Investigating the present procedure in return to play after injury in athletes of football primary league in Iran

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Abstract: For many injured athletes, a safe and successful return to play following injury is the ultimate aim of injury recovery. The aim of this study is to investigate the present procedure in return to play after injury in athletes of football primary league in Iran. The participants in the present study were trainers, coaches, physicians, and Physiotherapists of football primary leagues in 2010-2011. 53 persons (73%) responded the sent questionnaire. To achieve the aim of the research Beardmore (2005) questionnaire was used based on: the decision about the time a person can return to the competition. The results of this study show that full recovery was not always deemed necessary before a player returned to training and competition, and set procedures were not always communicated or followed. Despite the high profile given to 'fitness testing', this element did not rank highly as return to play criteria.
[Elahe Azadian, Mahdi Majlesi, Lotfollah Karimi. **Investigating the present procedure in return to play after injury in athletes of football primary league in Iran.** *Academ Arena* 2017;9(2):62-66]. ISSN 1553-992X (print); ISSN 2158-771X (online). http://www.sciencepub.net/academia. 5. doi:10.7537/marsaaj090217.05.

Key words: Injury, Football primary league, Decision-making

1. Introduction

Sport participation as a form of exercise is considered essential for promoting physical activity and health, and is advocated as a preventative measure for many illnesses (Finch, Owen, & Price, 2001). While encouraging participation in sport or physical activity is considered important, increased participation also increases the incidence of sports-related injury (Waller, Feehan, Marshall, & Chalmers, 1994). Considering injury or disability reported as a barrier to participation (Finch et al., 2001), it is vital to conduct regular epidemiological studies in order to assess causal links between risk factors and injuries, and to decide on therapeutic and preventive interventions (Brooks, Fuller, Kemp, & Reddin, 2006).

The athletes, coaches, and directors of competitive sports have attracted the attention of a lot of mass media and audience. The success or failure of a team depends on the health and injury of its key players respectively (Beardmore et al., 2005). In Iran sports like football, wrestling, basketball, etc. are important, but football has attracted more audience.

According to Orchard and Seward (2002) an injury is defined as "any physical or medical condition that causes a player to miss a match in the regular season". The match injuries for games have been 2.7 - 25.7 per 1000 playing hours (Dvorák, 2009).

The injuries vary based on kinds and levels of performance of sport and intensity of contact in sport. Based on the study conducted by Orchard (2001) on 83,503 subjects in the Australian Football League, the strongest risk factor for a recent injury has been the previous one.

One of the concerns about the sport injuries, apart from the athlete's health, is the high cost of treatment to heal and return to play. In the study by Dvorák (2009), considering the average medical cost per case (US$150), it was estimated that US$30 billion were spent annually on the primary care of football-related injuries. It was hypothesized that a reduction of injuries by just 10% could lead to a significant worldwide reduction in social and economic costs. The logical consequence was to focus F-MARC's research activities on prevention. The aim of this study is to investigate the present procedure in return to play after injury in athletes of football primary league in Iran, the contents of the tests performed on the team to permit the athletes to take part in the games after injury as well as determine the role of the participants in permitting the athletes to go back to sport arena.

Nowadays attention and interest in participating sports have increased and the number of participants in exercise amounts every year (Leslie & Robert. 2007). Soccer is the most commonly played sport in the world, with an estimated 265 million active soccer players participating in it around the world in 2006. The international popularity continues to rise as indicated by the 23 million increase in active soccer players compared to 8 years ago. Despite the predominance of male players (90%), the current trends suggest that the continued rise in participation is mainly on the part of females, who choose to

participate in soccer (Alentorn-Geli et-al., 2009; FIFA, 2008; Delfico & Garrett, 1998).

Previous studies on football players have reported a high rate of recurrent hamstring strains, groin strains, as well as knee and ankle sprains (Ha¨gglund et al., 2009). In the present study, similar strain or sprain was also found to be a strong predictor for a new injury. Injuries in the lower legs, ankles, and feet are the most common injuries in football. The most common types of injuries were muscle strains (29%), ligament sprains (22%), contusions (20%), and other injuries (29%) (Árnason et al., 1996).

Those associated with the care of the athletes are required to know the nature and severity of the injury and be familiar with treatment and rehabilitation. Therefore, preventive or reductive contrivances concerning the effect of injuries in contact sports are very important.

