FUNCTIONAL MOVEMENT SCREENING FOR INJURY RISK PREDICTION IN YOUNG HIGH SCHOOL ATHLETES- AN OBSERVATIONAL STUDY

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In

SPORTS PHYSIOTHERAPY

Under the guidance of

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Bhubaneswar, Odisha 2021-2023

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I hereby declare that this dissertation entitled **"FUNCTIONAL MOVEMENT SCREENING FOR INJURY RISK PREDICTION IN YOUNG HIGH SCHOOL ATHLETES- AN OBSERVATIONAL STUDY"** is a bonafide and genuine research work carried out by me under the guidance of DR. Asif Ahmed Assistant Professor, Abhinav Bindra Sports Medicine and Research Institute, Odisha

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LIST OF ABBREVIATIONS

1. **FMS –** Functional Movement Screen
2. **HS –** Hurdle step
3. **SPSS –** Statistical package for social science
4. **ILL–** In-Line Lunge
5. **SM –** Shoulder Mobility
6. **ASLR –** Active Straight Leg Raise
7. **TSPU –** Trunk Stability Push-ups
8. **RS –** Rotatory Stability

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ABSTRACT

FUNCTIONAL MOVEMENT SCREENING FOR INJURY RISK PREDICTION IN YOUNG HIGH SCHOOL ATHLETES- AN OBSERVATIONAL STUDY

BACKGROUND: sports programs have started pre-participation athletic screening techniques as an essential to identify athletes that are at a high risk of becoming injured. The Functional Movement Screen (FMS) is a screening technique intended to evaluate deficiencies in the mobility and stability of an athlete that might be linked to injury. To date, there are no published cut-off scores for the FMS in high school athletes. The purpose of this study was to establish composite scores for the FMS in young high school athletes (12 to 17 years). The study aims to investigate whether the FMS cut-off score =15 or more than 15 could predict injury in young high school athletes.

METHOD: 68 young high school male athletes between the ages of 12 and 17 years who fulfilled the inclusion and exclusion criteria, were selected for the study. The test administration procedures, instructions, and scoring process associated with the standardized version of the test were followed to ensure accuracy in scoring. The components of the FMS include seven tests deep squat, hurdle step, in-line lunge, shoulder mobility, active straight leg raise, trunk stability push-up, and rotary stability.

RESULTS: The mean composite FMS score was 15.85 out of a possible total of 21. But no statistical significance between the FMS cut-off score =15 or more than 15 those who reported an injury (p=.707).

Conclusion: The current research study concluded that an FMS cut-off score of 15 and more than 15 is not likely to predict sports injuries in high school athletes. FMS does have benefits in recognizing deficiency in certain movements, but it should not be used for the overall prediction of injury in high school athletes participating in different sports competitions.

Keywords- Functional Movement Screening, High school athletes, Injury prediction.

INTRODUCTION

Children's participation in solo sports and teams has increased in the last decade. At a younger age sport is mainly for enjoyment, health, and personal development, the change in balance once a competitive element intervenes. The younger athletes train harder, for longer periods, and participate throughout the year, because of this an undesired but inevitable consequence, sports-related injuries have significantly increased.[1]A report of high school sports season [1995-1997] indicates that more than 2 million injuries were sustained that require 5,00,000 doctor visits and almost 30,000 hospitalizations in the United States [2].

All these injuries reported in this setting, along with the fact that many of these significant sport–related injuries may lead to long-term physical impairments; warrants the research into the possibility of using any pre-participation screening methods able to identify young school athletes who are mainly at high risk of becoming injured [1]. Low-quality movement patterns may negatively affect musculoskeletal performance and lead to an increased risk of injury [3].

Young athletes are usually more prone to injury compared to others because of several factors like the presence of less resistance growth cartilage which is less resistant to

repetitive micro injury than a mature adult.[2] Aggressive training; decreased flexibility because of pronounced growth spurt; the tendency to take risks during sports and the physiological response to exercise are also different. In young athletes, the common sports injuries are sprains, sprains, overuse injuries, growth plate fractures, wounds, and epiphyseal injuries. stress fractures and dislocations [4].

