



## Knowledge Level of Futsal Extracurricular Students about Ankle Injuries

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### Abstract

Futsal is one of the sports that has a high risk factor for ankle injuries. Therefore, futsal sports practitioners should know the prevention and treatment efforts in anticipation of the risk of injury that may occur. The aims of the study was to identify the level of knowledge of students participating in futsal extracurricular activities regarding ankle injuries at Graha Madina Vocational School. This research design is a descriptive quantitative research with a questionnaire survey method via google form. The sampling technique in this study used a total sampling technique so that the research sample was the entire population of 21 students. The analysis technique in this study used descriptive analysis techniques. The instrument used is a questionnaire regarding ankle injuries that has been developed by researcher with the identification of understanding factors, causes of injury, injury prevention, handling, and treatment of ankle injuries. The result of this research analysis shows that students have a level of knowledge in the poor category with an average of 47.62 and details of 17 students (80.96%) have poor knowledge, 4 students (19.04%) have moderate knowledge, and none of the students have good knowledge. The limitation of this study is that the research sample is still classified as a small group scale of 21 students so that further research needs to be done with a larger group scale to get more relevant results.

**Keywords:** Knowledge, Extracurricular students, Futsal, Ankle Injury, Education

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## A. Introduction

Futsal is a game adopted from the sport

of football. This is because the concept of futsal has similarities with the game of football. This sport is carried out with the dominance of the feet and also has the goal of scoring as many goals as possible into the opponent's goal. The high dominance in the use of the feet also increases the risk of collisions so that it can cause injury to the area ([Argibay-González et al., 2022](#)).

Injury is an abnormality in an area of the body that can cause symptoms of pain, heat, redness, swelling, and cause impaired function in muscles, tendons, ligaments, joints, and bones caused by excessive motor activity or accidents ([Jeffries et al., 2020](#)). Injuries generally occur in physical contact (body contact) and high mobility sports such as martial arts, soccer, basketball, and futsal ([Arabnejad et al., 2023](#); [Setiawan et al., 2023](#)). In futsal, the highest risk of injury is to the lower extremities. This is due to sports activities that are dominated by the use of feet. Based on research conducted by ([Wu et al., 2019](#)) on 78 futsal athletes in China, the prevalence rate of ankle injuries was the highest with 37 cases (47.4%). Data obtained from the 2015 Futsal Gold Cup Indonesia (PEFI) competition also shows that 108 futsal players have been diagnosed with injuries caused by the sport of futsal games and there are 235 cases of injury from a total of 1000 matches with details of ankle injuries of 18% ([Audini et al., 2023](#)).

Knowledge of ankle injuries and early

treatment measures are very important for students, especially extracurricular futsal participants. Injuries that are not treated appropriately and responsively can lead to the risk of more severe injuries, ranging from acute to chronic injuries ([Maas et al., 2022](#)). In addition, ankle injuries that persist over a long period can also result in further disability, decreased quality of life, and decreased joint functionality ([Tummala et al., 2023](#)). With good and basic knowledge about ankle injuries, it is hoped that everyone will be able to make efforts to prevent and treat injuries that can befall themselves and others. For futsal extracurricular students, learning first aid for injuries is carried out as an effort to prevent or anticipate the risk of injury that can occur when carrying out sports activities both during training and during competition. According to ([G Javier & Lawrence B, 2021](#)) accurate diagnosis of ankle injuries is very important because around 40% of cases of ankle injuries are misdiagnosed or not treated properly, causing chronic ankle pain and disability.

According to ([Wang et al., 2020](#)) knowledge is defined as the result of an individual's sensing or understanding of objects based on their senses. Knowledge is a result of a knowing mechanism where this arises after a person has carried out a sensing process to a certain object. Knowledge refers to the concept of theoretical and practical understanding possessed by an individual

and has a strategic role for that person's intelligence. Knowledge can be stored or allocated in the form of books, technological systems, practices, or traditions. The transformation of knowledge occurs when the knowledge is used properly. Knowledge has a central role in the process of forming and developing a way of life for individuals, communities, or organizations ([Abubakar et al., 2019](#)). ([Wang et al., 2020](#)) divides the level of knowledge into 6 components, namely Knowing (C-1), Understanding (C-2), Application (C-3), Analysis (C-4), Synthesis (C-5), and Evaluation (C-6). According to ([Yanti et al., 2020](#)), there are several factors that can affect a person's level of knowledge, including internal factors such as education, age, and occupation or external factors including environmental and socio-cultural factors.

