International Journal of Science and Research (IJSR)
ISSN (Online): 2319-7064
Index Copernicus Value (2013): 6.14 | Impact Factor (2013): 4.438

Awareness of Sitting Posture in Patients Having Chronic Low Back Pain

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Abstract: ***This cross sectional survey was conducted to find out the level of awareness about correct sitting posture & association between the poor posture and chronic low back pain. A sample of 93 patients was taken from February 15, 2011 to April 30, 2011.The history of posture during job & work was taken through a structured questionnaire.VAS (visual analog scale) for pain intensity & pain duration were two dependent variables in study Out of 93 participants, 63% were males. Pain intensities were found associated with poor habit of sitting during their job hours. 82% of participants were not involved in exercise habit. Only 23.7% use Adjustable back support. High proportion of patients had poor knowledge of correct sitting posture and used to adapt poor posture. They ignored their pain which lead to recurrent micro trauma pain & disability. It is recommended that posture awareness program & workshop should be conducted in community centers.***

Keywords: sitting posture, sitting and LBP, chronic low back pain, awareness of posture, postural awareness, faulty posture

1. Introduction

Overview

Chronic low back pain is one of the major causes of physiotherapy patients in Hospital & clinical setup. Despite of accessibility of highly sophisticated diagnostic tools, it seems difficult to find out exact cause of chronic low back pain [1]

Mechanical back pain is broad, most frequently encountered and most widely focus of treatment. There are many causes of chronic low back pain; most common of these is frozen back i.e. muscular spasm. Pakistan is a country having low level of literacy. Pakistan is in the age group 55–64 had a literacy rate of almost 30%, those aged 45–54 had a literacy rate of nearly 40%, those 25–34 had a literacy rate of 50%, and those aged 15–24 had a literacy rate of more than 60% 7. Because of this low level of literacy and lack of awareness we often exploit our posture during our ADL, IADL and sport activities. Some of them do not aware of whether their posture is faulty or good, others ignore considering this. My study will find the relevant ratio of them, and also make them aware of importance of posture maintenance [1]

Many times, the cause of the pain is unknown or cannot be obviously defined. In fact, in many instances, the condition or damage that triggers the pain may be totally healed and untraceable, but the pain may still persist to bother you. Even if the original cause of the pain is healed or unclear, the pain you feel is real. [1]

Chronic low back pain may be caused by many diverse origins. It may start from diseases, injuries or stresses to many different structures including bones, muscles, ligaments, joints, nerves or the spinal cord. The affected structure will send a signal through nerve endings, up the spinal cord and into the brain where it registers as pain [1]

Many dissimilar theories try to elucidate chronic pain. The exact method is not wholly understood. In general, it is assumed that the nerve pathways that take the pain signals from the nerve endings in the course of the spinal cord and to the brain may become sensitized. Sensitization of these pathways increases the apparent pain to the source of the pain. Stimuli that usually are not alleged as painful, such as light touch, can be augmented or changed by these sensitized pathways and experienced as pain. Sometimes, even after the original injury or disease process has recovered, sensitized pathways keep on sending signals to the brain. These signals sense just as true as and sometimes worse than the pain caused by the original injury or disease process [1]

A good patient history and a thorough physical examination by a professional clinician are the most vital aspects of the evaluation. Severe injuries and illnesses can frequently be diagnosed or ruled out based on the history and physical examination alone. However, lack of a exact diagnosis does not inevitably mean further testing is required. Needless testing is not only costly, but it could expose to needless risks or radiation. [1]

Investigations may include blood tests, X-ray films, computed tomography (CT) scans, diagnostic injections, magnetic resonance imaging (MRI), bone scans, electromyography (EMG) and many other specialized tests. [1] Several times, the exact source of the pain is still not well clear at the end of the assessment. [1]

Psychological factors are even more imperative in patients with chronic back pain. Disappointment with a work situation, a director, or a blind alley job and tedium contribute greatly to the commencement and persistence of back pain. [2]

Disc herniation and spinal canal narrowing are so frequent as to be shown by MRI imaging in a large amount of the people in their later years, and in most cases, such conditions are not responsible for the pain. They often are refer to as reasons for surgery, but only seldom are operations successful in improving the pain definitively [2]