Functional Movement Screening (FMS) was first proposed by American Orthopedic training experts Gray Cook and Lee Burton, it is derived from the famous functional movement training, it was first applied in the 1990s [5]. FMS excellent, practical screening tool, easily portable, efficient, reliable, easy to practice and execute, and can be used in both sports and the general community [6]. The primary goal of FMS is to evaluate the body kinetic chain system where the body is evaluated as a linked system of interdependent segments which often work in a proximal to distal direction to initiate movement [7].

FMS can be used with all physically active populations and was initially designed to put the individual in positions where possible muscular weakness, mobility limitations, or anatomical and muscular asymmetries were exposed and identified [8].

Functional Movement Screening is a test, it mainly uses 7 functional movements to detect the stability and overall movement of joint flexibility softness balance ability core strength, and proprioception.

FMS is used as a revolutionary diagnostic and rehabilitation method and as a measuring instrument. It provides us with a systematic tool to monitor the progress and development of movement patterns in the presence of a variable injury status. The FMS

confirm the fact that it is one of the key tool and factors in injury prevention and functionality in professional and recreational athletes.

. **SEVEN TESTS: -**

1. Deep squat
2. Hurdle step
3. In-line lunge
4. Shoulder mobility
5. Active straight leg rises
6. Trunk stability push-ups
7. Rotatory stability

Figure-1: - FMS tests

CLEARANCE TEST: -

1. Spinal flexion
2. Spinal extension
3. Shoulder internal rotation with flexion

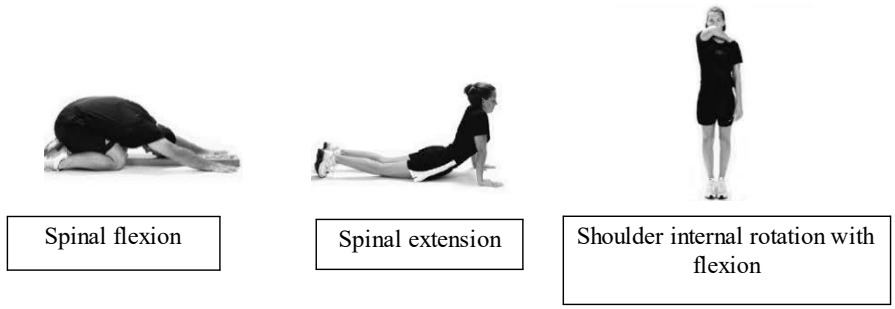


Figure-2: - FMS clearance tests

They are scored as either positive or negative with a positive response indicating that pain was reproduced during the examination movement.

All seven test scores are added together to determine the FMS composite score with a possible range of scores from 0-21. A greater composite score signifies greater functional movement ability whereas a lower score indicates impaired ability and possible increased risk of injuries [8].

SCORING: -

0- Pain present

1- Subject unable to perform the movement

2- Exercise is performed with compensation

3- Movement was successfully performed without loss of balance or movement adjustments.

Each of the seven functional tests was scored from 0-3 according to the FMS instructions. Both the left and right sides of the body are scored separately [hurdle step, in-line lunge, shoulder mobility, active straight leg raise, rotatory stability] the participant sometimes may score 3 on the left or right side and 2 or 1 on the left side. if any different score was recorded the lower score from the 2 sides was recorded for that particular individual test [9].

Research on the FMS has grown, and studies addressing sports injuries are a reoccurring topic [10].

The FMS helps to predict injury risk and the performance outcome over the populations, including elite and field athletes, marine officer candidates, and junior and ice hockey players. It has also been used to assess and lower the risk of injury in particular occupational groups (e.g.: firefighters). The FMS has been used to assess the risk of injury in a variety of groups, including female collegiate athletes and military personnel. In a study done with healthy, active people, Onate et al. examined the real-time intersession and inter-rater reliability of the FMS. They discovered that all of the tasks showed good to high inter-rater reliability and moderate to high inter-session reliability.

To establish normative values for the FMS in a group of active, healthy people, a different investigation was carried out.

FMS is used to identify the weakest links in the kinetic chain of subjects through FMS screening to correct and improve them in time because the correction itself improves the movement pattern which largely avoids and reduces the risk of injury. In addition to the prevention, FMS also offers key information for planning and programming workouts. This tool can assess and identify the quality of movement and require both balance and stability [11]. The purpose of this study was to assess whether FMS scores can predict injuries in young high school athletes.

