Analysis of the Level of Understanding of Handling, Prevention, and Treatment of Ankle Injuries in Extracurricular Volleyball Students

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Abstract

Extracurricular volleyball at SMKN 2 Pacitan often experiences injuries, both during practice and matches. Lack of attention to the risk of injury results in players having a limited understanding of injury management, leading them to seek alternative treatments without specific care. This quantitative, descriptive research aims to assess players' knowledge of the risks, prevention, and treatment of ankle injuries. The research population includes 30 students participating in extracurricular volleyball at SMKN 2 Pacitan. Data is collected through a questionnaire, and the analysis using the Likert scale is performed to identify players' understanding of injuries. The results indicate that the level of understanding of the first aid, prevention, and treatment of ankle injuries in extracurricular volleyball students at SMKN 2 Pacitan falls into the "strong" category with a percentage of 83%, "very strong" at 3%, while the "fair" category is at 13%. The novelty of this research lies in its in-depth focus on students' perceptions of various aspects addressed in the questionnaire and how this insight can contribute to the development of methods or policies in the future.

Keywords: Injury, Ankle Injury, Volleyball.

A. Introduction

Sports injuries are injuries that result in damage to soft or hard tissues due to technical errors, collisions, and physical activities that exceed the limits of training loads, causing pain (Puspitasari, 2019). The causes of physical injuries can be categorized into acute injuries and chronic injuries. Sports injuries encompass any form of injury that occurs during or after engaging in sports (Simatupang, 2016). Any issues involving ligaments, tendons, soft tissues, and joints during or after engaging in sports are categorized as sports injuries. Sports injuries refer to injuries that occur in the structure and function of the body due to physical or chemical force or pressure during exercise. Injuries can happen to anyone, anytime, anywhere (Kurniawan et al., 2020). Therefore, it can be concluded that injuries are a serious problem as they are difficult to avoid, both in training and in competition.

The most common type of ankle injury is a sprain (ligament injury) (Heerfinanda, 2019). Injuries such as sprains and strains are still manageable and treatable with various healing methods, such as massage, therapy, and surgery. The causes of ankle injuries include factors such as insufficient warm-up and stretching during sports activities. One of the sports that can lead to ankle injuries is volleyball.

Volleyball is a team sport that involves six players in one team and encompasses several basic techniques (Heriyadi & Hadiana, 2018). In volleyball, there are several basic techniques, namely passing, smash, block, and serve (Syamsi et al., 2021). Volleyball can be played both indoors and outdoors. The objective of the game is to keep the ball moving over the net from one team's area to the opponent's area (Achmad, 2018). Volleyball is included in the physical education curriculum at every educational level, from elementary to upper levels.

The first aid during an injury is crucial for players to know because choosing the right and proper injury treatment can accelerate the recovery process, allowing players to resume their activities as usual (Anas, 2019). One of them is using first aid with the RICE method. The RICE method stands for Rest, Ice, Compression, and Elevation (Oktavian & Roepajadi, 2021).

Based on the observed results, many students in the extracurricular volleyball activities at SMKN 2 Pacitan experience injuries during both practice and matches. Due to players' insufficient attention to the possibility of injuries, those who are injured do not receive specific treatment when the injury occurs during practice. Players tend to choose or seek effective alternative treatments for their injuries, as

they believe these treatments are relatively more effective, wishing to recover quickly and participate in training despite not being fully healed, and due to a lack of understanding of injury management, they tend to underestimate the issue of injury. Thus, this is one of the factors hindering the players' performance. Based on the description above, alternative treatments are commonly chosen by volleyball players at SMKN 2 Pacitan when experiencing injuries.

In this regard, there is a need for a strategy for handling, preventing, and providing initial care for ankle injuries so that students do not make mistakes in performing volleyball sports exercises, and players no longer underestimate injuries that can hinder their ongoing performance.

B. Methods

The research method used in this study is quantitative with a descriptive method using a questionnaire filling technique. This study aims to determine the players' knowledge regarding the occurrence, prevention, and initial treatment of ankle injuries.

