

Prevalence of low level of physical activity due to fear of pain in subjects with low back pain

Asif Saleem*, Kiran Fatima, Shiza Arshad, Sidra Khalid

Abstract: Low back pain is a common health problem all over the world, affects the people of all ages. Fear of avoidance is resisted behavior of a subject to movement or activities based on fear. The current study was conducted to observe the association of increased fear of pain and lower level of physical activity with its prevalence and to explore fear avoidance beliefs in order to increase awareness regarding increase in physical activity in subjects with back ache so as to decrease burden on health care system. 150 subjects were included in this study on the basis of inclusion criteria. Data was collected by using Fear Avoidance Belief Questionnaire (FABQ), Hannover Functional Ability Questionnaire, and Visual Analogue Scale (VAS) to assess pain related fear, functional abilities and pain intensity respectively. The results revealed that patients with severe pain have increased fear avoidance beliefs. There is statistically strong association between elevated fear avoidance beliefs and low level of physical activity in patients with low back pain. It is concluded that a strong association exists between elevated fear avoidance beliefs and lower level of physical activity in subjects having low back pain. Fear of pain results in restriction of physical activity more than pain itself.

Keywords: Low back pain, fear avoidance beliefs, level of physical activity, fear of movement, Fear avoidance, beliefs questionnaire, Hannover functional ability questionnaire, Visual analogue scale.

College of Physical Therapy, Government
College University Faisalabad

Corresponding author email:
asif.saleem@gcuf.edu.pk

INTRODUCTION

Low back pain can be defined as the pain, uneasiness, muscle stress and tension confined upper to the lower level of gluteal crease and beneath the costal margin, with or without pain radiating to the lower limb (1). Lumbago or low back ache is the 5th commonest cause of doctor's appointment and 4th leading cause of mortality worldwide (WHO). Approximately 60- 80 percent of population is affected by lumbago during their lifespan. Due to low backache, 11- 12% people became physical inactive and affects 31% individuals over 15 years of age (2). Physical inactivity is defined as inadequate co-operation in the recommended level of physical activity during vacation and increase inactive lifestyle in office and housekeeping activities.

The experience of chronic pain and disability are influenced by fear and anxiety. Fear avoidance is referred as resistance to movements and activities that are depending on fear. "Fear-avoidance" can be described by the model that pain perception can be sustained and exaggerated by fear of pain in human imagination and avoidance of activity performance, even in absence of identifiable disease (3).



Low back pain and disability are the constructors of avoidance behavior and stress(5). Pain leads to

functional restriction and are important than anatomical and structural impairment. When normalabilities of body are lost due to pathological, physiological and anatomical abnormalities this is called Impairment. Impairment always leads to disability. Physical impairment and disability depend only 10% on severity of pain (6). Psychological factors especially the cognitive factors are the most important that lead to persistence of low back pain and development of disability. Disability of LBP patients along with routine activities, their results of treatment and patient's ability to perform their work again are predicted by Fear avoidance beliefs (7).

MATERIAL AND METHOD

Data was collected from outdoor patients of physical therapy department in 2 government setups of Faisalabad i.e. DHQ Hospital and Allied Hospital. A sample size 150 patients was selected through convenient sampling technique in this study.

PROCEDURE

This cross-sectional study was conducted on having low back pain in district Faisalabad. The participants were included according to defined selection criteria. Data regarding their pain intensity, pain related fear and functional abilities was collected by using Visual Analogue Scale (VAS), Fear Avoidance Belief Questionnaire (FABQ) and Hannover Functional ability Questionnaire respectively. Analysis of data was performed with SPSS software and findings were drawn.

DATA ANALYSIS PROCEDURE

SPSS version 17 was used to examine the data collected from target population. Independent sample T-test one-way ANOVA test was applied to analyze the data.

RESULTS

Classification of participants according to pain intensity is given in Table: 1 where 22.7% participants reported mild pain, 40.7% participants reported moderate pain and 36.7% participants reported severe pain.

Table 1: Classification of participants according to their severity of pain measured by Visual Analogue Scale

Pain intensity	Frequency of subject (n=150)	Percentage %
Mild (1-3)	34	22.7
Moderate (4-6)	61	40.7
Severe (7-10)	55	36.7

Table: 2 Level of fear in the patient avoiding physical activity

	N	Yes	With effort	with help from others	X ₂	p-value
Low fear	3 2.0	0 0	3 2.0	0 0		
Moderate fear	25 16.7	1 .7	22 14.7	2 1.3	16.73	.002
Elevated fear	122 81.3	0 0	70 46.7	52 34.7		
Total	150 100.0	1 .7	95 63.3	54 36.0		

The chi-square value $\chi^2 = 16.7$ and $p\text{-value} = .002$ ($P < 0.05$) shows that there is statistically strong association between fear avoidance beliefs and level of physical activity in low back ache patients.

Table:3 Shows fear avoidance beliefs of subjects with respect to their pain intensity (mild, moderate and severe):

Pain intensity	N	Mean	Standard deviation
Mild pain	34	2.6176	0.55129
Moderate pain	61	2.7541	0.50516
Severe pain	55	2.9455	0.22918
Total	150	2.7933	0.45313

Table: 4 Shows comparison regarding fear avoidance beliefs between males and females:

Gender	N	Mean	S. D	Df	t-value	p-value
Male	55	2.7818	0.45910	148	-.236	0.814
Female	95	2.8000	0.45195			

Table shows that there is no prominent difference between Male ($M = 2.7818$, $S. D = 0.45910$) and Female ($M = 2.8000$, $S. D = 0.45195$) $t = -.236$ which indicates both type of gender show similar response regarding fear avoidance beliefs.

DISCUSSION

Lumbago is major catastrophizing health issue and the 5th commonest cause of doctor's appointment. (2). The study was directed to observe lower levels of physical activity due to fear regarding pain in subjects having low back pain. The data was collected from population having required characteristics using cross-sectional study design.

A study conducted to measure kinesiophobia and physical therapy related MSK pain in patients and their general physicians. Tempa Scale of kinesiophobia was used to examine fear regarding movement. Pain perception was higher in patients referred by physician with pain related fear than those patients referred by physicians without any pain related fear. MSK pain and fear of movement can be treated well by appropriate combination of physical therapy and psychotherapy sessions (8).

A cross sectional study conducted by Marshall, Schabrun, & Knox, 2017, using following questionnaires: Oswestry Low Back Pain Disability Index, visual analogue scale, The Fear Avoidance Beliefs Questionnaire, The Pain Catastrophizing Scale, Hospital Anxiety and Depression Scale. It was concluded that fear

regarding pain, destructive behavior and stress strongly mediate the association between level of pain and disability (9). These previous studies support this current study which is based on the idea that subjects having low back pain reported increased avoidance behavior and low level of physical activity.

The importance of physical activity can be understood by these studies, which concluded that highly educated subjects stay active during their free time. And subjects with low education level remained physically inactive in leisure time and developed back pain, which further aggravated fear avoidance beliefs and disability, conducted by Schaller et al.(10).

CONCLUSION

Both male and female patients reporting lumbago have equal level of fear regarding pain and avoidance behavior. Most of participants with back pain have moderate pain severity but subjects with severe pain have increase fear avoidance beliefs. It is also concluded that a strong association exists between elevated fear avoidance beliefs and lower level of physical activity in subjects having lower back pain. Fear of pain results in lower level of physical activity more than pain itself.

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