NEED OF THE STUDY: -

- Lack of knowledge among young school athletes of regarding the rules and regulations of the game, and biomechanics of the game. So, there are more chances of an increase in injuries.
- No idea about the warm-up and cool-down and no proper guidance, they are more at risk of injuries, So, FMS screening is helpful to detect and predict the risk of injury.
- There is a lack of research about norms and interpreting FMS scores for athletes participating in youth sports is needed.

- Using a specific cut-off score to predict the injury risk across the various sports remain controversial and has not been consistently verified for healthy and active adult or high school athletes

STATEMENT QUESTION:

Do FMS scores predict the risk of injury in young school athletes?

AIM OF THE STUDY: -

The study aims to check the FMS score for injury risk prediction in young high school athletes.

OBJECTIVES OF THE STUDY: -

- The objective of the study is to evaluate the FMS composite score in young school athletes by using the FMS screening test.
- To evaluate the injury risk prediction in young school athletes with FMS composite score.

HYPOTHESES

- **NULL HYPOTHESIS**

  FMS may not predict the injury risk in male high school athletes.

- **ALTERNATIVE HYPOTHESIS**

  FMS may predict the injury risk in male high school athletes.

REVIEW OF LITERATURE

1. Kanako Shimoura et, al. in 2020, conducted a study on Association Between Functional Movement Screen Scores and Injuries in Male College Basketball Players with 81 participants and concluded that deep squat and hurdle step scores may be associated with injuries in basketball players.

2.Monique Mokha et, al. In 2016 conducted a study on predicting musculoskeletal injury in national collegiate athletic association division ii athletes from asymmetries and individual-test versus composite functional movement screen scores with 84 participants of different sports like volleyball, soccer, rowers, Results: Athletes with FMS scores of ≤14 were not more likely to sustain an injury than those with higher scores (relative risk = 0.68, 95% confidence interval = 0.39, 1.19; P = .15). However, athletes with an asymmetry or individual score of 1 were 2.73 times more likely to sustain an injury than those without (relative risk = 2.73, 95% confidence interval = 1.36, 5.4; P = .001).

Conclusions: Asymmetry or a low FMS individual test score was a better predictor of MSI than the composite FMS score

3. Xuejuaan Huang et, al. in 2022, conducted a study on the criterion validity of functional movement screen as a predictor of sports injury risk in Chinese police staff with more than 160 Chinese police staff (148 females, 69 males) and FMS results of this study showed a distinct deterioration trend with increasing age, conclusions: The FMS deserves consideration by trainers and clinicians as a pre-exercise physical examination for Chinese police staff to avoid sports injury.

4. Robert W Moran et, al in 2016, conducted a study on How reliable are Functional Movement Screening scores? A systematic review of rater reliability and the result is for inter-rater reliability based on live scoring of individual subtests there was 'moderate' evidence of 'acceptable' reliability ($\kappa \geq 0.4$) for 4 subtests (Deep Squat, Shoulder Mobility, Active Straight-leg Raise, Trunk Stability Push-up) and 'conflicting' evidence for the remaining 3 (Hurdle Step, In-line Lunge, Rotary Stability). And concluded that This review found 'moderate' evidence that raters can achieve acceptable levels of inter-rater and intra-rater reliability of composite FMS scores when using live ratings

5. Armin et, al. in 2020, conducted a study on FMS screening as a revolutionary - rehabilitative measuring instrument in sports and recreation A systemic study concluded that FMS is an excellent, practical screening tool, easily portable, efficient, reliable, easy to practice and execute and can be used in both the sports and general community. The normative values given for FMS in these studies can be useful for identifying abnormal overall results in the world of

sports, recreation, and fitness, and present FMS as a specific revolutionary - rehabilitation diagnostic tool that will avoid and prevent injuries.

6. **Nikole J. Keil, et, al 2022** conducted a study on Functional Movement Screen in High School Basketball Players: Pre- and Post-Season with 10 male and 8 female participants There were also no differences between male and female average composite scores Coaches, trainers, parents, and athletes must be aware of these differences when training. The training tactics that work well for collegiate and professional athletes may not be the best practice for these developing young high school athletes.

7. **Allan Abraham, Rajasekar Sannasi, and Rohit Nair in 2016,** conducted a study on normative values for the functional movement screen in adolescent school-aged children the mean composite FMS score was 14.59 (CI 14.43 - 14.74) out of a possible total of 21, and concluded that With the advent of increased injuries in adolescent aged school population, it is essential to introduce a pre-screening procedure before any sporting event that would be helpful to determine any potential risks for injury.

