.9)
Total (100)	1 (0.9)	21 (19.1)	56 (51.4)	27 (24.9)	4 (3.6)

Table 2: Duration of career of participants

Department in hospital	Duration of participants career (N=109)				
	0-9 Years n (%)	10-19 Years n (%)	20-29 Years n (%)	30-39 Years n (%)	40+ years n (%)
Emergency (Total)	2 (1.8)	3 (2.8)	8 (7.3)	0	0
Theatre	0	2 (1.8)	1(0.9)	0	0
Surgical	4 (3.7)	11 (10.1)	9 (8.3)	1 (0.9)	0
Medical	7 (6.4)	7 (6.4)	4 (3.7)	2 (1.8)	0
Pediatric	4 (3.7)	8 (7.3)	3 (2.8)	1 (0.9)	1 (0.9)
Obstetric + Gynecology	0	4 (3.7)	2 (1.8)	0	0
Psychiatric	2 (1.8)	1 (0.9)	0	0	0
Specialized Clinics	0	4 (3.7)	12 (11.0)	6 (5.5)	0
Total	19 (17.4)	40 (36.7)	39 (35.8)	10 (9.1)	1 (0.9)

Almost twice as many nurses worked for 10-19 years (36.7%) and 20-29 years (35.8%) than those who worked for less than 10 years. Refer to Table 2.



4.4 Prevalence, frequency and duration of low back pain

Table 3: Prevalence of LBP among participants

Departments (number of participants in each department)	Staff in each department experiencing LBP n (%)
Emergency (13)	13 (100)
Theatre (3)	3 (100)
Surgical Departments (24)	22 (92)
Medical Departments (20)	15 (75)
Pediatric Departments (17)	13 (76)
Obstetric + Gynecology Department (6)	6 (100)
Psychiatric Department (3)	2 (67)
Specialized Clinics (22)	18 (82)
Total	92 (84%)

The majority of nurses (84%) suffered from back pain with all the participants from three departments (emergency area, O+G, theatre) reporting experiencing LBP at least once (is this once their lifetime/once a week?). The department that reported the lowest prevalence was the psychiatric department with only 2 nurses (67%). Refer to Table 3.

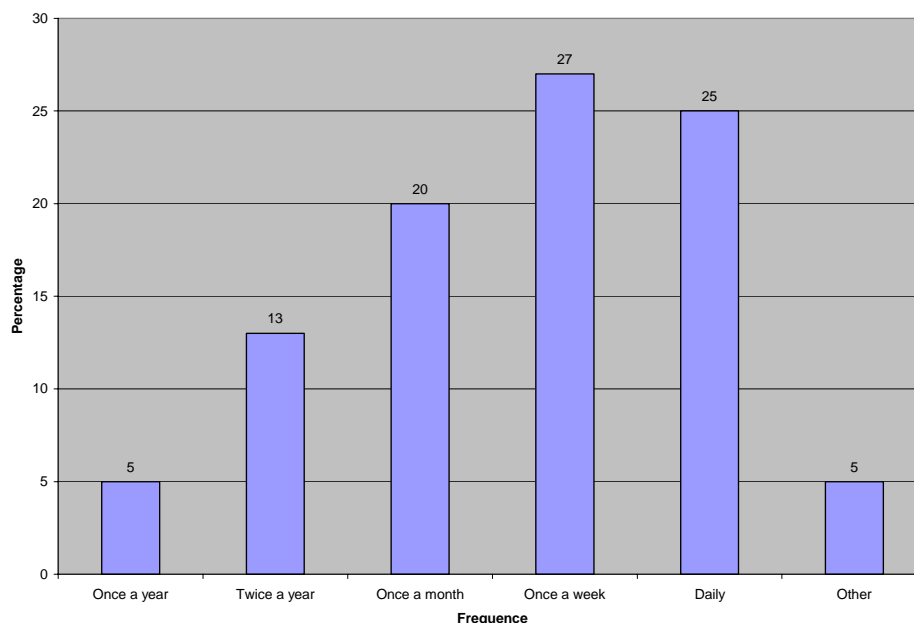


Figure 1: Frequency of LBP among participants

Most participants indicated that they had experienced LBP at least once a day (25%) or once a week (27%). Only 5% reported that they had only one episode a year. Refer to Figure 1.

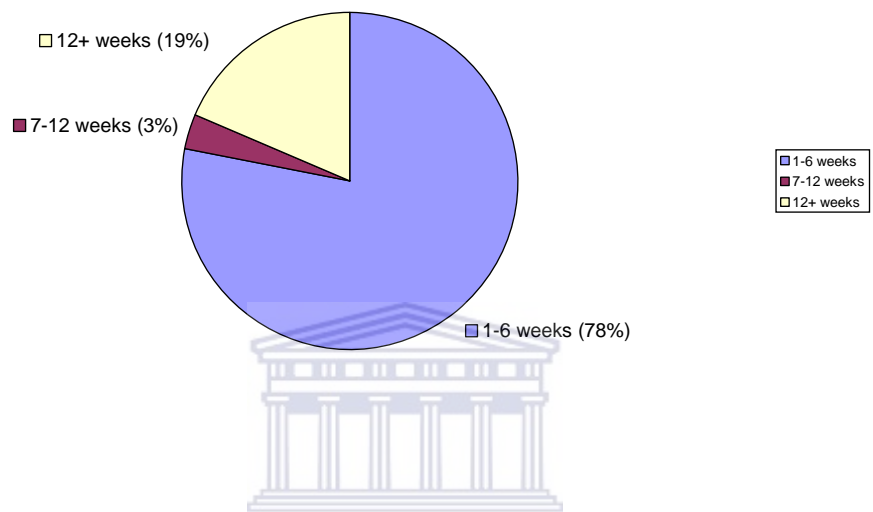


Figure 2: Duration of LBP among participants (%)

Most nurses (78%) reported that LBP episodes resolved within 6 weeks. Episodes that lasted for longer than 12 weeks were reported by 19% of the nurses. Refer to Figure 2.

4.5 Absenteeism from work due to low back pain in the past year

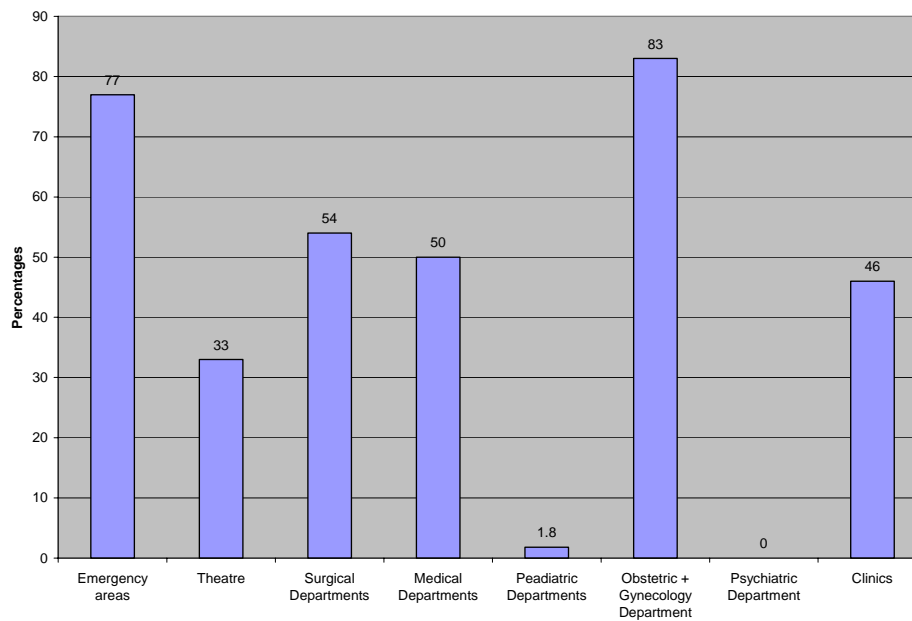
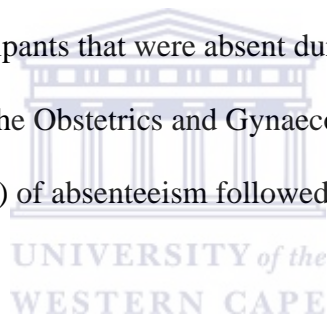


Figure 3: Absenteeism from work in the past year due to LBP

The percentage of participants that were absent during the past year due to LBP is shown in Figure 3 with the Obstetrics and Gynaecology Department recording the highest percentage (83%) of absenteeism followed by the emergency care areas with 77%.



4.6 Statistical analysis

A Chi square test was done to investigate the association of different variables. The associations tested included: the duration of participants' careers and the age of the participant; the prevalence and frequency of LBP; duration of symptoms and absenteeism.

The association between absenteeism and age was statistically significant using a p value of 0.05. The age group younger than 30 years was less likely to be absent due to LBP than the 40 to 50 year age group. Likewise the 30 to 40 year age group was less likely to be absent due to LBP than the 40 to 50 year age group.

The other associations tested was found not be statistically significant.

