



PREVALENCE OF CHRONIC ANKLE INSTABILITY ON ADL AND SPORTS ACTIVITY USING FOOT ANKLE ABILITY MEASURE (FAAM) QUESTIONNAIRE AND IDENTIFICATION OF FUNCTIONAL ANKLE INSTABILITY (IDFAI)

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ABSTRACT: Objective - To rule out the prevalence of CAI on ADL and sports activities of athletes using FAAM and IDFAI Method - 120 athletes from College (60% male and 40% female, mean age 22.15) completed online survey. To rule out the presence of CAI (identification of functional ankle instability IdFAI) and estimate physical activity in sporting activities and activities of daily living (Foot and Ankle Ability Measure FAAM – Activities of daily living and FAAM Sports) .Conclusion - the prevalence of CAI on ADL and sports activities are high on athletes. Presence of CAI lowers the physical ability of athletes.

• **Keywords ankle sprain, ADL, Ankle joint, mechanical instability, functional instability**

INTRODUCTION

•Chronic ankle instability is a condition characterized by a recurring giving way of the outer (lateral) side of the ankle. This condition often develops after repeated ankle sprains. The sensation that the ankle is about to give way is a common symptom of ankle instability. When walking on uneven ground or in high heels, this may be amplified. The soreness on the outside

of the ankle may accompany the instability. This pain might be severe at times, while it might be a mild aching at other times. Ligament stability is dependent on the three ligaments anterior talofibular ligament, posterior talofibular ligament and calcaneofibular ligament. Ankle sprains are the most common injury in men and women who participate in soccer, basketball, and volleyball. Up to 73% of individuals who sprain their ankles have residual Symptoms including pain, repeated sprains, and episodes of “giving way. Ligament lesions determine laxity, characteristic of mechanical instability. Functional instability goes along with proprioceptive deficiency. There are postural factors such as varus of the hindfoot that favor instability. Following a lateral ankle sprain, the likelihood of injury recurrence is considerable, resulting in a huge 21 percent number of patients acquiring chronic ankle instability. Longterm ankle instability 22 causes sensorimotor impairments and impaired functioning, both of which are connected to reduced physical activity and quality of life. (Gribble, 2014) Ankle sprains are the most prevalent injury among men and women who play soccer, basketball, and volleyball, according to the National Collegiate Athletic Association. Symptoms such as discomfort, recurring sprains, and instances of "giving way" affect up to 73 percent of people who sprain their ankles.

AIM AND OBJECTIVE OF THE STUDY

AIMTo study the effects of Prevalence of chronic ankle instability on ADL and sports activity using foot ankle ability measure (Faam) questionnaire and Identification of functional Ankle Instability (IdFAI) ”

OBJECTIVE To rule out prevalence of chronic ankle instability on ADL and sports activity using measures FAAM & IdFAI.

METHODOLOGY:-

STUDY DESIGN : This is a cross sectional study

SAMPLE SIZE: 120

SAMPLING METHOD : Simple Random Sampling.

TIME PERIOD OF STUDY : 8 weeks.

INCLUSION CRITERIA :-

- Age- 18-25years.
- College athletes.
- Not involved in any previous protocol

EXCLUSION CRITERIA:-

- Non athletic population.
- Age above 25.
- Age below 18.

IDENTIFICATION OF FUNCTIONAL ANKLE INSTABILITY (IdFAI)

Instructions: This form will be used to categorize your ankle stability status. A separate form should be used for the right and left ankles. Please fill out the form completely and if you have any questions, please ask the administrator. Thank you for your participation.

Please carefully read the following statement:

"Giving way" is described as a temporary uncontrollable sensation of instability or rolling over of one's ankle.

I am completing this form for my **RIGHT/LEFT** ankle (circle one).

1.) Approximately how many times have you sprained your ankle? _____

2.) When was the last time you sprained your ankle?

Never > 2 years 1-2 years 6-12 months 1-6 months < 1 month
0 1 2 3 4 5

3.) If you have seen an athletic trainer, physician, or healthcare provider how did he/she categorize your most serious ankle sprain?

Have not seen someone Mild (Grade I) Moderate (Grade II) Severe (Grade III)
0 1 2 3

4.) If you have ever used crutches, or other device, due to an ankle sprain how long did you use it?

Never used a device 1-3 days 4-7 days 1-2 weeks 2-3 weeks >3 weeks
0 1 2 3 4 5

5.) When was the last time you had "giving way" in your ankle?

Never > 2 years 1-2 years 6-12 months 1-6 months < 1 month
0 1 2 3 4 5

6.) How often does the "giving way" sensation occur in your ankle?

Never Once a year Once a month Once a week Once a day
0 1 2 3 4

7.) Typically when you start to roll over (or 'twist') on your ankle can you stop it?