8. Hua Liu, Huixian Ding, Xing Gao, and Junjaine Xuan in 2023, conducted a study on the functional movement screen in Chinese college students at different levels of physical activity and sports performance to predict sports injuries. a total of 151 students were taken with three levels of sports performance, low sports performance, moderate sports performance, and high sports performance, and concluded that FMS composite score was used to predict college students with a

cut-off value of 17.5 sports injuries. Population stratification by the levels of sports performance seems to influence the predictive accuracy of the FMS.

9. Wen-Dien Chang, Li-wei Chou, and shuya in 2019, conducted a study to assess the relationships between functional movement screen (FMS), star excursion balance test (SEBT), agility test, and vertical jump test scores and sports injury risk in junior athletes. Eleven volleyball, 12 basketball, and 9 handball athletes were recruited. All participants followed the routine training in school sports teams. Junior athletes with a high risk of sports injury did not exhibit differences in terms of FMS, SEBT, and physical fitness test scores Overall, junior athletes with an FMS score of ≤14 or a SEBT score difference of ≥4 cm have a higher risk of sports injury, the results did not reveal differences in FMS, SEBT, and physical fitness to compare with low and high risks of sports injury.

- **10. Craig R Triplett, Bryan S Dorrel, and Matthew L Symonds in 2021,** conducted a study on Functional Movement Screens to detect Asymmetry and Normative Values Among College-Aged Students. One hundred university students completed the FMS and an associated survey to determine which sport and for how many seasons they participated in each sport during high school. Total FMS scores were assessed to identify the presence of an asymmetry during an FMS screen Participating in multiple sports and multiple sports seasons during high school was associated with higher FMS total scores. Results suggest that participating in multiple sports and multiple sports seasons

was associated with fewer asymmetries, which may decrease subsequent injury risk.

METHODOLOGY

- STUDY DESIGN: Observational study
- SAMPLING TECHNIQUE: purposive sampling
- STUDY POPULATION: High school male athletes.
- SAMPLING SIZE: 68.
- STUDY SETTING: Maha raja Boys high school parlakhimundi...
- STUDY DURATION: 6 months

INCLUSION CRITERIA: -

- Age group – 12-17
- Gender – Males
- Playing any sports at high school levels

- Participants with FMS score >15 or equal to 15.
- Subjects those who are given consent.

EXCLUSION CRITERIA: -

- Any musculoskeletal injury from the last 6 months
- Any previous orthopedic surgeries.
- History of any Cardiopulmonary, neurological, or communication disorders.
- Subjects who are not willing to participate in the study.

STUDY MATERIALS: -

- Yoga mat [1]
- FMS suite (Hurdle) [1]

- Wand (stick)
- Dowel

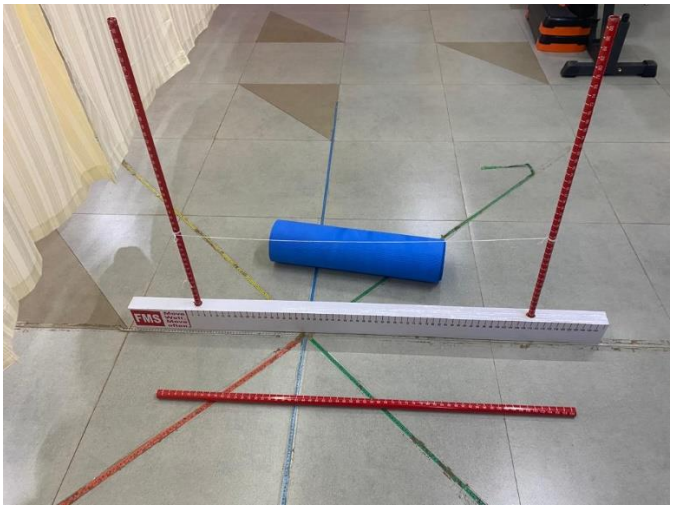


Figure 3: Materials

OUTCOME MEASURES: -

- FMS ICC value – 0.81[13]