Based on preliminary studies through observation and interview mechanisms that have been carried out by researchers on the futsal extracurricular participants of SMK Graha Madina, the results show that some participants in the futsal extracurricular program still do not know about the mechanism of ankle injury and how to handle it. In fact, knowledge of the concept of ankle injury and its handling is something that is important for participants to have as an effort to prevent and anticipate the risk of injury that may occur. The results of interviews conducted by researchers with the futsal extracurricular coach of SMK Graha

Madina also identified that learning about ankle injuries is still limited to the lecture method and the unavailability of supporting media so that the learning process tends to be limited.

Previous research on ankle injuries has been conducted by ([Wicaksono et al., 2022](#)) with the title "Overview of Knowledge Regarding Ankle Injuries in Male Futsal Athletes UASB State University of Malang". The study used a survey research method with a questionnaire instrument developed by the researcher with a total of 19 questions. The results showed that the level of knowledge of male athletes UASB State University of Malang is included in the category of good knowledge. The research by ([Minawati & Warthadi, 2023](#)) with the title "Athlete Knowledge Level About Ankle Injuries and Exercise Therapy at Telaga Utama Football Association". The study was a quantitative descriptive study using a survey method with data collection techniques using a questionnaire. The subjects of this study were all 30 PS Telaga Utama soccer athletes. The results showed that the level of knowledge of athletes about ankle injuries and exercise therapy at PS Telaga Utama was mostly in the poor category (53.3%) and in the moderate category (46.7%) and none of them were in the good category. Other similar research was conducted by ([Nur & Bakti, 2021](#)) with the title "Survey of the Level of Knowledge of Soccer Players About Ankle Injuries and

Exercise Therapy at Ricky Nelson Academy". This study used a questionnaire survey method with a sample size of 60 players. The results showed that the players' knowledge level was mostly in the low category with an average of 23. Based on some of the research exposure above, it can be concluded that the level of knowledge about ankle injuries still tends to be low so that researchers are interested in taking this research topic.

Therefore, the research objectives can be analyzed to identify the level of knowledge of students participating in extracurricular futsal regarding ankle injuries at Graha Madina Vocational School.

## **B. Methods**

This research is a quantitative descriptive study of the level of knowledge of extracurricular futsal students towards ankle injuries. The purpose of descriptive research is to provide an objective description of an object of observation. In this study, the researcher intends to provide a description of the level of knowledge of futsal extracurricular students towards ankle injuries. This study applied a survey method with data collection using a questionnaire and distributed via the google form platform. The questionnaire applied is a questionnaire regarding ankle injuries that has been developed by the researcher himself, totaling 20 statement items with details of 14 positive

questions and 6 negative questions about ankle injuries.

The indicators in this questionnaire emphasize understanding factors, causes of injury, injury prevention, handling and treatment of ankle strains and sprain injuries. The questionnaire that was compiled was then continued by conducting validity tests and reliability tests with subjects outside the sample but still with the same characteristics. The validity and reliability test results show that all statement items in the questionnaire are valid and reliable with a reliability value of 0.874. The sampling method applied is total sampling, therefore the sample used is all members of the population of futsal extracurricular participants at Graha Madina Vocational School, totaling 21 students. The data from the distribution of the filled questionnaires was then continued in the analysis process using quantitative descriptive techniques expressed in percent form with the SPSS Statistics software application. The overall score is obtained through the mechanism of summing up the question item assessments. Grouping in categories is done after the percentage calculation process is complete and the scores are obtained. The grouping process will be carried out in 3 categories, namely Good, Medium, and Lack. Categorization of knowledge level according to (Arikunto, 2014) and (Nursalam, 2020) divided into 3, as follows:

Table 2: Categories of Knowledge Levels (Nursalam, 2020) & (Arikunto, 2014)

Category	Value
Good	76 - 100
Middle	56 - 75
Minus	< 56

### C. Result and Discussion

#### Result

#### 1. Description of Respondent

##### Characteristics

##### a) Age

Data from 21 research participants who have filled out the questionnaire shows the age range of research subjects from 15 to 18 years, which is then grouped into several age categories as presented in table 2 below:

Table 3 Age Characteristics

Age (Year)	Number (Person)	Percentage (%)
15	3	14,2
16	12	57,1
17	5	23,8
18	1	4,9
Total	21	100

Source: primary data research results

Based on the exposure of the table above, it can be analyzed that the characteristics of respondents based on age are divided into 4 groups, namely the 15-year-old group totaling 3 people (14.2%), the 16-year-old group totaling 12 people (57.1%), the 17-year-old group totaling 5 people (23.8%), and the 18-year-old group with a total of 1 person

(4.9%).

