

# VALIDATION OF FASH-UR (FUNCTIONAL ASSESEMENT SCALE FOR ACUTE HAMSTRING INJURIES URDU VERSION) AMONG FOOTBALL PLAYERS

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## **Abstract-**

**Background:** Football is one of the most popular sports worldwide. A prevalent muscle injury in sports is the hamstring injury. The FASH (Functional assessment scale for acute hamstring injuries) has been designed for use in English, German, and Greek. Only patients and players who were mostly field and track athletes and spoke Greek were used to examine the instrument's validity and reliability.

**Objective:** The study was aimed to check the validity of FASH-Ur.

**Study Design:** Cross sectional study

**Methodology:** The FASH-Ur validity was examined in 25 cricket players, 33 players without symptoms, and 18 players with hamstring injuries (Patients group) (at risk group). By comparing the FASH-Ur total scores of the wounded and non-damaged groups, validity was examined.

**Results:** Significant disparities between wounded and non-damaged individuals proved the recognized group's validity ( $p < 0.001$ ). The FASH-Ur exhibited very good reliability test (intra-class correlation coefficient = 0.852,  $p < 0.001$ ). Cronbachs alpha test was used for the internal consistency within the groups, cronbachs alpha value was 0.858 indicates our scale high level of internal consistency.

**Conclusion:** The FASH-Ur was a trustworthy and accurate tool to evaluate the seriousness of hamstring injuries in football players who spoke Urdu

## **Index Terms-**

Hamstring injuries, Sports Injuries, FASH, Football, Validity.

## INTRODUCTION

In world the largest team sport is soccer and every year engage new players<sup>1</sup>. Over the past decade, studies number focusing on injuries that occur as a result of playing soccer as increased<sup>2</sup>. Previous club - level studies reported incidence rates of 20.6 to thirty injuries per 1000 hours for matches and injuries from 4.1 to 11.8 per 1000 hours for training, with a high ratio of hamstring muscle injuries<sup>3</sup>. Muscle injury is one of the principal troubles dealing with football gamers<sup>4</sup>. The most common type of injury are hamstring muscle injuries, accounting for twelve percent of all injuries<sup>5</sup>. The initial study of the injuries audit by football association found that over the two seasons hamstring strain injuries were twelve percent of all injuries<sup>6</sup>.

According to epidemiological research, hamstring injuries account for between 6 and 30 percent of all soccer-related injuries, with an incidence of 6 to 9 injuries per 1,000 hours of play.<sup>7</sup> Hamstring injuries, which make up 13% of all injuries in professional football in Europe<sup>8</sup>.

Hamstring injuries ends in important time-loss from coaching and competition and have a high rate of return<sup>[9]</sup>. Hamstring strains are a common football injury. Incidence rates vary from 0.35 to 1.5 per thousand soccer hours among professional male athletes but lower rates in female players. In collegiate soccer, similar differences of gender have been reported<sup>[10]</sup>.

Athletes collaborating in expert soccer have a vast chance of injury<sup>[11]</sup>. In many sports and at all levels of participation, posterior hamstring tendinopathy (PHT) usually affects athletes<sup>[12]</sup>. In elite football hamstring injury is the most common single injury<sup>[13]</sup><sup>[14]</sup>. Despite all the research and additional understanding over the past twenty to thirty years of hamstring muscle injuries, we have not decreased the incidence of first-time injuries and the rate of recurrence is still excessively high<sup>[15]</sup>. Thigh muscle tear (especially hamstring muscle tear) was the most commonly reported diagnosis of injury during top - level international athletics championships<sup>[16]</sup>.

In the athlete, there is a wide range of injuries related to hamstring can occur<sup>[17]</sup>. HSI (hamstring strain injuries) accounts for a significant amount of acute musculoskeletal injuries in football players<sup>[18]</sup>. Certainly, the audit of injuries by football association initially found that hamstrings trains were the most prevalent injury in the English Premier League over a period of two seasons<sup>[19]</sup>. In ARF (Australian rules football) a player misses a game due to hamstring strain injury. About twenty percent of all missed games caused by this type of injuries<sup>[20]</sup>.