PROCEDURE

The institutional Ethical committee evaluated and approved the current study. NOC Was taken from the head of Maharaja boys' high school Paralakhemundi was recruited for the study. Interested players were screened for inclusion and exclusion criteria. Participants were explained about the study in their language. An informed consent form was obtained from the participant's parents. Each subject completed a short form regarding their injury history and demographic information along with information about the sports they played. Each participant's weight was measured in kilograms and height in centimeters. Participants were allocated by purposive sampling method. The participants performed the seven tests (deep squat, hurdle step, in-line lunge, shoulder mobility, active straight leg raise, trunk stability push-up, and rotator stability) 3 times. Each time the participant performed each of the seven tests least they were scored on a scale 0-3. For each of the seven tests, the highest score of the three trials was given to the participant. For the tests with the bilateral assessment component, the side with the lowest score was taken into consideration for total FMS score calculation and was used for data analysis. Three of the tests (shoulder mobility, trunk stability push-up, rotator stability) of FMS have a clearing procedure associated with them. For each of the clearing procedures, participants were given positive if they reported pain and negative if they reported no pain during the clearing procedure.

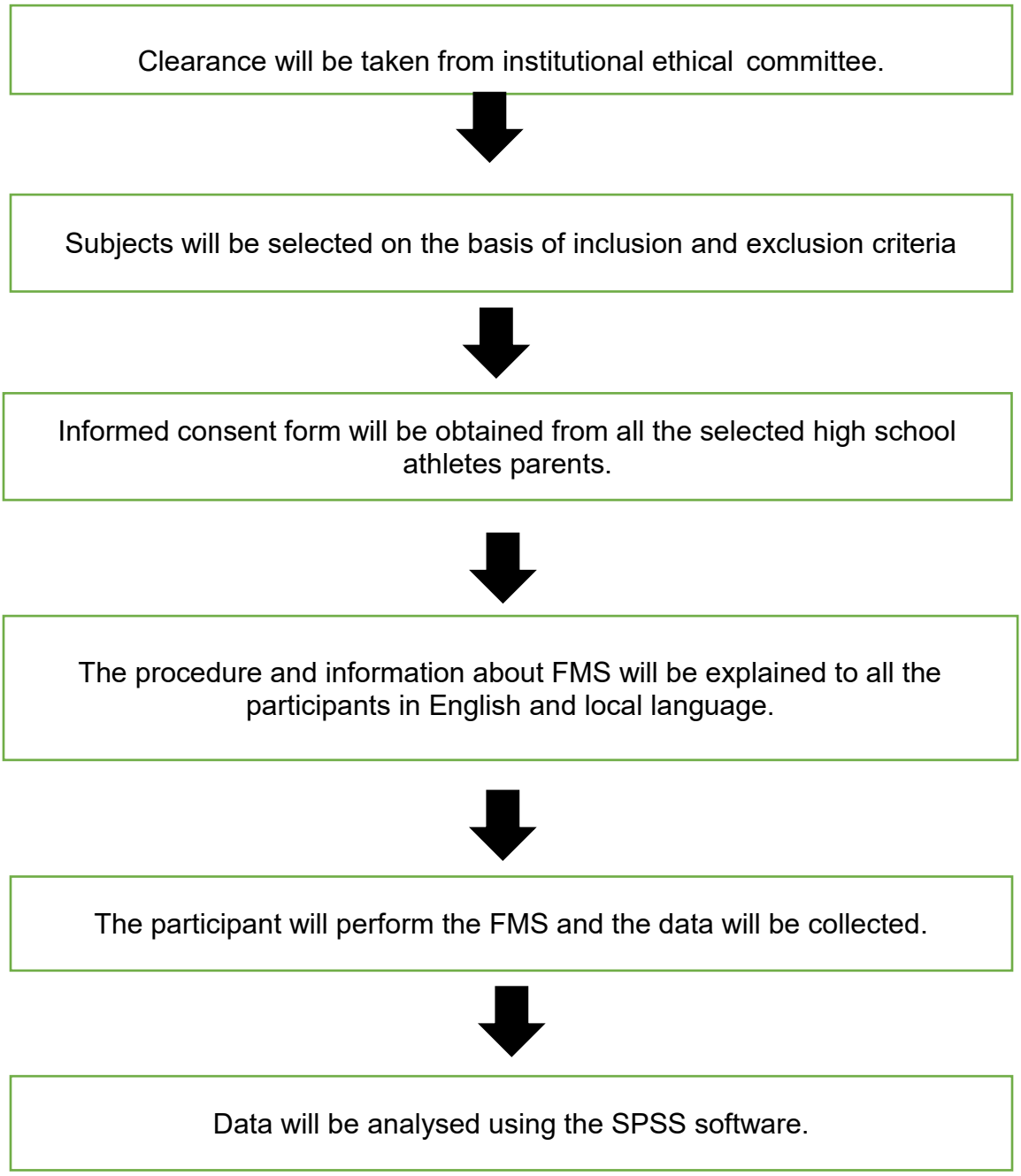


Figure 4. Flowchart of the study procedure

Figure-5: - Participants performing the FMS test

Sample Size Estimation

