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Research Article

**PREVALENCE OF LOW BACK PAIN AND DISABILITY  
LEVELS IN FAST BOWLERS**Ayesha Karim<sup>1</sup>, Ayesha Sheikh, Fatima Nadeem<sup>1</sup>, Aaiza Jabeen<sup>1</sup>, Rahat Ayub<sup>1</sup>, Anum  
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Sargodha, Pakistan**Abstract:**

**Objective:** Low back pain is endured by fast bowlers due to unique asymmetrical action which puts extra load on the trunk through rotation, extension and side flexion during the delivery stride. This study was conducted among fast bowling cricketers because low back pain is more prone in athletes due to higher physical activity.

**Material and Methods:** The design of this study was randomized cross-sectional. We took 200 fast bowlers as a sample (both males and females) ranging from 15 to 40 years of age from different cricket academies in Lahore. The data was collected through "Oswestry Low Back Pain Disability Questionnaire".

**Results:** Our results indicated that the low back pain was prevalent in fast bowlers, the most common pain intensity being mild. Moderate disability appeared prominent in fast bowlers.

**Conclusion:** This evidence shows that fast bowlers suffer from low back pain and disability which not only limits various daily life activities but may also result in poor performance in the sport.

**Keywords:** Low back pain, fast bowlers, disability

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**INTRODUCTION:**

Up to 80% adults develop low back pain at least once in life.<sup>(1)</sup> Low back pain is considered the chief source of disability worldwide.<sup>(2)</sup> Low back pain is among the major causes of disability in athletes.<sup>(3)</sup> Athletes are at a considerable risk of experiencing low back pain due to higher physical activity. During the sport, the lumbar spine and muscles undergo a lot of stress and strain, twisting and turning and micro trauma that may lead to a painful experience.

Cricket is a non-contact popular sport played and liked worldwide that requires an amalgamation of fitness, skills and good strategy. According to several researches fast bowlers are subject to more injuries than spin bowlers.<sup>(4)</sup> Furthermore, it has also been indicated that fast bowlers are prone to lower back injuries at a greater level as compared to spin bowlers.<sup>(5)</sup> Fast bowlers in cricket are susceptible to low back pain and as a result endure disturbances in their activities of daily life and sports thus resulting in disability.<sup>(6)</sup> Numerous factors including faulty biomechanics and overuse injuries lead to pain in the lower back in fast bowlers resulting in varying levels of discomfort and decline in their performance while delivering the ball. The root cause of the low back pain in them is said to be mainly due to their bowling technique.<sup>(7)</sup> Studies shows that often, players with low back pain either have not recovered from their previous episode of injury and continue playing their sport regardless of continual pain, or they may halt participation.<sup>(8)</sup>

Pakistan has many cricket academies and one of the highly competitive teams in international cricket but there is not enough research done on health, fitness and body mechanics in this field that may help to analyze different factors that affect performance of

the players. Information about these factors will not only ensure better health and ease for the players but will also enable them to perform better.

Therefore, we investigated low back pain's prevalence among fast bowlers because despite the high levels of fitness, they may sustain injuries and suffer low back pain due to extremely vigorous physical activity.

**MATERIAL AND METHODS:****3.1 Population:**

This was a qualitative cross-sectional study, conducted on fast bowler cricketers, consisting of two parts. Target population consisted of fast bowlers from cricket academies in Lahore. Consent was taken from each player a through interview. First, the fast bowlers were asked if they were suffering from Low Back Pain to determine the prevalence. Secondly, the levels of disability due to low back pain were evaluated which gave an insight on different daily life activity limitations among the players due to Low Back Pain. Oswestry low back disability questionnaire was used for data collection.

**Inclusion criteria**

Cases were age above 15 and below 40 years with at least 1 year of bowling experience at the cricket academy, having at least 1 hour of daily practice, and ability to provide assent/consent.

**Exclusion criteria**

Players under 15, players over 40 years of age, players with less than 1 year of experience, players who practice less than 1 hour a day. The study protocol was reviewed and approved by the School of Health Sciences at the University of Management and Technology, Lahore.

**RESULTS:**

Table 1 Descriptive Statistics

	N	Minimum	Maximum	Mean	
	Statistic	Statistic	Statistic	Statistic	Std. Error
<b>Age</b>	200	15	38	21.57	.344
<b>Practice Hours</b>	200	1	8	3.29	.093
<b>Experience</b>	200	1	22	5.42	.251
<b>Oswestry Score</b>	200	0	27	8.49	.451

This table shows the mean of age, practice hours, experience and Oswestry score. The minimum and maximum value of every variable is also explained. The mean age in our study is 21 and mean of practice hours is 3. In addition, mean of experience is 5 years and means of Oswestry score is 8.

