



Five Year Prevalence of Musculoskeletal Disorders during Training among wrestlers in Haryana: A Retrospective Study

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Abstract- The usefulness of blended learning in helping prospective teachers to learn English reading comprehension is investigated in this study. Conventional approaches to improving students' English comprehension are being questioned. To improve their knowledge and reading comprehension of English, the study's researchers tried to implement blended learning. In this work, the experimental method was used. The study's sample consisted of 70 students from the prospective Teachers of a College of Education of Kerala State. There were thirty-five pupils in the Control group and thirty-five more in the Experimental group. A self-made achievement test created by the researcher served as the study's instrument. Learning English comprehension through blended learning is more successful than using traditional approaches.

Keywords- Blended Learning, Prospective Teachers, Comprehension, Conventional Approach, and Traditional Approach.

I. Introduction

Wrestling is a popular sport in many countries around the world. Its origins can be sketched back to the Sumerians as early as 5000 BC, and records of ancient Greeks wrestling in the Olympics in 708 B.C.(Associees. FWFIdL, 2009). Wrestling is an international discipline and an Olympic sport, for both men and women. Wrestling has its origins in catch-as-catch-can wrestling and the prime victory condition in this style involves the wrestler winning by throwing and pinning his opponent on the mat. This style allows the use of the wrestler's or his opponent's legs in offense and defense. In modern times, there has been increasing recognition of the role of Sports in Development. The International Charter of Physical Education and Sport, UNESCO, 1978 states that "Every human being has a fundamental right of access to physical education and sport, which are essential for the full development of his personality. (Pawiter Singh, 2018)

Wrestling is the low-key game as far as the number of special equipment are concerned. The wrestlers compete in the area which can take the shocks of their actions. The wrestlers enter the game area hands-free.

Wrestling is one of the ancient sports introduced to ancient Persian and Sumerian civilizations about 6000 years ago. It is so ancient that it has been mentioned in the national epics such as the one by Ferdowsi (Rabihy 2008).



Wrestling is the national sport of Iran and quite popular across the country (Kordi R, Akbarnejad A et al , 2010; Kordi R, Ziaee V et al, 2011). Wrestling has been referred to as the most intense and physically demanding sport, with a high risk of injury. into many different forms all over the world. This sport has evolved major styles including; freestyle, Greco-Roman and folk styles. In the United States, wrestling participation averaged 2.5 million participants per year between 2000- 2006, with an average of 1.1 million participants wrestling more than 50 days per year. (Myers RJ, Linakis SW, Mello MJ, Linakis JG,2010)

Wrestlers in ancient India were often mocked by the ruling class, but the monarchy made sure they had a balanced diet of milk, beats, sweets, sugar, and heavenly desserts. Wrestlers used to constantly engage in physical exercises to maintain their health and quality of life. Wrestling was popularized and accepted by the British administration in India, so its practitioners could serve in the armed forces. Preparedness plans are made by both the Indian warriors and the British military. As a result, wrestling flourished as a popular sport in India, and the country is now ranked in the top 10 in the world. The situation did not change until the 1960s. In 1967, India hosted the world championship of wrestling in New Delhi. Many of India's greatest athletes in many different sports have come from the state of Haryana. Twenty-two of India's thirty-eight gold medals at the 2010 Commonwealth Games in Delhi were won by athletes from the state of Haryana. With a total of 80 medals (including 30 gold, 22 silver, and 28 bronze), Haryana dominated the nation in the 33rd National Games in Assam in 2007. Haryana has been a national hero in both men's and women's volleyball, as well as women's hockey. Sporting events including Kabaddi, Kho-Kho, Judo, Boxing, Volleyball, and Wrestling have long established Haryana as a regional powerhouse (regularly know as Kushti) Haryana's sports scene is managed by the state's Department of Sports and Youth Affairs.

Haryana has been India's medal factory in the last few editions of the world's biggest sporting spectacular. Haryana has always been at the foremost in sports achievements in the past decade. From the Indian contingent of 81 athletes at the 2012 London Olympic, 18 hailed from Haryana including all the top boxers and wrestlers. This despite the fact that the state has a share of only about 2% of the national population. Apart from Mary Kom and Vijay Kumar, the other four medal winners had some connection with one of the most economically developed regions in South Asia. One of the most important disciplines for India in this edition of the Olympic is wrestling. And can you believe it six out of eight wrestlers are from Haryana only. Sakshi Malik and Babita Phogat had participated in Rio Olympic games and Sakshi Malik won the bronze medal in wrestling.(Kamlesh ML, Sangral MS 2019)

Haryana Sports Policy and Rewards



The efforts of the government have not gone to waste chief minister Bhupinder Singh Hooda has played a major role in the upliftment of sports in the state. His successor M.L Khattar has enhanced the rewards for medal winners and participants. After performance in international competitions. Players have been showered with cash rewards and luxury cars and offered jobs in the Police dept and in other respected fields. They are not just the number one state in promoting sport but also in terms of identifying talents and policies. This has encouraged major youth to take up sports as a career. According to new sports policy, substantially increases the award money given to national and international Players.

II. Methodology

The present study was a cross sectional survey study with retrospective model, where wrestlers were asked to report injuries sustained in last 3 year. Total of 500 wrestlers, 350 males and 150 females, were selected according to convenience of investigator. The data collection sites were from Choturam Stadium Rohtak, Bhim Stadium Bhiwani, Karan Singh Wrestling Academy Fatehabad, C B S Wrestling Academy Hissar, Mahabir Singh Phogat wrestling Academy Balali (Dadri), Arjun Stadium Jind, Gurugram Wrestling Academy Gurugram, GPS Jodkan Sirsa, The data was collected between February 2022 to October 2022. Athletes were asked to report injuries sustained from last 5 years. Main inclusion criteria were age between 13 to 28 years; both males and females; playing experience was at least one year; have a regular play and played in at least at the district level. Athletes with following characteristics were excluded from the present study: Use of steroids and other performance enhancing drugs; known hypertension, diabetes.