A sample size of 66 subjects was estimated using a medium effect size of 0.5, a power of 0.95, and a level of significance set at 0.05. 68 Participants were included in the study having an FMS cutoff score equal to 15 or greater than 15.

Statistical Analysis

Data was analyzed by using the statistical package **SPSS 29.0** (SPSS Inc, Chicago, IL). Qualitative analysis is done by using the Chi-square test. The level of significance was set at **p<0.05**

DESCRIPTIVE STATISTICS.

			INJURY		Total
			absent	Present	
FMS	Equal 15	Count	22	7	29
		Expected count	21.3	7.7	29.0
		%within FMS	75.9%	24.1%	100.0%
		% within Injury	44.0%	38.9%	42.6%
		% of total	32.4%	10.3%	42.6%
	Above 15	Count	28	11	39
		Expected count	28.7	10.3	39.0
		%within FMS	71.8%	28.2%	100.0%
		% within Injury	56.0%	61.1%	57.4%
		% of total	41.2%	16.2%	57.4%
Total		Count	50	18	68
		Expected count	50.0	18.0	68.0
		%within FMS	73.5%	26.5%	100.0%
		% within Injury	100.0%	100.0%	100.0%
		% of total	73.5%	26.5%	100.0%

FMS=15 the expected count of injury absent is 21.3 and injury present is 7.7 of the total 29.0, the % within FMS with injury absent is 75.9%, and injury present is 24.1% of the total 100%, % within the injury absent is 44% and injury present 38.9% of the total 42.6%. Of the total 42.6% injury absent is 32.4 and injury present 10.3 %.

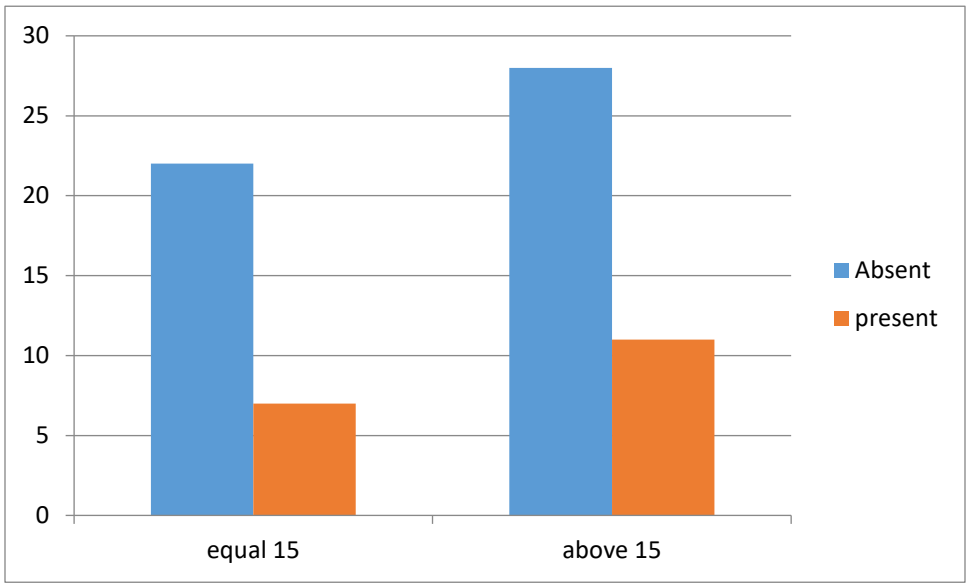
FMS>15 the expected count of injury absent is 28.7 and injury present is 10.3 of the total 39.0, the % within FMS with injury absent is 71.8%, and injury present 28.2% of the total 100%, % within the injury absent is 56.0% and injury present 61.1% of the total 57.4%. Of the total 57.4% injury absent is 41.2% and injury present 16.2 %.