4.7 Past treatment practices for low back pain

Past treatment practices includes the immediate course of action that participants followed after developing LBP as well as which members of the medical team were consulted.

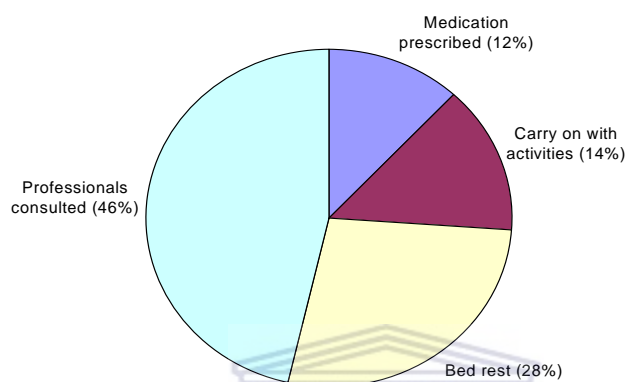


Figure 4: Immediate course of action after the development of LBP

Figure 4 shows that the majority of nurses (46%) consulted a first line practitioner (doctor or physiotherapist). Bed rest was the second most popular treatment option (28%) with only 14 % of nurses opting to carry on with activities after developing LBP.

Table 4: Professionals consulted after the development of LBP

Professional consulted	Number of participants who consulted professionals after developing LBP n (%)
Traditional healer	0
Dietician	0
Occupational Therapist	3 (3)

Psychologist	3(3)
Orthotist	4 (4)
Nurse	6 (6)
Radiologist	14 (13)
Pharmacist	16 (15)
Physiotherapist	24 (22)
Medical doctor	40 (37)

No nurses consulted a traditional healer or dietician. Medical doctors were the first line practitioners most consulted (37%) followed by physiotherapists (22%). Only 15 % of nurses reported taking medication and 13% reported being referred for radiological investigations. Refer to Table 4.



4.8 Sources of information on low back pain

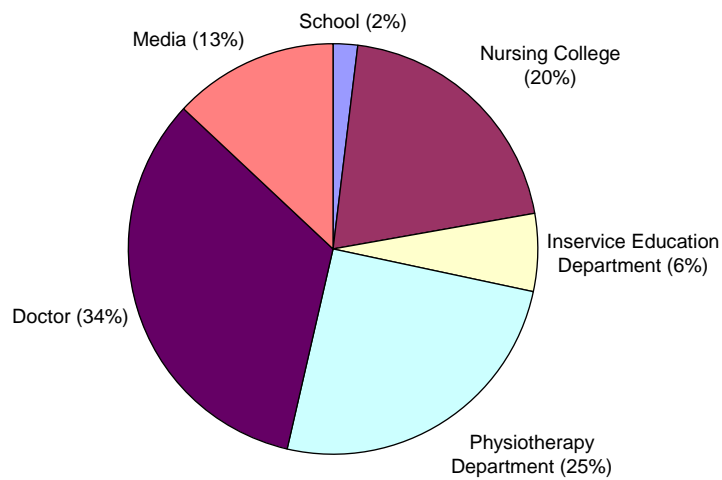


Figure 5: Sources of information on LBP

Fifty four percent of nurses indicated that they had received some kind of information about LBP previously. Thirty four percent of participants received information on LBP from doctors followed by the physiotherapist (25%). Only 6 % of nurses reported that they had received information from the training department and 20% indicated that it was part of the nursing curriculum at the nursing college. Refer to Figure 5.

4.9 Knowledge and beliefs about causes of low back pain

4.9.1 Perceived causes of low back pain

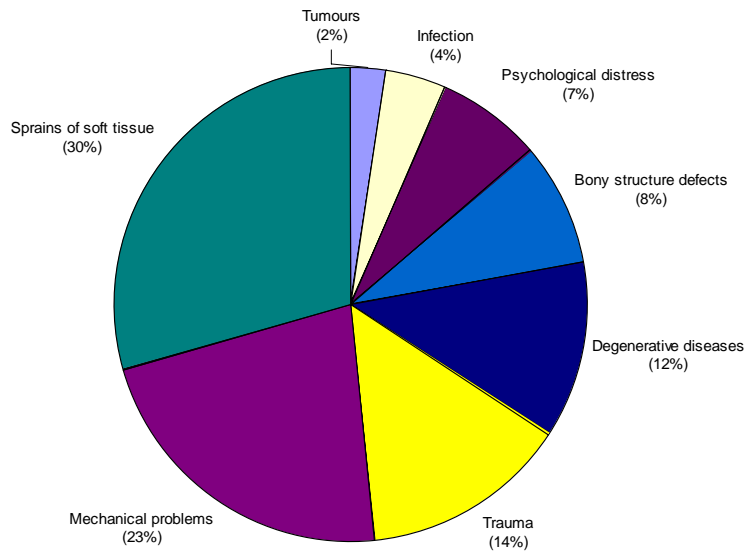


Figure 6: Perceived causes of LBP

According to participants, the most likely causes of LBP are sprains of the soft tissue (30%) and mechanical problems (23%). Only 7% of the nurses thought psychological distress was the cause of LBP. Refer to Figure 6.

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4.9.2 Risk factors perceived to be contributing to low back pain

The participants perceived that the work environment (61%), patient care (57%) and physical factors (28%) were the main causative factors contributing to LBP.

Psychological and social factors were considered by only 14 % and 3 % of participants respectively.

Physical factors that were thought to cause LBP included prolonged standing (55%), poor posture (44%) and bending forward (38%). Poor physical fitness was considered by 20% and slumping by 16% of participants.

It was the participants' opinion that trunk flexion (34%) and trunk extension (25%) were the two main specific movements that caused back pain while 17% thought that trunk rotation was a factor for LBP.

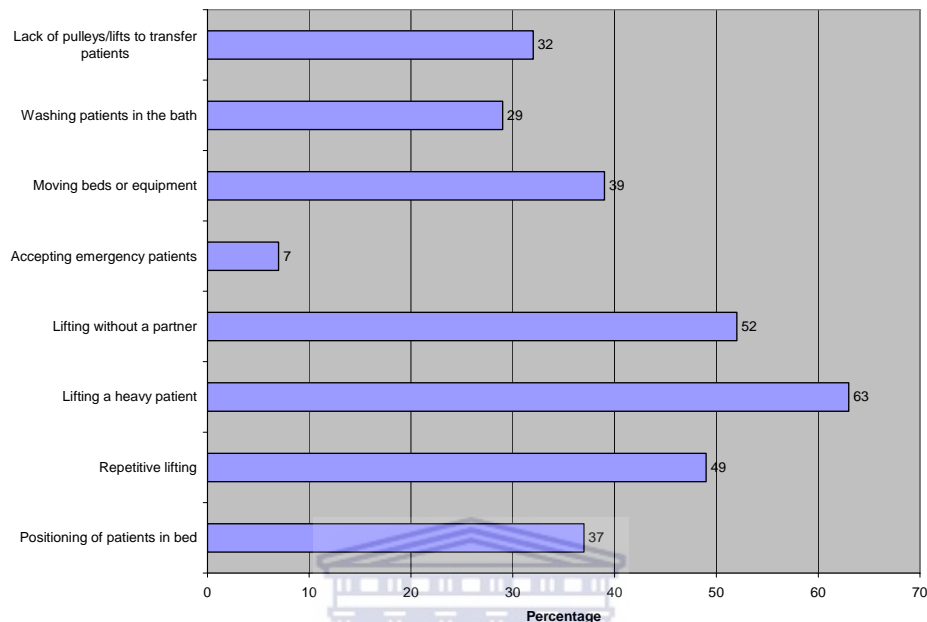


Figure 7: Perceived patient care factors that contribute to LBP

Figure 7 illustrates that the patient care factors that were thought to contribute to LBP included lifting (mean 55%), moving beds or equipment (39%) and positioning patients in bed (37%). Only 7% of participants considered accepting emergency patients as a contributing factor.

4.9.3 Psychological and social factors

The participants thought that obesity (72%) and increased age (55%) contributed greatly to the development of LBP. Participants reported that they thought LBP was most likely to develop in the 40-50 year age group (46%), followed by the 30-40 year age group (34%). Participants thought that smoking and substance dependence did not

contribute at all to LBP. Ten percent (10%) of participants indicated that they did not believe any of the social factors (smoking, obesity, age, poor social or educational and dependency) given was responsible for the development of LBP.

Psychological factors that contributed to LBP were identified as follows: fatigue (58%), emotional distress (42%) and depression (36%). Fifteen percent (15%) did not believe that any psychological factors could cause or contribute to LBP.