Often the answer of cause of pain lies not only in terms of pain, but in the way we stand, sit, rest, and play. [4] How we care for our posture has a direct impact on the extent to which back pain may occur. Be aware of "best " way to sit, stand, walk and can go a little further to the easing of symptoms.[5] Research among patients suffering from back problems shows that 85% of all problems can be traced back to a sitting position (long) incorrect. A better life starts with being healthy. [9] Pain can be minimized by changing sitting posture during job activity. Changing position o legs, back and even chair can cause significant improvement of frequency of Low Back Pain [10] Correct posture is a function of Pelvis position, Lumbar and thoracic spine position, Shoulder position, Maximum hip extensor muscle use, Core stabilization, Eliminates low back discomfort and Eliminates shoulder -arm -hand discomfort **[6]**

Objectives

The objectives of this study are,

1. Awareness of sitting posture adapted by patients of chronic low back pain
2. Correlate the poor sitting posture with chronic low back pain

1.1 Operational Definitions

1.1.1 Low Back

The lumbar spine consists of five lumbar vertebral bodies. These sit on top of the sacrum, which in turn is above the coccyx (tailbone). The lumbar spine supports the thoracic spine (which has twelve vertebral levels), and this in turn wires the cervical spine (neck), which has seven levels. Finally, the cervical spine supports the head. It is hence clear that the lumbar spine supports most of the weight of the body. Its vertebral bodies are the largest of the spine, because of the large amount of weight they must bear. (1)

1.1.2 Low back pain

Low back pain is a common musculoskeletal disorder disturbing 80% of people at some point in their lives. In the United States it is the most frequent cause of job-related disability, a leading provider to missed work, and the second most common neurological disorder, only headache is more common. It can be acute, subacute or chronic in duration. With conservative trial, the symptoms of low back pain typically show considerable improvement within a few weeks from onset. (1)

1.1.3 Chronic Low Back Pain

Low back pain is considered chronic if present for more than three months. Chronic back pain may incur an injury, illness or stress on various body parts. The type of pain can vary widely and can be felt as bone pain, nerve pain or muscle. The pain may also vary. For example, pain can be painful, burning, tingling or stabbing, sharp or dull, and seems well defined or vague. The intensity can range from mild to severe. (1)

1.1.4 Posture

Lower Back Pain affects up to 80 percent of the population. It can come on suddenly or evolve over time. The causes are many cases with most lasting only a short period of time. However, persistent lower back pain last for a while and have a direct impact on the quality of life, potential and our ability to function in our daily activities. While the causes of low back pain are many, some underlying considerations affect not only how it progresses, but how to possibly improve back pain. (4)

1.1.5 Sitting for too long

Find a comfortable and stable sitting is important in maintaining the lumbar spine is healthy, which makes the chance of lower back pain. 5. Sitting for long periods can directly affect our ability to maintain good sitting posture, and especially how our lower back and is adjusted as the sitting position is maintained (4)

1.1.6 Healthy postures

Many back problems are primarily the result of an improper lifestyle. Research among patients suffering from back problems shows that 85% of all problems can be traced back to a sitting position (long) incorrect. A better life starts with being healthy. (9)

1.1.7 Correct posture

- Pelvis position (note: pelvis position dictates spine position)
- Lumbar and thoracic spine position
- Shoulder position…which allows for:
- Maximum hip extensor muscle use
- Core stabilization
- Eliminates low back discomfort
- Eliminates shoulder -arm -hand discomfort (**6**)

1.2 Materials and methods

1.2.1 Study Design

A cross sectional survey was done. Participants of the study are of both gender and any age having established diagnosis of chronic low back pain. History of patients were taken and a questionnaire Performa was filled

1.2.2 Setting

Physiotherapy department of

- Ghurki Trust Teaching Hospital Lahore
- Raza Hospital, Lahore

1.2.3 Study Population

Male and Female patients with chronic low back pain

1.2.4 Duration of Study

It took about three months to collect data and analyze it for conclusion from the participants of the study after approval from advance research committee

