A Demographical Study on the Distribution of Sports Injuries in Male

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Abstract

The purpose of the study was to compare among selected years and among each delimited classified injuries of male sportsperson. Microsoft Excel (version -7) data base was generated from the clinical records of national level institute of physical education and sports sciences with the column headings viz. date of occurrence of injury, name of patient, and type of injury for the years from 1995 to 2007. Thereafter the excel data base was subjected to computation of frequencies and percentages of each sports injury. The tabulated frequencies and percentages has been presented in table and graphs which gives a detailed map in regard to year wise frequency and percentage distribution of types of injuries for understanding and interpretation of the trends. The study was delimited to samples age ranging from 17 to 25 years and those who have reported in the medical/ emergency centre. Chi square was computed to compare among the years in respect to each delimited classified injury, further to compare among the injuries in each delimited specific year. It was found that (1) As a whole Sprain ranked 1st with highest percentage of 50.91 followed by contusion (12.18), Strain (11.98),Spasm (9.743), Tendinitis (2.673) ,Stress (2.436), Bursitis (2.199), Sciatica (1.725),Shin Pain Syndrome (1.286) and Epicondilitis (0.913) were among first ten ranks. (2)As a whole the highest percentage of injuries were found in the year 1996(16.1367), followed by 1997(13.22733), 2002(10.4195), 1998(9.4723), 2006(8.93099), 2001(7.002706), 1995(6.5291), 2005(6.292287), 2004(5.31123), 1999(5.2774), 2000(4.566982), 2003(4.3302), and 2007(2.50338). (3)Bursitis, Contusion , Compression Syndrome, Calcaneum Spur, Disc Prolapsed , Enteropathy , Epicondilitis, Insidious Onset, Ligament Laxity , Lumbago , Metatarsalgia , Osteoarthritis , Planter Fascitis , Road Traffic Accidents, Sprain , Strain , Spasm , Stress , Shin Pain Syndrome , Sciatica , Spondilitis, and Tendinitis were found to be significantly different when compared among the years. (4) All the years viz. 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006 and 2007 were found to be significantly different when compared among the injuries. From the findings, it was concluded that the sprain, contusion, strain and spasm pre dominated the occurrence of injury without specific trends among the years from 1995 to 2007 as per the record of emergency room of national level institution of physical education and sports sciences.

Introduction

There is general agreement among researchers that injury incidence is greater during competition than in training sessions. A.W.S. Watson (1) performed a prospective study of European handball injuries in 186 men and found that injury incidence during competition was 24 times greater than in practice. An injury was defined as any incident that resulted in absence from at least one practice or game. Over half (54%) of all injuries occurred in the lower extremity, and the knee was the most commonly injured anatomical region.

Two studies were found in which male athletes had a slightly higher rate of injury. Jorgensen, U. (2) performed a prospective study of high school basketball athletes and found that the overall injury rate was higher among boys (0.56 injuries per season) than girls (0.49 injuries per season), and girls had a 60% greater incidence of knee injury than boys. Furthermore, the incidence of ACL injuries was 3.6 times higher in girls than boys. Likewise, N.S perryn Peter (4) found that males had a higher incidence of all injuries (IR = 19.0/1000 hours of exposure, 95% CI = 17.7 to 20.2) than females (IR = 13.6/1000 hours of exposure, 95% CI = 12.3 to 14.9) in a prospective study of athletes participating in recreational sports.

The growing popularity of sports and exercise is focusing attention on the injuries that may occur in addition to the health benefits. Treating sports injuries may be expensive, so preventive strategies and measure are required on economic as well as medical grounds (1, 4, and 5). Several epidemiological surveys have outlined the frequency and types of injuries in various sports (3, 5, and 6) .Different studies complied by the different injury criteria as well as by inconsistency in data collection and recording. (7)

Methodology

Microsoft Excel (version -7) data base was generated from the clinical records of national level institute of physical education and sports sciences with the column headings viz. date of occurrence of injury, name of patient, and type of injury for the years from 1995 to 2007. Thereafter the excel data base was subjected to computation of frequencies and percentages of each sports injury. The tabulated frequencies and percentages has been presented in table and graphs which gives a detailed map in regard to year wise frequency and percentage distribution of types of injuries for understanding and interpretation of the trends. The study was delimited to samples age ranging from 17 to 25 years and those who have reported in the medical/ emergency centre. Chi square was computed to compare among the years in respect to each delimited classified injury, further to compare among the injuries in each delimited specific year.