In soccer players forty percent of all muscle injuries caused by these hamstring muscle injuries<sup>[21]</sup>. Sixteen to twenty three percent of hamstring injuries are responsible for all injuries in players of football<sup>[22]</sup>. Hamstring injuries, especially in athletes, are common<sup>[23]</sup>. Of all the muscle strain sustained by football players, forty seven percent influence the hamstring tissues<sup>[24]</sup>. For more than a decade, the injury rate of muscle in professional male soccer players has remained unchanged and high<sup>[25]</sup>.

The aim of the study is to evaluate the reliability of FASH-Ur (Functional assessment scale for acute hamstring injury, Urdu version) among Urdu-speaking soccer players in Faisalabad. Therefore, it will be simple for football players who speak Urdu to complete this questionnaire on their own.

## METHODOLOGY

Study was cross sectional. The setting of research was different football and sport clubs in Faisalabad. Study duration was of 6 months. Sample size was 76. Convenient sampling technique was used.

### Inclusion and exclusion criteria

Players with age 18 to 30 were included in the study which actively participated in football. Exclusion criteria for healthy players were pain of hamstring muscles during physical activity, spinal problems, or other uncertain diagnosis.

### Instruments and data collection

Data was collected using FASH-Ur from players with acute hamstring injuries. 18 players with acute hamstring injury, 25 cricket players at risk and 33 healthy players represented different clubs of Faisalabad and different teams at domestic or national level. Data was collected from them through contact with their coaches and trainers or managers of clubs. The FASH-Ur was given to all soccer and cricket players who speaks Urdu language and participated in this study. As there were not many players with hamstring injury so we added at risk group players to injured group with hamstring injury players. To check the validity of FASH-Ur scores of injured group and non-injured group was compared.

### Statistical analysis

Data was analyzed using SPSS. Data was subjected to further statistics for test of significance using 5% level of significance. The Kolmogorov-Smirnov test was used to examine the normal distribution of the data. The Kruskal-Wallis test was used to determine the validity by calculating the group differences. For multiple comparisons and post hoc comparisons, Mann-Whitney U tests were run. Bonferroni corrections were applied. By using Cronbachs alpha total FASH score internal consistency was examined.

### Ethical approval

Ethical committee of The University of Faisalabad approved the topic.

## RESULTS

The ages of the respondents included in our study was divided into three categories i.e., 18-21 years, 22-25 years & 26-29 years of category. The mean age of the players was found to be 22.33 with the standard deviation of 2.247 years & the median age was 22.

Out of the 76 respondents in our study 46 of them used to play with the Right leg and the left 30 players used to play with the left leg.

Test of Normality

Kolmogorov-Smirnov <sup>a</sup>		
Statistic	Df	Sig.
.076	76	.200*

Table 1 shows Kolmogorov-Smirnov test indicates a significance of 0.200 (P>0.05) which indicates that the data is normally distributed which means that further test could be run on the data.

We utilized the Kruskal-Wallis H test, a non-parametric rank-based test also known as rank based one-way Anova designed to compare two or more independent groups, to determine the statistical significance between the groups. Here we had three groups; the healthy, at-risk and injured group & we compared the scores of all the groups with one another to check for the statistical significance among them. Which gives the chi-squared value with the degree of freedom, below 0.05 indicates that there is a statistical significance between the groups. A Kruskal-Wallis H test showed that there was a statistically significant difference in total scores between the three groups,  $\chi^2(2) = 26.765, p = 0.000$ .

The Mann Whitney U test was used to examine differences between two independent groups. Depending on the distribution assumptions established for the data, this test allows for different conclusions to be drawn. Here in this case where we had three groups, to check for the differences between two groups by using Mann-Whitney test we had to use them one by one, but what we did was counting the at-risk and hamstring injured group as a one group and comparing the difference with the healthy player group. Which showed that the total FASH-Ur score was higher in the Healthy group people i.e. the U=380.5, p=0.001 (which is less than 0.05) indicates that there is a significant difference between the healthy groups and other groups so we will reject the saying of null hypothesis.

