

STUDY OF CAUSES, CONSEQUENCES AND REHABILITATION OF KNEE-INJURIES IN MALH SPORT IN SINDH PROVINCE

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Abstract

Malh is an indigenous, traditional and very popular sport in Sindh for centuries. Malh is intense body-contact sport with critical chances of injuries especially knee-injury. This study tends to determine the causes, consequences and rehabilitation of knee injuries in Malh across thirteen districts of the province. Data were collected through structured interview using survey questionnaire and analyzed in SPSS version 22.0. The average mean age of the Malh players also known as Pehelwans was found 43.03 years. Height and weight were recorded as 64.37 inches and 83.26kgs respectively. Findings of this study reveal that 52% Malh players got their right knee injured while 99% players reported they have had several types of injuries most injuries were serious and intrinsic. Implications of findings for Malh players, trainers, parents, physiotherapists and government policy makers are discussed with reference to promotion of Malh sport and diagnosis and rehabilitation of knee injuries.

Keywords: Malh, indigenous sport of Sindh, Knee Injury, Diagnosis, Management

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Introduction

Malh is an indigenous and one of the oldest outdoor sports in Sindh for centuries. Malh is show up of players' strength and skills. Malh is similar to that of Japanese Sumo competition or Western form of professional wrestling. It has been immensely popular across Sindh and has been played with traditional flair, with certain rituals performed before each game. The mood is set by drumbeaters called *Manghanhaars* e.g., Sindhi folk musicians, beating drums to a particular rhythm. Games generally begin in the evening, and the drumbeat serves to attract spectators and infuses the competitors. The drumbeating sets the environment and they keep on beating till the end of the sporting event. The drumbeating gets mixed together with lots of noise, shouts of hurray from the crowd. Drumbeaters are accompanied by some other musicians who play other instruments including *shehnai* e.g., the reed instrument. The music they produce together is called 'the music of the game'. The malh competitors also known as *pehelwans* closer to wrestlers grab or hug each other by the rope or *sandro* very tightly and force each other to drop on the ground on his back with their body strength and leg-tricks. The knee plays very important role in creating hurdle for the opponent and that move or trick stops the competitor to move or be able to play more and sometimes falls on the ground. The one who drops to the ground first loses the competition. There are always two matches between the opponents. However, if each competitor gets one win then they play a third match and that is decisive one. Mela and

Figure 1and2: Start and End of Malh Competition





Malakhra are soul of Sindhi culture. There are some traditional Melas which take place in cities like Sehwan (at the tomb of Qalandar Lal Shehbaz), Bhatt Shah (at the tomb of Shah Abdul Latif Bhita) where malh is one of the major sporting event. In Malh competition, participants i.e. Malh Pehlwan come from different parts of the country. Malh is extremely fascinating game which is played under some rules and regulations. No wrestler wants to lose and do not want to be disgraced. People come to see Malakhro not only from Sindh but also from Balochistan, Panjab and other parts of the country.

Following the musical overture, the pehlwan ceremoniously bow and touch the soil with the index fingers of each hand. They then kiss these fingers, and touch their ear lobes. This ritual is meant to

demonstrate the competitor's humility and the absence of undue pride in one's strength, muscle power and skill. A more recent inclusion in this preparatory practice has been the players touching the feet of their trainer, mentor or teacher, seeking permission to take part in the upcoming match. Figure 1 presents view of the beginning of the competition where two people are seen helping the pehelwans grabbing each others from rope i.e. *sandoro* tied onto their waist. Figure 2 shows the end of the match as one falls off his back. It is a typical action of Malh player during which maximum chances of knee injuries due to lifting and rotating in flexion position.

In Pakistan's context, a detailed analysis of the causes and management of knee-injuries in sports is urgently required. Such effort will invoke academic and research debates on one hand and provide policy recommendations for all stakeholders e.g. government officials, coaches, trainers, sportspersons, healthcare professionals and audience on the other hand. Consequently, this study tends to identify district-wise data of sports related knee injuries including what causes most knee-injuries and find out management techniques employed in diagnosis and rehabilitation of knee injuries.

Knee injuries in malh

Injury in sports is not a new phenomenon and so the knee injuries in sports are the most common problem among athletes. It has

particularly been observed that indigenous, traditional and local sports such as *malh* are body-contact games and played under intense pressure like wrestling, rugby, and other games. Especially, in *malh* wherein two competitors hug each other tightly, push each other hard, and use their legs and knees to knock each other down on solid ground with greater danger to have ribs, arms, legs and knees broken and losing competitors get faint as one of the two shall fall on the other heavily.

