



# **Sport Participation and Injuries Among Undergraduate Students of a Nigerian University**



***Professor SRA Akinbo, PhD  
College of Medicine, University of Lagos.  
Lagos, Nigeria***

***2<sup>nd</sup> International Conf & Expo on Novel  
Physiotherapies, London; June 2016***

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# Study Background

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- **Participation in sports is essential because physical activity has significant health benefits and a decrease in physical activity has been shown to increase the risk of morbidity and mortality from diseases [1-3]**
- **Mass participation in sports and exercise is an effective way for enhancing public health and minimizing poverty and anti-social behaviours among youths [4, 5]**

# Consequences of Sport Injuries

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- Sports participation despite being a healthy behaviour is usually mired by injuries, which may militate against continued participation.
- Sports injuries particularly lower extremity injuries may result in an increased risk of osteoarthritis (OA) later in life [6,7]
- Sports injuries cause young people to discontinue recreational sporting activities & could lead to sub-optimal health in the future[8].



# Study Rationale

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- **Sports participation appears to have rapidly increased among youths and young adults in Nigeria & Africa over the past decade, however, the extent of participation remains unknown [9,10]**
- **The 2013 Nigerian report card on physical activity showed that about half (41%–60%) of Nigerian children and youth engage in health enhancing activities such as recreation and active play [9]**

# Study Rationale Conts...

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- The report card however acknowledged that information on the frequency of participation in organised sports by the children and youths is lacking [9]
- Determining population specific injury prevention programmes is imperative for reducing the risk of injuries among participants
- Identification of pattern and risk factors for injuries in a given population is a first step in risk sports injuries mitigation

# Study Objectives

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**To assess,**

■ **the frequency of sport participation and associated factors, and**

■ **evaluate pattern of sport injuries**

**among undergraduate students in a Nigerian University.**

# Methods

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## **Study Design and Population**

- **A cross-sectional survey of a representative sample of undergraduate students of the University of Lagos, Lagos, Nigeria was completed**

## **Sample Size Calculation**

- **A proportional stratified sampling technique was used to select students from the 12 faculties of the university.**
- **With a consideration for 20% participant attrition, a sample size of 480 was estimated from a standard normal deviate of 1.96 and a sport injury prevalence of 59% attributable to the study population; as derived from a similar previous study [11]**
- **Thus, 40 students were randomly recruited from the departments in each of the 12 faculties through September and November 2014.**



# Study Questionnaire & Procedure

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- **Study questionnaire was adapted from a questionnaire used in a previous study [12]**

# Study Questionnaire & Procedure Cont...

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**The questionnaire comprised sections that addressed**

- **participants' demographics,**
- **social characteristics,**
- **sports participation,**
- **exposure time to sporting activities,**
- **type and frequency of sporting activity and**
- **sport-related injuries sustained in the past one year**

# Statistical Methods

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- **Descriptive statistics using mean and standard deviation, frequency and percentages were used to summarize parametric data.**
- **Relationships between non-parametric variables were analysed using chi-square.**

# Results and Discussion

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- **Four hundred and forty-two; 442, (92%) of the 480 administered copies of study questionnaire were returned, of which 433 (97%) valid were analysed.**
- **Gender distribution was 63.7%, 36.3% male to female participants.**
- **Majority of the participants (77.1%) were mostly youth; age range 16-24 years**

# Descriptive Characteristics of Participants

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<b>Characteristics</b> <b>N = 433</b>	<b>N</b>	<b>%</b>
<b>Gender</b>		
Male	276	63.7
Female	157	36.3
<b>Age (years)</b>		
16-24	334	77.1
≥ 25	65	15.0
Missing	34	7.9
<b>Ethnicity</b>		
Yoruba	299	69.1
Igbo	80	18.5
Hausa	10	2.3
Others	37	8.5
Missing	7	1.6
<b>Level</b>		
100	60	13.9
200	123	28.4
300	102	23.6
400	108	24.9
500	34	7.9
600	6	1.4
<b>Faculty</b>		
Arts	36	8.3
Basic medical sciences	35	8.1
Business administration	38	8.8
Clinical sciences	37	8.5
Dental sciences	35	8.1
Education	37	8.5
Engineering	37	8.5
Environmental sciences	38	8.8
Law	38	8.8
Pharmacy	29	6.7
Sciences	37	8.5
Social sciences	37	8.5

# Sport Participation

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- **A total of 278 [prevalence: 64.2%] students participated in at least one sport in the previous year**
- **Football (soccer) had the highest participation rate (53.2%)**
- **Two hundred & eighty nine (289; 72.3%) also participated in other forms of exercise asides sport.**
- **Aerobics exercise (Gym exercise) was the most common (45.3%) form of other exercise done followed by brisk walking (26.3%)**