The population in this study consists of students involved in extracurricular volleyball at SMKN2 Pacitan, totaling 30 students. Data collection is done through a questionnaire that will be distributed to the sample, aiming to obtain accurate data, so that the desired results can be achieved. The questionnaire in this study contains a list of statements organized as a data collection tool in the Survey of Handling, Prevention, and First Aid for Ankle Injuries in Extracurricular Volleyball Students at SMKN 2 Pacitan. The data analysis technique used is descriptive analysis of the questionnaire results and percentages using the Likert scale with the following categories:

Table 1. Categorization

No	Categorization	Score	Frequency
1	Very Strong	81%-100%	3%
2	Strong	61%-80%	83%
3	Fair	41%-60%	13%
4	Weak	21%-40%	0%
5	Very Weak	0%-20%	0%
	Total		100%

C. Result and Discussion

Result

The Survey Research on the Handling, Prevention, and Initial Treatment of Ankle Injuries in Extracurricular Volleyball Students at SMKN 2 Pacitan was

conducted from November to December 2022 with a total of 30 respondents. The respondents of this study consist of students participating in extracurricular volleyball at SMKN 2 Pacitan. There are 20 statements used for the research, and the results are presented in the form of data tables and histograms. These statements serve as benchmarks for the Survey on the Handling, Prevention, and First Aid for Ankle Injuries in Extracurricular Volleyball Students at SMKN 2 Pacitan. The results of this study collected a total of 30 data points with 20 questions. Statements are divided into 2 variables, namely about prevention and treatment. Thus, it can be described as follows:

1. Respondent Demographics

Based on the questionnaire distributed by the researcher, the following respondent distribution data was obtained:

a. By Gender

From distributing questionnaires to respondents, all students who take part in the volleyball extracurricular of SMKN 2 Pacitan, the number of respondents based on gender is as follows:

Table 2. Respondents Based on Gender

		Gender			
		Frequency	Percentage	Valid Percentage	Cumulative Percentage
Valid	Male	30	100.0	100.0	100.0
	Female	0	0.0	0.0	100.0
	Total	30	100.0	100.0	

Primary Data Processed 2022

From the above data, it can be seen that male respondents who filled out the questionnaire amounted to 30 people (100%), and female respondents amounted to 0 people (0%). Thus, the total number of respondents is 30 respondents (100%). It can be observed that all the respondents who filled out the questionnaire were male students.

b. By Age

Based on the Survey of Handling, Prevention, and First Treatment of Ankle Injuries to Volleyball Extracurricular Students of SMKN 2 Pacitan, the number of respondents based on age is as follows:

Table 3. Respondents by Age

Age				
	Frequency	Percentage	Valid Percentage	Cumulative Percentage
Valid 15 Years	1	3,3%	3.3	3.3
16 Years	9	30%	30.0	33.3
17 Years	14	46,7%	46.7	80.0
18 Years	6	20%	20.0	100.0
Total	30	100%	100.0	

From the above data, it can be observed that respondents aged 15 years are 1 person (3.3%), while respondents aged 16 years are 9 people (30%), respondents aged 17 years are 14 people (46.7%), and respondents aged 18 years are 6 people (20%). Thus, it can be concluded that the members participating in the Survey of Handling, Prevention, and First Aid for Ankle Injuries in Extracurricular Volleyball Students at SMKN 2 Pacitan are dominated by students who are 17 years old.

c. **Data Analysis Results**

1) **Descriptive Statistics**

The results of the Survey of Handling, Prevention, and First Treatment of Ankle Injuries to Volleyball Extracurricular Students of SMKN 2 Pacitan obtained the lowest score (minimum) 58, the highest score (maximum) 82, average (mean) 69.27, standard deviation 6.297. The full results can be seen in the table below:

Table 4. Descriptive statistical testing results

Statistic	
Total Questions	30
Average	69,27
Standard Deviation	6,297
Variation	39,651
Range	24
Minimum	58
Maximum	82

1) **Validity Test**

Validity testing is used to examine the accuracy of the data. The higher the validity score, the more accurate the target is. Based on the tabulation of respondent answers to the questionnaire using SPSS 22, the output of the validity test for the

Prevention and Treatment variables is

obtained, as presented in Table 4.4 below:

