

Special Article

Low Back Pain in Nurses

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Abstract

Low Back Pain (LBP) is one of the occupational musculoskeletal diseases that occurs most commonly in nurses among all health professionals. LBP ranks the second as a reason for work-force loss and health expenses following cancer pain and it is a common occupational health problem that results in serious physical, cognitive, sensory, emotional and developmental obstacles for nurses. The literature review reveals that the frequency of LBP in nurses ranges between 40% and 97.9% and occurs more frequently in nurses when compared with other individuals in society. There are various physical and psychosocial risk factors that cause LBP in nurses. The practices that require heavy lifting such as transferring and carrying the patients as a part of nursing care are among the main factors that cause LBP in nurses. Preventing LBPs in nurses is important in order for nurses to exercise their fundamental right to work under healthy and safe conditions and to provide better support for the patients. Necessary individual and institutional precautions should be taken in order to prevent LBP in nurses.

This review discusses frequency of LBP in nurses and the risk factors that cause LBP in line with the literature.

Key words: Low back pain; nurse; occupational musculoskeletal diseases

Introduction

Low back pain (LBP) is a highly prevalent health problem responsible for serious suffering and disability than any other health condition across the world (Kamper et al., 2015). The literature review points out that even mild LBP results in significant function loss and decreases quality of life for individuals (Sikiru & Hanifa, 2010). Also, as LBP results in loss of labour force, reduction in labour productivity and significant economic loss, it influences the society and the economy of the country where the individual lives (Monteiro, Alexandre, Ilmarinen & Rodrigues, 2009). Nursing is one of the occupations with a high risk for back injuries (El-Soud et al., 2014). The risk factors of LBP among nurses is usually multifactorial and it can be categorized as individual and occupational risk factors (Kamper et al., 2015; Yang et al., 2016). LBP can be prevented completely if the necessary precautions are taken. Taking

precautions for risk factors of LBPs in nurses is important to exercise their fundamental rights and provide better support for patients (Kabatas, Kocuk & Kucukler, 2012; Yilmaz & Ozkan, 2008).

Low back pain

LBP refers to the pains in dorsal area that are between below the costal margin and above the gluteal curve and can spread towards legs (Altinel, Kose & Altinel, 2007; Back School; Nabiyeve, Ayhan & Acaroglu, 2015). LBP, a common public health problem, may result in loss of labour force, serious financial loss and various physical and psychological problems due to its chronic nature (Altinel et al., 2007; Yang et al., 2016).

Low back pain epidemiology

50-85% of the whole world population experience LBP at a certain point in their life (Eti Aslan, 2014; Moussa, El-Ezaby & El-Mowafy, 2015; Terzi & Altin, 2015). While LBP is the second most

frequently occurring health problem following flue (Kabatas et al., 2012), it is the second most common cause for consulting a doctor (Carneiro & Rittenberg, 2010); the 5th for inpatient treatment and the 3rd among diseases that require a surgery (Kutsal et al., 2008). It is stated that LBP frequency is 75% in Finland; 80% in the USA and 25.7% among workers in the USA in 2010 (Eti Aslan, 2014; Yang et al., 2016). In the world, LBP prevalence is 12% momentarily, 23% monthly, 38% annually and around 40% for the life course for adults. The life-long prevalence for Turkey is 50% for urban areas and 80% for rural areas (Nabiyev et al., 2015).

Low back pain in nurses

The nurses who work for protection, development and improvement of health in cases of health problems for individuals and families spend more time with the patients when compared with other health professionals and provide direct care for the patients (Akinci, Dereli & Sert, 2014). Therefore, it is known that the frequency of LBP is higher in nurses when compared with other health professionals (Altinel et al., 2007; Kabatas et al., 2012; Terzi & Altin 2015) and rest of the society (Meydanlioglu, 2013; Terzi & Altin, 2015). LBP may distort the nurses' performance regarding their daily life activities and hinder their interpersonal relations, result in various psychological problems and affect the quality of life adversely (El-Soud et al., 2014; Hinmikaiye & Bamishaiye, 2012). Moreover, LBP also affects the economy of the countries adversely due to labour loss of nurses, reduction in work efficiency and other financial costs (Sharma, Shrestha & Jensen, 2016). Nurses may be forced to quit their jobs or change their work places because of LBP (Moussa et al., 2015; Hinmikaiye & Bamishaiye, 2012).