# Sport Participation Rates among Participants

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Characteristics	N	%
<b>Sport Participation</b>		
Yes	278	64.2
No	155	35.8
Total	433	100
<b>Sport of Participation</b>		
Football	185	53.2
Basket Ball	36	10.3
Volley Ball	30	8.6
Lawn Tennis	42	12.1
Track and Field	38	10.9
Others	17	4.9
Total	348	100
<b>Exposure rate</b>		
Daily	28	10.4
Twice/thrice a week	88	32.8
Once a week/fortnight	84	31.3
Once in a month	29	10.8
Others	39	14.5
Total	268	100
<b>Hours of participation in sports(exposure time)</b>		
Less than an hour	85	30.6
2 hours	120	43.2
3 hours	40	14.4
4 hours and more	33	11.8
Total	278	100
<b>How long have you being participating in sports?</b>		
Less than a year	68	24.9
1-3 years	47	17.2
4-6 years	46	16.8
Over 7 years	112	41.0
Total	273	100
<b>Do you participate in other forms of exercise apart from sport?</b>		
Yes	289	72.3
No	111	27.8
Total	400	100
<b>Which type of exercise is it?</b>		
Gym exercise	131	45.3
Dance	42	14.5
Yoga	15	5.2
Brisk walking/walking	76	26.3
Others	25	8.7
Total	289	100

# Sport injuries Prevalence

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- **Out of the 278 students who participated in sports, 146 [prevalence: 52.5%] had at least one sport injury in the past year.**
- **Overall, the prevalence of injury in male students was 45.7% and 12.7% in female students.**



# Sports Injuries Characteristics

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- **Fifty nine participants (59; 40.4%) had only one injury and about half (49.3%) of these injuries were time loss injuries.**
- **Injury reported were moderate (43.8%) & Mild (37%) severity respectively.**
- **And were as a result of direct contact (64.4%) with another player or object.**
- **Ligament sprain (19.9%), fracture (15.8%), bruises (13.7%) and muscle strain (8.9%) were the most common types of injury.**

# Characteristics of all Sport Injuries Reported by

Students

Characteristics N = 146	Frequency	Percentage (%)
<b>Number of injuries</b>		
1	59	40.4
2	47	32.2
3	10	6.8
4 or more	30	20.6
<b>Time loss injury</b>		
Yes	72	49.3
No	74	50.7
<b>Severity of injury</b>		
Mild	54	37.0
Moderate	64	43.8
Severe	28	19.2
<b>First time injury</b>		
Yes	36	24.7
No	110	75.3
<b>Mechanism of injury</b>		
Direct collision with someone else	94	64.4
Collision with an object	31	21.2
Non- contact	21	14.4
<b>Type of injury</b>		
Ligament sprain	29	19.9
Fracture	23	15.8
Wounds and bruises	20	13.7
Muscle strain	13	8.9
Rupture of tendon or ligament	11	7.8
Laceration	10	6.8
Others	8	5.4
Skin lesion	6	4.1
Concussion	5	3.0
Back pain	4	2.7
Dislocation	3	2.1
Patella tendinopathy	3	2.1
Dental injuries	3	2.1
Contusion	3	2.1
Jammed fingers	3	2.1
Neck injuries	2	1.4

# Sport-Injury Specific Rates & Distributions

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- **Overall, football (73.8%) had the highest prevalence of injury.**
- **The leg (20.5%) and ankle (15.1%) were the most frequently injured body parts.**

# Sport-Specific Injury Rates and Distribution of Most Serious Injury by Body Parts

	Total/Overall (%)	Male (%)	Female (%)
<b>*Sport-Specific Injury Rates</b>			
Football	73.8	71.0	2.8
Track and Field	37.2	5.4	31.8
Tennis	21.3	3.1	18.2
Volleyball	20.5	2.3	18.2
Not Specified	10.6	1.5	9.1
Basketball	6.1	6.1	0.0
<b>Most Serious Injury by Body Part</b>			
Leg	19.4	20.8	18.0
Ankle	16.4	14.6	18.2
Knee	13.8	13.9	13.6
Hand	9.9	6.2	13.6
Head/Neck	8.0	7.0	9.0
Wrist	6.8	4.6	9.0
Hip/Groin	6.1	7.7	4.6
Upper Arm	5.3	1.5	9.0
Foot/Toe	5.0	10.0	0.0
Trunk	4.6	4.6	4.6
Shoulder	2.0	3.9	0.0
Thigh	1.6	3.1	0.0
Fore Arm	1.1	2.3	0.0

\*Multiple choices allowed

# Further Discussion

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- **To our knowledge, this study is the first to document the rate and types of sport participation among university students who engage in recreational sports in Nigeria**
- **It is unsurprising that football recorded the highest participation rate knowing that football is the most popular sport in Nigeria & Africa [13, 14].**
- **A focus on football injury prevention is necessary to promote safe participation.**

# Further Discussion Cont....

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- **Results from this study suggest that 1 of 4 students is expected to sustain a serious sport-related injury that would stop him or her from participating in sport for a period of time depending on the severity of the injury**
- **This has health implications for the injured students.**
- **Sport injury has been linked to decreased sport participation and is associated with all-cause morbidity, overweight/obesity and post-traumatic degenerative disease e.g. OA [7, 8, 15]**

# Study Limitations

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- **A limitation of this study however is the use of self-reported questionnaires, which is prone to under-reporting due to recall and social desirability bias**
- **Furthermore, the accuracy of the diagnosis and severity of injuries reported is limited to participants' judgement and perception of their injuries**

# Future Directions/Further studies

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- **There is a need for future studies to investigate potential risk factors for sports injuries in similar settings**
- **Developing injury prevention strategies for this group of young adults is crucial and would have long-term public health benefits**



# Conclusions

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- **Sport participation among students was above average.**
- **Injury rate was considerably high, mostly affecting the lower extremity**
- **Most injuries occurred from football participation**
- **This study recommends the need for improved sport participation support among students,**
- **and the need for the initiation of injury prevention strategies by stakeholders**

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