Legs are considered fundamental organs of the human body which profoundly contribute to performance and bear the weight of whole body and let individual move and do physical activity. Similarly, knee is the most significant part of the leg that allows motion to a human leg and body. It is a complex joint that provides both stability, to allow weight bearing, and mobility. Medical and health scientists understand that knee joint acquires reasonable strength and stability from the bones due to incongruity of the tibia and femoral condyles. On the contrary, menisci offer stability through enhanced joint congruity in its shape, orientation, and functional properties. Similarly, the ligaments, capsule, and the muscolutendinous soft tissue envelops the knee to interact with gliding and rolling movements to maintain functional stability (Barrack & Skinner, 1990).

Knee movements are possible in amalgamation of rolling and gliding (Greenfield, 1993; Palastanga & Soames, 1994). The tibial plateaus slopes approximately 9° posterior (Meister et al., 1998; Nisell, 1985). During weight-bearing, a vertical compression causes

the tibia to translate anteriorly (Dejour & Bonnin, 1994; Kvist, 2001). At activities such as running and cutting the knee is flexed, which means that the tibial plateau is almost parallel with the weight-bearing surface (Dye & Vaupel, 2000). For sportspersons legs are the crucial organ of the body that let them perform sport of their choice. Knee injuries are common in all kinds of sports especially, football, cricket, rugby, ice-hockey, wrestling, etc. The anatomy of knee joint has six degrees of freedom, three rotational and three translational (Greenfield, 1993). The growing number of knee injuries cases, is reported in advanced and developed countries than in developing countries. Because, in developing countries, such injuries cases are treated at local level or quacks provide necessary first aids and patient do get medical health facility.

Research Method

Data were collected through structured interviews using survey questionnaire comprising three sections such as (I) demographic characteristics, on injury and period of recovery, (II) sports injury circumstances and environment and (III) injury management (first-aid), rehabilitation and comeback. Convenience sampling technique was applied to gather data from malh players all across Sindh. The survey also investigated wide variety of demographic questions, including gender, age, education, height, and weight.

Results and discussion

Malh is a locally popular game in Sindh likewise it has also same popularity across Pakistan and South Asian countries. Malh is known as indigenous form of wrestling.

Sampling Distribution

Table 1 shows the sampling distribution of the respondents. It is revealed from the table that major proportion of the sample (14%) was taken from Jamshoro followed by Mirpurkhas (13%), and Larkana (10%) showing the popularity of the game among the Districts. A very small part of sample was taken from Nawabshah, Nausheerofroz and Jacobabad which was about 4.7 percent.

Table 1 Distribution of Sample by District

Districts	Frequency	Percent
Jamshoro	18	14
Mirpurkhas	17	13.2
Larkana	13	10.1
Hyderabad	12	9.3
Dadu	12	9.3
Sukkur	11	8.5
Matari	10	7.8
Khairpur	10	7.8
Badin	8	6.2
Nawabshah	6	4.7
Nausheerofroz	6	4.7
Jacobabad	6	4.7
Total	129	100

Personal Profile

Table 2 divulges the personal profile of the respondents. The mean age of the respondents was found to be 43.03 years. However, height and weight were recorded as 64.37 inches and 83.26kgs respectively.

Table 2 Personal Profile of the Respondents

Demographic details	N	Minimum	Maximum	Mean
Age (years)	129	17	79	43.03
Height (inches)	129	60	84	64.37
Weight (kgs)	129	55	118	83.26

Educational Status

Table 3 reveals the educational status of the respondents. Majority of the respondents 62.8% were illiterate while 19.4% got their primary education. Middle education was recorded as 5.4%, the matriculation and intermediate educational level was found same among the respondents which were 4.7%. A very low proportion 1.5% of the respondents was found having graduated and post graduated education.

Table 3 Education of Respondents

Education	Frequency	Percent
Illiterate	81	62.8
Primary	25	19.4
Middle	7	5.4
Matriculation	6	4.7
Intermediate	6	4.7
Graduate	2	1.5
Post Graduate	2	1.5
Total	129	100

Occurrence, Recovery and Replay after Injury

Table 4 is evident of the occurrence, recovery of injury, and the re-start of the game after injury. The minimum and the maximum days taken in recovery were 5 and 1835 days with the mean 227 days. Table also indicates that the mean time of injury was 5pm because this game is mostly played in the evening time.

Table 4 Occurrence and Recovery of Injury & Replay after Injury

Occurrence of injury	N	Minimum	Maximum	Mean
Recovery in days	129	5	1835	227.17
Time of Occurrence of Injury (PM)	129	4pm	8pm	5pm

Member of Organization

Table 5 indicates whether the player belongs to any organization or not. It is clear from the 78 respondents 60.5% belong to an organization while 51 respondents 39.5% do not belong. A high proportion of the respondent belonging to any organization could be because this game is mostly organized by various local organizations.