Low back pain epidemiology in nurses

LBP is one of the most common occupational health problems in nurses (El-Soud et al., 2014). The literature review reveals that LBP prevalence ranges between 33% and 86% for Italian nurses (Lorusso, Bruno & L'abbate, 2007) and the prevalence is annually 73.5% for Nigerian nurses (Sikiru & Hanifa, 2010). In a study conducted by Madani, Masoudi Alavi & Taghizadeh (2014) the nurses reported that low back was the most common painful area in their body. In the studies

conducted by Al-Samawi & Awad (2015) in Sudan; by Rustøen (2016) in Nepal; by Shieh, Sung, Su, Tsai & Hsieh (2016) in Taiwan and by Roupa et al. (2008) in Greece, the frequency of LBP in the nurses were 87.5%, 65%, 72% and 40% respectively. Budhrani-Shani et al. (2016) stated that the frequency of LBP in nurses worldwide is about 50-80%. In the studies conducted by Petersan & Marziale (2014) and Owayolu et al. (2014) on intensive care nurses it was found that 67% and 84.2% of intensive care nurses have LBP respectively and the ratio was 75.8% in the study conducted by Akinci et al. (2014). The study conducted by Altinel et al. (2007) found that the frequency of LBP in nurses is two times more than in doctors and chronic LBP is most often experienced by nurses with a ratio of 55.8%. In a study on occupational musculoskeletal diseases of nurses in Turkey conducted by Pinar (2010), it was found that the highest prevalence was in LBPs with 49.7% and 70% of nurses consult a doctor because of LBP.

Risk factors for low back pain in nurses

Risk factors for LBP can be categorized under two major groups as individual risk factors and occupational risk factors. Occupational risk factors consist of two subgroups as physical and psychosocial factors (Akinci et al., 2014; Yang et al., 2016).

Individual risk factors

It is stated that the individual risk factors for LBP in nurses such as increase in the age (El-Soud et al., 2014; Monteiro et al., 2009), low economic status (Kabatas et al., 2012; Yilmaz & Ozkan, 2008) and smoking (Altinel et al., 2007) increase the frequency of LBP and exercise protects low back health and reduces LBPs (Budhrani-Shani et al., 2016; Stieglitz, Vinson & Hampton, 2016).

Occupational risk factors

Hospitals are places of health services that include risk factors of various degrees for occupational safety and physical, emotional and social well-being of nurses (Kilic & Keklik, 2014). The nurses who spend an important part of their daily life at hospitals may be exposed to various risk factors that threaten low back health because of their working areas and occupational responsibilities (Buker, Aslan, Altug & Cavlak, 2006; Roupa et al.,

2008). While the study conducted by Akinçi et al. (2014) found that 92.9% of the nurses have experienced LBP after starting to work, Sikiru & Hanifa's study (2010) indicated that as the working time period increases LBPs related to physical and psychological traumas also increase.

Physical risk factors

It is stated that there is a significant relation between physical factors and musculoskeletal problems (Park, Cheong, Kim & Kim, 2010) and repetitive movements, improper posture and excessive use of force are the three major factors that lead to musculoskeletal problems (Buker et al., 2006). These factors lead to excessive use of tendons, ligaments and muscles, static muscle loading and fatigue, thus increase the likelihood of low back traumas. Performing duties related to carrying without getting support or any supportive equipment may also result in LBP (Buker et al., 2006; Yilmaz, Sahin & Kuran et al., 2006).