To correlate FMS with injury was analyzed chi-square test with a p-value <0.05.

	CHI square value	Significant value
FMS	0.046	0.707

Interferential statistics by using a chi-square test shows that FMS composite =15 or more than 15 is not useful to predict injury in young high school athletes.

Graphical representation of bar chart showing injury present and absent with cut-off score FMS =15 and above 15.



RESULTS: The results of the current investigation demonstrated that the FMS screening tool was not a valid predictor of injury in male high school athletes participating in various sports competitions.

DISCUSSION

This study aimed to describe composite scores in young high school athletes for FMS. FMS consists of seven tests developed in 1997 that rely upon common basic movements to identify athletes that may be at an elevated risk of injury.[2] The seven basic movement patterns were deemed to represent foundational actions of many sports maneuvers. No evidence has yet been published to establish the composite score for functional movement screen in high school athletes. The availability of composite score reference data could increase the clinical utility of FMS in younger populations, to screen for movements that could provide risk for injury in children and adolescents.

The variables like age, height, and weight do not show a strong correlation with the mean composite score it can be proposed that the mean composite score can be used as the normative value for young school athletes and adolescents between the age group of 10 and 17 years.

The validity of FMS as a screening tool to predict injury has been established through the use of an evidence-based cut-off score. Three studies have used screening techniques to establish the cut-off score of <= 14 as being appropriate to identify individuals who have greater odds of sustaining an injury.[6]

the clinical utility of FMS is currently limited by its lack of composite cut-off score and normative reference values for young high school athletes. This study aimed to provide composite scores for young high school athletes with the use of FMS and establish

reference values for young high school athletes. The use of FMS in young high school athletes by establishing a composite score to predict injury risk.

The present study evaluated the use of the FMS composite score and its predictive potential for sports injury risk in young high school athletes, and it was discovered That the cut – off score FMS score was equal to 15 or more than 15, and its accuracy and specificity showed no significant differences at the high school athlete level.

The participants chosen for this research had a mean FMS of 15.85 which was greater than previous studies in college students or student-athletes with an FMS of 14. Scores 0–2 of FMS indicate a variety of functional movement impairments, including asymmetry, stability, and flexibility during movement, which might contribute to sports injuries by movement deficiencies and asymmetries. Vehrs et al in one study categorized the FMS test's different components based on their action characteristics into three subcategories: movement score (DS, HS, and ILL) and mobility score (SM and ASLR), stability score (TSPush-up and RS).[5]

The unusual distribution of the FMS composite score was associated with lower scores in the DS, ILL, SM, and RS tests, showing that young students not focusing on shoulder mobility and stability training and are prone to the risk of sports injuries. For example, core strengthening exercises. Athletes with high physical activity and sports performance had a greater chance of injury risk in one study. The risk of sports injury rises in physical activity time increases. increasing the amount of time spent performing high-intensity exercise does increase the risk of sports injuries.

Athletes who specialize in sports and exercise are more likely to report a higher number of injuries. However, it is uncertain whether these are the variables that may affect the FMS score. evidence showed that FMS had no significant relationship with low PA but was highly connected with moderate or above PA in preschool-aged children, and in middle-aged healthy people, the greater the amount of exercise activity they did, the higher their FMS score

Composite scores did not show strong correlations with BMI, age. Our findings also say that the FMS is not a diagnostic tool, it is designed to identify mobility impairments that might lead to injury. but the FMS composite score was unlikely to predict sports injury risk in young high school athletes. This might be due to failing to examine the affecting aspects of the FMS in young high school athletes. Although this study demonstrated no apparent association between the FMS composite score and injury risk occurrence. This study says that FMS composite score was not an acceptable predictor of injury risk.

The participants who sustained musculoskeletal injuries were more likely to be older than participants who were not injured and some athletes had better FMS scores than uninjured athletes. Older athletes have likely been playing for longer periods than younger athletes and have more opportunities for injury. In addition, the nature of higher-level athletics and increased exposure time in older athletes over more years of participation could result in more injuries and therefore greater risk of future injury.[12]

This data in young high school athletes with a total FMS composite score =15 and greater than 15 was a poor predictor of the risk of injury status. It is possible because younger athletes present with varying levels of maturity, development, and motor

control, and FMS is not an appropriate test to detect those at risk of injury in young school athletes.