Table 5 Member of organization

Malh Association	Frequency	Valid Percent
Yes	78	60.5
No	51	39.5
Total	129	100

Injury in Knee

Table 6 is evident of the place of injury occurred during the game. The data in the above table reveals that most players 52.7% injured in right knee while 41.9% have injury in left knee. A very small percent 5.4 % has got injury in both the knees.

Table 6 Injury in Knee

Injury in knee	Frequency	Valid Percent
Right	68	52.7
Left	54	41.9
Both	7	5.4
Total	129	100

Types of Recovery

Table 7 divulges about the types of recovery after injury. The table shows that 79.85% of the injured players were completely recovered while only 19.38% were partially.

Table 7 Type of Recovery

Recovery	Frequency	Valid Percent
Complete	103	79.85
Partial	25	19.38
NA	1	0.77
Total	129	100

Occurrence of Injury

Table 8 opted about the occurrence of injury during training of the game or at the time of competition. It is cleared from the table that all the players 99.2% have got injury during the competition where as a very small number of players 0.8 % was injured during the training of the game.

Table 8 Occurrence of Injury

	Frequency	Valid Percent
Competition	128	99.2
Training	1	0.8
Total	129	100

Climate during Injury

The table 9 below presents findings about a comfortable majority of the players 51.9% were injured in the cold season while 47.3% were injured in the hot season.

Table 9 Climate during Injury

	Frequency	Valid Percent
Cold	67	51.9
Hot	61	47.3
Humid	1	0.8
Total	129	100

Nature of injury

Table 10 reveals that mostly all the players 98.4% were injured intrinsically while only about two percent were injured extrinsically.

Table 10 Nature of injury

	Frequency	Valid Percent
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Intrinsic	127	98.4
Extrinsic	2	1.6
Total	129	100

Complaint of injury

Table 11 divulges about the complaint after injury. The table shows that majority 77.5% of the injured players complaint delay after injury whereas only 22.5% were complained instantly.

Table 11 Complaint after injury

	Frequency	Valid Percent
Instant	29	22.5
Delayed	100	77.5
Total	129	100

Precautions during training

Table 12 opted about the precautions taken during training of the game. It is clear from the table that majority of the players 98.46% did not eat food during the game where as a very small number of players 1 (0.77 %) was taken other precautions during playing and training.

Table 12 Precautions during Training

	Frequency	Valid Percent
No	127	98.46
Other	1	0.77

NA	1	0.77
Total	129	100

Nature of injury

Table 13 is evident of the nature of injury occurred during the game.

The above table reveals that most players (67.4 %) were severely injured while 29.5 percent had injured moderately. A very small percent (3.1 %) were got mild injuries.

Table 13 Nature of injury

	Frequency	Valid Percent
Severe	87	67.4
Moderate	38	29.5
Mild	4	3.1
Total	129	100

Medical Investigations

This study also investigated about the medical investigations respondents gone through in case of knee injury, see table 14. About 27.14 percent of the respondents replied that only X-ray technology was used for the investigation purpose. Only 1% of them replied that ultra sound also used when it was advised.

Table 14 Medical Investigations

	Frequency	Valid Percent
X-ray	35	27.14

Ultra Sound	1	0.77
Athrogram	0	0.0
Arthroscopy	0	0.0
MRI	0	0.0
NA	93	72.09
Total	129	100

Type of Doctor

Survey also inquired respondents what type of medical attention was paid to them either by MBBS-medical doctor or a local quack. Table 15 reveals about the types of doctors to whom the injured players get consultation. About one fourth of the players (22.48%) said that they consult with the specialists and three-fourth of the players (73.64%) was replied that they used other sources than doctors.

Table 15 Type of Doctor

	Frequency	Valid Percent
Specialist	29	22.48
Quack	2	1.55
Other	95	73.64
NA	3	2.33
Total	129	100

Hospitalization

Table 16 divulges about whether the injured players were hospitalized or not. The table shows that majority (95.3%) of the injured players were not hospitalized whereas only 4.7 percent were hospitalized.

Table 16 Whether hospitalized

	Frequency	Valid Percent
Yes	6	4.7
No	123	95.3
Total	129	100

Hospitalization and operation

Table 17 shows that if the injured players hospitalized, 3.1% were admitted immediately whereas 1.6% were admitted late. Most of the players 97.9% were not operated whereas small numbers of the players 2.3% were operated after their admission.

Table 17 Hospitalization and operation

		Frequency	Valid Percent
Admitted	Immediate	4	3.1
	Late	2	1.6
Not Admitted		123	95.3
Total		129	100
Whether Operated		Frequency	Valid Percent
Yes		3	2.3
No		126	97.7
Total		129	100

Physiotherapy

The responses of the players about the physiotherapy were summarized in the above table. Majority 92% of the respondents got physiotherapy and only 7.8% did not get it. Table 18 deals with the type of physiotherapy given to the players i.e. manual, instrumental.