4.9.4 Work environment

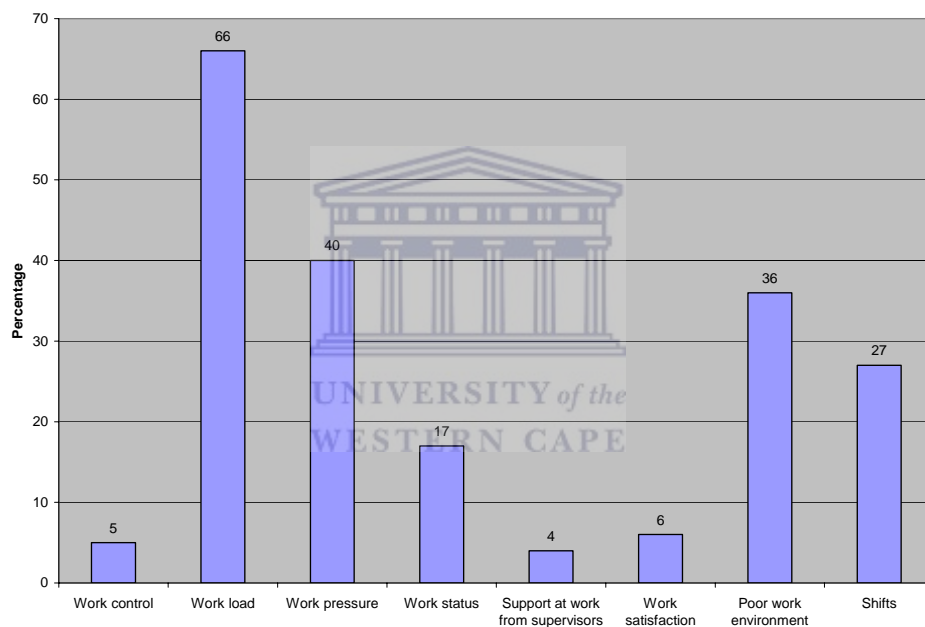


Figure 8: Perceived work environment factors that contributes to LBP

Work environment factors that were indicated as responsible for the development of LBP by participants included work load (66%), work pressure (40%) and a poor work environment (36%). Support from superiors, work control and work satisfaction were chosen by 4%, 5% and 6% of the participants respectively. Refer to Figure 8.

4.10 Perceptions about treatment of low back pain

This section deals with the investigation of the beliefs and knowledge about treatment after development of LBP.

Table 5: Perception on initial treatment choice after developing LBP

Treatment	Number n (%)
Injection	4 (4)
Surgery	5 (5)
Resuming normal activities as soon as possible	7 (6)
Practice relaxation methods	11 (10)
Corset	23 (21)
Medication	27 (25)
Heat therapy	28 (26)
Exercise regime	40 (37)
Bed rest	56 (51)
Consult a doctor	73 (67)

Table 5 indicates that most nurses thought that one should consult a doctor (67%) and rest (51%) after developing LBP. Only 6% of participants indicated that they would resume normal activities as soon as possible.

4.11 Perceptions on time period to avoid activities after the development of low back pain

Thirty nine percent of participants thought that it was best to avoid any activities that could cause more pain when experiencing LBP until the pain is gone. A period of rest for two to three days was suggested by 19% of participants, followed by a period of one week rest (16%). Only 7% of the participants thought it best to carry on with activities when experiencing LBP.

Table 6: Knowledge on warning signs to seek medical attention

Warning signs	Number n (%)
Unintentional weight loss	0 (0)
Trouble urinating	5 (5)
Sudden weakness	13 (12)
Numbness/tingling in legs	38 (35)
Pain after trauma	40 (37)
Pain does not decrease with rest and medication	54 (50)

Most of the participants could identify that numbness of the legs (35%), pain after trauma (37%) and pain that did not decrease with rest (50%) were warning signs of LBP. Only 5% identified trouble urinating and 12% sudden weakness of the legs as warning signs that required medical attention. Refer table 6.

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4.12 Preferred medication for low back pain

The majority of the participants indicated that they would take analgesics (59%), NSAIDS (46%) and benzodiazepine (32%) for back pain. Anti depressants was thought to be appropriate by 7% of participants.

4.13 Knowledge and beliefs of a low back pain programme

This section investigated the knowledge and beliefs of the participants regarding the different elements that should be included in a LBP program.

The majority of participants (70%) indicated that the back muscles must be targeted in a LBP program. Abdominal and leg muscles was only considered by 17% and 16% of the participants.

4.13.1 Perceived exercises that should be included in a low back pain programme

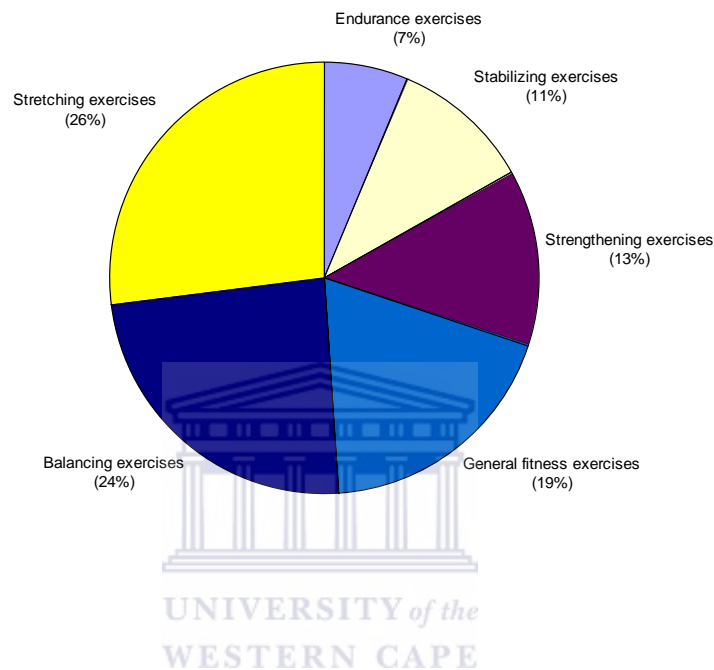


Figure 9: Perceived exercises to be included in a treatment programme

Participants thought that stretching (26%) and balancing exercises (24%) should be included in an exercise program. Only 13% of participants indicated that strengthening of the muscles is important and even less (7%) thought that endurance of the muscles must be addressed in an exercise program. Refer to figure 9.

4.13.2 Perceived types of topics to be included in a preventative low back pain programme

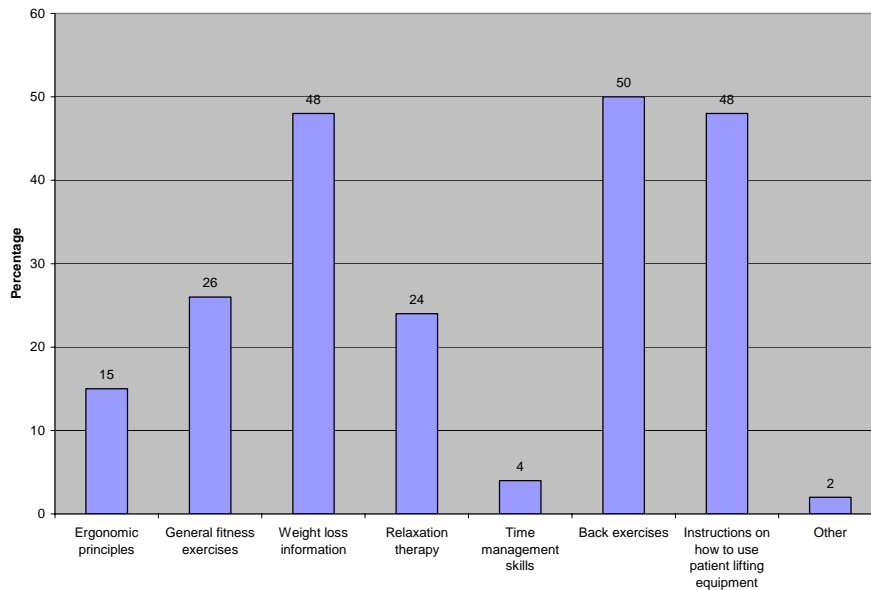


Figure 10: Perceived topics that should be included in a low back pain program

Participants indicated that back exercises (50%), weight loss advice (48%) and instruction on how to use lifting equipment (40%) were important topics that should be included in a LBP program. Ergonomic principles were only thought to be important by 15% of the nurses. Psychological aspects such as time management (4%) and relaxation methods (24%) were not regarded as important as the physical aspects associated with the development of LBP. Refer to Figure 10.

The next chapter is a discussion of the findings of the study.

CHAPTER 5

DISCUSSION

5.1 Introduction

This chapter compares the current study's findings with published literature. The causes and risk factors for development of LBP among nurses are discussed. The different treatment options are explored using literature to highlight the benefits and

limitations of each. The chapter ends with a discussion of the different components that should be included in a back programme according to the participants of the study.

5.2 Prevalence, duration and frequency of low back pain

The prevalence of LBP in the current study is 84 %. Three departments (Emergency, Theatre and O+G) reported a 100% prevalence rate. The reasons for the high prevalence rate in these departments may be because of the time constraint put on nurses when emergencies occur and the increased workload associated with these departments. During emergencies nurses must respond quickly causing sudden movements which can lead to injury. Nurses are also not able to pace themselves or rest when tired in these departments as they must respond immediately when needed.