The media frequently reports that an athlete's impending participation is contingent on the athlete's passing a 'fitness test'. These tests of course have less to do with an athlete's physiological status, and more to do with their ability to participate games or competitions following illness or injury, but they do imply some form of pass/fail assessment. The panel contends that the team physician should establish and direct the return to play process. Evaluations for return to play should seek to confirm anatomical and functional healing, recovery from acute illness, and its sequelae, or the status of chronic injury or illness (Beardmore et al., 2005). Many studies have been conducted regarding the prevalence of injuries in various sports, especially Soccer (e.g. Giannottia et al., 2010; Ekstrand, 2008; Cory, 2009; Majewski et al., 2006; Melissa, 2007) and rehabilitation return to play after injury (Giulio, 2010; Stracciolini et al., 2007). But a few researches are available regarding the procedures to return to competition after injury. The aims of this study are to determine the type and content of fitness test, describe the current situation regarding the decision-making, and procedures for return to play after injuries in athletes of football primary league in Iran. The research questions are:

- What are the decision-making criteria for return to play after injury?
- Who are involved in decision-making for return to play after injury?
- What is the content of fitness test used to assess readiness to return to play?

2. Material and Methods

The sample subjects in this study consisted of coaches, physicians, physiotherapists, and trainers who dealt with athletes of football primary league in Iran in 2010-2011. In order to gather the necessary data and information the questionnaire of Beardmore (2005), based on deciding about the time when a person can return to the competition, was used.

Participants were asked to complete and return an 11-item questionnaire. Key themes addressed in the questionnaire were:

1) the degree of recovery deemed necessary to resume full involvement in competition,

2) procedures undertaken to evaluate player fitness after injury,

3) the nature of specific fitness tests used to assess readiness to return to play,

4) determinants of success or failure on the prescribed tests, and

5) the roles and weighted responsibilities of the medical and coaching personnel involved with the return to play evaluation process.

Questionnaires were coded as to the roles (coaches, trainers, physicians, physiotherapists) of the participants. Participants were asked to provide responses to nine questions using a five-point Likert scale (Likert, Roslow, Murphy, & Hakel, 1993). For three of these questions, participants made multiple selections from extended lists, again using the five-point Likert scale.

Depending on the question a rating of '1' typically indicated low importance or a low frequency of use, and a rating of '5' indicated high level importance or use. Based on the low frequency of responses selecting either 1 or 2, these two selections were combined for subsequent analysis (i.e. a rarely/never category).

Seventy-two questionnaires were distributed among 18 teams. Of the 72 individuals approached, 53 responded, providing a response rate of 73%. The number of responses from the various roles within participants are presented in Table 1.

Table 1: Respondents and their roles in teams

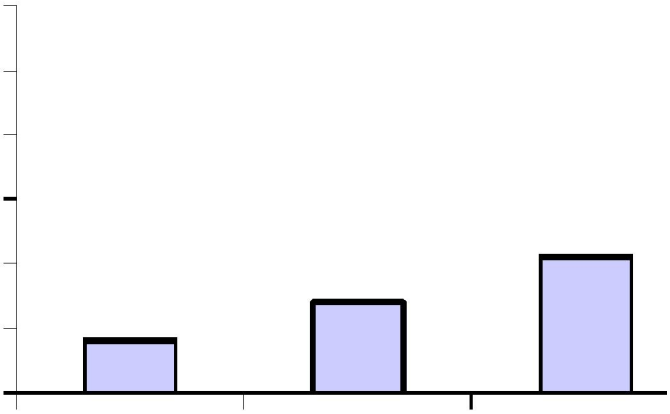
Role	*Frequency*
Coach	12
Trainer	13
physicians	15
Physiotherapist	13
Total	53

To assess the reliability of questionnaire Cronbach's alpha was used. So the questionnaires were distributed, in a pilot study, among a number of samples. The resulting alpha coefficient value for the questionnaire was 0.82.

3. Results

The results of this study show that full recovery was not always considered essential before a player returned to competition. Only 16% of team personnel believed that this was always the case. Only 37% of

teams surveyed, routinely used fitness testing (Fig. 1) as part of their procedures for determining a player's readiness to return to play. Also 76 % of team personnel believed that standardized or set testing procedures should be used.



The most important criteria to evaluate the health of players after injury were the team chiropractor, a medical examination, and certification in activity, ability to participate in heavy exercise and contact, and the ability to complete readiness test.

The most important tests used to evaluate the ability of injured athletes to return to competition were the ability to perform specific training and tests especially related to injury. The rankings of these tests are presented in Table 2.