##### b) Education Level

The results of the questionnaire on the class *form* (education level) are divided into 3 levels which can be reviewed through table 3 as follows

Table 4 Characteristics of education level

Class	Total	Percentage (%)
10	12	57,1
11	6	28,5
12	3	14,4
Total	21	100

Source: primary data research results

Based on Table 3 above, it can be analyzed that the characteristics of respondents based on education level are

divided into 3 levels, namely class 10 totaling 12 people (57.1%), class 11 totaling 6 people (28.5%), and class 12 totaling 3 people

(14.4%).

## 2. Data Description of Research Results

### a) Description of Research Data

The data analyzed were data regarding the level of knowledge of students participating in futsal extracurricular activities towards *ankle* injuries at SMK

Graha Madina. The data was collected from the answers to 20 statement items of the knowledge level questionnaire that had been filled in by 21 students participating in the futsal extracurricular at SMK Graha Madina. The results of the descriptive analysis are presented in table 4 as follows:

**Table 5 Descriptive Analysis Results**

Variables	Mean	Standard Deviation	Min	Max
Knowledge Level	47,62	11,897	30	75

*Source: primary data research results*

The results of the descriptive analysis of the level of knowledge of students participating in futsal extracurricular activities towards *ankle* injuries at SMK Graha Madina obtained a mean of 47.62, a standard deviation with a value of 11.897, a minimum value of 30 and a maximum value of 75. Based on the mean analysis, it can be concluded that the level of knowledge of students participating in futsal extracurricular activities at SMK Graha Madina is classified in the insufficient category.

The data analysis technique for describing the level of knowledge is descriptive statistics. The calculation process is through a percentage technique which is then grouped into 3 categorizations, namely good, moderate, and less. The categorization is made based on several expert opinions that classify the level of knowledge as less if the percentage obtained is <56%, moderate 56-75%, and good 76-100%. The categorization of knowledge levels can be seen in table 5 below.

### b) Description of Knowledge Level

**Table 6 Description of Knowledge Level n**

Category	Value	Frequency	Percentage
Good	76 -100	0	0%
Medium	56 - 75	4	19,04%
Less	< 56	17	80,96%
Total		21	100%

*Source: primary data research results*

Based on the data exposure above, it can be analyzed that the level of student knowledge of *ankle* injuries is 17 students

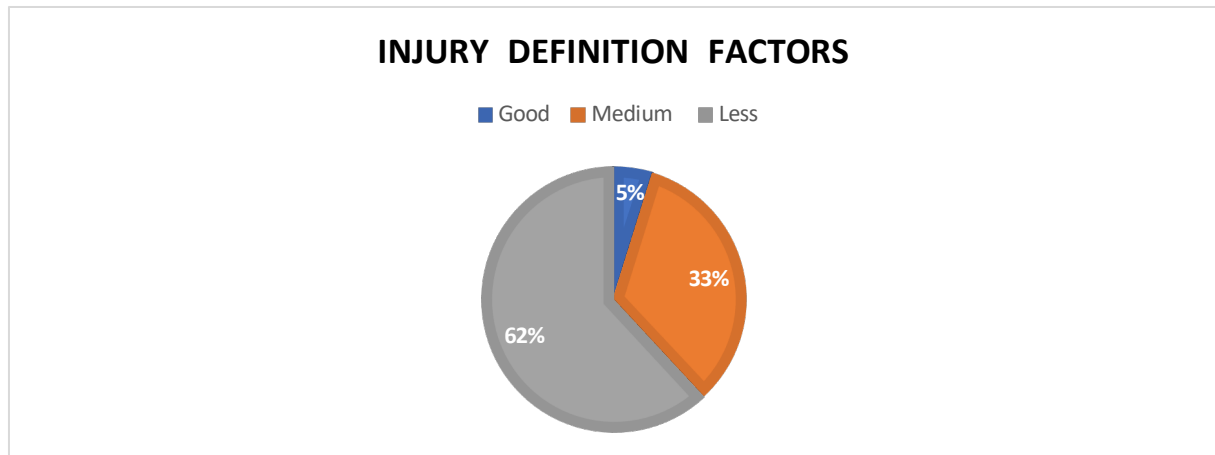
(80.96%) have less knowledge, 4 students (19.04%) have moderate knowledge, and 0 students (0%) have good knowledge.