Long working hours, excessive work load, inadequate personnel and equipment, inadequate breaks, standing up for long periods of time, working in wrong posture, disruptions of sleeping cycle and eating habits due to shifts are among the occupational risk factors that may result in LBP for nurses (Ovayolu et al., 2014; Pinar, 2010; Selvi et al., 2010). Various occupational responsibilities such as assisting patients' daily lives, positioning them on the beds, carrying and lifting them or carrying medical devices of various weights and sizes, tidying beds of various heights also increase the risk of a low back trauma for nurses. Also American Nurses Association (ANA) stated that the duties of nurses that require carrying patients are related with LBP. (Akcapinar & Inceboz, 2016; Akinçi et al., 2014; El-Soud et al., 2014; Hinmikaiye & Bamishaiye, 2012; Meydanlioglu, 2013; Moussa et al., 2015;). The study conducted on surgical nurses (Hinmikaiye & Bamishaiye, 2012) found that the factor that causes LBP the most often is carrying a patient to another bed/stretchers. It is stated in the literature that nursing practices are risk factors in development of LBPs (Shieh et al., 2016) and carrying patients is the most common factor that causes LBPs (Yassi & Lockhart, 2013). The study conducted by El-Soud et al., (2014) indicated that 85.7% of the nurses have experienced LBP stemming from carrying

heavy loads and it was found that carrying heavy loads increase the frequency of LBP. It was also found in studies conducted by Al-Samawi & Awad (2015) and Wong et al. (2012) that carrying heavy medical equipment and patients are the major causes of LBP.

It is indicated that getting support/help during nursing care practices is correlated with LBP. The study conducted by Ovayolu et al. (2014) found that conducting certain nursing practices without help/getting support from an equipment increases the frequency and intensity of LBP. The study conducted on surgical nurses by Hinmikaiye & Bamishaiye (2012) found that the nurses who position patients in beds and lift them without getting help experience LBP more often when compared with the nurses who get help.

Psychosocial risk factors

The literature review points out that the effects of psychosocial factors on health progressively increase and result in various physical problems such as LBP (Yilmaz et al., 2006; Yilmaz & Dedeli, 2014). Psychosocial factors may increase muscle tension, work related mechanical tension and perception of symptoms. Pain attacks related to physical injuries at the onset may trigger chronic dysfunction of psychological and physiological central nervous system and may result in chronic pain. In some occupational situations changes in psychosocial expectations may be related with physical characteristics and changes in biomechanical stress (Yilmaz et al., 2006). Stress and anxiety are the main psychosocial factors that may cause LBP (Moussa et al., 2015; Wong et al., 2010). The nurses' dissatisfaction about their job, lack of relaxation opportunities at the work place and lack of a supportive culture, monotonous work life, heavy work load and passive coping methods may cause stress and anxiety for health professionals (Akinçi et al., 2014; Roupá et al., 2008; Yilmaz & Ozkan, 2008). Moreover, some negative situations such as long working hours, frequent night shift, occupational obligation to stay away from the family and children may result in various psychosocial problems for nurses (Akcapinar & Inceboz, 2016). The study conducted by Wong et al. (2010) found that dissatisfaction about the job increases the frequency of LBP. The study conducted by Yilmaz & Ozkan (2008)

indicated that the frequency of functional disability related to LBP is more in nurses who are not satisfied with their jobs. The systematic review conducted by Kamper et al.,(2015) indicated that multidisciplinary biopsychosocial rehabilitation interventions are more effective than usual care and physical treatments in decreasing pain and disability in people with chronic low back pain.

Prevention of low back pain in nurses

A major characteristic of LBP, one of the occupational diseases, is that it can be prevented completely if the necessary precautions are taken. It is stated in the literature that LBP is not related to what duty is done but how it is done. In this context, sitting in a proper and controlled way, lifting legs correctly and well-balanced, exercising to strengthen low back and stomach muscles, applying principles of body mechanics correctly, abstaining from activities that presses low back area, taking breaks during occupational duties that require sitting or bending forward for a long time are important precautions. Maintaining a well-balanced emotional and physical life by not gaining excessive weight, not smoking, following healthy diet and exercise habits are also effective in protection of low back health (Back School; Yilmaz et al.,2006).

As a conclusion, LBP continues to be a common occupational disease for nurses. However, taking precautions for prevention of LBPs in nurses is important in order for nurses to exercise their fundamental right to work under healthy and safe conditions, to maintain their professions and to provide better support for their patients (Kabatas et al.,2012; Yilmaz & Ozkan, 2008). Overall, the nurses who have important duty and responsibilities for improvement and protection of health need to protect and improve their health first in order to be able to provide effective care and be more beneficial for the patients (Yilmaz & Ozkan, 2008).

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