



Level of Understanding of First Aid for Injuries in Futsal Players, Faculty of Sports and Health Sciences, Yogyakarta State University.

*Tingkat Pemahaman Penanganan Pertama Cedera pada Pemain Futsal Fakultas Ilmu
Keolahragaan dan Kesehatan Universitas Negeri Yogyakarta.*

Original Article

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Abstract.

Background	Futsal is a high-intensity sport that is prone to injury. However, the level of players' understanding of first aid for on-field injuries has not been widely studied, particularly among students in the field of sports science.
Objectives	This study aims to determine the level of understanding of first aid for on-field injuries among futsal players of the Faculty of Sports Science and Health, Yogyakarta State University, covering the dimensions of knowledge, attitude, and skills.
Methods	This study used a descriptive quantitative method with a survey approach involving 21 members of the Futsal Student Activity Unit, who were selected through total sampling. The instrument was a 20-item questionnaire with a four-point Likert scale.
Results	The results show that the players' level of understanding was in the moderate category (42.9%), followed by poor (33.3%), good (19.0%), and very good (4.8%). The overall mean score was 41.90 out of a maximum score of 80 (52.4%). The knowledge dimension obtained the lowest mean (1.80), followed by skills (2.08) and attitude (2.33).
Conclusion	The conclusion of this study is that the level of understanding of first aid for on-field injuries among futsal players of the Faculty of Sports Science and Health, Yogyakarta State University, is classified as moderate, but still requires improvement in the aspects of knowledge and technical skills through structured first-aid socialisation and training.

Keywords: Futsal, level of understanding, injury management, first aid

Received: July 20, 2026. Accepted: August 22, 2026

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INTRODUCTION

Futsal is one of the team sports that continues to experience an increase in popularity in Indonesia, including within the higher education environment. The dynamic characteristics of the game, combined with limited court dimensions, force players to perform rapid acceleration, sudden changes of direction, and intense physical contact within a relatively short match duration [3,15]. These conditions inherently place futsal players at significant risk of musculoskeletal injury, ranging from ankle sprains, knee injuries, and muscle cramps, to head impacts.

The phenomenon of the high incidence of injury in futsal has become a serious concern within the field of sports science. Research on futsal athletes at GSG UIN Walisongo found that the athletes' level of knowledge regarding sports injuries was still in a category requiring particular attention [15]. This condition is worsened by the limited understanding of structured warm-up (*warming up*) and cool-down (*cooling down*) protocols, even though both are directly correlated with a reduction in the incidence of on-field injury [16]. Other research has also identified various factors that hinder the

examination and rehabilitation of injuries in futsal athletes, one of which is limited knowledge related to injury management [1].

When an injury occurs on the field, the speed and accuracy of the first-aid response become the main determinants of the recovery prognosis. The clinically recognised gold-standard method for managing acute injury is R.I.C.E (*Rest, Ice, Compression, Elevation*), which was subsequently developed into P.R.I.C.E.S (*Protection, Rest, Ice, Compression, Elevation, Support*). The appropriate implementation of this method within the first 24-48 hours after injury has been proven capable of minimising swelling, reducing pain, and accelerating the tissue healing process [4,9,10]. However, research shows that practical understanding of the R.I.C.E method is still uneven, so that counterproductive management practices are often encountered, such as direct massage of the acute injury area or the use of hot balm, which may in fact worsen inflammation [1,10].

Efforts to improve this understanding can be made through structured education. Health education has been proven to exert a significant influence on improving first-aid knowledge and skills using the PRICES method, while training in the PRICE technique has also been shown capable of improving sports injury management ability among athletes [4,9,13].

Within the Faculty of Sports Science and Health, Yogyakarta State University, the futsal team is one of the active student activity units, with a relatively high intensity of training and competition. As students who mostly study in the field of sports science, they should theoretically possess a better foundation of understanding regarding injury management. However, no empirical study has specifically measured the level of understanding of first aid for on-field injuries among futsal players of the Faculty of Sports Science and Health, Yogyakarta State University. This information gap forms the basis of the urgency of this study.

Based on the background described above, this study aims to describe the level of understanding of first aid for on-field injuries among futsal players of the Faculty of Sports Science and Health, Yogyakarta State University, covering the dimensions of knowledge, attitude, and skills. The research results are expected to serve as a basis for the evaluation and recommendation of first-aid training programmes for the futsal team of the Faculty of Sports Science and Health, Yogyakarta State University.