The majority of participants experienced LBP at least once a month with more than half indicating that they had experienced LBP on a daily or weekly basis. This can have serious implications because it is well documented that a history of LBP is a risk factor for new episodes. However Feyrer, Herbison, Williamson, de Silva, Mandryk, Hendrie and Hely (2000) suggested in their study that the frequency and time after the last episode might be more important in predicting new episodes than simply the presence of LBP in the past. This is supported by Smedley *et al* (2005) who also found that the risk of recurring LBP increased with both the duration and frequency of previous symptoms and Flaherty (1999) who reported that 90% of back pain sufferers will recover within a year, but 75% will also relapse within 1 year of recovery. Maul, Laubli, Klipstein and Krueger (2003) expanded on this theory when he suggested that the recurrence of LBP must be distinguished into two categories: Those episodes that are new and those that are recurring from a previous episode. In support of this Abenhaim, Suissa and Rossignol (1988) found that over the course of 3 years, 67% of

episodes reported by nurses were recurrences. This can be explained if it is assumed that the injured part of the spine remains more sensitive and prone to new injury. The present study did not attempt to distinguish between the two categories.

The majority of the participants reported that their LBP episodes resolved within 6 weeks. This is in line with a study done by Hashemi, Webster and Clancy (1998) which found that 66% of LBP sufferers' symptoms had resolved to such an extent that they could return to work within 4 - 8 weeks after the onset of the injury. The fact that some participants (19%) reported experiencing LBP for longer than 12 weeks must be of concern if taken into consideration that Frank, Brooker, DeMaio, Kerr, Maetzel and Shannon (1996) predicted that if a person does not return to work within 6 months of the LBP onset, the likelihood of returning becomes 20%. This will create a burden as the nurses in the ward must take on the added responsibility of the absent nurses' work. On the other hand, if an injured nurse continues to work with the LBP she/he increases the likelihood of further injury. Another problem that the nurses could face is economic hardship if she/he is not able to continue working, placing a double burden on themselves.

With the exception of the psychiatric ward the majority of the participants in the hospital have been working for more than 10 years. The departments that recorded participants with career duration of less than 10 years did not have any staff members younger than 30 years. This reveals a trend where training to become a nurse is starting later in life. This could be relevant as damage to the back could occur before nurses training is even started which will compound the problem once nurses start working in wards (Klaber-Moffett, 2002).

5.3 Causes of back pain

The most common perceived causes of LBP identified in the present study were physical factors such as soft tissue sprains, mechanical problems, trauma and degenerative diseases. However, according to Mounce (2002) less than 25% of all back pain injuries have an identifiable cause. Of the 25%, only 3% will be caused by pathology such as infections, tumours and trauma (Dionne, Bourbonnais, Frèmont, Rossignol, Stock and Larocque, 2005).

The National Institute of Arthritis and Musculoskeletal and Skin Diseases (2004) states that although not always identifiable as the root cause of LBP, degeneration of the bone; spasms and muscle tension are the most likely causes of LBP. The last two factors can be caused or contributed to by psychological factors. Only a few participants in the present study indicated that LBP may have a psychological cause. If the participants in the study do not understand what the root cause of their LBP is, they cannot reasonably be expected to avoid or manage the pain. They will also not find any benefit in an integrated treatment program if they do not understand why psychological aspects are included.

5.4 Risk factors contributing to low back pain

The general risk factors that were identified as having a potential to contribute to LBP were those to do with the physical aspect of their work. These include the physical condition of the nurse, the physical attributes of the work environment and patient care.

Participants identified prolonged standing as the main physical risk factor for developing LBP. This is supported by Mounce (2002) who found that prolonged standing; static postures; forward bending; half sitting postures contributed to the development of LBP. Dangerous work posture is most often associated with patient

handling activities (Hignett, 2003). Other physical factors identified as risk factors by the participants included poor posture of nurses such as half sitting postures and bending forward when bathing patients. This is supported by both Owen and Garg (1989) and Hignett (2003) who reported that work posture is a risk factor for developing LBP.

5.4.1 Work environment

Work load, work pressure and a poor environment at work were chosen by participants as the most relevant factors that contribute to LBP while work status, work control, work satisfaction and support from supervisors were not thought to contribute to LBP.

A poor work environment in the context of this study refers to an unpleasant atmosphere at work due to problems experienced which is outside the control of the nurses. These problems may include low social support at work (supervisors or peers) and work control (Eriksen, Bruusgaard and Knardahl, 2004; Ando, Ono, Shimaoka, Hiruta, Hattori, Hori and Takeuchi, 1999).

The organizational culture of the work unit has been shown to be related to the occurrence of LBP. Participants in this study believe that work load and pressure but not work control would contribute to LBP. This is important as the ability to pace oneself when working, and not only the amount or urgency of the work will help to minimize the risk of developing LBP.

Management of the hospital also needs to be made aware of what risk factors there are to developing LBP as it causes decreased work efficiency, absenteeism and loss of human resource due to resignations or medical boarding.

5.4.2 Patient care factors

Lifting of patients was identified as the main patient care activity that could cause the LBP. These included lifting heavy patients, repetitive lifting and lifting alone. Several studies have shown the relationship between transferring patients and LBP (Ando *et al*, 1999; Owen and Garg, 1989). The reasons why nurses tend to injure their backs during transfers include loss of balance (nurse/patient), no transfer device, sudden movement and a poor physical work environment (Engkvist, Hagberg, Wigaeus, Menckel and Ekenvall, 1998). Thirty two percent of participants indicated that the lack of a lift or pulley system could cause LBP. Moving equipment, such as a pulley system, was also identified by the participants as a high risk activity. This means that the risk of moving the lift or pulley system from patient to patient must be considered against the risk of manually lifting patients. Ando *et al* (1999) reported that one of the reasons why lifting or pulley systems to transfer patients were not successfully implemented was because nurses found it to cumbersome and heavy to move from patient to patient.

Positioning patients in the bed and washing patients were the other activities that were also regarded as high risk. This is supported by Eriksen, Bruusgaard and Knardahl (2004) who found that the frequency of positioning patients in bed also predicted the development of LBP. Only 7 % of participants identified accepting an emergency patient as dangerous, which is surprising seeing that 100% of the participants had experienced LBP in the emergency department. According to a study done by Bongers, Winters and Kompier (1993) accepting emergency patients may be a risk factor for the development of LBP due to the time pressure it entails. They postulated that more hurried movements, quick accelerations and poor postures is used during busy periods in emergency areas where immediate attention is needed which will increase the mechanical load on nurses' backs.

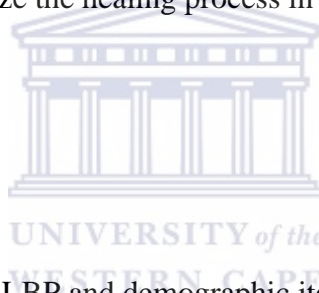
5.4.3 Psychological and social factors

Only 15% of the participants thought that psychological distress was a risk factor for LBP. This finding is worrying because several previous studies have linked back complaints with low mood, stress, and job dissatisfaction (Smedley, Poole, Waclawski, Stevens, Harrison, Buckle and Coggon, 2005). This is important since Waddell, Newton and Henderson (1993) reported that less than half of back related disability is caused by physical impairments and that a significant proportion of LBP is due to psychological distress. The psychological distress causes the patient to be more aware of bodily symptoms such as pain and can increase with the duration of the symptom and amount of specialists seen (Mounce, 2002). If nurses do not recognize the importance of this contributing factor, they will simply treat the symptoms of the LBP which will cause only temporary relief and not resolve the problem. The other important reason why this factor must be addressed is the developing of chronicity among LBP sufferers. According to Mounce (2002), the development of chronicity of LBP is associated with high levels of psychological distress, dissatisfaction with work status and poor self rated health.

Contrary to what was found in the literature, the participants in this study associated LBP with age and obesity. This can be due to different reasons. Firstly, it is possible that the professionals consulted may have alluded to this association during consultations when providing advice about weight loss. Although no participant was referred to a dietician in this study, other professionals may have given weight loss advice. Secondly, participants may believe that weight and age is a primary cause of LBP when in fact it will be responsible for the aggravation of symptoms after the development of LBP. Thirdly participants did indicate that they rely on the media

(13%) for information about LBP. The media generally do not distinguish between the cause and aggravating factors of LBP, but include weight loss as a standardized part of LBP information.

Smoking was not regarded as a risk factor to LBP by any of the participants even though several studies found that smoking is a consistent risk factor for LBP. The National Institute of Arthritis and Musculoskeletal and Skin Diseases (2004) provide evidence that smoking decreases the absorption of nutrients by the discs in the back. It also slows healing and leads to a prolonged pain experience. The participants were obviously not aware of this fact. Health care providers more so than anybody else should be aware of the dangers of smoking. For those that suffer from LBP it is important not to jeopardize the healing process in any way and by smoking they might just be doing so.