c) Description of Knowledge Level Regarding Definition of Injury

The level of knowledge of students participating in futsal extracurricular activities towards *ankle* injuries at Graha Madina Vocational School from the injury

understanding factor obtained 1 student (4.8%) had good knowledge, 7 students (33.3%) had moderate knowledge, and 13 students (61.9%) had poor knowledge.

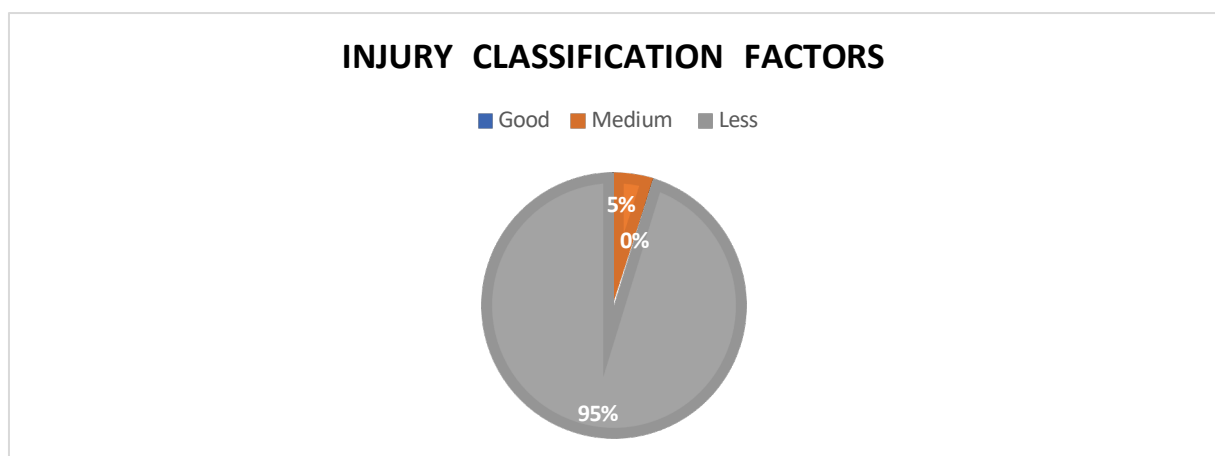


***Image 1 Diagram of injury understanding factors***  
*Source: primary data from research*

d) Description of Knowledge Level Regarding Injury Classification

The level of knowledge of students participating in extracurricular futsal towards *ankle* injuries at Graha Madina Vocational School from the injury classification factor

obtained 0 students (0%) had good knowledge, 1 student (4.8%) had moderate knowledge, and 20 students (95.2%) had poor knowledge.



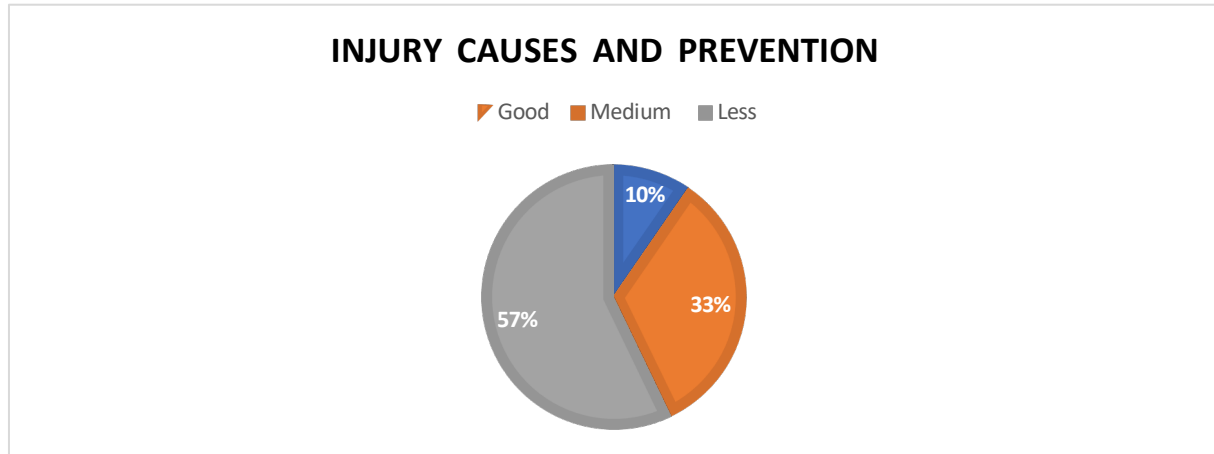
***Image 2 Diagram of Injury Classification Factors***  
*Source: primary data from research*