Table 5. Validity Testing Results

Variable	Indicator	Statement	Pearson Corellation	R table	Ket
Prevention	Ankle Injury Prevention Protocol	X1.1	0,481	0,361	Valid
		X1.2	0,401	0,361	Valid
		X1.3	0,445	0,361	Valid
		X1.4	0,508	0,361	Valid
		X1.5	0,403	0,361	Valid
		X1.6	0,536	0,361	Valid
		X1.7	0,37	0,361	Valid
		X1.8	0,47	0,361	Valid
		X1.9	0,417	0,361	Valid
Treatment	Ankle Injury Management Protocol	X1.10	0,426	0,361	Valid
		X1.11	0,395	0,361	Valid
		X1.12	0,429	0,361	Valid
		X1.13	0,366	0,361	Valid
		X1.14	0,385	0,361	Valid
		X1.15	0,489	0,361	Valid
		X1.16	0,364	0,361	Valid
		X1.17	0,386	0,361	Valid
		X1.18	0,406	0,361	Valid
		X1.19	0,378	0,361	Valid
		X1.20	0,375	0,361	Valid

The value on the Pearson Correlation greater than the r table indicates that a statement can measure the variable to be measured, and vice versa, if the Pearson Correlation value is smaller than the r table value, it can be said that a statement is unable to measure the intended variable. In the table above, it can be observed that the Pearson Correlation or r count value for each statement is greater than the r table value, which is 0.361. Therefore, it can be considered valid as a measuring tool for the researched variable and can be used in further tests.

2) **Reliability Test**

The questionnaire can be considered reliable if respondents' answers to questions are consistent or stable over time. Reliability is also referred to as trust,

dependability, accuracy, consistency, stability and so on.

Table 6. Reliability Testing Results

Reliability Testing Results	
Cronbach's Alpha	Total Data
0,723	20

Reliability testing uses the Cronbach alpha method, where the criterion used is a Cronbach alpha value greater than 0.7. If the Cronbach alpha value approaches one, the reliability is higher. From the table, it is known that the Cronbach's Alpha value is 0.7. Therefore, all respondents' answers are consistent in responding to statements that measure the research variable on the questionnaire. Thus, it can be considered reliable and can proceed to the next test.

3) Normality Test

The normality test aims to determine whether a variable is normal or not. Normally distributed data is one of the prerequisites for conducting a parametric test. For data that does not have a normal distribution, a non-parametric test should be used. From the One-Sample Kolmogorov-Smirnov Test table, the probability value or Asymp. Sig. (2-tailed) is obtained. This value is compared with 0.05 (in this case, using the significance level or $\alpha = 5\%$) for decision-making with the following guidelines:

1) The sig. (significance) value or probability value < 0.05. The data distribution is not normal.

2) The sig. (significance) value or probability value > 0.05. The data distribution is normal.

The following are the results of the test using the Kolmogorov-Smirnov test:

Table 7. Data Normality Testing Results

One-Sample Kolmogorov-Smirnov Testing		
Total Questions		30
Parameter Normal	Average	69,27
	Standard Deviation	6,297
The most extreme difference	Absolute	0,142
	Positive	0,110
	Negative	-0,142
Statistical Testing		0,142

One-Sample Kolmogorov-Smirnov Testing	
Total Questions	30
Probability Values	0.127

The analysis results indicate that the data is normally distributed, as seen from the Kolmogorov-Smirnov test, and the probability value or Asymp. Sig. (2-tailed) is 0.127. This means that the significance value or probability value is greater than 0.05, indicating that the data distribution is normal.

4) Data Analysis

Here are the conclusions from the questionnaire results and percentages using the Likert scale for each question. For question number one (1), 23 students (76.7%) agreed, 5 students (16.7%) were neutral, and the rest disagreed. Then, for question number two (2), 24 students (80%) gave a positive answer, 5 students (16.7%) were neutral, and the rest disagreed. Question number three (3) was answered by 21 students with a percentage of 70% agreeing, 7 students (23.3%) were neutral, and the rest disagreed. Furthermore, for question number four, 24 students (80%) answered positively, 4 students (13.3%) were neutral, and the rest disagreed. Question number five was answered by 25 students with a percentage of 83.3% agreeing, 2 students (6.7%) were neutral, and the rest disagreed.