Findings

Frequency and Percentage Distribution of Different Injuries of Male Sportsperson
Table -1

s.no.	Variables (Injuries)		Years													∑F (Column)	%	X^2
			1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007			
1	Arthritis	F			1		1					1				3	0.101	10.01 (N.S.)
		P			0.25		0.64					0.63						
2	Bursitis	F	10	4	10	18	18				3		1	1		65	2.199	102.03 *
		P	5.181	0.83	2.54	6.38	11.68				2.34		0.54	0.37				
3	Bruising	F			1											1	0.034	2.07 (N.S.)
		P			0.25													
4	Contusion	F	28	67	60	32	16	17	24	14	17	19	32	15	19	360	12.18	126.51*
		P	14.51	13.9	15.26	11.3	10.38	12.59	11.16	4.41	13.28	12.1	17.29	5.68	24.35			
5	Compression Syndrome	F								10	1					11	0.372	109.12*
		P								3.15	0.78							
6	Compartment Syndrome	F		1												1	0.034	2.07 (N.S.)
		P		0.2														
7	Cut injury	F													1	1	0.034	2.07 (N.S.)
		P													1.28			
8	Calcaneum Spur	F												4		4	0.135	49.23*
		P												1.51				
9	Disc Prolapsed	F							6		2		1			9	0.304	50.37*
		P							2.79		1.56		0.54					
10	Dislocation	F						1	1				1			3	0.101	10.01(N.S.)
		P						0.74	0.46				0.54					
11	Enteropathy	F		1			2		6							9	0.304	44.2*
		P		0.2			1.29		2.79									
12	Epicondilitis	F	8	2	4				6	1	1	1	2	2		27	0.913	281.49 *
		P	4.16	0.4	1.01				2.79	0.31	0.78	0.63	1.08	0.75				
13	Frictional	F		1												1	0.034	2.07 (N.S.)

	Injury	**P**		0.2														
14	**Haematoma**	**F**			1											1	0.034	2.07 (N.S.)
		P			0.25													
15	**Insidious Onset**	**F**		2												2	0.068	24.61 *
		P		0.4														
16	**Ligament Laxity**	**F**			2				2			2				6	0.203	20.05 *
		P			0.5				0.93			1.27						
17	**Lumbago**	**F**		1	1	2						1	4			9	0.304	24.26 *
		P		0.2	0.25	0.7						0.63	2.16					
18	**Metatarsalgia**	**F**	1		2											3	0.101	24.69 *
		P	0.52		0.5													
19	**Osteoarthiritis**	**F**		1	1	1	8		1							12	0.406	61.86 *
		P		0.2	0.25	0.35	5.19		0.46									
20	**Planter Fascilis**	**F**	6		11	1										18	0.609	96.42 *
		P	3.12		2.79	0.35												
21	**Road Traffic Accidents**	**F**		7	1											8	0.271	73.88*
		P		1.46	0.25													
22	**Sprain**	**F**	58	211	170	126	67	73	103	234	45	93	95	199	31	1505	50.91	422.52*
		P	30.2	44.05	43.2	44.6	43.6	54	47.9	73.8	35.1	59.2	51.35	75.37	39.74			
23	**Strain**	**F**	31	80	41	31	23	30	22	12	14	11	20	26	13	354	11.98	146.12*
		P	16.14	16.7	10.4	10.9	14.93	22.22	10.23	3.78	10.93	7.00	10.8	9.84	16.66			
24	**Spasm**	**F**	19	34	30	17	10	9	21	31	41	23	27	17	9	288	9.743	54.9*
		P	9.89	7.09	7.63	6.02	6.49	6.66	9.76	9.77	32.03	14.64	14.59	6.43	11.53			
25	**Stress**	**F**	4	11	16	17	5	4	7	1	2	2	2		1	72	2.436	72.42*
		P	2.08	2.29	4.07	6.02	3.24	2.96	3.25	0.31	1.56	1.27	1.08		1.28			
26	**Shin Pain Syndrome**	**F**	6	12	1	16	1			1			1			38	1.286	124.62*
		P	3.12	2.5	0.25	5.67	0.64			0.31			0.54					
27	**Sciatica**	**F**	8	4	24	3	2	1	4	3	1	1				51	1.725	126.72*

