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Knowledge Survey Badminton Extracurricular Students SMA 1 Klari on Injury Handling With The Rice Method

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ABSTRACT

This study aims to analyze the level of knowledge of badminton extracurricular students at SMA 1 Klari on the RICE (Rest, Ice, Compression, Elevation) method in handling sports injuries. The research method uses a quantitative approach with a descriptive analysis design. Data collection through surveys uses questionnaires created in Google Forms to make it easier for respondents to distribute and fill out. The population in this study is 30 students who are members of the badminton extracurricular at SMA 1 Klari. The sampling technique used purposive sampling, with a sample of 20 students who met the criteria. The questionnaire consists of 20 questions, which include 15 positive statements and 5 negative statements. The scoring scale used is the Guttman scale, with a "Yes" or "No" answer option. The results showed that the level of knowledge of students varied, with 26.7% being at the high level, 53.3% at the medium level, and 20% at the low level. Most students understand the basic concepts of the RICE method, but lack the mastery of its practical applications, such as the use of "Compression" and the optimal duration of "Ice." Low knowledge is found in early-grade students, while upper-grade students have better understanding thanks to longer experience and exposure to information. Extracurricular programs need to include educational modules and injury management simulations to ensure all students can handle sports injuries optimally.

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INTRODUCTION

Badminton is a sport that is very popular among various circles, both children, teenagers and adults. The game of badminton uses a racket as a beating tool and a shuttlecock as an object that is hit, a rectangular badminton court has a net as a separator between the two opponents, this game is played individually or in groups that are opposite each other to score points (Mumtaman & Purnomo, 2019). The purpose of

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the badminton game is to hit the shuttlecock with a racket through the net and drop it towards the opponent's court. The sport of badminton requires a combination of speed, strength and high endurance (Hasan & Teguh Prasetyo, 2022). In the game of badminton, the factors that can support success are practice and good physical condition (Rofiqy & Jayadi, 2021). Therefore, badminton is very popular and played everywhere, in schools, cities, organizations, offices, governments, and so on.

The school is a forum for implementing and developing badminton games to score achievements. Badminton games in the school environment are usually included in extracurriculars. Extracurricular badminton is one of the favourite activities that are in demand by students at various levels of education, including high school (SMA), because it not only provides opportunities but also provides significant benefits, such as improving physical fitness, training concentration, and developing social skills through teamwork (Sumroti & Himawan, 2021). Badminton extracurriculars provide space for students to develop their potential in the field of sports.

Therefore, the safe implementation of a badminton extracurricular program requires a comprehensive approach, including proper training in playing techniques, warm-up before practice, and the implementation of safety procedures (Rasyid et al., 2022). It is undeniable that the sport of badminton has a risk of injury, both minor injuries to severe injuries. Injuries themselves can occur both before doing sports activities and after doing sports activities. The occurrence of fatigue, mistakes during warm-up, and lack of flexibility can also pose a risk of injury.

The risk of sports injuries also increases, especially for students who do not have good playing technique or optimal physical condition (Yasin et al., 2025). The risk of sports injuries has an impact on impaired physical activity, psychics and achievement. Sports injuries that often occur in badminton include sprains, ankle injuries, and pulled muscles due to incorrect movements or lack of warm-up (Putra Wardana & Rochmania, 2022). In addition, sports injuries are also physical abnormalities that cause pain, heat, swelling, and redness that cannot function properly in muscles, tendons, ligaments, joints and bones as a result of excessive strenuous activity (Surur et al., 2024). According to research conducted by Yusni in 2019, it is said that sports injuries are a condition in which the body experiences damage to tissues accompanied by functions caused by physical trauma directly from sports activities, both light and heavy. Sports injuries need to get help as soon as possible, of course, with the right handling, so that they can avoid more fatal risks (Anas & Rochmania, 2019). One of the appropriate initial treatments for overcoming sports injuries is using the Rest, Ice, Compression and Elevation (RICE) handling method.