### Frequency of Level of Disability

So, to know the frequency of disability levels a table is coded in SPSS-21 which is further explained by pie chart.

**Table 2 Disability Prevalence**

Disability Level		Frequency	Percent
	Minimal Disability	132	66.0
	Moderate Disability	58	29.0
	Severe Disability	10	5.0
	Total	200	100.0

### Prevalence of Lower Back pain among fast bowlers

Prevalence of low back pain among fast bowlers including both genders between the age group 15 to 38, was determined using Oswestry Low Back Disability Scale. The Frequency was measured by using the SPSS-21 and presented by using bar chart.

**Table 3 Pain Intensity**

Pain Intensity	Frequency	Percent
I have no pain at the moment	50	25
The pain is very mild at the moment	68	34
The pain is moderate at the moment	47	23.5
The pain is fairly severe at the moment	23	11.5
The pain is very severe at the moment	8	4
The pain is the worst imaginable at the moment	4	2
<b>Total</b>	<b>200</b>	<b>100</b>

### Frequency and percentage of Age Group

200 participants belonging to different age groups were present. As shown in the table the minimal age was 15 years and maximal was 38 years. This table explains the frequency and the percentage of participants present in every age group. The frequency and percentage of each group is different. Participants who were 19 years of age have the highest frequency; 23 fast bowlers (11.5%) were of 19 years.

### Relation between age and Pain intensity

In order to find out a relation between pain and age, Correlation test was applied so that we can check the p value.

#### Pain Intensity with Age

Correlations			
		Age	Pain Intensity
Age	Pearson Correlation	1	.218**
	Sig. (2-tailed)		.002
	N	200	200
Pain Intensity	Pearson Correlation	.218**	1
	Sig. (2-tailed)	.002	
	N	200	200

\*\* . Correlation is significant at the 0.01 level (2-tailed).

According to the results, Pearson correlation was .218\*\* and the p value = .002. As the value is less than .05 this means that our result is significant.

**Oswestry Score with Age**

Correlations			
		Age	Oswestry Score
Age	Pearson Correlation	1	.314**
	Sig. (2-tailed)		.000
	N	200	200
Oswestry Score	Pearson Correlation	.314**	1
	Sig. (2-tailed)	.000	
	N	200	200

\*\* . Correlation is significant at the 0.01 level (2-tailed).

As shown in the table above, Pearson Correlation of age is 1 and of Oswestry score is .314\*\*. P value = .000 which is less than .05. There is a relation between Oswestry score and age of fast bowlers. This result is significant to conclude that there is a relation between Oswestry score and age of fast bowlers.

**DISCUSSION:**

The cause of this study was to know whether low back pain was prevalent in fast bowlers or not, and to get to know the disability levels among them. We predicted that low back pain was prevalent among fast bowlers. Mostly, mild pain was frequent among them. However, there were a quarter of bowlers who did not have pain in their low back. Many daily life activities were affected due to pain but there were some bowlers who experienced no pain but their daily life activities were restricted. There were three main variables in this study; age, experience and practice hours. Each variable had a different relation with pain. As shown in the results, pain and age were correlated. As the age increased the pain increased accordingly. Whereas, experience and practice hours were not correlated with pain. In addition, disability level was also discussed in the research. In this study, Oswestry score had a relation with pain while experience and practice hours had no relation with pain. As both genders were included in this data, a comparison was made that aimed to assess whether the Oswestry score of males was equal to females. After comparison, a conclusion was drawn that the Males Oswestry score was not equal to that of females. However, pain and Oswestry score were found to be unaffected by experience and practice hours, and thus the hypothesis was not supported for that task.

The results of this study were compatible with Kachanathu *et al.* (2012),<sup>(9)</sup> which stated that low back pain prevailed in fast bowlers. Due to persistent pain they can suffer from limitation in their daily activities which can cause disability in them at different levels. However, the study, in comparison, was conducted on spinal core exercises among fast bowlers to see the effects of the exercises while our study was only limited to checking the prevalence of pain in low back and disability levels varying according to the variables. In both the studies, same Oswestry low back pain disability questionnaire was used to measure the disability level in fast bowlers. Another possible explanation is that the injuries in

lower back are very common and become a reason of low back pain among fast bowlers (Ranson, 2005).<sup>(10)</sup> Ranson assessed the cause of the pain in bowlers by radiological findings while we assessed the fast bowlers by interview and physical testing. The mean age in his study was 26 years and the mean age in our study was 21 years. He interpreted the action of the bowlers and the facts that affected the lumbar disk and pars intericularis which caused pain in lower back. But his data collection was very limited. The data in his research only comprised of 53 male subjects, while we took a data of 200 subjects and of both genders.

**CONCLUSION:**

This evidence shows that fast bowlers suffer from low back pain and disability which not only limits various daily life activities but may also result in poor performance in the sport.

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