To check for internal consistency of the total FASH-Ur score, Cronbachs alpha was used for data examined. Most general measure of internal

consistency ("reliability") is Cronbach's alpha. It is typically employed when a survey or questionnaire has several Liker items that together constitute a scale, and you want to know whether the scale is accurate. Here in this form total 10 questions involved that were to be rated from range 0-10. The questions 1 & 3-8 were to be answered from 0-10 while question 2,9 & 10 had categorical answers. The score of each question was noted and the Cronbachs alpha test was performed, after which the results were interpreted.

Reliability Statistics

Cronbachs Alpha	Cronbachs Alpha Based on Standardized Items	N of Items
.852	.858	10

Table 2 gives the info that the Cronbachs Alpha is 0.858 which indicates our scale internal consistency high level.

When quantitative data are reported as units that are grouped together, the intra-class correlation coefficient, also known as the intra-class correlation, is a descriptive statistic that is utilized. It defines how closely one unit in a group resembles the others.

Intraclass Correlation Coefficient

	Intraclass Correlation <sup>b</sup>	95% Confidence Interval		F Test with True Value 0			
		Lower Bound	Upper Bound	Value	df1	df2	Sig
Single Measures	.366 <sup>a</sup>	.283	.466	6.776	75	675	.000
Average Measures	.852 <sup>c</sup>	.798	.897	6.776	75	675	.000

Table 3 shows there is an intra-class co-efficient of 0.852. When we look at the scale, we can see those values of the intraclass correlation coefficient (ICC) are classified as good, fair to bad, or poor when they are less than 0.40, and poor when they are less than

0.75. As a result, the ICC in this instance is 0.852, which shows that there is excellent similarity within each group.

## DISCUSSION

Based on the findings of our study, the FASH-Ur questionnaire was shown to be an accurate instrument for assessing soccer players who speak Urdu who have hamstring injuries or not as well as those who do not. Talking about the feasibility & acceptability of the questionnaire we concluded that the players whether injured or non-injured felt no difficulty in filling the forms, even they were able to understand without the help of the demonstrator as they were in the native language so were easy to read & answer.

The FASH questionnaire was first used as a clinical tool during the recovery phase to evaluate the severity and track hamstring injuries. It is accessible in German, Greek, and English. The validation procedure, however, was only completed earlier for the German and Greek versions<sup>[9]</sup>. The prevalence studies show that the hamstring is most common injury of the elite football players as well as its frequency has been increasing day by day. As a result, we chose to administer the FASH-Ur questionnaire to the football population who speak Urdu to do additional psychometric testing. The value of describing the degree of hamstring injuries and for its use as an extra tool to direct therapy after the athlete has had hamstring troubles both require more study. In our undergone research study, we differentiated the significance between hamstring injured & non-injured players i.e., healthy players. Therefore, in next step the question should be introduced to access different Hamstring Muscle injuries by using the FASH Questionnaire. The choice on the injury's prognosis and the player's timeline for returning to sports might then be determined by evaluating the injured person's real FASH score. The only questionnaire available to date for diagnosing acute hamstring injuries is the FASH. By following a strict process, it was developed and rapidly adapted in different cultures.

Most of the research have certain limits, and our study is no exception; it also has some shortcomings. The very first limitation is that we conducted our study for validating the questionnaire in Urdu speaking football players and we had a small population from city Faisalabad. At-risk group players were also evaluated

which were from other sports than Football. However, if we talk about the limitation then we should say that this questionnaire should be generalized for other sports too to assess the hamstring injuries.

Future research should broaden the application of the FASH questionnaire to include other sports. He or she need to take a sample that is representative of a bigger group. To provide better findings and more generic results, the questionnaire must be utilized across cultural boundaries.

## CONCLUSIONS

FASH-Ur was an effective tool or questionnaire for assessment of acute hamstring injuries in Urdu speaking soccer players. Urdu speaking players will not find any trouble while filling out these questionnaires for reporting any acute hamstring injury. So, this is a validate and reliable tool for assessing hamstring injuries in local language players of Pakistan.

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