Volume 3, Issue 10, 2025

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

EFFECTS OF FIFA11+ AND WARMUP EXERCISES ON FLEXIBILITY POWER AND AGILITY

Umair Ashfaq[*1], Qasim Ali[2], Hamna[3], Sibgha Anum[4], Mubashra Ali[5], Ahmad Ilyas[6]

[*1]*Assistant professor; M Islam medical and dental college, Gujranwala*
[2]*Senior lecturer, M Islam medical and dental college, Gujranwala*
[3]*Senior Physical therapist, Imran Idrees institute of rehabilitation science, Sialkot*
[4]*Royal medical college*
[5]*Lecturer, M islam medical and dental college*
[6]*M Islam medical and dental college*

[*1]umairashfaq43@gmail.com, [2] qasimalibhatti07@gmail.com, [3]physiohamna@gmail.com, [4]anumsibgha00@gmail.com, [5]mubashraali293@gmail.com, [6]m.ahmad.oppal@gmail.com

DOI: https://doi.org/10.5281/zenodo.18046694

Keywords
FIFA11+, warmup, flexibility, power, agility, footballers

Article History
Received: 26 October 2025
Accepted: 10 December 2025
Published: 24 December 2025

Corresponding Author: *
Umair Ashfaq

Abstract

Objective: *The objective of this study is to compare the effects of FIFA11+ with warmup exercise on flexibility power and agility among footballers.*

Methods: *The data was collected from Athletes in sports from govt. secondary high school Gujranwala ground. The study was completed in a period of six week after the approval of synopsis. The design of my study was (RCT) study. And the sampling technique was non-probability convenience sampling. A sample of 38 (19 in each group) was selected using 10% level of significance and 80% power of test. Two groups made each containing 19 participants with inclusion criteria met. Group A will be given interventional treatment with FIFA11+ exercise and group B will be given control group treatment with simple warmup exercise.*

Results: *53 participants were included in the study, randomized and allocated to group A and B. 11 participants were dropped due to not according to inclusion an exclusion criterion so 42 participants were divided Out of 21 participants each group, 2 participants from group A failed to follow up, so were dropped out of study. Data of 38 participants, 19 from each group was analyzed. Data was found to be negatively skewed for power so non-parametric Mann-Whitney U test were applied to analyze data. While for flexibility and agility parametric test were applied to analyze. Analysis concluded significant difference in both groups and rejected the null hypothesis.*

Conclusion: *FIFA11+ exercise are more effective than simple warmup exercise on flexibility power and agility among footballers.*

INTRODUCTION

Football is the world's most mainstream sport. As per the Federation International Football. Affiliation (FIFA), there are 265 million male and female enrolled football players with different clubs worldwide and out of these mostly players from Africa that are almost 46 million (17%) and third biggest after Asia (33%) and Europe (23%).(1)

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

Football is the game in which occurrence of injury is higher as compared to other games. Football players have high risk to develop lower extremity injuries in ground. On normal a professional athlete playing football have experiences 1.7 to 7.6 each thousand hours of injuries during practice match and 12 to 35 injuries each thousand hours during their professional match in ground. Mostly parts where injuries in footballers occur are head, thigh, lower legs, knee, foots and calf muscles in practice session and competition or professional match. Accordingly new methods and knowledge for the avoidance of football rate of occurrence of injuries are benefits for all footballers athlete and places where they are practice their session on regular base , also not only to football players who are professional but also all those person who seen this game as a fitness purpose and for health purpose.(2)

It usually see that dynamic warmup in footballers before training session or professional match in ground have positive effects on fitness of players and personal gain achieve in improvement in power, speed, and agility which are the component of fitness that necessary for football players to enhance performance. Other researches has also concluded that active warmup exercises before training session or professional match enhance strength and jumping performance in football players. Literature also review that warmup exercise before sessions not only enhance performance of football player but also decrease occurrences of injury rate in that players.(3)

Anybody who perform activity in sports and other physical activity have equal chance to develop injuries instead of having fitness level and experience in their sports or activity. Sports injuries are also very expensive economically to deal in all types of games. The process to get previous fitness level is very difficult to achieve and sometime its look impossible to get previous fitness level in sports. Accordingly players who get injuries of any part of body mostly lower extremity injuries in which injury of ACL is very difficult to get full recovery in any sports including footballs game. Some wellbeing experts mainly dealing with musculoskeletal issues have very good work about the avoidance of musculoskeletal issues occur in players during match, going from practice program to reestablish muscle length , stretching and flexibility exercises to overcome muscle tightness that occur in sports and stability exercises to increase stability and awareness of body position in sports in which rate of injuries can be minimize.(4)