		P	4.16	0.83	6.1	1.06	1.29	0.74	1.86	0.94	0.78	0.94						
28	**Spondilitis**	**F**		3		2						3				8	0.271	32.49*
		P		0.62		0.7						1.91						
29	**Tendinitis**	**F**	12	34	12	13	3		4		1					79	2.673	58.85*
		P	6.25	7.09	3.25	4.6	1.94		1.86		0.78125							
30	**Tensosynovitis**	**F**	1	1	1					1						4	0.135	9.22 (N.S.)
		P	0.52	0.2						0.31								
31	**Weak Muscle**	**F**			1											1	0.034	2.07 (N.S.)
		P			0.25													
32	**Wound**	**F**	1			1										2	0.068	11.27 (N.S.)
		P	0.52			0.7												
	∑F (row)	**F**	193	477	391	280	156	135	207	308	128	157	186	264	74	2956		89466.93
	%		6.529	16.13667	13.2273	9.4723	5.2774	4.56698	7.002706	10.4195	4.33018	5.31123	6.29229	8.93099	2.5034			
	X^2	**F**	788.7*	3405.89*	2678.64*	1895.2*	1048.93*	1436.41*	1629.61*	5374.45*	926.75*	1818.46*	1483.15*	4682.88*	5126.2*	30038.24*		

Note: -

1. Chi square for comparison among injuries = 89466.93
2. Chi square for comparison among years = 30038.24
3. Level of significance was 0.5

Discussion

According to the table-1, the highest percentage of injuries were recorded in Sprain (30.2) followed by Strain (16.14), Contusion (14.5), Spasm (9.89), Tendinitis (6.25), Bursitis (5.18), Epicondilitis (4.16), Sciatica (4.16), Planter Fascitis (3.12), Shin Pain Syndrome (3.12) and others .i.e. a total of 6.529 percent in the year 1995.

Further, the highest percentage of injuries were documented in Sprain (44.05) followed by Strain (16.70), Contusion (13.90), Spasm (7.09), Tendinitis (7.09), Shin pain syndrome (2.50), Stress (2.29), Road Traffic Accident (1.46), Sciatica (0.83), Spondilitis (0.62) and others .i.e. a total of 16.13 percent in the year 1996.

Further, the highest percentage of injuries were recorded in Sprain (43.2) followed by Contusion (15.26), Strain (10.4), Spasm (7.63), Sciatica (6.1), Stress (4.07), Tendinitis (3.25), Planter Fasciitis (2.79), Bursitis (2.54) , Epicondilitis (1.01) and others .i.e. a total of 13.22 percent in the year 1997.

Further, the highest percentage of injuries were documented in Sprain (44.6) followed by Contusion (11.3), Strain (10.9), Bursitis (6.38), Spasm (6.02), Stress (6.02), Shin Pain Syndrome (5.67), Tendinitis (4.60), Sciatica (1.06), Lumbago (0.70) and others .i.e. a total of 9.47 percent in the year 1998.

Further, the highest percentage of injuries were recorded in Sprain (43.6) followed by Strain (14.93), Bursitis (11.68), Contusion (10.38), Spasm (6.49), Osteoarthritis (5.19), Stress (3.24), Tendinitis (1.94), Enteropathy (1.29) ,Sciatica (1.29) and others .i.e. a total of 5.27 percent in the year 1999.