e) Description of Level of Knowledge on Causes and Prevention of Injuries

The level of knowledge of students participating in futsal extracurricular activities towards *ankle* injuries at Graha Madina Vocational School from the causes

and prevention of injuries obtained 2 students (9.5%) had good knowledge, 7 students (33.3%) had moderate knowledge, and 12 students (57.2%) had poor knowledge.

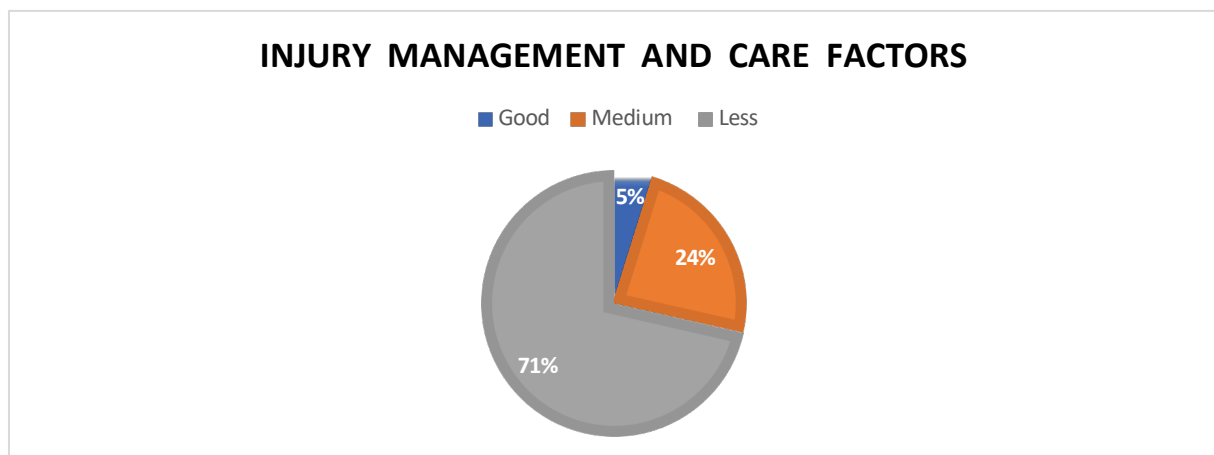


**Image 3 Diagram of factors causing and preventing injury**  
*Source: primary data from research*

f) Description of Knowledge Level Regarding Injury Management and Care

The level of knowledge of students participating in futsal extracurricular activities towards *ankle* injuries at Graha Madina Vocational School from the factor of

handling and treating injuries obtained 1 student (4.8%) had good knowledge, 5 students (23.8%) had moderate knowledge, and 15 students (71.4%) had less knowledge.