5.4.4 Age

The association between LBP and demographic items such as age, duration of employment, workplace, height and weight seems to be weak according to the literature. Several researchers have found that these factors are poor predictors of LBP among nurses (Ando, Ono, Shimaoka, Hiruta, Hattori, Hori and Takeuchi, 1999; Mostardi, Noe and Kovacik, 1992; Maul, Laubli, Klipstein and Krueger, 2003). In the current study height and weight was not included among the variables investigated. However age was a predictor for being absent because of LBP in the 40-50 year age group but duration of employment was not an indicator for the development of LBP.

The National Institute of Arthritis and Musculoskeletal and Skin Diseases (2004) reported that the first episode of LBP can be expected between the ages of 30 and 40.

Furthermore, it was reported that the frequency of LBP increases with age. This fact was corroborated by the participants in the present study who indicated that the age group where LBP will most likely develop for the first time is 40-50 years.

The second biggest age group in this study is shared among the 30-40 year and 50-60 year age group. These statistics reveals an aging work force. This is worrying as the workforce is becoming older and according to the findings of this study there will only be a small reserve (20%) to replace the nurses when they leave their posts due to retirement, promotion or resignations.

5.4.5 Movements contributing to back pain

Participants indicated that contributing movements to LBP are trunk flexion and extension. Only a small percentage recognized that trunk rotation can contribute to LBP. Bhatnagar, Kostuik, Michael, Tooke and Huckell (2002) found that both trunk flexion and rotation can increase the intradiskal pressure and so put more stress on the lumbar spine. Mounce (2002) also reported that twisting (rotation) is a risk factor for the development of LBP. This is important as repeating these movements or exceeding the weight limit when performing the movements can cause serious pathology to the back. When structuring a back program it is important to strengthen the muscles which control these movements to improve the stability of the spine and include techniques that will teach the participants to perform these movements ergonomically correct.

This is illustrated through the findings of the Bhatnagar, Kostuik, Michael, Tooke and Huckell (2002) study, which found that trunk muscles need endurance to stabilize the trunk when performing an activity repeatedly. The study found that subjects with LBP had a lower endurance level than the control group. The paraspinal muscles can also

contribute to LBP if it is decreased in strength or endurance. It also plays an important role in maintaining a good posture, which if dysfunctional, can contribute directly to LBP.

5.5 Absenteeism from work

The emergency care and Obstetrics and Gynaecology Departments recorded the highest absenteeism rate associated with LBP. This is most likely due to the physical nature of the work in these areas causing LBP as well as the psychological aspects associated with these areas such as time pressure and work load that can lead to stress which is a risk factor for LBP.

The association between absenteeism and age were statistically significant. The Chi Square test showed that the age group younger than 30 years were less likely to be absent from work due to LBP than both the 30-40 and 40-50 year age group. This is illustrated in the specialized clinics section where the majority of participants (91%) are older than 40 years. This may explain why the specialized clinic department has a high absenteeism rate (46%) even though the workload in these departments are expected to be of a less physical nature than other departments.

5.6 Warning signs

It is encouraging to note that most participants could identify the main warning signs to seek medical attention immediately after developing LBP. This means that they had good knowledge on the warning signs. The only warning signs that participants had trouble recognizing were trouble urinating and sudden weakness. These are signs of the cauda equine being compressed and require urgent attention (Speed, 2004).

5.7 Sources of information

Fifty four percent of participants indicated that they have received some kind of information about LBP. Only a small percentage of the participants reported receiving information from the nursing college curriculum, in service department of the hospital or mass media.

Providing information about LBP has several benefits. Several studies have found that information improves beliefs about LBP, self reported disability and activities of daily living. In addition an informational approach can also be effective in reducing sick leave in both the long and short term (Buchbinder, Jolley and Wyatt, 2001).

5.8 Treatment of low back pain

5.8.1 Consultations

Thirty seven percent of participants reported that they consulted a doctor after they developed LBP. This is in contrast to the findings of Mounce (2002) who found that in only 10% of LBP episodes nurses will consult with a general practitioner. In Cecilia Makiwane Hospital the high number of general practitioners consultations can be contributed to the availability and ease of accessibility of staff health services.

Traditional healers are a recognized part of the Xhosa culture. None of the participants indicated that they had consulted a traditional healer for LBP before. This could be attributed to the educational level of the participants. Of those nurses that consulted a doctor after developing LBP, 22% were referred to a physiotherapist, 15 % received medication and 13% was sent for X-ray investigations. None were referred to a dietician for weight loss advice. Flaherty (1999) recommended guidelines for uncomplicated acute LBP is to consult a doctor, drug therapy and to remain as active as possible of which the latter is contrary to what the present study found.

5.8.2 Rehabilitation

The participants did not believe that corsets, injections or surgery were appropriate treatment modalities for LBP. This is supported by several studies that found no scientific evidence to suggest that injections, traction and corsets were effective for treating LBP (Cherkin, Deyo, Wheeler and Ciol, 1995; Jellema, van Tulder, van Poppel, Nachemson and Bouter, 2001). The National Institute of Arthritis and Musculoskeletal and Skin Diseases (2004) warns that corsets might make the problem worse if back muscles are allowed to weaken from lack of use. Surgery should only be considered for herniated discs when sciatica is present and symptoms persist for longer than one month with no improvement (Flaherty, 1999).

5.8.3 Physiotherapy

Only 22% of participants consulted a physiotherapist. It is unclear whether participants knew that physiotherapists were first line practitioners (can be consulted without a referral), or whether the doctors that were consulted did not refer to physiotherapy. In a study done by Cherkin, Deyo, Wheeler and Ciol (1995) it was found that more than 80% of the physicians in their study believed physical therapy was effective. Evans and Richards (1996) reported that manipulation seem to have conflicting evidence in the literature about its effectiveness, but that some literature did suggest long term therapeutic benefits. This is supported by Koes, Assendelft, van der Heijden and Bouter (1996) who found that no randomized clinical trials have been done to prove the effectiveness of manipulation. However Evans and Richards (1996) reported that reassurance and advice as well as early resumption of normal activities may be more effective than physiotherapy treatment.

5.8.4 Diagnostic imaging

Cherkin, Deyo, Wheeler and Ciol (1995) reported that LBP will resolve with a minimum of intervention from diagnostic imaging and referring patients for this within the first month of an episode will only contribute to cost, not efficiency. Flaherty (1999) echoed this in his findings where he found that unless there is a progressive neurological deficit, diagnostic imaging should not be done. He also mentioned that abnormal findings are frequently found in asymptomatic individuals, which means that the likelihood of finding pathology unrelated to the LBP could be increased.

5.8.5 Medication

According to the participants, analgesics and NSAIDS and to a lesser extent benzodiazepane should be taken after development of LBP. This confirms that the participants had the correct knowledge because Deyo (1996) advocates that LBP should be managed through analgesics, NSAIDS and muscle relaxants. There is a debate about the usefulness of antidepressants in LBP. Van Tulder, Koes and Bouter (1997) suggested that it could be used to regulate pain and sleep, but The National Institute of Arthritis and Musculoskeletal and Skin Diseases (2004) found that although it is frequently prescribed, it has limited proven efficacy. It is however important to educate patients about the side effects and disadvantages of long term drug use (Deyo, 1996).

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5.9 Avoidance of activities after the development of low back pain

According to Lethem, Slade, Troup and Bentley (1983), avoidance of activities mean that the individual is trying to avoid certain activities because they anticipate it to cause or increase pain. This behaviour is considered maladaptive as it will lead to a reduction in activity levels, an increase in fear and avoidance behaviours, a greater length of disability and negative physical and psychological effects. Bed rest or avoidance of

activity will cause the back muscles to weaken causing more pain as the muscles cannot function properly. It also allows the sufferer to focus on the pain which will increase the pain and disability. This can lead to a chronic disability because the sufferers believe they cannot cope with normal activities.

Participants believed that after the development of LBP, activities that cause pain should be avoided with only a small percentage reporting that they carried on with their normal activities. Almost half of the participants indicated they will avoid all activity until the pain is gone. This belief is in contrast to both Spitzer, LeBlanc and Dupuis (1987) and National Institute of Arthritis and Musculoskeletal and Skin Diseases (2004) guidelines which advise against bed rest and recommended a gradual return to normal activities. The only indicator for bed rest of no more than 4 days is initial symptoms of pain radiating down the legs. Waddell, Feder, McIntosh, Lewis and Hutchinson (1996) suggest that patients should be encouraged to develop pain relief strategies and receive information which reinforces that activity will not further damage the spine. Nurses need to be made aware of these guidelines. To address fear avoidance beliefs Fritz and George (2002) suggested that patient education must be used to provide credible explanations in order to address misconceptions. This will increase patients' confidence to carry on with activities of daily life. Burton, Waddell, Tillotson and Summerton (1999) found that those patients who overcame fear of movement and physical activity had better treatment outcomes and quality of life.

Altmaier, Russell, Feng Kao, Lehmann and Weinstein (1993) found in their study that patients with LBP who received counseling had an increased self-efficacy score and reported less pain. They also found that self-efficacy had a direct influence on the activity level and functioning of the patients. This means that increasing a patient's

self-efficacy during the management of LBP is an effective clinical and economical outcome measure. This can be done through counseling and psychological support.