METHOD

Type and Design of the Research

This study used a quantitative method with a descriptive survey approach. This approach was selected because it is able to provide an objective picture of the level of knowledge of members of the Futsal Student Activity Unit of the Faculty of Sports Science and Health, Yogyakarta State University, regarding first aid for on-field injuries, based on data obtained from respondents. The quantitative method was also selected because the data obtained are measurable, so that they can be analysed statistically in order to determine the respondents' level of knowledge in accordance with the research objectives.

Time and Place of the Research

Sampling and questionnaire distribution were carried out in mid-June 2026 among members of the Futsal Student Activity Unit of the Faculty of Sports Science and Health, Yogyakarta State University.

Population

The population in this study consisted of all active students who were registered as members of the Futsal Student Activity Unit of the Faculty of Sports Science and Health, Yogyakarta State University.

Sample

The research sample comprised 21 respondents, representing the entire population (total sampling). Sampling was carried out using a purposive sampling technique, that is, a sampling technique based on particular considerations or criteria. The criterion used in this study was that students were still active as members of the Futsal Student Activity Unit at the time the research was conducted.

Research Instrument

The research instrument was arranged in the form of a questionnaire using a four-point Likert scale with the alternative answers Very Confident (VC), Confident (C), Less Confident (LC), and Not Confident (NC). Scoring for each statement was carried out according to the following provisions: Very Confident (VC) = 4, Confident (C) = 3, Less Confident (LC) = 2, and Not Confident (NC) = 1. This instrument consisted of 20 statement items covering three dimensions, namely knowledge (5 items), attitude (7 items), and skills (8 items), which were used to measure the level of understanding of Futsal Student Activity Unit members regarding first aid for on-field injuries.

RESULTS AND DISCUSSION

Respondent Characteristics

This study involved 21 futsal players from the Faculty of Sports Science and Health, Yogyakarta State University, as respondents. All of these respondents had met the criteria that had been established, and were therefore considered able to provide information consistent with the research objectives. The complete characteristics of the respondents are presented in Table 1 below.

Table 1. Characteristics of the Research Respondents (n = 21)

Characteristic	Category	Frequency (n)	Percentage
Study Programme	PJKR	8	38,1
	PKO	5	23,8
	IKOR	7	33,3
	PJSD	1	4,8
Length of Membership	< 1 year	9	42,9
	1-2 years	8	38,1
	> 2 years	4	19,0
First-Aid Training	Yes	10	47,6
	Not Yet	11	52,4
Injury History	Yes	20	95,2
	Never	1	4,8

Source: Primary Data, 2026

Based on Table 1, most respondents came from the PJKR study programme (38.1%) and IKOR/Sports Science (33.3%), followed by PKO (23.8%) and PJSD (4.8%). In terms of length of membership, the largest proportion consisted of players who had joined less than one year previously (42.9%), which indicates a predominance of relatively new players within the team. A crucial aspect that needs attention is that more than half of the respondents (52.4%) had never received training or socialisation regarding sports injury management (first aid/sport injury). Meanwhile, almost all respondents (95.2%) had experienced an injury while playing on the field, with the most common injury type being ankle injury, followed by knee injury and muscle cramp.

Players' Level of Understanding

The measurement of the level of understanding was carried out on 20 statement items, with total scores per respondent ranging from 25 to 73, a mean value (M) = 41.90, and a standard deviation (SD) = 12.21. This score is equivalent to 52.4% of the ideal maximum score (80). The distribution of the categorisation of the level of understanding of all respondents is presented in Table 2.

Table 2. Distribution of Futsal Players' Level of Understanding of First Aid for Injuries

Category	Score Range	Frequency (n)	Percentage (%)	Cumulative (%)
Very Good	> 60,21	1	4,8	4,8
Good	48,01 – 60,21	4	19,0	23,8
Moderate	35,80 – 48,01	9	42,9	66,7
Poor	23,60 – 35,80	7	33,3	100,0
Very Poor	<23,60	0	0,0	100,0
Total	-	21	100,0	-

Source: Primary Data, 2026

The data in Table 2 show that no respondents were in the very poor category. Nevertheless, the moderate category was dominant, with a proportion of 42.9%, whereas 33.3% of respondents were still in the poor category. Only a small proportion of players (23.8%) reached the good and very good categories. Accordingly, the level of understanding of first aid for on-field injuries among futsal players is generally in the moderate category, although with a tendency that is not yet satisfactory, given that more than one third of respondents are still classified as having a poor level of understanding.