Also positioning exercises in which athlete develops control of body make the athletes to gain good equilibrium during practice or professional session also this natural position prevent further injuries in players when he quickly change body position during sessions. Different literatures have also concluded that neuromuscular training in which body work to develop control and fitness work and decrease occurrence of injuries especially injuries of calf, hamstrings and ACL in all games where compotator's aggressively participate to compete.(5)

FIFA11+ is perhaps the best therapy which has been invented by federation of international football association and medical and research center to prevent injuries rate mainly in football players. The FIFA11+ have three fundamental section one is simple slow running at the start of session first session is for eight minutes in which player mainly warmup body with hip in and hip out exercise and also with combination of both and fourth part is when two athletes run and contact shoulder to each other with slight jump the mainly focus of first segment is to warmup and prepare body to next exercises work. Second segment mainly focus on strength balance and plyometric exercises in which players develop control of body static bench sideline bench hamstrings control single leg

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

stance for balance jumping all are the exercises which are performed by athletes which are further modify or make complex time duration for these exercise is ten minutes third part mainly consist of three exercise with jump running fast running and cutting exercise that are performed in two minutes so total time duration of these exercise are twenty minutes with fifteen exercise.(6)

The FIFA11+ exercise are recommended by national football association and under the use of different clubs worldwide due to its importance in injuries prevention rate according to different sources injuries rate can be lowered even to half of total injuries that has very good importance in injuries of musculoskeletal issues develop in football but not in all cases regime is not accepted as worldwide because it see it can changed result due to a number of reasons including time and frequency also matter a lot and also performance of correct exercises in sequences as mentioned in FIFA11+ regime.(7)

The FIFA clinical and research make 11+ warm up program, a high level adaptation of 11 program, incorporates other component like running, strength, plyometric, and balance segment. Just few investigations have work on 11+ regime and harmo knee. The primary work is to investigate the effects of testing on strength, equilibrium and occurrence of musculoskeletal issues rises during game. Also there are previous investigations on fitness of players utilizing these regime of FIFA11 programme. Kindling and collaborators' noticed and see improvement in lower leg muscle in 20 mint sprints, despite the fact that they report no progressions in weight, quickness in body and body muscle strength, in young football players. On another hand stiffen et al, 2008 show no importance difference among 11 and control group as far as in vertical jump test, forty mints running test and speed test that includes 10 meter running with ball and without ball and a soccer abilities test among young females soccer players. Pioneers of these inconsistencies has driven FIFA to become the FIFA11+ program that consolidates an expansion in power and exercise part to potionally work on the actual performance of soccer players. On other hand, further literature to be needed to find the impacts of this development in advancement of the FIFA11+ program on the actual increase in fitness of soccer players is to be needed.(8)

Materials and methods

This study was conducted as a randomized clinical trial to evaluate the effects of the intervention among football players. The study was carried out at the Government Higher Secondary School Ground, Gujranwala. The total duration of the study was six months, which commenced after the formal approval of the research synopsis.

The sample size was calculated using Epitool based on vertical jump performance outcomes reported in previous studies. The calculation was performed for two groups, considering both pre-intervention and post-intervention measurements. The statistical inputs used for sample size estimation included a mean value of 45.33 for Group 1 and 48 for Group 2, with a variance of 5, a confidence level of 95%, statistical power of 95%, and a two-tailed test. Based on these parameters, the calculated sample size was 19 participants per group, resulting in a total sample size of 38 participants.

Participants were recruited using a non-probability convenient sampling technique. Eligible participants were selected based on predefined inclusion and exclusion criteria. Male football players aged between 18 and 45 years, who were active members of a football club for at least one month and were willing to participate voluntarily, were included in the study.

Participants were excluded if they had a history of any surgical procedure, systemic disease, or musculoskeletal injury that could potentially affect their physical performance during the study period.

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

Questionnaire

A self-assessment questionnaire was administered online. Data were collected by using predetermined tools.

To study the effects of FIFA11+ and warmup exercise on flexibility power and agility we design three study tools for all participants before allocation in interventional and control groups to check flexibility sit and reach test were used in all players in which players are sitting on ground and shoes were removed both knee locked and pressed against floor palm facing downward and hand are on top of each other and athlete try to reach maximum distance and the distance recorded in inches on question form.

