



Original Article

Prevalence of Low Back Pain in Bike Riders: A Cross Sectional Study

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ABSTRACT

Low back pain is a leading problem in bike riders and is increasing day by day due to faulty posture during bike riding. **Objective:** To find out the prevalence of low back pain in occupational and non-occupational bike riders. **Methods:** This was a cross-sectional survey conducted on 200 bike riders who were professional as well as non-professional riders. Data were collected using Oswestry Questionnaire. **Results:** Results showed that 52.5% bike riders had low back pain, this was further divided on severity of pain, 32% have mild pain on the movement, 11% experienced moderate pain, 5% bike riders experienced fairly severe pain during movement, 3% of the bike riders have very severe pain at movement, where as 1% of the bike riders are those whose pain worst imaginable at the movement. **Conclusions:** This study sums up that prevalence of low back pain is higher among occupational and non-occupational bike riders who were exposed to bike riding five or more hours a day. This also had a high effect on their sitting, standing, managing self-care and traveling. This study concluded that more than 52.5% bike riders had low back pain.

INTRODUCTION

Lower back region starts from the rib cage and ends up at gluteal folds. Vertebrae located in this region are called lumbar vertebrae that have inward curvature due to which it's called lordosis. Lumbar spine has 5 vertebrae numbered as L1-L5, which are large and well located because of its functions. In lumbar spine, last two segments, L4-L5 and L5-S1 carry the most weight and movement of the body due to which they are more prone to injury [1]. Each nerve root is closely related to the medial and inferior aspects of the adjacent vertebral pedicle, with anomalies excluded. There are fixed boundaries of the intervertebral foramen,

although its dimensions vary depending on the height of the individual disc spaces. It is bound by the vertebral pedicles above and below. At the end of the passage, the intervertebral foramen is analogous to the doorway, its vertical height being determined by the vertical height of the corresponding intervertebral disc space [2]. Low back pain is the key cause of restriction of operation and absence of work in most of the world, placing an immense economic strain on citizens, families, societies, industry and governments [3]. Motor bikes are the most price reducing and fuel efficient mode of transport but this they

cause postural stress and psychological stress which leads to increase number of road accidents, as due to long hours of driving there is loss of sensation of saddle area and cause of low back pain, due to incorrect posture and nerve compression due to awkward sitting positions, physiological comfort of bike seat is neglected but style and looks of bike are preferred more which later on cause long term lower spine problems. An important aspect concerning the investigation is to measure either postural or psychosocial strain can cause accident and injury as well as to note down the intensity of aggressiveness, rate of alertness, and tricky conduct [4]. The conclusion is that in this present study, the body position adapted while driving motorbike CBX 70 applied typical position while driving Motorbike CBX 750, the uncomfortable position leads to discomfort and muscle injuries [5]. Chronic low back pain is a syndrome of chronic pain that lasts at least 3 months in the lower back region. A significant welfare and economic issue, chronic low back pain is the second leading cause of disability worldwide [6]. Muscle tension, or stiffness located below costal margins and above the inferior gluteal folds. Pain and disability are the most significant symptoms of nonspecific low back pain. Diagnostic and therapeutic treatment of patients with low back pain has long been characterized by significant variations among general practitioners, medical specialists, and other healthcare professionals within and between countries [7]. In terms of ergonomics, one of the significant elements to be considered is motorcyclists riding comfort sitting. Motorcyclists are more vulnerable to sitting hazards during the riding period compared to car drivers. Furthermore, the majority of the configuration of the motorcycle seat is not fitted with a backrest support. Therefore, in order to maintain the balance of stresses in your body. Motorcyclists tend to adopt a variety of postures during their riding process [8]. The targeted provision of data is an alternative way to target cognitive and behavioral aspects of chronic low back pain. In this manner, education attempts to effect change by conceptualizing the issue. By targeting distinct aspects of chronic low back pain, manual therapy, specific exercise training and targeted education. All seem to encourage therapeutic success. Although in the field of physiotherapy. Each of these strategies is broadly encompassed [9]. Proper posture and ergonomic plan needed to be implemented to overcome the issues with bike riding [10]. It can presumed that the bike type fundamentally effects on spinal agony event by and large which was the most noteworthy was in endure /cross sort drivers [11]. Low back pain (LBP) issues have become very prevalent in the health status of Dhaka City motorbike riders. As per the ergonomic literature, a routine interval and therapeutic exercises especially stretching exercise