119 out of 129 respondents, 87.6% were given manual physiotherapy. Whereas, the same percentage 2.3% was found for those who were given both instrumental and manual physiotherapy. The same table reveals about the complaint of recurrence of injury. About three fourth 76% of the players had not complained about the recurrence of injury while only one fourth 24% of them had complained about its recurrence.

Table 18 Physiotherapy

	Frequency	Valid Percent
Yes	119	92.2
No	10	7.8
Total	129	100
Type of physiotherapy		
Manual	113	87.6
Instrumental	3	2.3
Both	3	2.3
NA	10	7.8
Total	129	100
Complaint of Recurrence		
Yes	31	24.0
No	98	76.0
Total	129	100

Continuity of Play after recovery from Injury

Table 19 divulges about whether the injured players continue to play or not? Majority 71.32% of the injured players were continued their

game after injury whereas only 26.35% said that they could not continue.

Table 19 Continuously Played after Injury

	Frequency	Valid Percent
Yes	92	71.32
No	34	26.35
NA	3	2.33
Total	129	100

Conclusions

Results show, respondents from various districts participated in the survey. It appears that malh is widely popular in Jamshoro, Mirpurkahs, Larkana, Nawabshah, Nausherofroz and Jacobabad. The findings revealed that 52% malh players got their right knee injured while 41.9% have injury in left knee. Further data show that 80.5% of the injured players were completely recovered while only 20% were partially. About 99% players reported that they got injury during the competition where as a very small number of players (1) 0.8% was injured during the training of the game. Mostly, all the players 98.4% were injured intrinsically while only about 2% were injured extrinsically. Majority of 80% of the injured players delayed in the injury complaint whereas only 20% complained instantly. Results also revealed that most players 67.4% were severely injured while 29.4% had injured moderately. A very small percent 3.1% were got minor injuries. About 25 percent of the respondents replied that only X-ray technology was used for the investigation purpose. Only one percent of them told that ultra sound was also used when it was necessary. Majority of 92% of the respondents got

physiotherapy and 95% were given manual physiotherapy. A comfortable majority of about 73% of the injured players reported that they continued playing after their complete recovery.

Malh players strongly complained about the lacking of proper physical training program that includes a dynamic warm-up, jump and plyometric exercises, agility, static stretching, and strength training which aims at decrease frontal plane valgus motion at the knee joint. There appears no coaching, mentoring, proper lighting, and floors. Players play with their ability and interest and having “I can do attitude”. Motivation to play, with very limited and/or no training, practice and mentoring including unavailability of proper stadia and grounds, contribute to sports injuries, in many cases and games. Due to lack of proper healthcare facility the quacks worsen the injury further.

Policy implications

The findings of this study identify acute shortage of stadia and playgrounds for indigenous sport malh and no government financial and promotional support. People play for the sake of leisure, fun and earn social support. As a result, there are greater risks of getting injured whilst competition. In order to minimize risk of injury, proper training and coaching should find and develop such quick, simple, safe, and effective over multiple perspectives and can lead to success both on and off playing any game.

Policy makers need to promote malh by providing necessary funding for sportspersons, trainers and coaches. Healthcare, risks of knee-injury and clinical informative guidelines should be published to help healthcare professionals, trainers, coaches and sportspeople so

that necessary precautions may be taken to avoid harm to the health. Such guidelines should be detailed and extensive to cover first-aid and associated treatment of knee-injury. It is believed that if properly developed, communicated and implemented, guidelines can improve care. The advice on the management of internal arrangements of the knee be based on epidemiological and other research evidence, supplemented where necessary by the careful opinion of the expert development team based on their own experience. In case of knee-injury, the available medics, coaches, trainers or sportspeople can use ice, compression, elevation and take rest. This is widely accepted and expected as standard management for all acute musculoskeletal injuries to reduce pain and swelling. Sportspeople should be advised about the risks of further damage to the injury in the early stages. Sportspeople should also be advised to avoid applying heat and massage to a fresh injury. They must be advised to avoid further activity, or do exercises in the first couple of days after injury otherwise that may also result in further damage. Traditional concepts of rehabilitation tended to focus more on regaining strength and motion; however, more recent concepts embody the notion of 'functional rehabilitation' and this includes concepts of agility, proprioception and confidence. It has also been recognized that knee injuries can result in significant disability, and that psychological factors and skills play a critical role in successful injury rehabilitation. Physiotherapists use a wide range of exercise-related interventions in the rehabilitation of knee injuries; however, there is insufficient evidence to establish the effectiveness of any one type of intervention. Management has been described for

injuries to isolated structures. Some discussion has been included about the operative versus non-operative management of injuries as well as the postoperative management following repair or reconstruction.

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