5.10 Components of a low back pain programme

5.10.1 Exercise programme

There is a body of literature that suggests that an exercise programme can be an effective prevention and treatment modality (Bhatnagar, Kostuik, Michael, Tooke and Huckell, 2002). The benefits associated with a general exercise program include an improved general attitude, decreased depression, reduced stress and muscular tension and a decrease in new back problems which together will add to the prevention/reduction in LBP (Bhatnagar, Kostuik, Michael, Tooke and Huckell, 2002).

Most participants recognized that back muscles should be targeted in an exercise programme but only a small percentage of participants indicated that leg and abdominal muscles should be included. The fact that most of the participants did not think that abdominal muscle exercises were important means that they do not have knowledge on the matter. Abdominal muscles provide stability and control to the spine and should therefore be prioritized in LBP programmes (Speed, 2004). Studies have shown that there is a greater frequency of LBP among patients with poor abdominal muscle function. This is thought to be because the endurance of the back muscles is negatively affected when the abdominal muscles are weak (Bhatnagar, Kostuik, Michael, Tooke and Huckell, 2002). In the current study, strengthening and stabilizing exercises received little support and endurance training for job dimensions even less. The composition of an exercise programme should include stretching, balancing and general fitness exercises.

Conversely, LBP will decrease the strength of back muscles due to inactivity. It is

also important to include stretching exercises to a back programme as this will increase soft tissue extensibility, reduces muscle spasm, and restore muscle length. If the upper and lower extremities are inflexible, it allows less force to be absorbed there instead of the spine which can lead to injury (Bhatnagar, Kostuik, Michael, Tooke and Huckell, 2002).

5.10.2 Other components to be included

Participants indicated that they thought it important to include back exercises, weight loss information and instructions on how to use lifting equipment in a preventative back program. It is encouraging that they wanted weight loss information included seeing that they thought obesity was a risk factor for LBP. The inclusion of the use of lifting equipment meant that they were considering using the equipment. This is a positive step because it would lead to a reduction in LBP as was alluded to earlier. There was moderate support for general fitness and relaxation techniques to be included, but ergonomic/prevention principles and time management skills were not indicated as important. This is of concern because ergonomic principles are the foundation of how to look after one's back. Without this information it is impossible to plan any prevention programme.

5.10.3 Staff involvement

It is very important to involve staff when assessing the risks and putting together a preventative back programme to prevent injury as it has been shown in previous studies that interventions purely based on training of techniques are not effective to reduce LBP (Hignett, 2003). Including staff when planning a back programme will increase ownership of the program. It will also highlight the perceived and real problems that must be addressed during the programme. Both Cohen *et al* (1994) and Di Fabio (1995)

concluded that back exercises alone do not have any long term benefit to reduce LBP. Instead, the different components of a treatment programme for LBP that will be more effective has been proven to include a supervised exercise/fitness programme (Klaber-Moffett, 2002) weight loss information (Flaherty, 1999), behavioural therapy (Turner, Clancy, McQuade, Cardenas, 1990) and cognitive therapy (Van Tulder, Koes, Bouter, 1997). Mounce (2002) however found that these therapies are only used after 6 months of symptoms and new research is needed to establish the effectiveness before 6 months.

It has been found in the literature that the implementation of policies must address various interventions in order to be successful (Hagberg, Silverstein, Wells, Smith, Carayon, Hendrick, Perusse, Kuorinka, Forcier, 1995). Some of these interventions include: training, treatment and rehabilitation practices, safe occupational health and safety practices and ergonomical analyzing of workplaces (Harber, 1990). These interventions must be planned and implemented in conjunction with all stake holders. Previous studies have identified that implementing these policies in isolation create a perception among nurses that they are responsible for their own health regardless of external factors (Harber 1990). The general feeling observed by the researcher among participants in this study was that LBP is a part of life that must be treated when it interferes with daily duties, but must otherwise be ignored. Very few of the nurses took a proactive approach to manage their LBP or knew how to adopt their working environment or practices to prevent LBP.

The next chapter draws conclusions from the study.

CHAPTER 6

CONCLUSION

6.1 Introduction

A brief summary of the study is provided in this last chapter. Conclusions are drawn from the discussion and findings presented in the previous two chapters. Lastly recommendations are proposed arising from the study.

6.2 Summary

The majority of nurses, regardless of where they work at present, are experiencing LBP on a regular basis. In three departments all the participants indicated that they experienced LBP. More than 60% of participants are experiencing LBP on a weekly or daily basis. Combined with the absenteeism results of this study it is fair to state that the work performance of participants is suffering due to LBP.

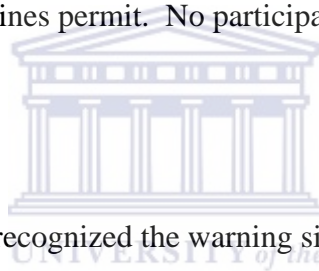
The nursing population of Cecilia Makiwane Hospital is getting older with only a small reserve of nurses to replace the ageing nursing population. Nurses are also entering the profession at a much later stage, contributing to the older nursing population and possibly starting their career with a LBP problem.

Even though half of the participants indicated that they had not received information about LBP, most of them could identify the most common physical risk factors associated with the development of LBP. The actual perceived causes of LBP included mechanical problems, trauma and sprains of the soft tissue. Psychological risk factors associated with LBP was neglected by the majority of nurses

Physical factors that were thought to cause LBP included prolonged standing, poor

posture and bending forward. The actual movements that were thought to result in LBP if performed incorrectly included trunk flexion and extension, but not trunk rotation. Patient care factors associated with the development of LBP included lifting, moving equipment and positioning of patients in bed. Social factors that were thought to be contributing to LBP were age and weight. Fifteen percent of nurses did not think that LBP could be caused by psychological factors. The rest indicated that fatigue, emotional distress and depression will contribute to the development of LBP. Work environment factors included work load, pressure and a poor working environment.

Participants indicated that they preferred to consult a doctor, rest and take medication after the development of LBP. The amount of time participants wanted to rest was more than clinical guidelines permit. No participants were referred to a dietician for weight loss advice.



Most of the participants recognized the warning signs to consult a doctor, although the very important warning signs of cauda equine compression were not. Participants knew which medication to take to alleviate LBP.

Participants indicated that an exercise programme to prevent LBP should include exercises targeting different muscles groups. The most important muscle groups, abdominal and leg muscles were left out of the programme though. Similarly endurance and strengthening of muscles were not included in the programme by the participants. Participants indicated that topics that should be covered in a preventative exercise programme include instruction on how to use lifting equipment and weight loss advice, but not time management and ergonomical instruction.

The physical and patient care factors are without doubt the most important contributors to LBP in the nursing profession. It is an integral part of the job that cannot be avoided and must therefore be adjusted to become safe for both the patient and nurse. It is equally important that nurses understand and are aware of the risk factors for LBP. If not, they cannot make provision for safe working and handling practices which will prevent LBP from developing. Such a proactive approach is necessary as the recurrence rate of LBP is high and will only increase after the first episode (Flaherty, 1999). The researcher suggests a list of recommendations below to stakeholders

6.3 Recommendations

- A comprehensive policy guideline that will address the management of LBP among staff must be put in place and made available to staff
 - A procedure needs to be developed that can be followed when incidents concerning LBP occur
 - Guidelines on how staff can request 'lighter duties' or relevant job training if they cannot perform regular duties due to LBP must be made available
- A comprehensive back programme, including physical and psychological components, must be developed in consultation with nursing staff and implemented for staff in the hospital. This programme can be preventative and rehabilitative in nature. The Physiotherapy Department can be instrumental in this regard
 - A general fitness programme can be initiated by the physiotherapy department to improve the general fitness of the nurses
 - Staff must be educated on the risk factors and when to access treatment once LBP has developed. This must include a

multidisciplinary team approach

- The in service training department of the hospital must include LBP prevention and treatment principles in their programme for the year
- Equipment to lift patients must be made available in the wards where nurses' duties require much lifting such as in the spinal ward
- The Physiotherapy Department at the hospital must market itself so that nurses become aware of their services
- Further research must be conducted on LBP in nurses to establish the magnitude of the problem in the health care sector of South Africa



CHAPTER 7

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PROVINCE OF EASTERN CAPE ISEBE LEZEMPILO/ DEPARTMENT OF HEALTH		
EAST LONDON HOSPITAL COMPLEX		
FRERE HOSPITAL P Bag X9047 East London, 5200 Reference: Imibuzo: email Tel: 027 43 709 1111 Fax: 027 43 713 4065		CECILIA MAKIWANE HOSPITAL P Bag X13003 Cambridge 5206 Irefrensi: Dr. Ndindwa Enquiries : Joyce Gysman Tel; 027 43 708 - 2231 Ifaxi: 027 43-7611158

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APPENDIXES

APPENDIX A



UNIVERSITY *of the* WESTERN CAPE
DEPARTMENT OF RESEARCH DEVELOPMENT

31/10/2006

Mr Mosana
CEO East London Hospital Complex

Dr. Rajeev
Hospital Manager – Cecilia Makiwane Hospital

Mrs. Murray
Nursing Manager – Cecilia Makiwane Hospital

RE: RESEARCH APPROVAL

I am currently doing my Masters in Public Health through the University of the Western Cape. As part of the requirements to complete my studies, I have to conduct a research study.