[12]. Thus, low back pain remains to be consequential communal condition, especially among motorbike taxi riders in our homeland where bike riding is increasingly evolving into a rescue profession for the population faced with growing unemployment, hence the need to act on the different factors for effective prevention [13]. The investigation says that, almost 30–70% of cycle riding people tolerate cervical, dorsal, or lumbar back aches. The analysis was performed for assessing one of the potential sources of lower back torment and insinuating intervention alongside applicable adaptations conversant with cycle. This is one of the many reasons that cycle riding people quit the sport, nonetheless bicycling is the only way of conveyance for some people there [14]. Chronic low back pain cannot easily explain chronic complains, because there is no clear correlation between symptoms and pathology. The current approach to chronic low back pain therefore tends to be more and more inspired by the bio-psychosocial point of view. The effect of the contact is discomfort from this angle between biological, psychological and social variables. In the transition from acute to chronic low back pain, psychosocial factors, in particular, should become more important. The primary goal of low back pain therapy is to recover to the full standard [15]. In addition to pain sensation, effects commonly encountered in chronic low back pain patients are decreased lumbar stability, decreased flexion relaxation seen in healthy subjects and rigid balance. Thus, in the pathophysiology of chronic low back pain, it is mostly recognized that muscle processes as well as connective tissues and neural systems are involved. While in the acute state, exercise therapy seems to be without benefit, certain forms of exercise tend to be successful after the pain has become chronic. Traditional physiotherapy, medical essence preparation, stretching, or freely chosen exercise are among these types. It has turned out to be successful in particular lumbar extension [16].

METHODS

The study design is Observational Cross-Sectional Study. The data was obtained from occupational (Food Delivery Boys in Johar Town, Lahore) and non-occupational (UMT Students) bike riders. The study was conducted on the bike riders. The sampling technique used for data collection was simple random sampling. The sample size was 200. Inclusion criteria included the occupational and non-occupational bike riders who were riding bike minimum 3 and maximum 5 hours a day. The occupational bike riders included were food delivery boys and non-occupational bike riders were students. Exclusion criteria included bike riders who were older than 40 and bike riders having any musculoskeletal issues. An introduction of the study was given to the contributors. Questionnaire were then given to

them and informed consent was signed by them. Contributors were free to take out their part from study at any time. Data gathered was kept confidential completely. The questionnaire used to collect data included questions about age, posture when riding a bike, working hours, the intensity of low back discomfort after riding a bike, and whether or not pain interfered with daily activities such as bending, twisting, or tilting. Oswestry questionnaire was used to collect the data it consisted of different sections. First section focused on the intensity of pain, second section was about personal care that how a person cares himself after riding bike for whole day, third section was about lifting that is there any pain during lifting anything. Data were stored and examined on SPSS version 23.0, and was represented in the form of graphs.

RESULTS

Two hundred occupational and non-occupational bike riders took part in the study. They all were male. Figure 1 showed that with increasing age from twenties to thirties, the severity of pain in lower back region due to bike riding also increased.

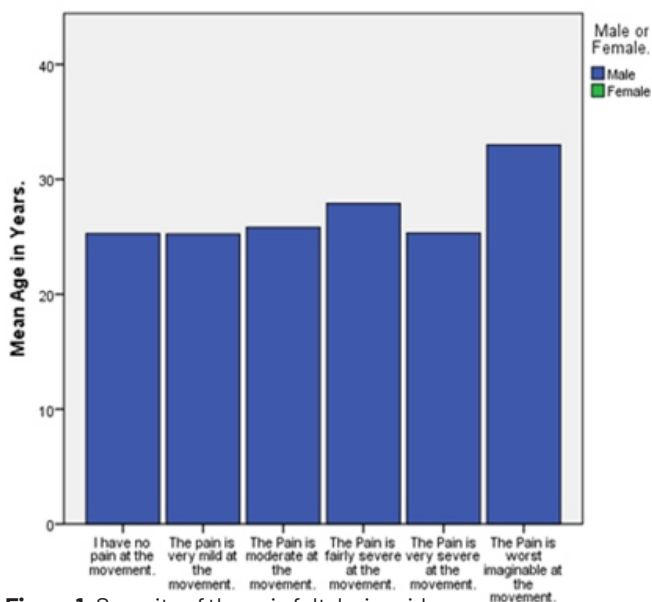


Figure 1: Severity of the pain felt during ride

Figure 2 depicts that by increase age, the severity of pain the person felt during ride also increased. It also affected the management of personal care so by increase in age, the pain felt during personal care also increased.

