

Evaluate the effectiveness of selected nursing intervention on management of back pain among employees working in a selected company, Bangalore.



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“Evaluate the Effectiveness of Selected Nursing Intervention on Management of Back Pain among Employees working in a Selected Company, Bangalore”.

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INTRODUCTION

Chapter-I

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“It is Health that is real wealth and not pieces of gold and silver.”

-MAHATMA GANDHI

Better health is central to human happiness and well-being. It also makes an important contribution to economic progress, as healthy populations live longer, are more productive, and save more. WHO Stated “Health is a state of complete physical, mental, social, spiritual wellbeing and not merely an absence of disease or infirmity.”

Physical fitness is a general state of health and well-being and, more specifically, the ability to perform aspects of sports or occupations. Physical fitness is generally achieved through correct nutrition, vigorous Physical exercise, physical activity,² and sufficient rest.³

Before the industrial revolution, fitness was the capacity to carry out the day’s activities without undue fatigue. However, with automation and changes in lifestyles physical fitness is now considered a measure of the body's ability to function efficiently and effectively in work and leisure activities, to be healthy, to resist hypokinetic diseases, and to meet emergency situations.⁴

Back pain refers to the pain arising in back and usually arises from the muscles, joints, nerves, or other structures in the spine. Back pain is a fairly common condition that most people suffer from these days. Medically the condition is as one where the person experiences pain or discomfort in any part of the back. Incidentally, the lower back is a place where most people suffer from pain, commonly caused due to improper posture or strain.⁵

Lower back pain refers to any pain or discomfort experienced in the bottom region of the spine, which is known as lumbar spine. This region supports most of the upper body’s weight. This specific type of back pain is extremely widespread, affecting around 80% of the adults and ranking as number cause of job related disability.⁶

Low back pain is one of the most common problems people have. About 60 - 80% of the adult U.S. population has low back pain, and it is the second most common reason people go to the doctor. Low back problems affect the spine's flexibility, stability, and strength, which can cause pain, discomfort, and stiffness. Back pain is the leading cause of disability in Americans under 45 years old. Each year 13 million people go to the doctor for chronic back pain. The condition leaves about 2.4 million Americans chronically disabled and another 2.4 million temporarily disabled.⁷The presence of computer in the workplace leads to a set of peculiar characteristics of the workstation which require the workers to stay in a static posture for long periods.⁸

Low back pain can be more than just physical. It affects our appetite, sleep; concentration and performance People who are in constant pain may worry that they won't be able to work or go about their daily activities. People get depressed, anxious, and irritable. Pain is more than just unpleasant sensations traveling through your nervous system. It also involves perception, feelings, and thoughts too.⁹

An estimated 65 million people in the United States alone suffer from chronic back pain. Chronic back pain doesn’t just hurt sufferers physically—it can hurt emotionally too. From physical ailments,

to impacting mood, memory and relationships, chronic pain can have a huge impact on one's life. Back pain affects quality of life in many ways such as it induces depression, anger, anxiety, mood swings are

few of its side effects. It disrupts our life by making harder to do the things we love and thus causing low self-esteem. It affects relationships with friends and families as the sufferer tends to avoid social gatherings and get together.¹⁰

Low back pain (LBP) is the leading cause of activity limitation and work absence throughout much of the world, and it causes an enormous economic burden on individuals, families, communities, industry and governments. Several studies have been performed in Europe to evaluate the social economic impact of low back pain. In the United Kingdom, low back pain was identified as the most common cause of disability in young adults: with more than 100 million work days lost per year. In Sweden a survey suggested that low back pain increased the number of work days lost from seven million in 1980 to four times that (28 million) by 1987; In the United States an estimated 149 million days of work per year are lost because of LBP. The condition is therefore costly, with total costs estimated to be between US\$ 100 and US\$ 200 billion annually, two-thirds of which are due to decreased wages and productivity.