1.2.5 Sample size

Sample size was calculated by the following formula

$$n_0 = \frac{Z^2 pq}{e^2}$$

Where Confidence level = 95%
For 95% Confidence levelZwas1.96
p (proportions/Confidence interval) =10%
q= 1-p, e= half width of the desired interval

Sampling Technique:
Non probability purposive sampling

1.2.6 Eligibility

Inclusion Criteria

- Chronic low back pain (invading more than 3 months)
- Age factor: 20-50 years
- Localized lower back pain
- Mechanical low back pain
- Patients having job with ≥ 4 hours of sitting

Exclusion Criteria

- Radiating back pain
- Inflammatory disease of vertebral column or spinal cord
- Infectious disease of vertebral column or spinal cord
- Malignant disease of vertebral column or spinal cord
- Congenital vertebral deformity
- Patient not meeting inclusive criteria
- Patient not willing to be included in research

1.2.7 Data collection

120 questionare performa were given. Out of which 93 were found reliable to be included in research. A Performa was filled relating to their sitting posture habbit during job/work. Data is collected on a questionnaire Performa

1.2.8 Ethical consideration

Informed consent of all the participants was given before conduct of the study.

- The privacy and confidentiality of patients is preserved.
- The ethical and moral values are observed in the development of research plan.
- The research was exclusive of anything which may cause any physical, social or emotional harm to the patient.

1.2.9 Statistical Procedure

Descriptive statistics were used to determine the frequencies of the following variables like age, gender, sitting time, sitting position, type of chair and use of lumbar support pillow. Data was entered by using SPSS version 20 and was analyzed by Interactive Statistical Calculator

2. Results

2.1 Socio-demographic Profile

Table 1: Socio-demographic Profile of Subjects

	Study sample		The intensity of LBP									
	No.	%age	Unbearable		Severe		Moderate		Mild		Discomfort	
			No.	%age	No.	%age	No.	%age	No.	%age	No.	%age
Gender												
Male	59	63.4	7	12	12	20	18	31	20	34	2	3
Female	34	36.6	6	18	9	26	11	32	5	15	3	9
Age group (years)												
≤34	52	55.9	6	12	9	17	16	31	19	37	2	3
≥35	41	44.1	7	17	12	29	13	32	6	15	3	7
Exercising habit												
Yes	17	18.3	0	0	1	6	9	53	4	24	3	17
No	76	81.7	13	17	20	26	20	26	21	28	2	3

2.2 Work ergonomic characteristics

Table 2: Work ergonomic characteristics of patients and their LBP duration:

	Study sample		Duration of pain history							
			3 month		3 month - 6 month		6 month – 1 year		>1 year	
			No.	%age	No.	%age	No.	%age	No.	%age
Sitting Time										
≥6hrs	62	66.6	8	13	12	19	19	31	23	37
<6hrs	31	33.4	4	13	6	19	11	36	10	32
Body Position in Sitting										
Forward Bent ≥ 2hrs	57	61.3	7	12	14	25	17	30	19	33
Forward Bent < 2hrs	36	38.7	5	14	4	11	13	36	14	39
Chair type										
Back Support	68	73.1	8	12	13	19	20	29	27	40
No back Support	25	26.9	4	16	5	20	10	40	6	24
Adjustable Back Support										
Yes	22	23.7	3	14	4	18	8	36	7	32
No	71	76.3	9	13	14	20	22	31	26	36
Adjustable Seating Surface										
Yes	11	11.9	3	27	3	27	2	19	3	27
No	82	88.1	9	11	15	18	28	34	30	37

2.3 Lumbar support pillow with pain intensity

Table 3: Frequencies and Odds ratio with respective 95% CI for variables related to physical activity

	Study sample		The intensity of LBP									
	No.	%age	Unbearable		Severe		Moderate		Mild		Discomfort	
			No.	%age	No.	%age	No.	%age	No.	%age	No.	%age
Lumbar support pillow												
Yes	43	46	2	5	5	12	17	39	16	37	3	7
No	50	54	11	22	16	32	12	24	9	18	2	4

3. Conclusion

According to this cross sectional survey Posture awareness is very poor in PAK public. They often use poor posture while they are sitting. And they can't even recognize it. Their ignorance not only leads to some serious problems but also causes increased expanses on their treatment and also affects their job activities. This indirectly affects their life

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