Table 2: Prioritize tests was used by teams

Test elements	*Overall ranking by participants*
Ability to complete position specific drills	1
Injury-specific test	2
Jumping/hopping tests	3
Agility speed tests	4
Sprint tests (acceleration/deceleration)	5
Walk/jog/run patterns	6
Return drills	7
Lifting drills	8
Stair drills	9
Push up drills	10
3 km run	11

Person's role in decision-making for return to play in injured athletes were evaluated using some questions shown in Table 3. Physicians and physiotherapists had important role as executor and evaluator in the procedures of returning to competition. But the coach and the trainer had a less role in this process. It was also noted that within a team, there was not always close agreement as to roles that individual personnel played in the decision-making process.

Table 3: Team personnel involved in fitness testing procedures

	Administer	*Observe*	*Assess*
Coach	1	2	3
Trainer	1	3	2
Physician	4	3	3
Physiotherapist	3	1	3

4. Discussions

The results of this research show that physicians and physiotherapists were ranked first and second, respectively, to be the most important criteria for deciding readiness for a return to play. Our findings are in agreement with those of Beardmore et al. (2005) who obtained the same results in New Zealand rugby union.

Medical practitioners and physiotherapists tend to dominate support teams, and while well-trained on the clinical aspects of injury assessment and treatment, they often lacked a depth of understanding of the functional requirements of the sport. Personnels with comprehensive knowledge of the biomechanical and physiological demands of football, and methods for progressively introducing these stresses to injured structures could fulfill the work of physicians and physiotherapists.

Despite the fact that the results of projects implied that return to play decisions should be based on fitness test (ACSM, 2002), the major finding from the present study was that the athletes do not participate in fitness test before return to play. In fact the fitness test ranked only fourth in terms of the suggested criteria for return to play. The most important criteria for decision-making for return to play were clinical test and physicians and physiotherapist's opinions. In the present study, the importance of the player for the team ranked as lowest criterion for deciding about readiness for a return to play.

Although decision-making regarding return to play based on a specific procedure has been recommended, the important findings of this study are: 24% of the teams followed an irregular procedure and 40% of teams used fitness test as the priority of players health assessment. Also compared questionnaire responses between the different teams indicated that there are differences in decision-making processes in return to play and there was not always close agreement as to roles that individual personnel played in the decision-making process.

Performing exercises specific to a sport and light exercises that focus more on tactics and team work are more important than test elements and the tests of injured limb and the exercises related to it.

The standard set by the ACSM and results of studies of Ziegler (2010) showed that the types of criteria for return to competition are the status of anatomical and functional healing, athlete's psychological readiness to return to competition, no fear of return to sport(because unrealistic fear could exacerbate an injury), ability to perform safely with equipment modification, bracing, and orthoses. Return also includes specific skills of sport such as range of motion, strength, power and functional performance. The athlete could perform the functions necessary for his sport and do it well. Simple tests can be designed by breaking down the skills necessary to be performed by the athletes in their specific position and having the athletes perform the skills beginning at 50% intensity and gradually increasing to full speed. Differences in health assessments in return to play in football primary league and the standard procedure are visible.

This study, on the Iranian Premier League football teams, showed that there is not a fixed and standard procedure for return to play. Also the role and duty of individuals in the team, and the amount of skill and their professionalism might influence the criteria of return to play. Another finding of this study was that full recovery was not always necessary before player be able to return to play.

Despite efforts to standardize the assessment methods for return to play after injury, high rate of reinjuries is indicative of weakness and problems in evaluations (Falsone et al., 2002; Laskowski et al., 1997). Reports have shown that fitness tests should be more associated with athlete's physiological status and is not limited to the implementation of specific exercises (ACSM, 2002; Giulio, 2010).

Also fitness test has several major problems that may not be attractive to members of the team management. Examples are difficulty in finding a test that is harmonized with functional demands of exercise, the problem of standardization of testing procedures, and low reliability of test.

Overall findings of this research indicate that in the Iranian Premier League football teams there is no a fixed and standard procedure for return to play and the teams don't use fitness tests for evaluation of players health. Similarly, in the process of injured athlete's returning to competition, the opinions of medical board are considered crucial and, thus, incomplete recovery and quick return to the exercises play an important role in being reinjured in football.

This study, like the others, suffers its own limitation. The responses given to the items of the questionnaire may not be as accurate as possible. Moreover, all the questionnaires distributed were not returned back. Since the study lacked the opinions of the athletes, it is recommended to include their opinion in the future studies.

Acknowledgement:

Special thanks to Dr. Phil Handcock because of her guidance.

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2/25/2017