China is the world's largest developing country with a huge number of occupational populations. The prevalence rates of LBP among the Chinese occupational population were from 26.4% to 84.6%. The latest LBP data obtained from articles written in English in the mainland of China showed that the 1-year prevalence of LBP in rural working populations was 64%.¹¹

The estimated annual prevalence of low back pain is between 35 and 50% in France. As the third most important cause of chronic disability, low back pain is the chronic pathology that most often leads to activity limitations in persons aged 45 through 65 years old. Acute low back pain is a benign condition that heals within a few weeks in 90% of cases. That said, between 20 and 44% of patients undergo a recurrence within one year, and 5 to 10% of patients develop chronic low back pain, which in turn is responsible for 70 to 80% of the total cost of low back pain.¹²

About 76% of computer professionals in India reported musculoskeletal pain and discomfort in various epidemiological studies.^{13, 14, 15, 16} Studies done in western countries and in India show a high prevalence of MSD in computer professionals and computer users. Of which, studies done in Serbia and Nigeria report the prevalence rate of musculoskeletal complaints to be 55.8% and 21% respectively.¹⁷ On the other hand studies done in India in Delhi, Mumbai, Loni Maharashtra, and four metropolitan cities report the prevalence rate to be 76.5%, 63%, 73.3% and 59% respectively.

The Information Technology (IT) Industry boom in India, since the last two decades, has led to an increased use of Computer Devices and peripherals. Approximately 76% of Computer professionals from India reported musculoskeletal discomfort in various epidemiological studies.¹⁷ There are several risk factors associated with the development of work related Musculoskeletal Disorders among the workers who use Computer extensively at their workplace. Hence, the workers involved in the IT profession will have high prevalence of Work-related Musculoskeletal Disorders and that may be associated with work style as one of the risk factors in the development of musculoskeletal discomfort.¹⁸

Various factors contribute to Back Pain in Information Technology Professionals and these factors include Individual risk factors, Work-related physical risk factors such as poor posture, Work related psycho-social factors and Occupational risk factors. The identification of appropriate risk factors is of vital importance in preventing the recurrence of this health issue. Among the various types

of industry workers, the working environment of IT Professionals is unique. A number of studies have suggested that prolonged sitting could be a risk factor for the development of Low-Back Pain.¹⁹ Thus the study of discomfort in relation to prolonged sitting may reveal important aspects of the transition between discomfort and pain. Discomfort is considered to be related with sitting postural changes²⁰ and it had been reported a positive relationship between discomfort and the frequency of postural changes during computer work.

The information technology professionals faces a tough time tackling the occupational health problems. Ocular discomfort, musculoskeletal disorders and psychosocial problems from the key category of the health problem found among constant computer users.²¹ Prolonged use of computers and keyboard can cause orthopaedic injuries from repetitive strain.²² Posture stress due to poor workstation ergonomics such as inappropriate location of the monitor, keyboard or mouse has been found to be associated with musculoskeletal problems.²³ As more people get hooked to laptops, mobiles and even play stations, incidence of Repetitive Strain Injury (RSI) has become common. Earlier, wrist pain or numbness in the hand would be common among older people, but in the last few years, it's the young (20-30 yrs.) who've been suffering from.

Need for the study

About eighty percent of adults experience low back pain at some point in their lifetimes. It is the most common cause of job-related disability and a leading contributor to missed work days. Men and women are equally affected by low back pain, which can range in intensity from a dull, constant ache to a sudden, sharp sensation that leaves the person incapacitated. Sedentary lifestyles also can set the stage for low back pain, especially when a weekday routine of getting too little exercise is punctuated by strenuous weekend workout.

Most low back pain is acute or short term, and lasts a few days to a few weeks. It tends to resolve on its own with self-care and there is no residual loss of function. The majority of acute low back pain is mechanical in nature, meaning that there is a disruption in the way the components of the back (the spine, muscle, intervertebral discs, and nerves) fit together and move.