Never rolled over Immediately Sometimes Unable to stop it
0 1 2 3

8.) Following a typical incident of your ankle rolling over, how soon does it return to 'normal'?

Never rolled over Immediately < 1 day 1-2 days > 2 days
0 1 2 3 4

9.) During "Activities of daily life" how often does your ankle feel **UNSTABLE**?

Never Once a year Once a month Once a week Once a day
0 1 2 3 4

10.) During "Sport/or recreational activities" how often does your ankle feel **UNSTABLE**?

Never Once a year Once a month Once a week Once a day
0 1 2 3 4

Version 1.0

1. Running

No Difficulty At All	Slight Difficulty	Moderate Difficulty	Extreme Difficulty	Unable to do	N/A
<input type="checkbox"/> (+4)	<input type="checkbox"/> (+3)	<input type="checkbox"/> (+2)	<input type="checkbox"/> (+1)	<input type="checkbox"/> (+0)	<input type="checkbox"/> (X)

2. Jumping

No Difficulty At All	Slight Difficulty	Moderate Difficulty	Extreme Difficulty	Unable to do	N/A
<input type="checkbox"/> (+4)	<input type="checkbox"/> (+3)	<input type="checkbox"/> (+2)	<input type="checkbox"/> (+1)	<input type="checkbox"/> (+0)	<input type="checkbox"/> (X)

3. Landing

No Difficulty At All	Slight Difficulty	Moderate Difficulty	Extreme Difficulty	Unable to do	N/A
<input type="checkbox"/> (+4)	<input type="checkbox"/> (+3)	<input type="checkbox"/> (+2)	<input type="checkbox"/> (+1)	<input type="checkbox"/> (+0)	<input type="checkbox"/> (X)

4. Starting and stopping quickly

No Difficulty At All	Slight Difficulty	Moderate Difficulty	Extreme Difficulty	Unable to do	N/A
<input type="checkbox"/> (+4)	<input type="checkbox"/> (+3)	<input type="checkbox"/> (+2)	<input type="checkbox"/> (+1)	<input type="checkbox"/> (+0)	<input type="checkbox"/> (X)

5. Cutting/lateral movements

No Difficulty At All	Slight Difficulty	Moderate Difficulty	Extreme Difficulty	Unable to do	N/A
<input type="checkbox"/> (+4)	<input type="checkbox"/> (+3)	<input type="checkbox"/> (+2)	<input type="checkbox"/> (+1)	<input type="checkbox"/> (+0)	<input type="checkbox"/> (X)

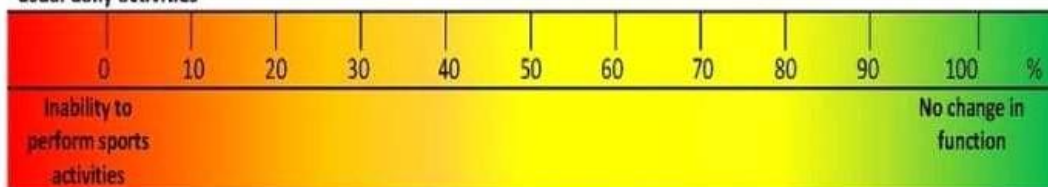
6. Ability to perform activity with your normal technique

No Difficulty At All	Slight Difficulty	Moderate Difficulty	Extreme Difficulty	Unable to do	N/A
<input type="checkbox"/> (+4)	<input type="checkbox"/> (+3)	<input type="checkbox"/> (+2)	<input type="checkbox"/> (+1)	<input type="checkbox"/> (+0)	<input type="checkbox"/> (X)

7. Ability to participate in your desired sport as long as you would like

No Difficulty At All	Slight Difficulty	Moderate Difficulty	Extreme Difficulty	Unable to do	N/A
<input type="checkbox"/> (+4)	<input type="checkbox"/> (+3)	<input type="checkbox"/> (+2)	<input type="checkbox"/> (+1)	<input type="checkbox"/> (+0)	<input type="checkbox"/> (X)

8. How would you rate your current level of function during your sports related activities from 0 to 100 with 100 being your level of function prior to your foot and ankle problem and 0 being the inability to perform any of your usual daily activities



How would you rate your current level of function?

Normal	Nearly Normal	Abnormal	Severely Abnormal
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

OUTCOMES MEASURES: FAAM IDFAI

FAAM- it is a self-report test that evaluates physical function in people with musculoskeletal problems of the lower leg, foot, and ankle. The sum of the items scores is divided by the greatest possible score. IDFAIIt is a self reported questionnaire used to identify ankle Instability . This is a recommended questionnaire for clinicians and researchers as according to research it is proven that it is simple ,easy and short questionnaire to administer and take . It

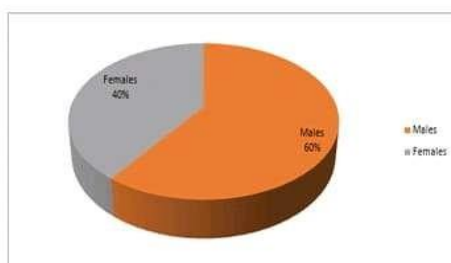
has excellent test retest reliability .