The topic I have chosen is back pain among nurses in Cecilia Makiwane Hospital. I have prepared a proposal that will be sent to the ethical committee of the University for approval.

The proposal attached explains the rationale for the research study, the study aim and objectives as well as the study population and the methods that will be used. Please review the proposal (see attached document) and grant me permission to continue with the study.

If you have any other questions or comments to make, please contact me in the Physiotherapy Department.

Liezel Cilliers
Physiotherapist
043 708 2550

Appendix B

Liezeli 2550
0835184009.

PROVINCE OF EASTERN CAPE ISEBE LEZEMPILO/ DEPARTMENT OF HEALTH		
EAST LONDON HOSPITAL COMPLEX		
FRERE HOSPITAL P Bag X9047 East London, 5200 Reference: Imibuzo: email Tel: 027 43 709 1111 Fax: 027 43 743 4065		CECILIA MAKIWANE HOSPITAL P Bag X13003 Cambridge 5206 Irefrensi: Dr. Ndindwa Enquiries: Joyce Gysman Tel: 027 43 708 - 2231 Ifaxi: 027 43-7611158

31/10/2006

Dr. Rajeev
Mrs. Murray

RE: RESEARCH APPROVAL

I am currently doing my Masters in Public Health through the University of the Western Cape. As part of the requirements to complete my studies, I have to conduct a research study.

The topic I have chosen is back pain among nurses in Cecilia Makiwane Hospital. I have prepared a proposal which will be send to the ethical committee of the University for approval (see attached document).

I am not aware that there is any ethical committee in the hospital from which I must gain approval to conduct my study, so I am seeking the approval of Hospital Management in this regard.

The proposal attached explains the rationale for the research study, the study population and the methods that will be used. If approval is given the study will be conducted via a questionnaire during November/December 2006.

If you have any other questions or comments to make, please contact me in the Physiotherapy Department.

Yours truly,

Liezeli Cilliers

Liezeli Cilliers
Physiotherapist
043 708 2550

**MEDICAL SUPERINTENDENT
CECILIA MAKIWANE HOSPITAL
PRIVATE BAG X13003
CAMBRIDGE 5207**

Dr. E.R. RAJEEV RAO

Jayagh pupa chandel

Dr. Randolf. Head Clinical Governance

[Signature]
15/11/06

*Approved: provided it will
not interfere with day to day
operational services of the
HOSP. [Signature]
15/11/06*

RECORD OF INFORMED CONSENT

Name of participant: _____

Date:

UWC Student no: 2520432

Tel: 043 708 2550

E-mail: liezelcilliers@yahoo.com

Institution: University of the Western Cape

What follows is an explanation of the purpose and process of the research study. Please sign this page if you consent to participate in the research study and return it with your questionnaire to the Physiotherapy Department.

1. Information about the interviewer

I am Liezel Cilliers, a student at the School of Public Health, University of the Western Cape. As part of my Masters in Public Health, I am required to conduct research for my mini-thesis. I will be focussing on the prevention and treatment of low back pain among nurses at Cecilia Makiwane Hospital for this project. I am accountable to S Mohamed who is contactable at 021 9592809 or by e-mail at sumohamed@uwc.ac.za

Here is some information to explain the purpose and usage of this questionnaire.

2. Purpose and contents of questionnaire

The function of the questionnaire is to gather information about the prevention and treatment of low back pain among nurses at Cecilia Makiwane Hospital. This information will then be compiled into a report. The categories of the questionnaire include: General information about the participant, occurrence of low back pain, treatment of low back pain, causes and prevention of low back pain.

3. Process

Please read this letter and if you agree to participate in the study, sign at the bottom of this page. Read the instructions and complete the questionnaire. Return this page and the questionnaire to the envelope provided and return it to the physiotherapy department within 2 weeks.

4. Anonymity of contributors

At all times I will keep the source of the information confidential. I shall keep any other records of your participation locked away at all times and destroy them after the data has been collected.

5. Things that may affect your willingness to participate.

If there are any questions that you would prefer not to answer, please feel free to leave it open. I will not be offended and there will be no negative consequences if you would prefer not to answer a question.

6. Agreement

a. Participant's agreement

The participant will sign this page to give her/his consent

b. Researcher's agreement

I shall keep the contents of the above research confidential. The contents will be used for the purposes referred to above, but may be used for published or unpublished research at a later stage without further consent. Any change from this agreement will be renegotiated with you.

Signed: _____

Date: _____

Place:|_____



UNIVERSITY *of the*
WESTERN CAPE

APPENDIX D

LOW BACK PAIN AMONG NURSES

CONFIDENTIAL QUESTIONNAIRE

Study nr: _____

“Low back pain is any non-traumatic musculoskeletal disorder affecting the low back which include all back pain, regardless of diagnosis, that was not secondary to another disease or injury cause.”

Punnet, Pruss-Ustun, Nelson, Fingerhut, Leigh, Tak and Phillips, (2005).

Name: _____

Age (in years): _____

Marital status: Single ____
Married ____
Divorced ____
Widowed ____

First nursing qualification obtained: _____
Date (year): _____

Most recent nursing qualification obtained: _____
Date (year): _____

How long have you been working as a nursing professional (years): _____

How long have you been working at Cecilia Makiwane Hospital (years):

Which ward are you currently working in? _____

Have you ever experienced low back pain?

Yes	No
-----	----

If yes, how often do you experience low back pain?

Once a year	Once a week
Twice a year	Daily
Once a month	Other (please specify)

If you have experienced backache how long did the last low back pain episode last?

1-6 weeks
6-12 weeks
Longer than 12 weeks

Have you been absent due to low back pain in the past year?

If so, how many days? _____

If you have experienced backache what course of action do you normally follow when you experience low back pain?

Consult a medical doctor	Use medication bought at pharmacy without prescription
Consult a traditional doctor	Bed rest
Consult a physiotherapist	Carry on with activities

What members of the medical team have you consulted in the past for low back pain?

Medical doctor	Nurse
Traditional doctor	Pharmacist
Occupational Therapist	Orthotist
Physiotherapist	Radiologist
Psychologist	Dietician

Have you ever been instructed or received information on how to prevent low back pain?

Yes	No
-----	----

If so, where did you receive the information?

School	Doctor
Nursing College	Media e.g. radio, TV, newspaper
In service education department	Other (please specify)
Physiotherapy department	

What is the most common age group among nurses for development of low back pain?

20-30 years	40-50 years
30-40 years	50-60 years

What are the most common causes of low back pain?

Infections	Trauma e.g. fractures
Sprains of the soft tissue	Degenerative diseases e.g. OA
Bony structure defects	Mechanical problems e.g. poor posture
Tumours	Psychological distress

What factors contribute to the development of low back pain?

Physical	Psychological
Patient care	Social
Work environment	None of the above

What physical factors can contribute to the development of low back pain?

Poor posture	Slumping / half sitting
Prolonged standing	Bending forward
Prolonged walking	Poor physical fitness

What specific movements can cause low back pain?

Trunk flexion	Trunk side flexion
Trunk extension	Trunk rotation

What patient care factors can contribute to the development of low back pain?

Positioning of patients in the bed	Accepting emergency patients
Repetitive lifting	Moving beds or equipment
Lifting a heavy patient	Washing patients in the bath
Lifting without a partner	Lack of pulleys/lifts to transfer patients

What social factors can contribute to the development of low back pain?

Smoking	Dependency e.g. alcohol, drugs
Obesity	Poor social and educational status
Age	None of the above

What work environment factors can contribute to the development of low back pain?

Work control	Support at work from supervisors
Word load	Work satisfaction
Work pressure	Poor work environment
Work status	Shifts e.g. day/night

What psychological factors can contribute to the development of low back pain?

Fatigue	Depression
Emotional distress e.g. anxiety	None of the above

What is the best way to treat low back pain immediately after it developed?

Consult a doctor	Exercise regime
Bed rest	Heat therapy
Medication	Surgery
Injection	Resuming normal activities as soon as possible
Corset	Practice relaxation methods

After developing low back pain, how long should one rest or avoid activities that cause pain?

Not at all	Two weeks
2-3 days	A month
One week	Until the pain is gone

When should one consult a doctor after developing low back pain?

Trouble urinating	Unintentional weight loss
Sudden weakness	Pain after trauma e.g. fall
Numbness/tingling in legs	Pain does not decrease with rest and medication

What type of exercises should be included in a low back program?

General fitness exercises	Stabilizing exercises
Strengthening exercises	Endurance exercises
Stretching exercises	Balancing exercises

What specific muscles should be targeted when doing low back pain exercises?