Table 1

Variables	Opts	Percentage	Frequency
How many injuries have you sustained through your career that your athletic trainer and/or physician and/or physiotherapist evaluated	Never been injured	5.7%	12
	1-4 injuries	72.9%	153
	5-8 injuries	20.5%	43
	9-12 injuries	0.0%	0
	13 or more injuries	0.0%	0

The table shows that there are only 5.7% wrestlers were those who have never been injured before. 72.9% wrestlers are those who got injuries by only 1 to 4 times. Besides this, 20.5% wrestlers are those who injured by 9 to 12 times in last 5 years and 0% are those who got injuries by 13 or more times in last 5 years.



Table 2: Site specific one year prevalence rate of injuries in field Wrestling (n=500)

Joints	Prevalence of 36 month injury	Consultation by Physiotherapist or Physician
Head	2(4.16%)	2(100%)
Neck	0(0%)	0(100%)
Shoulder	2(6.25%)	2(100%)
Upper back	3(1.25%)	0(0%)
Lower back	6(100%)	1(16.66%)
Wrist/ Hand	18(37.25%)	10(55%)
Hips/Thigh	6(4.16%)	6(100%)
Knee	2(5%)	1(50%)
Legs	8(16.66%)	4(50%)
Ankle/Feet	6(12.5%)	5(83%)

In wrestling, the upper limb injuries are most common (49%), followed by lower limb (34%) and trunk injuries (13%). Wrist & hand is most common (37%) site of injury followed by knee & Leg (17%) and lower back injuries (13%)

Table 3: Prevalence of type of injury among Wrestlers (n=500)

Type of injury	Number of players
Sprain	200(40%)
Strain	260(52%)
Fracture / Dislocation	20(4%)
Other Injuries	20(4%)

Among different type of injury, strain is the most common (52%), followed by sprain (40%) as shown in table 3

Table 4: Gender specific, gender on site specific prevalence of injuries in Wrestling

Joints	Male(350)	Female(150)
Head	70(20%)	15(10%)
Neck	0(0%)	0(0%)



Shoulder	20(5.71%)	25(16.66%)
Upper back	3(.85%)	0(0%)
Lower back	60(17.14%)	20(13.33%)
Wrist/ Hand	18(5.14%)	10(6.66%)
Hips/Thigh	16(4.57%)	26(17.33%)
Knee	100(28.57%)	75(50%)
Legs	80(22.85%)	40(26.66%)
Ankle/Feet	6(1.71%)	5(3.33%)

Table 5: Gender difference in type of injury among Wrestlers

Type of injury	Male	Female
Sprain	133(38.23%)	22(14.28%)
Strain	175(50%)	10(7.14%)
Fracture / Dislocation	21(5.88%)	85(57%)
Other Injuries	25(7%)	0(0%)

Discussion

The primary objective of the present study was to see the overall, site specific and type of injury specific prevalence of musculoskeletal injuries during training in boxing players. The results showed overall prevalence is 46%. Wrist and hand is most common site (37.5%), followed by knee and leg (16.7%), ankle and foot (12.5%) in wrestling training. Strain accounted for more than 50% of total injuries, followed by sprain (40%). Secondary objective of the present study was to see gender difference in overall, site specific, type of injury specific prevalence of musculoskeletal injuries in wrestling. In wrestling, prevalence of injuries in males is marginally higher than females (46.6% vs 43.8% for males and females respectively) with back (14.7 vs 7.1%) and ankle (19.4% vs 0.0%) injuries are more common in males whereas wrist (29.4% vs 57.1%) and shoulder (2.9% vs 14.3%) injuries are more common in females wrestling players. According to type of injury, strain and sprain are two most common problems in both



males and females. There is no female player reported fracture/dislocation or other injuries; whereas, 2 cases for each reported by males.

According to site specific injuries, present study results are in accordance to Kordi R, Akbarnejad A, Wallace WA.2010. There are 4.2% of head injuries in the present study; this is supported by Kordi R, Akbarnejad A, Wallace WA 2007. More than 90% of total injuries in present study are either sprain or strain. Literature shows 40-60% of sprain and strain in wrestling players during training period (Boden BP, lin W, Young M 2007). 4% of total injuries are fracture or dislocation in our study is supported by Atkinson, M. 2002. Most of the literature reported more incidences of head injuries especially concussion type injury in wrestling players. The reason for this may be more competitive level, age, sample size and characteristics, diagnosis criteria in those studies as against safety environment received by present study sample. Minor concussions in the present study might have ignored by players, coaches during the data collection as in the present study injury acquired during training period and not at the competition period. This might have resulted in discrepancy seen in present study as compared to other literature used. Present study has some limitations such as it lacks methodological rigor- it used convenient sampling technique where investigator selected sample according to his ease of data collection. Males, female's ratio is skewed (2.5:1). Sample heterogeneity- Age, level of play, experience in training is not standardized leading to data contamination. Retrospective study like this has „recall bias“- where subject may forget minor but significant injuries. Musculoskeletal injuries were assessed at the end of year and physician or therapist might have misdiagnosed and misclassified the type of injuries

III. Conclusion

Within the limitations, the present study can be concluded with following points: Nearly half of the boxers reported at least one injury during training in three years. Wrist/hand, knee/leg and ankle/foot are the most common sites of injury in boxing. Understanding the epidemiology of this sport is important so that preventive strategies can be developed in the forms of protective equipment, conditioning and change in rules. The results of present study may also help the trainers and physiotherapists to decrease the incidences of injuries through proper conditioning program.

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