RESULT:-

• In the study the sample size is 120. The average age of sample size is 22.15, average height is 165.66 , and average weight is 69.07. Out of 120 samples we have taken the frequency of male is 72 whereas female be 48. Which is 60% and 40% respectively. In this study we can say that there is significant level of effect of lower physical ability of the participants as the FAAM results are lesser in the scoring the ADI 1 shows 19.33 ± 7.417 ADL 2 shows 7.83 ± 2.800 and sports sub scale show 9.67 ± 4.482 . Identification of Functional Ankle Instability (IdFAI) shows 61 % for right ankle 38.3 % for left ankle with the score of 6.45 ± 7.041

	Age	Height (cm)	Weight (kg)
Mean	22.150	165.669547	69.07
N	120	120	120
Std. Deviation	2.1524	31.5926641	14.204

GENDER				
	Frequency	Percent (%)	Valid Percent(%)	Cumulative Percent(%)
MALE	72	60.0	60.0	60.0
FEMALE	48	40.0	40.0	100.0
Total	120	100.0	100.0	



	MEAN±SD	Z-TEST	P-VALUE
Activities of Daily Living Subscale 1	19.33±7.417	28.554	P<0.05
Activities of Daily Living Subscale 2	7.83±2.800	30.651	P<0.05
Sports Subscale	9.67±4.482	23.629	P<0.05

Identification of Functional Ankle Instability (IdFAI)

Comparison between RIGHT and LEFT ANKLE		
	Frequency	Percent
RIGHT ANKLE	37	61.7
LEFT ANKLE	23	38.3
Total	60	100

Out of all the samples 50% of the youngsters have CAI in which 37 youngsters have issues in right ankle and 23 in left ankle which is 61% and 38% respectively.

DISCUSSION:-

• In this research we studied the prevalence of CAI on sports activities and ADL of young athlete. The physical demographic variables taken were age, weight, height and history of ankle injury. As per the requirement we used two outcome measures that are FAAM and IDFAI. IDFAI was used to find out whether athlete has Ankle Instability or not on the other hand FAAM scale was used to find the amount of insufficiency caused due to CAI on ADL and sports activities. As per my data analysis we have taken sample young athlete of India. We found that 50% are suffering from CAI; on further analysis of this affected youngster we found that 61.7% are having issues with right ankle and remaining 38% are having issues with their left ankle. In our study we found that our youngster playing football, basketball, volleyball, cricket, etc are having recurrent chances of ankle injury. According to the study of Alison Suzanne Attenborough the most common sports were soccer, basketball, and volleyball, and the most common CAI symptom was recurring ankle injury/sprain. The most common sports were soccer, basketball, and volleyball, and the most common CAI symptom was recurring ankle injury/sprain. Soccer had the highest percentage of players with repeated sprains (61%) and mechanical instability (38%) whereas track & field had the highest percentage of players with perceived instability (41%). (Attenborough, 2014)

Many football players or the other athletes get the injury due to collision between the player leading to frequent injury in the ankle. In one of the study conducted by Raymon jay on football injuries of ankle that say, Just before or during foot impact, direct contact with a laterally directed force on the medial portion of the lower leg might cause the player to land with the ankle in this vulnerable inverted position. According to video study of ankle injuries in professional soccer players. (Walls, 2016) In the study conducted by Luke Donovan that CAI is expected to affect roughly 20% of teenagers who participate in sports. We found out the prevalence of chronic ankle Instability on ADL & sports activities of youngsters we conducted this research using FAAM and IDFAI. We found that there is a significant level of lower physical ability of the affected athletes up to 50%.

LIMITATIONS OF THE STUDY

This research was done on small group of population No physical examination was done to verify the test. Decreased sports activity due to Covid. Only two scales were used to collect data.

FUTURE RESEARCH

As a result, interventions to avoid ankle injury and maintain physical activities in younger athletes are critical for reducing the economical hardship and continuing implications of CAI.

CONCLUSION

- In order to get the results of prevalence of chronic ankle Instability on ADL and sports activities of athletes we conducted this research using FAAM and IDFAI . We found that there is a significant level of lower physical ability of the affected athletes as per the FAAM and IDFAI results . The significance value is $p < 0.05$. We also found that 50% of population (60 athletes) was affected with chronic ankle instability out of which 62% had instability in right ankle and 38% had Instability in left ankle. On the basis of obtained results we conclude that existing of CAI in athletes affect the ADL and sports activities and is prevalent in this population.

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