Vertical jump test were used to check power in all footballers. Footballers were side to wall and height of athlete measured after that players maximum extend his arm above head with walls and we mark that point after athlete try to jump maximum against wall and the distance from zero point to maximum point is measured in centimeters (CM) and noted on question form.

Similarly T agility test is perform to check the agility of footballers before allocation in international and control group to check agility of footballers in which four cones are placed at some distance vertical cone distance was 10 meter and three other cones place at 5 meter in form of T shape. The starting and finishing point are same in which footballers run forward sideway and backward and time duration of running were noted and write on question form.

Research Ethics:

Every procedure was completed in compliance with all applicable rules and regulations, including the Helsinki Declaration. The study was approved by the Riphah international university Ethical Review Board. The participants were made aware of the objectives, risks, and advantages of the study and gave their informed consent thereafter. Participants received the guarantee that their participation was completely voluntary and that they could withdraw at any time, for any reason. The anonymity and confidentiality of participants were maintained, and only aggregated data were utilized.

Results

During the trail, pateints were selected randomly and allocated into two groups. Non parametrics tests were performed as the data was not normally distributed for power. And parametric test is used to check flexibility and agility.Within the group comparison was done by using wilcoxan signed rank test for power and paired T test for flexibility and agility and its showed significant result in flexibility power and agility in both groups. p-value 0.000 for flexibility, 0.001 for power and 0.000 for agility. Between group comparison was made by using Mann-Whitney U test its showed significant changes in FIFA11+ and warmup execise among power with p value 0.331. and independent T test is used for between comparison of flexibility and agility and p value for flexibility and agility is p-0.86 and 0.38 respectively.

Between group comparison of flexibility

Table 5: Independent sample t test was applied to compare the improvement in flexibility between groups. Mean of difference of pretest-posttest flexibility measurement in Group A was 15.9±3.91 and in Group B was 21.9±.3.8, showing that there was statistically significant difference in improvement of both groups (P-value<0.05) and interventions of Group A (FIFA11+) are better in improving flexibility as compared to control in group B (warmup)

Between group comparison of power

oups	Pre-treatment mean ± SD	Post-treatment mean ± SD	Mean ranks pre-treatment	Mean ranks post-treatment	**P value**
	47.11 ± 7.35	51.27 ± 5.10	19.43	21.36	
	48.80 ± 6.37	49.5 ± 5.83	19.58	17.83	0.331

Table 6: Shows between group comparison in which pre and post mean± S.D score of power among group A (FIFA11+) and group B (warmup exercise) were mentioned. Mann Whitney U test is used to analysis

Volume 3, Issue 10, 2025

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

Between group comparison of agility

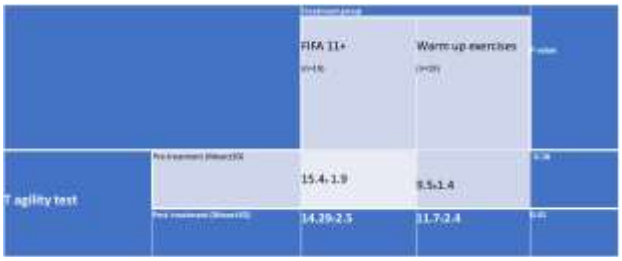

Table 7: Independent sample t test was applied to compare the improvement in agility between groups. Mean of difference of pretest-posttest agility measurement in Group A was 15.44±1.91and in Group B was 14.29±2.56, showing that there was statistically significant difference in improvement of both groups (P-value<0.05) and interventions of Group A (FIFA11+) are better in improving agility as compared to control in group B (warmup).

Within group comparison of flexibility outcome before and after Treatment

oup		Paired Differences		p-value
		Mean	Std. deviation	
(n=19)	flexibility pre-treatment– post treatment	-6	2.9	.000
(n=19)		-24	1.6	.000

Table 8: Within group comparison using paired sample t-test showed that the Mean difference in pre-treatment and post treatment readings on berg balance scale was -6±2.9 for Group A and -24±1.6 for Group B, these differences were statistically significant for both the groups (p-value <0.05)

Within group comparison of power outcome before and after Treatment

Groups	Pre-treatment mean ± SD	Post-treatment mean ± SD	Mean difference	P value
A	47.11 ± 7.35	51.27 ± 5.10	-4.16	
B	48.80 ± 6.37	49.5 ± 5.85	-0.7	0.001

Table 9: Within group comparison using Wilcoxon signed ranked test showed that the Mean difference in pre-treatment and post treatment readings on berg balance scale was 47.11±7.35 for Group A and 48.80±6.37 for Group B, these differences were statistically significant for both the groups (p-value <0.05).