The magnitude of the burden from low back pain has grown worse in recent years. In 1990, a study ranking the most burdensome conditions in the U.S. in terms of mortality or poor health as a result of disease put low back pain in sixth place; in 2010, low back pain jumped to third place, with only ischemic heart disease and chronic obstructive pulmonary disease ranking higher.²⁴

Low and lower back pain can vary from dull pain that develops gradually to sudden, sharp or persistent pain felt below the waist. Unfortunately, almost everyone, at some point during life will experience low back pain that may travel downward into the buttocks and sometimes into one or both lower extremities. The most common cause is muscle strain often related to heavy physical labour, lifting or forceful movement, bending or twisting into awkward positions, or standing in one position too long.²⁵

Ten years ago back injuries were associated with heavy lifting. Today they are caused by people sitting in front of computers. Employers and workers need to be informed of the health hazards of constant computer use, successful prevention techniques and useful remedies if injuries do occur.²⁶

India has been in the forefront in cyber world in which the Indian IT sector is growing rapidly with 2,236,614 working in it (NASSCOM Fact Sheet, 2009).²⁷ During the financial year 2012, the direct employment in the Indian IT sector is expected to reach nearly 2.8 million, an addition of 2,

30,000 employees, while indirect job creation is estimated at 8.9 million (NASSCOM Strategic Review, 2012).²⁸ From these data, it can be seen that not only the number of computer users increasing, exposure to computer-related risk factors are also increasing. With an increase in the frequency, intensity, and popularity of computer use inside and outside of work and at home, the incidence of work-related illnesses and injuries has increased.

The presence of computer in the workplace leads to a set of peculiar characteristics of the work station which require the workers to stay in a static posture for long periods²⁹ and it is most frequently cited risk factors leading to musculoskeletal disorders.³⁰ Further, an accumulated computer usage has been linked to increased risk of LBP.³¹ An individual sitting for more than half a day at work in combination with awkward postures or frequently working in a forward bent position has been found to increase the likelihood of having LBP.^{32,33}

A cross sectional study was conducted on prevalence of low back pain and sciatica among clerical workers in German. A sample of 1,720 clerical workers were investigated by a questionnaire and the result revealed that 70 % of the workers complained of low back pain and sciatica.³⁴

A study was conducted in Chennai 2009 to identify the health problems of employees in business process outsourcing (BPO) and data were collected from 50 employees with the help of a questionnaire. The results showed that 28 % of the employees suffer from Eye Problem, Back Pain (24%), Weight loss (16%); Tiredness (12%); Skin Irritation (16%) and Nerve Problem (4%)³⁴.

A cross-sectional survey was conducted in 2008 in IT companies of Mangalore, Manipal and Bangalore, to investigate the awareness of Computer Related Injuries (CRI) among computer users and their health behaviours related to computer usage. 200 computer users were interviewed using a questionnaire, 58.5% were aware of CRI. Among the various symptoms under study, the perceived pain among keyboard users is 40%, mouse users is 33%. Among this, 69% employees were aware that CRI is preventable and also found that Computer users' awareness of CRI appears to be fragmented and recommended emphasis of education programs on the appropriate health behaviours, cautious use of computers for leisure, and encourage an active lifestyle for effective prevention of CRI.³⁵

A survey was conducted in North India among bank employees revealed that 23.09% had low back pain, 57% had shoulder and neck pain, 26% had to change or leave their profession and 38% did not enjoy their present job. The incidence of low back pain has increased rapidly due to ignorance and failure to take precautionary measures at the earliest. Changes in the lifestyle with ignorance towards the sitting posture and strenuous activities have led to the problem. Since it is a harmless problem, nearly 90% of the cases can be tackled by taking appropriate preventive measures. The remaining 10% need to go for proper treatment.³⁶

Therapeutic exercises are defined as a set of specific movements with the objective of developing and training the muscle and joints with the use of a practice routine or physical training in order to promote the physical health of the individual.