**Image 4 Diagram of injury treatment and care factors**  
*Source: primary data from research*

## Discussion

This research is a descriptive quantitative study with a survey method using a knowledge level questionnaire developed by the researcher. This study involved 21 respondents who were students participating in extracurricular futsal at SMK Graha Madina. The purpose of this study was to identify the level of knowledge of students participating in futsal extracurricular activities regarding *ankle* injuries at SMK Graha Madina. The questionnaire used has gone through validity and reliability tests resulting in a valid and reliable instrument with a total of 20 valid statement items and a reliability coefficient of 0.874. Similar research on *ankle* injuries has also been conducted by ([Wicaksono et al., 2022](#)) Differences in instruments in research ([Wicaksono et al., 2022](#)) with this study lies in the aspects and indicators studied where the research was conducted. ([Wicaksono et al., 2022](#)) only emphasizes the indicators of definition, classification of injury, level of injury, efforts to help and recover from *sprain* injuries with a total of 19 questions while this study discusses further the identification of understanding factors, causes of injury, injury prevention, handling and treatment of *ankle strains* and *sprain* injuries packaged in 20 questions. In addition, research ([Wicaksono et al., 2022](#)) In addition, the research ([Wicaksono et al., 2022](#)) focused on male UASB athletes at the State University of

Malang, who are included in the student group with adult age characteristics, while this study focuses on measuring the characteristics of futsal extracurricular students who are included in the teenage age classification. The results showed that the level of knowledge of male athletes UASB State University of Malang regarding *ankle* injuries was included in the good knowledge category. These results are different from the results of this study where the results of measuring the level of knowledge of students participating in extracurricular futsal at SMK Graha Madina are in the lack category. According to (Febrianti, 2022) adolescence is a period when a person's curiosity about the changes that occur to him is very large and is often characterized by unstable character traits and behavior and is a process of self-discovery in forming a permanent character. Age can affect the learning and thinking process of each individual. According to (Wawan & Dewi, 2019) the older a person gets, the level of maturity and ability in the aspect of thinking will increase. Meanwhile, according to ([G & H S, 2022](#)), adolescents in the age range of 15 to 18 years have a high level of equilibrium that allows them to be able to carry out flexible and efficient thinking mechanisms and can overcome complex problems well.

The results of the analysis of the

knowledge level questionnaire show that the level of knowledge of students participating in extracurricular futsal at Graha Madina Vocational School is in the "lack" and "moderate" categories based on the knowledge level categories compiled by (Arikunto, 2014) and (Nursalam, 2020). Based on the results of the research data analysis, it was found that 80.96% of students participating in extracurricular futsal had a level of knowledge in the deficient category. This means that there are still many students who have a lack of knowledge about *ankle* injuries.

Based on interviews conducted with teachers/coaches and students participating in extracurricular futsal at SMK Graha Madina, the learning process regarding *ankle* injuries is only carried out using the lecture method and has not yet implemented learning methods using companion books/textbooks so that students tend to have limited sources of information in the learning mechanism regarding *ankle* injuries. This is in accordance with the opinion of (Yunus et al., 2022) that information is one of the important organs in forming knowledge. The more information a person gets, the more his knowledge will increase. Likewise, on the contrary, the less access to information obtained, the less knowledge. The level of education also affects the level of knowledge of futsal extracurricular students. Therefore, it can be concluded that the level of education also affects a person's level of knowledge.

This is in line with the opinion (Damayanti & Sofyan, 2022) that is, the higher a person's level of education, the higher the level of knowledge. Analysis of socio-cultural factors also shows an influence on the level of student knowledge. According to (Wawan & Dewi, 2019) the socio-cultural system that exists in society can also influence a person's attitude in receiving information. Based on the results of the interview, it was found that most students still did not know the procedures for handling *ankle* injuries using the RICE method so they still used traditional treatment procedures such as sequencing/massage and the use of balm. Even though efforts to massage or use balm on the injured area are not allowed in the acute phase because they can cause bleeding which is at risk of causing more severe injuries. Environmental factors and experience also play a role in students' level of knowledge. According to Ann. Mariner in (Nursalam, 2020) the environment is all the conditions that exist around humans and their influence can affect the development and behavior of people or groups. The results of the preliminary analysis also stated that some students gained knowledge related to traditional massage methods or the use of balm from their closest family, this further strengthens the researcher's argument that environmental factors also have a role in the level of student knowledge. As for the experience factor, some students stated that knowledge about the concept of treatment

using massage and balm methods was previously due to knowledge gained from students' experiences when seeing friends and relatives who had *ankle* injuries. Therefore, the experience factor also affects the level of knowledge of futsal extracurricular students so that it is necessary to justify the wrong handling concept so far. This is reinforced by the opinion ([Seo et al., 2021](#)) that the experience that a person receives as a source of knowledge is a way to obtain the truth of knowledge by repeating the knowledge gained in solving problems encountered in the past.

