



Research Article

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Effect of FIFA 11+ Warm-Up Programs on Agility and Speed in College Male Football Players

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Abstract: Football players performance is mostly determined by their speed and agility, which have a direct impact on game results. The FIFA 11+ warmup program, developed by the Fédération Internationale de Football Association (FIFA), is designed to achieve these goals through a structured series of exercises. This study aims to evaluate the effect of the FIFA 11+ warmup program on performance enhancements in speed and agility among college male football players. A total of 30 male collegiate football players age between 18 to 25 years was participated in this 12-week randomized controlled trial. Participants were divided into an experimental group (n=15) performing the FIFA 11+ program and a control group (n=15) following traditional warm-up routines. Agility was assessed using the Illinois Agility Test, and speed was evaluated through 50m sprint times, measured pre- and post-intervention. Paired t-tests were conducted to analyze intra- and inter-group differences. The FIFA 11+ group demonstrated significant improvements in agility, with a reduction in Illinois Agility Test times (pre: 16.1 ± 0.27 s; post: 15.1 ± 0.16 s, $p < 0.05$). Speed times also improved in the intervention group (50m: pre: 8.0 ± 0.15 s; post: 7.1 ± 0.08 s, $p < 0.05$). In contrast, the control group showed minimal or no improvements across all measures. The FIFA 11+ warm-up program significantly enhances agility and speed in collegiate football players, supporting its dual role in injury prevention and performance enhancement. Coaches are encouraged to adopt this evidence-based protocol to optimize player performance.

Keywords: FIFA 11+ warmup programme, football players, speed, agility

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INTRODUCTION

Football is a very hard sport that requires a high level of technical talent, tactical awareness, and physical conditioning. The game's fundamental elements—such as quick sprints, sudden direction changes, and frequent physical contact—inherently increase the chance of participant injuries (Ekstrand *et al.*, 2011). According to recent statistics, football-related injuries can result in extended periods of inactivity and a subsequent drop in performance, which can negatively affect both individual athletes and team results (Ekstrand, 2020). Football players frequently sustain sprains, sprains, and rips to their muscles, especially in the lower extremities, including the hamstrings and anterior cruciate ligament (ACL) (Waldén *et al.*, 2016). In addition to affecting athletic performance, these injuries need extended recuperation times, which can affect a player's career length and the effectiveness of the team as a whole (van Beijsterveldt *et al.*, 2013). Football's high-intensity physical demands, fast directional shifts, and frequent player collisions cause injuries. Muscle imbalances, poor neuromuscular control, and poor warmups increase injury risk (Silvers-Granelli *et al.*, 2015).

FIFA created the FIFA 11+ injury prevention initiative to address the demand for better injury mitigation measures. This program is divided into three parts: slow-paced running with active stretching and regulated physical interactions; strength, plyometric, and balancing workouts; and high-speed running with directional changes. The FIFA 11+ injury prevention

program improves players' talents, boosting their performance (Impellizzeri FM, Bizzini M, Di Marzo S, Giovannelli M, 2006). Speed helps players overtake opponents and reach the ball faster, while agility helps them dribble, defend, and avoid tackles (Little & Williams, 2005). According to (Mandelbaum BR, Silvers HJ, Watanabe DS, Knarr JF, 2005), neuromuscular training, a key part of FIFA 11+ injury prevention, improves football players' agility and sprint performance.

Evidence shows that the FIFA 11+ injury prevention program reduces injuries and improves performance metrics including speed, balance, and agility. Teams using FIFA 11+ injury prevention had much lower injury rates than those using standard warm-ups (Silvers-Granelli *et al.*, 2015). The FIFA 11+ injury prevention workouts are planned and methodical, improving players' physical talents and reducing injury risk. The FIFA 11+ injury prevention programme has regularly improved sprint timings and agility test results (Steffen *et al.*, 2008, 2013).

Studies show that FIFA 11+ injury prevention improves strength, balance, and neuromuscular control, boosting athletic performance. The FIFA 11+ injury prevention program improved sprinting and change-of-direction speed in youth football players (Pomares-Noguera *et al.*, 2018). Neuromuscular control and balance exercises improve agility and response speeds, which are crucial for high-level football (Ayala *et al.*, 2017).

The FIFA 11+ injury prevention program appeals to coaches and players due to its simplicity. FIFA 11+ injury prevention may be done with little equipment and infrastructure, making it accessible to teams of all levels (Owoeye *et al.*, 2014). This accessibility allows more athletes to benefit from the program's preventative and performance-enhancing effects. The FIFA 11+ injury prevention program also builds player mental toughness. Regular program involvement builds discipline and mental readiness, crucial for competitive athletics. Balancing and proprioceptive exercises boost players' confidence, minimising the risk of re-injury and boosting forceful play (Owoeye *et al.*, 2014).