Analysis per Dimension of Understanding

Further analysis was carried out on the three dimensions of understanding that were measured. The mean score results per dimension are presented in Table 3.

Table 3. Mean Score per Dimension of Understanding

Dimension	Number of Items	Mean Score	Category
Knowledge	5	1,80	Poor
Attitude	7	2,33	Poor
Skills	8	2,08	Poor
Overall	20	2,10	Poor

Source: Primary Data, 2026

The three dimensions of understanding were consistently in the poor category based on the mean score per item (scale 1-4). The knowledge dimension obtained the lowest mean (1.80), followed by skills (2.08) and attitude (2.33). This finding indicates that the fundamental weakness lies in the cognitive aspect, namely the conceptual understanding of injury and its management methods, which subsequently has implications for the low level of technical ability (skills). The attitude dimension was relatively better, although it still remained in the poor category.

Analysis per Statement Item

The analysis of each statement item provides a more detailed picture of the specific aspects that require attention. The mean score per item is presented in Table 4.

Table 4. Mean Score and Category per Statement Item

No.	Statement	Mean	Category
Q1	Knowing about R.I.C.E management (Rest, Ice, Compression, Elevation)	1,86	Poor
Q2	Managing injury according to personal belief	2,19	Poor

Q3	Letting an injury heal by itself	3,14	Moderate
Q4	Being able to restrain oneself from continuing to play when injured	2,57	Moderate
Q5	Being committed to not using hot balm/patches on the injured area	2,19	Poor
Q6	Knowing that R.I.C.E must be applied within the first 24-48 hours	1,86	Poor
Q7	Distinguishing fatigue pain from hamstring injury pain	2,00	Poor
Q8	Recognising the early signs of muscle cramp	1,81	Poor
Q9	Knowing the self-management of ankle sprain	1,90	Poor
Q10	Restraining oneself from massaging a swollen joint	1,90	Poor
Q11	Performing self-stretching techniques for calf cramp	1,76	Poor
Q12	Wrapping an elastic bandage on a swollen ankle/knee	2,05	Poor
Q13	Firmly refusing massage on an early-stage injured area	1,86	Poor
Q14	First aid for a hard impact to the shin	2,24	Poor
Q15	Checking a player's level of consciousness after an impact	2,52	Moderate
Q16	Refusing to return to the field before 100% recovery	2,43	Poor
Q17	Distinguishing the management of muscle cramp from a torn muscle	2,33	Poor
Q18	Knowing that not all injuries are managed in the same way	1,81	Poor
Q19	Being aware that recognising the injury type is important before management	1,76	Poor
Q20	Understanding that inappropriate management affects the injury condition	1,71	Very Poor

Source: Primary Data, 2026

Based on Table 4, only three statement items reached the moderate category, namely Q3 (letting an injury heal by itself, mean = 3.14), Q4 (restraining oneself from continuing to play, mean = 2.57), and Q15 (checking a player's consciousness after an impact, mean = 2.52). Item Q20 obtained the lowest mean (1.71) and fell into the very poor category, which shows that players do not yet fully understand the long-term consequences of inappropriate injury management.

The high value for Q3 (3.14) needs to be interpreted with care. This item is an unfavourable statement, so that a high score in fact indicates a tendency towards less appropriate behaviour, namely that most players still tend to let an injury recover by itself without structured management. This is consistent with the findings of Roepajadi (2021), who found fluctuations in practical understanding of the R.I.C.E method among futsal players, and is reinforced by Tryanita et al. (2023), who reported a low level of athlete knowledge regarding futsal sports injuries.

Discussion

The results of this study show that the level of understanding of first aid for on-field injuries among futsal players is generally in the moderate category, with a tendency that is not yet satisfactory. This finding is relevant to, and consistent with, the results of previous studies that have also identified a gap between the high risk of injury in futsal and athletes' readiness to manage it. A similar gap has also been reported in other sports, such as volleyball and badminton, which shows that the problem of limited first-aid understanding does not occur only in futsal, but is a cross-sport phenomenon [5,12].

The low scores in the knowledge dimension, particularly the understanding of the R.I.C.E method (Q1, mean = 1.86) and of its implementation within the first 24-48 hours (Q6, mean = 1.86), constitute a concerning finding. The R.I.C.E method is the most fundamental standard for acute injury management

and has long been recommended in clinical practice [10]. The limited understanding of this method shows that basic sports first-aid knowledge has not been disseminated evenly, even among sports students. Similar findings also show that the understanding of the R.I.C.E method among senior high school students still requires strengthening, even though sports health education has been provided within the school environment [8].