CONCLUSION

According to the current study, an FMS cut-off score of 15 or higher is unlikely to predict sports injuries in high school athletes. FMS has benefits in diagnosing deficits in some movements, and with additional training, the performance of these movements might improve, but it should not be used to predict total injury risk in high school athletes who compete in many sports.

LIMITATIONS

The number of samples is smaller. The observation time for predicting injury risk is 6 months. The definition of injury for this study was confined to a single occurrence of a musculoskeletal injury and did not specify whether the injury was contact or non-contact. This study was unable to record exposures. Those with a higher score may have superior movement quality and patterns, making them better athletes. Better athletes are more likely to compete and be exposed, which may raise their risk of injury. Participants supplied a list of competitions in which they competed, but no formal documentation was acquired.

FUTURE SCOPE

More study is needed to confirm the link between age and FMS scores in the younger population. This study did not assess the Further research needed to confirm the link between age and FMS scores in the younger population. The validity of FMS individual test scoring for sports injuries was not evaluated in this study. Individual FMS tests for asymmetry and their predictive accuracy in sports injuries should be investigated. FMS individual test score for sports injuries appears valid. Individual FMS tests for asymmetry and their predictive accuracy in sports injuries should be explored.

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ANNEXURES 1.

CONSENT FORM

CONSENT FORM

Title of the study –

FUNCTIONAL MOVEMENT SCREENING FOR INJURY RISK PREDICTION IN YOUNG HIGH SCHOOL ATHLETES- AN OBSERVATIONAL STUDY

I have been informed by Mr. Sabbi Yogan; pursuing MPT (sports) conducting the above-mentioned study under the guidance of Dr. Asif Ahmed Assistant Professor, Department of Sports|Physiotherapy ABHINAV BINDRA SPORTS MEDICINE AND RESEARCH INSTITUTE (ABSMARI), BHUBANESWAR.

I have no objection and will be a part of that group. I also understand that the study does not have any negative implications for my health. I understand that the information produced by the study will become a part of the institute's record and will be utilized, as per the confidentiality regulations of the institute. I am also aware that the data might be used for medical literature and teaching purposes, but all my personal details will be kept confidential.

I am well informed to ask as many questions as I can to Mr. Sabbi Yogan either during the study or later.

I understand that my assent is voluntary and I reserve the right to withdraw or discontinue the participation from the study at any point of time during the study.

I have explained to MR/MISS/MRS the purpose of the research, and the procedure required in the language he/she could understand to the best of my ability.

(Investigator) (Date)

I confirm that Mr. Sabbi Yogan (investigator) has explained to me in the language I can understand, the purpose of the study and the procedure. Therefore, I agree to give my assent for participation as a subject in this study and I will be accountable for the decisions.

(Signature) (Date)

ANNEXURES.2

ASSESSMENT FORM

FMS FUNCTIONAL MOVEMENT SCREEN SCORE SHEET

NAME: DATE: DOB:

ADDRESS:

CITY, STATE, ZIP: PHONE:

SCHOOL/AFFILIATION:

HEIGHT: WEIGHT: AGE: GENDER:

PRIMARY SPORT: PRIMARY POSITION:

HAND/LEG DOMINANCE: PREVIOUS TEST SCORE:

TEST		RAW SCORE	FINAL SCORE	COMMENTS
DEEP SQUAT				
HURDLE STEP	L			
	R			
INLINE LUNGE	L			
	R			
SHOULDER MOBILITY	L			
	R			
SHOULDER CLEARING TEST	L +/-			
	R +/-			
ACTIVE STRAIGHT-LEG RAISE	L			
	R			
TRUNK STABILITY PUSHUP				
EXTENSION CLEARING TEST	+/-			
ROTARY STABILITY	L			
	R			
FLEXION CLEARING TEST	+/-			
TOTAL SCREEN SCORE				

Raw Score: This score is used to denote right and left side scoring. The right and left sides are scored in five of the seven tests and both are documented in this space.

Final Score: This score is used to denote the overall score for the test. The lowest score for the raw score (each side) is carried over to give a final score for the test. A person who scores a three on the right and a two on the left would receive a final score of two. The final score is then summarized and used as a total score.

Clearing Test: A positive indicates pain. A negative indicates no pain. If pain is present (+),the score for that test would result in a 0.

FMS

ANNEXURES.3

MASTER CHART