The purpose of this study is to assess how FIFA 11+ warmup programs affect the physical characteristics of male collegiate football players. Through a thorough examination of these factors, the study aims to provide evidence-based suggestions for football training methods that maximise player performance. This research will add to the continuing discussion on football performance optimisation by examining the wider ramifications of incorporating the FIFA 11+ program into routine training schedules.

METHODOLOGY

Participants

Thirty male football players from St. Thomas College Thrissur in the area of Thrissur District Kerala, India, ages 18 to 25, participated in a randomised controlled experiment.

The experimental group (n = 15) and the control group (n = 15) were assigned at random to the participants.

Study Design & Intervention

A randomised controlled trial design was utilised to assess the impact of the FIFA 11+ warm-up program on the specified dependent variables. Participants were randomly assigned to two groups to guarantee an impartial comparison and dependable outcomes. The intervention spanned 12 weeks, comprising sessions held 5 days per week, each lasting 60 to 90 minutes. The experimental group engaged in the FIFA 11+ warm-up program, comprising running exercises, strength training, plyometrics, and balance exercises. The structure of each session was as follows: FIFA 11+ warm-up (20-25 minutes) comprising football training sessions (25-90 minutes). The control group maintained their usual warm-up and football training practices without any further intervention.

Assessment Protocol for Criterion Variables

The selection criteria mandated that all players were actively involved in regular football training and had no recent history of substantial injuries. The independent variable was participation in the FIFA 11+ warm-up program, while the dependent variables were speed and agility, and the criterion variable was the injury rates documented during the study period.

Speed was assessed by the 50-meter dash, in which individuals ran from a stationary position to the finish line as rapidly as possible, with time recorded with a stopwatch. Agility was evaluated by the Illinois agility test, in which subjects traversed a predetermined course with straight sprints, acute turns, and directional shifts, with the completion time recorded.

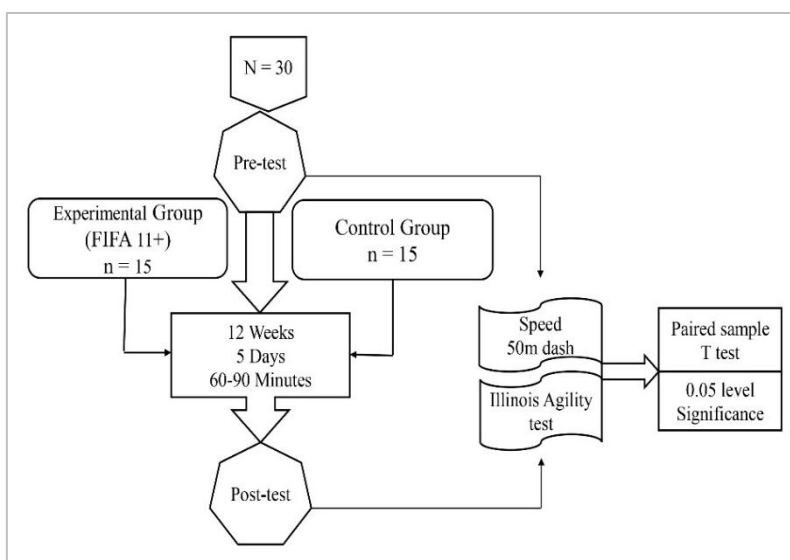


Figure 1: The flowchart delineates the study process.

Statistical Tools

Data analysis was done by SPSS Trial Version software. Descriptive statistics were computed to encapsulate the data for each category. A paired sample t-test was applied to compare pre-test and post-test scores

within each group to evaluate the significance of changes in speed and agility. The statistical studies facilitated the assessment of the FIFA 11+ warm-up program's efficacy in enhancing speed and agility among football players.

RESULTS

The study evaluated the effects of the FIFA 11+ Injury Prevention Programme on physical characteristics (speed and agility) in football players by contrasting pre-test and post-test data. Figure 1 illustrates the mean and standard deviation (SD) values for the pre-test and post-test. In the experimental group, the mean speed (Figure 1) enhanced from 8.0 seconds (SD = 0.15) to 7.1 seconds (SD = 0.08), but the control group's speed stayed largely unchanged, fluctuating from 7.9 seconds (SD = 0.13) to 7.9 seconds (SD = 0.11). Agility in the experimental group enhanced from 16.1 seconds (SD = 0.27) to 15.1 seconds (SD = 0.16), but the control group exhibited no

significant alteration, remaining at 16.0 seconds (SD = 0.38 to SD = 0.34). A paired sample t-test was performed to assess the statistical significance of the changes within each group.