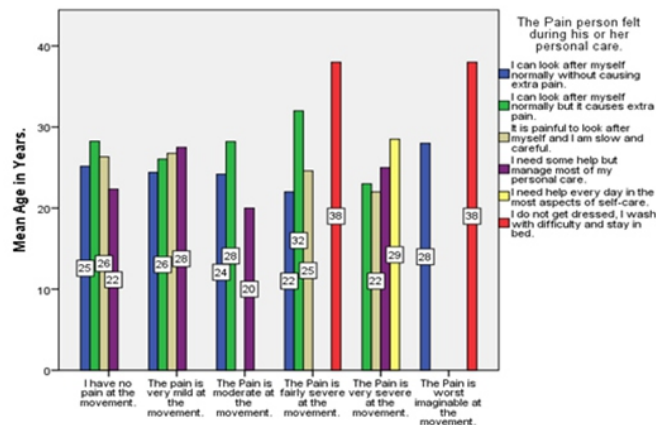


Figure 2: Pain associated with aging

Figure 3 depicts that the disturbance a person felt during traveling is not increasing in twenties but seen increasing in thirties to forties. Likewise, disturbance in sleep due to pain is increasing in thirties

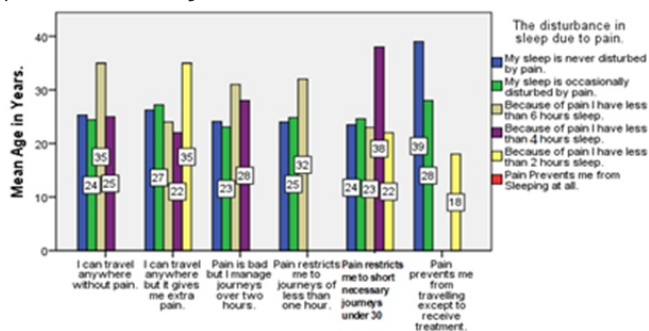


Figure 3: Travelling affected by pain

DISCUSSION

Low back pain is increasing problem day by day in bike riders. But it depends upon target population. In this study, the prevalence of low back pain in occupational and non-occupational bike riders had a percentage of 52.5. This research resembles to the study in Ilesha Southwest Nigeria by Mbada et al., among commercial motorcyclists about prevalence and management practice of low back pain which reported the prevalence of 41% which is lower than this study. This difference can be due to the target population as study in Nigeria target only the commercial bike riders and this study cover both occupational and non-occupational bike riders. The difference can be also due to the type of bike and numbers of hours riding the bike and facing the vibrations of bike, the condition of bike is also connected with this [17]. Many studies have been done on the low back pain in bike riders causes. As a study is done in Malaysia by Fatin on muscle discomfort among police riders. They said that muscle discomfort is present in bike riders due to the not having knowledge related posture that causes the issue and motor bike type. This issue should be addressed to the bike riders. Riding bike more than five hours a day is also the factor that causing pain in the bikers

[18]. Lumber pain was common in professional cyclists due to long hours of stress on the lumbar spine because of their in correct streamlined posture to avoid air resistance to gain high speed, this causes loss of lumbar lordosis. The study concluded that cyclists quote knuckle joint and spine of lumbar the sites most repeatedly afflicted due to aches [19]. Lower backache because of a horrendous mishap in the past two years. Out of the staying 66 cycle riding pupils, 49 were masculine and 17 feminine. 23 masculine and 10 feminine cycle riding pupils (summed up N = 33) detailed lower spine soreness during or in the wake of cycling (non-horrible) inside the most recent a half year. 26 masculine and seven feminine pupils (complete = 33) announced no lower spine soreness in the course of or subsequent to bicycling [20]. In our country, where riding a motorcycle is increasingly seen as a job to help the populace deal with growing unemployment, low back discomfort is a big public health concern, particularly among motorcycle drivers [21]. The measurements assign that bike riders are vulnerable to musculoskeletal problems at their lower back, upper back, and shoulder and neck areas of body. The vast majority of the participators griped lower back torment because of the compelled acts and extended periods of riding. The event of DMSDs at upper back, shoulder and neck are additionally announced as higher among these riders. It is obvious from the examination that the commonness of musculoskeletal problems isn't relied upon a particular age gathering, sexual orientation or class of vehicle [22]. A rating of perceived soreness level between 5 mm to 44 mm was considered less severe, 45-74 mm was more severe and 75-100 mm was considered extremely severe. The bike riders experienced pain in different regions of body but have most common in low back pain, result of study conducted in India by Dutta et al., on motorbike riders. The study reveals that low back pain is experienced most of the bike riders although other regions are also causing pain [23]. It also tells that this is due to bike type, posture of rider on bike. As this study also tell that the bike riding not only causing pain in lower back region but also disturbing the person's whole life i.e. Standing, sitting, lifting, sleeping, travelling and social life too.

CONCLUSIONS

This study sums up that the prevalence of low back pain is higher among occupational and non-occupational bike riders who are exposed to bike riding five or more hours a day. This also had a high effect on their sitting, standing, managing self-care and traveling. This study concluded that more than 52.5% bike riders have low back pain.

Conflicts of Interest

The authors declare no conflict of interest.

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