One of the factors presumed to be most influential is the limited exposure to formal training or socialisation. The research data show that 52.4% of respondents had never received first-aid or sport injury training. Structured health education has been proven to exert a significant influence on improving first-aid knowledge and skills [9]. In addition, online education regarding sports injury management has also been proven capable of significantly improving athletes' knowledge, so that limited access to face-to-face training can be overcome through digital-based education programmes [13]. These findings reinforce the presumption that the respondents' low level of understanding is closely related to a lack of systematic educational intervention [9,13].

The skills dimension also shows concerning values, particularly in the items related to stretching techniques for calf cramp (Q11, mean = 1.76) and the ability to distinguish the management of muscle cramp from that of a torn muscle (Q17, mean = 2.33). Both of these skills are very important in emergency situations on the field. The inability to distinguish types of muscle injury may have fatal consequences, because inappropriate management, such as forced stretching of a torn muscle, may in fact worsen tissue damage. Technical training has been proven capable of improving athletes' ability to carry out sports injury management, whereas theoretical knowledge has a strong relationship with practical skills in ankle injury management [4,11]. This shows that an improvement in knowledge has the potential to exert a positive impact on improving the skills of futsal players at FIKK UNY.

Interestingly, the attitude dimension shows relatively better values than the knowledge and skills dimensions, although it still remains in the poor category. The relatively higher values for Q4 (restraining oneself from continuing to play, mean = 2.57) and Q15 (checking consciousness after an impact, mean = 2.52) show that some players already possess a basic awareness of the importance of providing an appropriate response when an incident occurs on the field. However, this positive attitude has not been balanced by adequate knowledge and skills, so that it has not yet been able to be translated into correct action. This condition is consistent with the concept that knowledge, attitude, and skills are interrelated components in forming optimal health behaviour [14,16].

Particular attention also needs to be given to the low level of understanding regarding the prohibition on massaging an acute injured area that is swollen (Q10, mean = 1.90), as well as the use of hot balm in the early phase of injury (Q5, mean = 2.19). These practices are management errors that are still frequently encountered among athletes and the wider community, and they may worsen the inflammatory process and slow tissue healing [1]. Therefore, education needs to emphasise not only the correct actions, but also the actions that must be avoided when an injury occurs. Health education focusing on ankle injury and exercise therapy has been proven capable of improving the knowledge of student futsal players [7]. In addition, research on non-athlete groups also shows that a knowledge gap regarding first aid for injuries still exists, so that structured first-aid education programmes need to be provided more widely and not limited to particular sports communities [6,17].

CONCLUSION

Based on the research results and discussion, it can be concluded that the level of understanding of first aid for on-field injuries among futsal players is generally in the moderate category (42.9%), with a mean total score of 41.90 out of a maximum score of 80 (52.4%). More than one third of respondents (33.3%) are still in the poor category. The three dimensions that were measured - knowledge (mean = 1.80), skills (mean = 2.08), and attitude (mean = 2.33) - were all in the poor category, which shows that a comprehensive understanding of first aid for injuries has not yet been optimally established. The weakest aspects are the conceptual understanding of the R.I.C.E method and awareness of the long-term impact of inappropriate management.

Based on these conclusions, several suggestions can be put forward as follows. First, for futsal team managers and coaches, it is recommended that first-aid and sports injury management training programmes be integrated routinely into the training agenda, given that more than half of the players have never received socialisation regarding this matter. Second, for the institution, consideration needs to be given to organising certified sport first aid training for all athletes who are members of student

activity units. Third, for players, it is hoped that they will proactively seek information and improve their competence in injury management, given the high risk of injury in futsal. Fourth, for future researchers, it is recommended that the scope of the research be expanded by comparing the level of understanding between study programmes, by relating understanding to a history of first-aid training, or by using an experimental design to measure the effectiveness of first-aid education programmes.

ACKNOWLEDGMENT

The authors would like to thank the Sports Science Study Programme, Faculty of Sports Science and Health, Yogyakarta State University, and all members of the Futsal Student Activity Unit who were willing to become respondents in this study.

AUTHOR CONTRIBUTION STATEMENT

All authors contributed to the research process and to the preparation of the manuscript through to its completion.

CONFLICT OF INTEREST AND FUNDING

There is no conflict of interest

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