In terms of speed (Table 1), the FIFA 11+ group shown a substantial enhancement with a t-value of 17.290 (df = 14, p < 0.001), whereas the control group did not show a significant alteration (t = 0.163, df = 14, p = 0.872). The FIFA 11+ group shown substantial enhancement in agility (Table 1), with a t-value of 11.795 (df= 14, p< 0.001), whereas the control group revealed no significant change (t= 0.638, df= 14, p= 0.534).

Variable	Group	T	DF	P Value
Speed	FIFA 11+ Group	17.290	14	.000
	Control Group	0.163	14	.872
Agility	FIFA 11+ Group	11.795	14	.000
	Control Group	0.638	14	.534

Table 1: Paired sample t test t ratio and p value

DISCUSSION AND CONCLUSION

The study findings demonstrate that the FIFA 11+ warm-up program markedly enhances speed and agility in football players within the experimental group relative to the control group. These findings corroborate the increasing evidence that systematic warm-up routines enhance athletic performance and mitigate injury risk.

The significant enhancement in speed found in the experimental group can be ascribed to various elements intrinsic to the FIFA 11+ program. This program encompasses dynamic stretching, weight training, and agility drills, all facilitating neuromuscular changes.

Dynamic stretching improves muscle flexibility and joint range of motion, whereas strength workouts boost muscular power and coordination. Agility drills enhance motor abilities and reaction times, crucial for swift movements on the pitch. Research validates these conclusions. (Soligard *et al.*, 2008) reported significant enhancements in sprint performance among football players who engaged in the FIFA 11+ programme. A study conducted by (Bizzini & Dvorak, 2015) revealed that participants in the FIFA 11+ program exhibited substantial increases in sprint speed, which were ascribed to improved neuromuscular control and muscle strength.

The experimental group demonstrated a notable improvement in agility, essential for football players who need rapid directional shifts and precise turns during games. The agility workouts featured in the FIFA 11+ program, including quick feet drills and ladder drills, aim to enhance coordination, balance, and proprioception. These workouts activate the neurological system and enhance the capacity to execute intricate actions swiftly and effectively. The findings of the study corroborate earlier research by (Daneshjoo *et al.*, 2012), which

evidenced substantial enhancements in agility among football players subsequent to the FIFA 11+ program. Furthermore, study conducted by (Steffen *et al.*, 2013) emphasised that the program's focus on balance and proprioceptive training improves agility performance by augmenting athletes' capacity to maintain control during dynamic movements.

The processes responsible for the observed enhancements can be (Soligard *et al.*, 2008) further clarified by examining the program's diverse approach. Neuromuscular stimulation via the FIFA 11+ workouts enhances the efficacy of muscle recruitment and synchronisation during high-intensity activities. Incorporating strength workouts throughout the program boosts muscular power, facilitating quicker acceleration and superior sprint performance. Agility training enhance motor abilities, coordination, and the capacity to execute intricate actions rapidly, resulting in improved on-field performance. Minimising injury risk with preventative exercises enables players to practice and compete regularly, resulting in ongoing performance enhancements.

A multitude of investigations corroborate the conclusions of this research. (Soligard *et al.*, 2008) established that the FIFA 11+ program markedly diminishes injury risk and improves total athletic performance, encompassing speed and agility. (Impellizzeri *et al.*, 2013) shown substantial enhancements in sprint velocity and agility in participants of the FIFA 11+ program, attributing these benefits to superior neuromuscular control and muscular strength. (Daneshjoo *et al.*, 2012) showed substantial improvements in agility and speed subsequent to the FIFA 11+ program, underscoring the program's efficacy in enhancing athletic performance. (Steffen *et al.*, 2013) emphasised the beneficial effects of the FIFA 11+

program on balance, proprioception, and agility, corroborating the findings of the present study.

In conclusion, the FIFA 11+ warm-up program has demonstrated a substantial enhancement in speed and agility among football players. The enhancements can be ascribed to the program's holistic methodology, encompassing dynamic stretching, strength training, and agility activities. The findings are corroborated by other studies, validating the program's efficacy in improving athletic performance. Implementing planned warm-up routines is essential for enhancing performance.

RECOMMENDATION

It is advised that football teams and coaches incorporate the FIFA 11+ warm-up program into their standard training regimens. The consistent implementation of the program over a prolonged duration is essential for attaining enduring enhancements. Coaches and trainers must have adequate information and training to implement exercises effectively, so ensuring their efficacy and reducing injury risks. Subsequent studies could investigate the program's effects on additional physical factors and diverse athlete demographics, yielding more thorough insights into its enduring advantages. It is advisable to tailor the exercises to accommodate individual player requirements and fitness levels for optimal outcomes. Moreover, integrating the FIFA 11+ program with supplementary training and conditioning regimens can provide a comprehensive strategy for athlete development, hence improving overall performance and health. By implementing this advice, football teams can utilise the advantages of the FIFA 11+ program to enhance performance outcomes on the pitch.

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