The RICE (Rest Ice, Compression, Elevation) method is a simple approach method in dealing with sports injuries. The RICE (Rest Ice, Compression, Elevation) method is widely used in dealing with first injuries (Totok Budi Santoso et al., 2023). The rest method is to rest the injured part of the body before entering the medical realm and stop activities as soon as possible after the injury occurs to prevent more fatal damage. The ice method is a method of compressing ice into the affected area with the aim of

reducing pain and limiting blood vessels to prevent swelling from being carried out for 15 to 30 minutes to prevent spread. The compression method is a method of using a bandage or elastic bandage to gently apply pressure to the injured area. The elevation method is a method of raising the injured area to increase the blood flow of the heart with faster circulation and reduce swelling in the injured area (Ramadhan et al., 2021).

The RICE (Rest Ice, Compression, Elevation) method can help heal injuries including; stopping and reducing bleeding and swelling in the blood vessels that have been injured, as well as reducing and eliminating pain in injuries caused by the influence of ice. The RICE (Rest Ice, Compression, Elevation) method should be applied to the patient for 48 to 72 hours after the injury (Athoillah et al., 2024). This is supported by research conducted by Scialoia & Swartzendruber in 2020 that using the RICE (Rest Ice, Compression, Elevation) technique can improve recovery and reduce inflammation in injuries. In carrying out early treatment of sports injuries, good enough knowledge is needed so that the injury can be overcome immediately (Fitriana et al., 2022). Knowledge is when a person uses the five senses on an object from the results of the analysis. Good knowledge of handling sports injuries also needs to be understood by students of SMA 1 Klari extracurricular badminton.

Students' knowledge of the RICE (Rest, Ice, Compression, Elevation) method is an important aspect in badminton extracurriculars, especially to increase readiness in dealing with the risk of injury (Setiawan et al., 2024). Adequate knowledge allows students to immediately properly handle the injury before getting further treatment from a more expert party. In addition, an increased understanding of these techniques can also help students prevent the occurrence of injuries through better risk management (Liputo et al., 2024). Previous research has shown that knowledge of injury management methods such as RICE (Rest Ice, Compression, Elevation) plays a significant role in minimizing the impact of injury, supporting the sustainability of sports activities, and increasing awareness of the importance of safety in exercise (Prayoga Harmianto et al., 2024). Therefore, further study is needed on the level of knowledge of SMA 1 Klari extracurricular badminton students on the handling of injuries with the RICE method to ensure the safety and success of sports extracurricular programs.

METHODS

The method in this study uses a descriptive design analysis with a quantitative research approach. Aims to describe and analyze the knowledge of students of SMA 1 Klari extracurricular badminton on handling injuries using *the RICE* (*Rest Ice, Compression, Elevation*) method. Data collection was carried out through surveys using questionnaires created in *Google Forms* to facilitate distribution and filling out by respondents. The population in this study is 30 students who are members of the badminton extracurricular at SMA 1 Klari. The sampling technique used *purposive sampling*, with a sample of 20 students who met the criteria. The questionnaire consists of 20 questions, which include 15 positive statements and 5 negative statements. The

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scoring scale used is the *Guttman scale*, with a "Yes" or "No" answer option. Positive statements are given a score of 1 for the "Yes" answer and a score of 0 for the "No" answer, while for negative statements, the score is reversed which is 1 for the answer "No" and 0 for the answer "Yes". The data obtained from the survey was processed and analyzed using SPSS software version 20. Descriptive analysis was carried out to determine the frequency distribution and percentage of respondents' answers to each question. The results of the analysis are then presented in the form of a table to provide an overview of the knowledge of SMA 1 Klari extracurricular badminton students about *the RICE* method.

RESULTS AND DISCUSSION

The results of the research data were obtained by distributing questionnaires with as many as 20 questions to 15 students who are members of badminton extracurricular activities at SMA 1 Klari, the characteristics in the table below.

Table 1.
Characteristics of Badminton Extracurricular Students of SMA 1 Klari

Characteristic	Category	Frequency	Percentage
Gender	Man	8	53,3%
	Woman	7	46,7%
Class Level	High School Class 1	7	46,7%
	High School Class 2	5	33,3%
	High School Grade 3	3	20,0%
Age	15 Years	6	40,0%
	16 Years	4	26,7%
	17 Years	3	20,0%
	18 Years	2	13,3%

The characteristics of the respondents in this study provide an overview of the profile of students involved in extracurricular badminton at SMA 1 Klari. Based on gender, the majority of respondents were male (53.3%), while the rest were female (46.7%). This proportion shows that the extracurricular badminton at SMA 1 Klari has almost balanced participation between male and female students, indicating that this sport is in demand by both genders in the absence of significant dominance. This condition is in accordance with the characteristics of badminton as a sport that can be played by all genders, both individually and as a team.