Within group comparison of agility outcome before and after Treatment

Study group		Paired difference		
		Mean	Std. deviation	P-value
FIFA11+ Group A (n=19)	flexibility pre-treatment– post treatment	5.9	2.20	.000
Warmup Group B (n=19)		2.54	2.24	.000

Table 10: Within group comparison using paired sample t-test showed that the Mean difference in pre-treatment and post treatment readings on berg balance scale was 5.9±2.20 for Group A and -2.54±2.24 for Group B, these differences were statistically significant for both the groups (p-value <0.05).

Study limitations:

The limitations of the study are the short time available to investigate the effects of the FIFA11+ program (6 weeks), and the absence of follow-up. The generalization of the results onto girls is also a limitation because the study only included boys, participate due to lack of information and knowledge. thus, it is not known whether it is applicable in girls. Also a lack of randomization could have contributed to bias effects, therefore, future studies should randomize participants to overcome bias. Also footballs players are not interested or reluctant to

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

Study Implication

The strength of the present study is that it demonstrated the plausible effects and suitability of the FIFA 11+ warm-up program in male young footballers. Thus, the FIFA 11+ warm-up program can be implemented in the training sessions of young boys. This study supports previous findings that traditional warm-up programs could be replaced with FIFA11+ in male youth soccer players based on its superior effects on physical performance. This warm-up program also does not require specific equipment, supports the performance development of young football players, and accordingly significantly contributes to the reduction in the injury risk. Moreover, future studies should investigate the effects of the FIFA 11+ program with a longer duration on several physical performance variables using randomized control trial designs

Conclusion

The main findings of this study suggest that just 6 weeks of implementation of the FIFA 11+warm-up program improves physical performance compared with traditional warm-up routines in male football players. Therefore, the FIFA 11 + program can be considered appropriate for male footballers, as it seems to be adequate for inducing significant performance enhancements in male football players. Moreover, given the improvements in flexibility power and agility our study would advocate the introduction of these essential movement competency skills in football players. So due to evidence-based health benefits of the FIFA 11+ warm-up program, its primary target population could be expanded to recreational footballers and youth players, while aiming to improve public health.

Conflict of Interest: No potential conflict of interest relevant to this article was reported.

REFERENCES

1. Owoeye OB, Akinbo SR, Tella BA, Olawale OA. Efficacy of the FIFA 11+ warm-up programme in male youth football: a cluster randomised controlled trial. Journal of sports science & medicine. 2014;13(2):321.
2. Fernandes AdA, Silva CDd, Costa ITd, Marins JCB. The "FIFA 11+" warm-up programme for preventing injuries in soccer players: a systematic review. Fisioterapia em Movimento. 2015;28(2):397-405.
3. Cloak R, Nevill A, Smith J, Wyon M. The acute effects of vibration stimulus following FIFA 11+ on agility and reactive strength in collegiate soccer players. Journal of Sport and Health Science. 2014;3(4):293-8.
4. Ghareeb DM, McLaine AJ, Wojcik JR, Boyd JM. Effects of two warm-up programs on balance and isokinetic strength in male high school soccer players. The Journal of Strength & Conditioning Research. 2017;31(2):372-9.
5. Oliano VJ, Teixeira LP, Lara S, Balk RdS, Fagundes SG. Effect of FIFA 11+ in addition to conventional handball training on balance and isokinetic strength. Revista Brasileira de Cineantropometria & Desempenho Humano. 2017;19(4):406-15.
6. Oshima T, Nakase J, Inaki A, Mochizuki T, Takata Y, Shimozaki K, et al. Comparison of muscle activity, strength, and balance, before and after a 6-month training using the FIFA11+ program (part 2). Journal of Orthopaedic Surgery. 2019;28(1):2309499019891541.
7. Parsons JL, Carswell J, Nwoba IM, Stenberg H. Athlete perceptions and physical performance effects of the fifa 11+ program in 9-11 year-old female soccer players: a cluster randomized trial. International journal of sports physical therapy. 2019;14(5):740.
8. Daneshjoo A, Mokhtar AH, Rahnama N, Yusof A. Effects of the 11+ and Harmoknee warm-up programs on physical performance measures in professional soccer players. Journal of sports science & medicine. 2013;12(3):489.