Several studies have examined the effect of exercise on recurrence rates of acute low back pain, and a number have reported positive results. In a study of 39 patients with acute back pain, Hides et al. demonstrated a significant short-term and long-term decrease in the number of recurrences of back pain in a group of subjects randomized into treatment consisting of specific spine stabilization exercises compared with a control group.³⁷

Moffett et al. demonstrated significantly fewer sick days at 1-year follow-up for subjects with low back pain randomized to an exercise program that included strengthening and stretching as compared with traditional general practitioner management.³⁸

Soukup et al. evaluated 77 patients who had completed treatment for an episode of low back pain into a group that underwent 20 sessions of exercises that focused on pelvic, hip and abdominal exercises or a control group. At 12-month follow-up there was a significant reduction in recurrent low back pain episodes in the exercise group.³⁹

Lindstrom et al. reported on a population sick-listed with sub acute low back pain and noted that those randomized to an exercise program had significantly less sick leave resulting from low back pain compared with the control group.⁴⁰

Taimela et al. evaluated 125 patients with recurrent or chronic low back pain an average of 14 months after completion of a 12-week active low back rehabilitation program. They found that recurrences of persistent pain occurred significantly less frequently among those who had maintained regular exercise habits after the treatment than among those who had been physically inactive. They also found significantly less work absenteeism among the physically active individuals. They noted that those individuals with the best rehabilitation outcomes were more likely to maintain exercise. A lack of effect on recurrence of low back pain or work absence has been noted by other studies.⁴¹

Holmes et al. evaluated 18 elderly women with chronic 14-week program of back strengthening 60% decrease low back pain.⁴²

Edwards et al. evaluated 54 patients disabled with chronic back pain who underwent 4 weeks of resistive training, work 30% decrease low back pain hardening and manual treatments active graded exercise program consisting of three weekly sessions for 12 weeks with conventional physical therapy and an unsupervised walking program. They observed a 30% pain reduction in the active exercise group versus a 23% pain reduction in the physical therapy group and a 9% pain reduction in the walking group at the end of treatment.⁴³

Alaranta et al. evaluated 378 patients with back pain for less than 6 months and substantial work absences into a 3-week functional restoration program consisting of intensive exercise with educational and behavioural support or a controlled group that received passive physical therapy and low-intensity exercises. The intensive exercise group reported greater pain reduction at follow-up compared with the controlled group (36% versus 20%).⁴⁴

Manniche evaluated patients into various intensities of back extension strengthening (50 repetitions vs. 15 repetitions vs. controls). He found that the most intensively exercised group had a significantly greater reduction in pain symptoms.⁴⁵

Kankaanpää evaluated patients with chronic back pain into a 12-week active rehabilitation program consisting of resistive training versus a control group receiving passive treatments and noted a 54% reduction of pain in the active rehabilitation group versus no change in the control group.⁴⁶

In a study of a six-week program of segmental stabilization exercises for individuals with chronic LBP, it was possible to see significant differences between treatment and control groups in quality of life questionnaire. There was significant reduction of pain and disability in the group of subjects studied, and 89% of patients considered their pain intensity and functional disability acceptable.⁴⁷

The effectiveness of rehabilitation through active exercise has been documented in randomized controlled trials. In patients with nonspecific LBP, a program of active mobilization was compared with passive mobilization. There was a greater reduction in pain intensity in the group of active rehabilitation. After one year, the difference in pain intensity and disability index was even more significant. Change in lumbar strength was significantly higher in active rehabilitation group than in the control group (passive treatment).⁴⁸

After reviewing the literature related to exercise intervention and its impact on back pain and discussion with the experts, the researcher found exercise intervention as the most appropriate and convenient and real time to assess its effectiveness on low back pain.

The researcher felt the need of conducting this study as her spouse works in IT Sector and due to long sitting hours of his shift he often complains of lower back pain. This motivated researcher identify the prevalence of Low Back Pain among software professionals and to evaluate the effectiveness of selected intervention strategy to overcome the Low Back pain.