Based on grade level, the majority of respondents came from grade 1 (46.7%), followed by grade 2 (33.3%), and grade 3 (20.0%). This proportion shows that grade 1 students participate more in extracurricular activities than in any other class. This is likely due to the high interest of new students to try various extracurricular activities offered by the school as part of the adaptation to the school environment. In contrast, a smaller number of students from grade 3 can be attributed to academic priorities ahead of graduation exams so they tend to reduce extracurricular activities.

In terms of age, most of the respondents were in the age range of 15-16 years (66.7%). This age reflects the population of 1st and 2nd graders who dominate badminton extracurriculars. Ages 17-18, which is representative of 3rd-grade students, make up only

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a small percentage of respondents (33.3%). This data corroborates previous findings that student participation tends to decline as grade levels increase, especially in students who will face graduation exams.

The characteristics of these respondents show that the badminton extracurricular at SMA 1 Klari has a fairly wide appeal among students, especially for early-grade students. However, the challenge ahead is to maintain student participation until grade 3, so that this program can provide long-term benefits, both in terms of sports skills and character building. Diversifying the exercise program that suits the needs of students at each grade level as well as flexibility in the schedule of activities, can be a solution to increase student engagement on an ongoing basis.

In addition, the table below also describes the distribution of their level of knowledge about the RICE (Rest Ice, Compression, Elevation) method based on the results of the survey conducted.

Table 2.
Distribution of RICE Method Knowledge for Badminton Extracurricular Students

Knowledge Level	Score	Frequency	Percentage
Tall	16 – 20	4	26,7%
Keep	11 – 15	8	53,3%
Low	< 10	3	20,0%
Total		**15**	**100%**

The results of the study showed that the level of knowledge of badminton extracurricular students at SMA 1 Klari about *the RICE (Rest, Ice, Compression, Elevation)* method in handling sports injuries varied from high to low. As many as 26.7% of respondents had a high level of knowledge with a score of 16-20, (53.3%) were at a moderate level of knowledge with a score of 11-15, and (20.0%) were at a low level of knowledge with a score of ≤10. The majority of students with a high level of knowledge are those from grades 2 and 3, who may have been exposed to information related to sports injury management more often through personal experience or training provided during extracurricular activities.

The moderate level of knowledge that most students include indicates that they have a basic understanding of *the RICE* method but have not yet fully understood its practical applications, such as when and how to perform "*Compression*" or the optimal duration of use of "*Ice*." This may be due to a lack of in-depth discussion or hands-on training on this method in extracurricular activities. On the other hand, students who are at a low level of knowledge are generally from grade 1, who have recently joined badminton extracurriculars and may not have had enough experience or exposure to information regarding *the RICE* method.

These results emphasize the importance of further education about *the RICE* method, especially for new students who tend to have low levels of knowledge. Counselling through practical training and injury handling simulations can be an effective step to improve student understanding, especially for those at medium and low levels of knowledge (Widyarani & Kustanti, 2024). In addition, the integration of material on injury management into the extracurricular program in a structured manner can help all

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students understand the importance of this method, not only as an emergency management measure but also as part of injury prevention. This diverse level of knowledge suggests that although *the RICE* method is widely recognized as an effective way of dealing with injury, the success of its implementation depends heavily on individual understanding (Muhammad Aspar et al., 2022). By providing more directed and experiential learning, extracurricular programs can ensure that all students have adequate knowledge to deal with injury situations confidently and appropriately (Saifulloh et al., 2024).

Based on Table 2 above, the following are the results per question item from the questionnaire consisting of 20 questions using the *Guttman* scale ("Yes" = 1, "No" = 0).