Further, the highest percentage of injuries were documented in Sprain (54.0) followed by Strain (22.22), Contusion (12.59), Spasm (6.66), Stress (2.96), Sciatica (0.74), Dislocation (0.74) and others .i.e. a total of 4.56 percent in the year 2000.

Further, the highest percentage of injuries were recorded in Sprain (47.9) followed by Contusion (11.16), Strain (10.23), Spasm (9.76), Stress (3.25), Disc Prolapsed (2.79), Enteropathy (2.79), Epicondilitis (2.79), Sciatica (1.86), Tendinitis (1.86) and others .i.e. a total of 7.00 percent in the year 2001

Further, the highest percentage of injuries were documented in Sprain (73.8) followed by Spasm (9.71), Contusion (4.41), Strain (3.78), Compression Syndrome (3.15), Sciatica (1.91), Epicondilitis (0.31), Stress (0.31), Shin Pain Syndrome (0.31) and others .i.e. a total of 10.41 percent in the year 2002.

Further, the highest percentage of injuries were recorded in Sprain (35.1) followed by Spasm (32.03), Contusion (13.28), Strain (10.80), Bursitis (2.34), Disc Prolapsed (1.56), Stress (1.56), Compression Syndrome (0.78), Epicondilitis (0.78), Sciatica (0.78) and others .i.e. a total of 4.33 percent in the year 2003.

Further, the highest percentage of injuries were documented in Sprain (59.2) followed by Spasm (14.64), Contusion (12.1), Strain (7.00), Spondilitis (1.91), Stress

(1.27), Ligament Laxity (1.27), Arthritis (0.63), Epicondilitis (0.63),Lumbago (0.63) and others .i.e. a total of 5.31 percent in the year 2004.

Further, the highest percentage of injuries were recorded in Sprain (51.35) followed by contusion (17.29), Spasm (14.59), Strain (10.8), Lumbago (2.16), Epicondilitis (1.08), Stress (1.08), Bursitis (0.54), Disc Prolapsed (0.54), Dislocation (0.54) and others .i.e. a total of 6.29 percent in the year 2005.

Further, the highest percentage of injuries were documented in Sprain (75.37) followed by Strain (9.84), Contusion (5.68), Spasm (6.43), Calcaneum Spur (1.51), Epicondilitis (0.75), Bursitis(0.37) i.e a total percentage of 8.93 percent in the year 2006.

Further, the highest percentage of injuries were recorded in Sprain (39.74) followed by Contusion (24.35), Strain (16.66) , Spasm (11.53), Cut Injury (1.28), and Stress (1.28) .i.e. a total percentage of 2.50 percent in the year 2007.

As a whole Sprain ranked 1st with highest percentage of 50.91 followed by contusion (12.18), Strain (11.98),Spasm (9.743), Tendinitis (2.673) ,Stress (2.436), Bursitis (2.199), Sciatica (1.725),Shin Pain Syndrome (1.286) and Epicondilitis (0.913) were among first ten ranks.

As a whole the highest percentage of injuries were found in the year 1996(16.1367), followed by 1997(13.22733), 2002(10.4195), 1998(9.4723), 2006(8.93099), 2001(7.002706), 1995(6.5291), 2005(6.292287), 2004(5.31123), 1999(5.2774), 2000(4.566982), 2003(4.3302), and 2007(2.50338).

Bursitis, Contusion , Compression Syndrome, Calcaneum Spur, Disc Prolapsed , Enteropathy , Epicondilitis, Insidious Onset, Ligament Laxity , Lumbago , Metatarsalgia , Osteoarthritis , Planter Fascitis , Road Traffic Accidents, Sprain , Strain , Spasm , Stress , Shin Pain Syndrome , Sciatica , Spondilitis, and Tendinitis were found to be significantly different when compared among the years

All the years viz. 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006 and 2007 were found to be significantly different when compared among the injuries.

Conclusion

It is concluded that the sprain, contusion, strain and spasm pre dominated the occurrence of injury without specific trends among the years from 1995 to 2007 as per the record of emergency room of national level institution of physical education and sports sciences.

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