Arm muscles	Thoracic muscles
Leg muscles	Abdominal muscles
Neck muscles	Back muscles

What type of medication should one take after development of low back pain?

Analgesics (pain killers)	Benzodiazepines (muscle relaxants)
NSAIDS (anti inflammatory)	Anti-depressants

What, in your opinion, should be included in a program to prevent low back pain?

Ergonomic principles	Time management skills
General fitness exercises	Back exercises
Weight loss information	Instruction on how to use patient lifting equipment e.g. lifts/pulleys
Relaxation therapy	Other (please specify)



APPENDIX E

LOW BACK PAIN AMONG NURSES

CONFIDENTIAL QUESTIONNAIRE

Study nr: _____

“Low back pain is any non-traumatic musculoskeletal disorder affecting the low back which include all back pain, regardless of diagnosis, that was not secondary to another disease or injury cause.”

Punnet, Pruss-Ustun, Nelson, Fingerhut, Leigh, Tak and Phillips, (2005).

1. Igama:

2. Ubudala (ngeminyaka): _____

3. Awukatshati _____

Utshatile _____

Uqhawulo Mtshato _____

Ungumhlokazi _____

4. Ubongikazi ubufundele nini? _____

Umhla (Unyaka) _____

5. Ezinye izifundo zobongikazi osanda kuzenza ?

Umhla (Unyaka) _____

6. Unexesha elingakanani usebenza njengomongikazi

(iminyaka): _____

7. Unexesha elingakanani uxelenga kwisibhedlela iCecilia Makiwane

(iminyaka): _____

8. Usebenza kweyiphi iwadi ngoku? _____

9. Ingaba ukhe wakhathazwa ngumqolo ngaphambili?

Ewe	Hayi
-----	------

10. Ukuba kunjalo, amatyeli amangaphi?

Kanye enyakeni	Kanye ngeveki
Kabini ngonyaka	Roqo
Kanye ngenyanga	Olunye uhlobo cacisa

11. Ukuba ukhathazwa ngumqolo, iintlungu zithathe ixesha elingakanani ukudomalala, ukugqibela kwakho ukukhathazwa nguwo?

1-6 Iveki, iveki ezintandathu
6-12 Iveki ezintandathu, ukuya kwishumi elinesibini
Ngaphezulu kweveki ezilishumi elinesibini

12. Ingaba wakhe awaphangela ngenxa yomqolo obuhlungu? _____

13. Ukuba kunjalo, iintsuku ezingaphi? _____

14. Uye uthabathe manyathelo mani xa ukhathazwa ngumqolo?

Bonana nogqirha	Sebenzisa amayeza owathenge ekhemesi ngaphandle kwembalelwano kagqira
Bonana negqira	Phumla ebedini
Bonana neFisiyotherapist	

15. Ngawaphi amalungu onyango odibene nawo ngaphambili xa umqolo ubuhlungu?

Ugqira	Mongikazi
Igqira	Usokhemesi
Occupational Therapist	Ukusebenza ngofakelo milenze
Fisiyotherapist/Umoluli wamalungu omzimba	Egesini (X-Ray)
Ugqira wengqondo	Umntu ocebisa ngendlela yokutya

16. Ingaba ukhe wafumana ingcaciso/ulwazi ngendlela yokunqanda umqolo obuhlungu ungakuhlaseli?

Ewe	Hayi
-----	------

17. Ukuba kunjato uyifuma naphi ingcaciso?

Esikolweni	Ugqira
Ikholeji yabongikazi	Ngosasazo umzekelo radio, phepha ndaba amabonakude (TV)
Fundiswa licandelo osebenza kulo	
Kwicandelo le Fisiyotheraphi	

18. Ingaba umqolo obuhlungu uqala komongikazi ababubudala bungakanani?

20 – 30 Unyaka	40 – 50 Unyaka
30 – 40 Unyaka	50 – 60 Unyaka

19. Yintoni ebangela umqolo ubuhlungu?

Usuleleko	Ukubetheka njengokophuka
Kwezihlunu nemisiphaya ethi ikruneke	Izifo zamathambo
Ukwakheka kwamathambo ngendlela engaqhelekanga	Iingxaki zesimo yemizimba yethu ezithi zenziwe sithi
Amathumba	Ukuphazamiseka kwengqondo

20. Zintoni ezithi zibenegalelo ekwenzekeni komqolo obuhlungu?

Umzimba	Engqondweni
Ukhathalelo lwesigulana	Entlwalweni
Imo yendawo osebenza kuyo	Ayikho kwezi zingentla

21. Zeziphi izimo zomzimba ezinokubangela umqolo obuhlungu?

Amalungu omzimba	Ukubhena
Ukuma ithuba elide	Ukugobela phambili
Ukusebenza ithuba elide	Uku ngenzi imithambo

22. Ukungakhekhi kakhule komzimba ngenxa yokungenzi imithambo?

Ukugoba umzimba	Ukugobela ecaleni umzimba
Ukolula umzimba	Ukujikelizisa umzimba

23. Zeziphi iindlela ezinokuthi xa unceda/ukhathalela izigulana zibangele umqolo obuhlungu?

Indlela yokubeka/lalisa isigulana ebhedini	Ukwamkela izigulana ezifuna uncedo olukhawulezileyo
Ukuphakamisa rhoqo	Ukususa libhedi/nezixhobo
Ukupakamisa izigulana ezinobunzima	Ukuhlamba izigulana ebhafini
Ukuphakamisa ungenamncedisi	Ukunqaba koojingi/uzokwazi ukuziyela ebhedini

24. Zeziphi iindlela esizonwabisa ngazo/zentlalo ezinokubangela umqolo obuhlungu?

Ukutshaya	Ukusebenzisa iziyobisi/ubutywala
Ukutyeba	Indlela ozonwabisa ngayo/ukungabi namfundo kakuhle
Ubudala	Ayikho kwezi zingentla

25. Zeziphi izinto ezinokubangela umqolo obuhlungu kwindawo osebenza kuyo

Indlela olawula ngayo umsebenzi	Intsebenziswano kumntu okuphethayo
Ubungakanani bomsebenzi	Ukwaneliseka ngumsebenzi
Uxinzelelo lomsebenzi	Ukungabikho mgangathweni kwindawo osebenzela kuyo
Ubunjani bomsebenzi	Amaxesha okusebenza kusasa/ebusuku

26. Zeziphi izinto ezithi zakuphazamisa ingqondo zibangele umqolo obuhlungu?

Ukudinwa	Uxinzelelo/Ukukhathazeka
Ukunxuba nokutyhafa (emphefumleni)	Ayikho kwezi zingentla

27. Yeyiphi eyona ndlela yokunyanga umqolo obuhlungu wakuqalwa nguwo?

Bonana nogqira	Ukulandela indlela yemithambo
Ukulala bedini	Ukunyangwa ngobushushu
Amayeza	Ngoqhaqho
Inaliti	Ukuqhubekeka ngezinto obuzenza kwangoko
Ikhosethi	Ukuphumla

28. Ingaba ufanele ukuphumla ixesha elingakanani emva kokuhlaselwa ngumqolo obuhlungu?

Nakanye	Iveki ezimbini
Iintsuku ezimbini ukuya kwezi ntathu	Inyanga
Iveki enye	Zide ingqaqambo ziphele

29. Kuxa kutheni ze abekanti umntu udibana nogqira emva kokuhlaselwa ngumqolo?

Ingxaki ekuchaweni	Ukuhla emzimbeni ungena njongo
Ukusuka uzive ungenamandla	Intlungu emva kokubetheka (ukuwa)
Ubundindisholo	Intlungu azithomalali lunyango nakuku phumla

30. Yeyiphi imithambo efanele ukwenziwa xa unomqolo obuhlungu?

Imithambo yomzimba wonke	Imithambo yokuqinisa umzimba
Umithambo yokomeleza	Imithambo yokwenza ungadinwa
Ukolula imisipha	Imithambo yokwenza ungaxadazeli

31. Zeziphi izihlunu ezifanele ukuqwalaselwa xa usenza imithambo yomqolo obuhlungu?

Izihlunu zengalo	Izihlunu zomtla womqolo
Izihlunu zomlenze	Izihluni zesusu
Izihlunu zentamo	Izihlunu zomqolo

32. Ngawaphi amayeza/iipilisi ofanele ukuzithatha xa ukhathazwa ngumqolo?

Ipilisi zantlugu	Awokudomalalisa izihlunu
Awokuphelisa ukudumba	Awokuphelisa ukukhathazeka emphefumleni

33. Yintoni ocinga ukuba ingangezwa kwimithambo yokunqanda umqolo obuhlungu?

Indlela zokujonga imizimba emsebenzini naxa sisezindlwini	Ubungcaphephengokusebenza ngexesha
Imithambo	Imithambo yomqolo
Inkcazelo ngokwehlisa ubunzima bomzimba	Ingcaciso ekuphakamiseni izigulana nezinye izinto esisebenza ngazo
Unyango ngophumlisi	Izinye nceda cacisa