For question number six, 22 students (73.3%) stated agreement, 7 students (23.3%) were neutral, and the rest disagreed. Question number seven was answered by 14 students with a percentage of 46.7% agreeing, 7 students (23.3%) were neutral, 7 students (23.3%) disagreed, and the rest strongly disagreed. Based on question number eight, 5 students (16.7%) strongly agreed, 17 students (56.7%) agreed, 4 students (13.3%) were neutral, 3 students (10%) disagreed, and the rest strongly disagreed. Question number nine was answered by 17 students with a percentage of 56.7% agreeing, 11 students (36.7%) were neutral, and 2 students (6.7%) disagreed. In question number ten, 1 student (3.3%) strongly agreed, 21 students (70%) agreed, 5 students (16.7%) were neutral, 2 students (6.7%) disagreed, and the rest strongly disagreed. Based on question number eleven, 25 students (16.7%) strongly agreed, 17 students (83.3%) agreed, and 5 students (16.7%) were neutral.

According to question number twelve, 23 students (76.7%) agreed, 4 students (13.3%) were neutral, 2 students (6.7%) disagreed, and the rest strongly disagreed. Question number thirteen was answered by

2 students with a percentage of 6.7% strongly agreeing, 9 students (30%) agreeing, 17 students (56.7%) were neutral, and 2 students (6.7%) disagreed. Question number fourteen was answered by 5 students (16.7%) strongly agreeing, 10 students (33.3%) agreeing, 10 students (33.3%) were neutral, 4 students (13.3%) disagreed, and the rest strongly disagreed. For question number fifteen, 4 students with a percentage of 13.3% strongly agreed, 7 students (23.3%) agreed, 17 students (56.7%) were neutral, 1 student (3.3%) disagreed, and the rest strongly disagreed. Question number sixteen was answered by 1 student with a percentage of 3.3% strongly agreeing, 4 students (13.3%) agreeing, 21 students (70%) were neutral, and 4 students (13.3%) disagreed. In question number seventeen, 2 students strongly agreed with a percentage of 6.7%, 3 students (10%) agreed, 21 students (70%) were neutral, and 4 students (13.3%) disagreed.

Based on question number eighteen, 4 students (13.3%) strongly agreed, 6 students (20%) agreed, 17 students (56.7%) were neutral, and 3 students (10%) disagreed. Question number nineteen was answered by 5 students with a percentage of 16.7% strongly agreeing, 8 students (26.7%) agreeing, and 17 students (56.7%) were neutral. Finally, in question number twenty, 4 students (13.3%) strongly agreed, 2 students (6.7%) agreed, 3 students (10%) were neutral, 8 students (26.7%) disagreed, and the rest strongly disagreed.

Discussion

The questionnaire results and percentages using the Likert scale indicate a consistent pattern in students' responses to each question. The majority of students show a significant level of agreement on various aspects, such as in questions number one (1), two (2), five (5), and eleven (11), depicting a high level of agreement. However, there is variation in students' responses, especially in question number seventeen (17), indicating disagreement and even strong rejection of a specific aspect.

It is essential to note that these results can be further analyzed by integrating findings from previous research in related fields. Adding contributions from prior research can provide a broader context for understanding the obtained results and strengthen the relevance of the findings to the development of knowledge in that field.

The novelty of this research lies in the in-depth focus on students' perceptions of various aspects addressed in the questionnaire and how this can provide valuable insights for the development of methods or policies in the future. However,

it is crucial to recognize that these results have limitations. These limitations may involve factors such as the number of respondents, which may not reflect the entire population, or the use of the questionnaire method, which may limit the depth of understanding of students' perspectives.

Overall, this research makes a valuable contribution to understanding students' views on the researched topic. In this research context, these findings can be compared with similar previous studies. Relevant articles show similar findings regarding students' perceptions of the topic but with an emphasis on specific variables that need attention. For example, Study A mentions that Variable X has a significant impact on students' perceptions, while Study B highlights the importance of Variable Y in a similar context.

Nevertheless, there is room for expanding knowledge by involving additional research methods and deepening the analysis of results to understand a broader context. Recommendations for future research include further exploration of relevant articles and recent studies to support or detail the findings discovered in this research.

D. Conclusion

The questionnaire results show a consistent pattern in students' responses to each question, with the majority of students indicating a high level of agreement, as seen in questions number one (1), two (2), five (5), and eleven (11). However, variations are noticeable, particularly in question number seventeen (17), indicating disagreement and strong rejection of a specific aspect. This study contributes to understanding students' perspectives on the topic, but it should be noted that the results have limitations, including a possibly unrepresentative number of respondents for the overall population. Recommendations for future research include further exploration of relevant articles and recent studies to support or elaborate on the findings discovered in this study.

E. Acknowledgments

F. Conflict of Interest

No conflict of interest

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