This lack of knowledge can cause students who are experiencing *ankle* injuries to tend to not understand or take the wrong treatment, thus increasing the risk of recurrent (chronic) injuries. Early stage treatment of *ankle* injuries is recommended to apply therapy with RICE techniques, namely *Rest*, *Ice*, *Compression*, and *Elevation* to the injured body part to reduce swelling and pain ([Gaddi et al., 2022](#)). The provision of RICE therapy during the 48 to 72 hour post- traumatic period is intended to reduce swelling, relieve pain, and prevent further injury to the ankle. Players who experience *ankle* injuries if not given the right treatment and care, the strength of the *ankle* joint will not be able to approach 100% as Walker states that *ankle* joints that are not given proper exercise treatment, the strength of the *ankle* joint is limited to 80%, while exercise treatment adds the remaining 20% which

reduces the risk of recurrent injury ([Rahmah Laksni Ambardini, 2016](#)).

The results of the analysis also revealed that some students (19.04%) had a level of knowledge that was included in the moderate category. This causes students to only make efforts to handle and care for injuries with limited knowledge without fully understanding the benefits or actual goals even though it is very important for someone to know the actions of handling and treating *ankle* injuries properly. Injuries that are not handled appropriately and responsively can lead to more severe injuries, ranging from acute to chronic injuries. (Sanusi, 2019). Apart from that, ankle injuries that last for a long or continuous period can also increase the risk of further disability, decreased quality of life, and decreased joint function ([Sharma et al., 2020](#)). ([Waritsu et al., 2022](#)) There are several factors that have a relationship with a person's level of knowledge such as education level, age, sources of information, experience, environmental factors, and socio-culture. Experience can be utilized as a strategy to gain knowledge by reviewing previously gained experience in solving a problem (Widiastuti & Adiputra, 2022). Based on the results of previous interviews, it is known that the learning process regarding *ankle* injuries in the futsal extracurricular of SMK Graha Madina is only carried out using the lecture method without the application of other methods in the form of using textbooks or

field practice methods. Therefore, the researcher assumes that the limited learning methods carried out also affect the student experience factor in taking action to prevent, handle, and treat *ankle* injuries. This is in line with the opinion of (Rahmawati et al., 2021) that the lack of application or basic training directly affects the level of knowledge of the students.

The results of the analysis of each indicator also indicate that the level of knowledge of students participating in extracurricular futsal towards *ankle* injuries at Graha Madina Vocational School is mostly in the insufficient category so that efforts are still needed in the mechanism of increasing students' understanding of *ankle* injuries through training and learning activities on *ankle* injuries. In addition, it is also necessary to carry out activities to correct the patterns of understanding that have been wrong so far. For example, most of the research subjects still have the assumption that a grade 3 (severe) sprain injury does not require special help and treatment so that it can heal by itself, even though in the case of a grade 3 *sprain* injury there has been a total tear which can cause the release of ligaments from their attachment sites, causing total functional impairment. Therefore, special treatment is needed, including surgery and immediate splicing of the severed tissue. Another example is that some students still think that in level 2 (moderate) *ankle* sprain injuries there is no tear in the ligament so that it does

not cause a decrease in athlete performance, even though *ankle* sprain injuries are classified as level 2 if there has been a partial tear in the ligament so that it can cause a decrease in the performance of an athlete.

In this study there are several limitations, including that this study only involved subjects with a small group scale so that it is necessary to reassess the scale of a larger / wider group in order to get more significant results. In addition, the implementation of validity and reliability tests on this research instrument is only limited or adjusted to the number of research samples, namely 21 people so that it is necessary to conduct validity and reliability tests again for research involving respondents with a larger scale.

#### D. Conclusion

Based on the exposure and analysis of the research results related to the level of knowledge of students participating in extracurricular futsal towards *ankle* injuries at Graha Madina Vocational School, it can be concluded that the level of knowledge of students is in the poor category with an average of 47.62 with details of 17 students (80.96%) having poor category knowledge, 4 students (19.04%) have moderate category knowledge, and none of the students have good category knowledge.

For further research, it is hoped that it can expand the research subjects and can develop research with other variables such as attitudes and behavior by involving educational and age factors so that it can examine a wider

target in order to obtain more complex and coherent results.

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### F. Conflict of Interest

No conflict of interest

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