Table 3.
Distribution of Questionnaire Question Results

No	Question	Frequency "Yes"	Frequency "No"	Percentage "Yes"	Percentage of "No"
1	Do you know what *the RICE* method is?	12	3	80,0%	20,0%
2	Have you ever heard of the term "*Rest*"?	11	4	73,3%	26,7%
3	Do you understand the function of "*Ice*" in this method?	10	5	66,7%	33,3%
4	Do you know when to use "*Compression*"?	9	6	60,0%	40,0%
5	Do you know the "*Elevation*" step?	8	7	53,3%	46,7%
6	Have you ever used *the RICE* method?	6	9	40,0%	60,0%
7	Is this method effective in reducing swelling?	12	3	80,0%	20,0%
8	Did you know the *RICE method* is only for minor injuries?	10	5	66,7%	33,3%
9	Have you ever had an injury in extracurriculars?	7	8	46,7%	53,3%
10	Did you know that "*Rest*" means to stop the activity?	13	2	86,7%	13,3%
11	Do you understand the importance of "*Ice*" immediately after an injury?	11	4	73,3%	26,7%
12	Do you know how to perform "*Compression*" correctly?	8	7	53,3%	46,7%
13	Do you know the optimal duration of use of "*Ice*"?	9	6	60,0%	40,0%
14	Have you ever been taught this method in school?	5	10	33,3%	66,7%
15	Do you find this method difficult to implement?	7	8	46,7%	53,3%
16	Does this method help with faster recovery?	12	3	80,0%	20,0%
17	Did you know that "*Elevation*" reduces swelling?	10	5	66,7%	33,3%
18	Do you understand that this method is not a medical substitute?	13	2	86,7%	13,3%
19	Do you feel the need to learn more about this method?	14	1	93,3%	6,7%
20	Do you have an official guide to *the RICE* method?	4	11	26,7%	73,3%

The results of the question points from the questionnaire distributed to badminton extracurricular students at SMA 1 Klari show a varied understanding of the RICE (Rest,

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Ice, Compression, Elevation) method. In general, the level of students' knowledge of the basic concepts of the RICE method is quite good, with most respondents answering "Yes" to questions related to the definition of the RICE method, the function of each step, and the importance of applying this method.

Questions about common understanding, such as "Do you know what the RICE method is?" (80% answered "Yes") and "Do you understand the importance of the 'Rest' step?" (86.7% answered "Yes"), indicating that most students are already familiar with this method theoretically. However, when questions become more specific, such as "Do you know how to perform 'Compression' correctly?" or "Do you know the optimal duration of using 'Ice'?", the percentage of "Yes" answers decreases to about 53.3%-60%. This reflects that students' practical knowledge is still limited, even if they understand the basic concepts.

In addition, negative questions such as "Do you find this method difficult to implement?" showed that 46.7% of students felt there were challenges in implementing the RICE method. These results highlight the need for practical training that can help students apply the steps of the RICE method more confidently and effectively. Meanwhile, only 33.3% of students stated that they had been formally taught this method in school, indicating that education about the RICE method has not yet become an integrated part of extracurricular programs or general learning.

The last question, "Do you have an official guide to the RICE method?", recorded the lowest percentage of "Yes" answers (26.7%). This shows the lack of access for students to structured and official sources of information about this method. Although the majority of students stated that the RICE method helped them recover from injuries faster (80%) and that they felt the need to learn more (93.3%), these results showed a gap between the desire to learn and access to adequate learning materials.

The discussion of these results indicates that extracurricular programs need to adopt a more systematic approach to providing education about the RICE method. The addition of learning modules, injury management simulations, and the distribution of official guidance on the RICE method can improve students' understanding, not only in theory but also in practical application (Pangkey et al., 2022). Thus, students will be better prepared for sports injury situations, both individually and as part of a team.

CONCLUSION

Based on the results of the study, the level of knowledge of badminton extracurricular students at SMA 1 Klari about the RICE (Rest, Ice, Compression, Elevation) method showed variations from high to low. Most students have a moderate level of knowledge, demonstrating a basic understanding of this method, but lacking in its practical application. Low knowledge is mainly found in early-grade students who have just joined extracurricular activities. These results underscore the importance of more structured training to improve understanding of the RICE method, especially its practical application in injury situations.

It is recommended that the badminton extracurricular program at SMA 1 Klari integrate RICE method training in routine activities. This step can be in the form of counselling, injury management simulations, or the distribution of official guidance on this method. With a better understanding, students will be better prepared to face the risk of sports injuries and be able to implement appropriate initial treatment, thus supporting the sustainability of sports activities safely and effectively.

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