

The communities' knowledge, perception, and expectations toward sports injury management and sports achievements

Conocimiento, percepción y expectativas de las comunidades sobre la gestión de las lesiones deportivas y los logros deportivos

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Abstract. This article aims to measure how much knowledge, perception, and expectations society has regarding sports injury management and sports achievement. This research is descriptive quantitative research with a cross-sectional design. Total respondents in the study as many as 290 people. The data collected are demographic data and statements about knowledge, perceptions, and expectations regarding general health, injury, and sporting achievement. This statement is measured using the Likert scale. The majority of respondents were vulnerable aged 10-19 years (53.8%), and 62.8% of respondents from the general public. The frequency of physical activity performed by respondents was 2x/week (43.1%). Respondents' answers were in the excellent category for knowledge (70.3%), strongly agreed to perception (61.7%) expectations (73.8%). The entire group of both age, last education occupation, residence, respondent type, injury history, and frequency of physical activity had a $sig > 0.05$, which means no group is significantly related to both knowledge, perception, and expectations. The lack of sports medicine personnel causes most sports injuries currently managed by primary health facilities. Simultaneously, the treatment of sports injuries needs to be handled quickly and appropriately to prevent greater risk. If the handling of sports injuries is dealt with by people who have improper competence, it will impact the future of the athlete. Therefore, every sport of achievement needs to get assistance from sports medicine personnel. The system of mentoring athletes by competent doctors in sports, also supports the improvement of sports achievement coaching.

Keywords: sport injury management, sport achievement, knowledge, perception, expectations

Resumen. Este artículo pretende medir el grado de conocimiento, percepción y expectativas que tiene la sociedad en relación con la gestión de las lesiones deportivas y los logros deportivos. Se trata de una investigación cuantitativa descriptiva con un diseño transversal. El total de encuestados en el estudio asciende a 290 personas. Los datos recogidos son datos demográficos y afirmaciones sobre conocimientos, percepciones y expectativas en relación con la salud general, las lesiones y los logros deportivos. Estas afirmaciones se miden mediante la escala de Likert. La mayoría de los encuestados tenían entre 10 y 19 años (53,8%), y el 62,8% del público en general. La frecuencia de la actividad física realizada por los encuestados fue de 2x/semana (43,1%). Las respuestas de los encuestados se situaron en la categoría excelente en cuanto a conocimientos (70,3%), muy de acuerdo con la percepción (61,7%) y expectativas (73,8%). Todo el grupo de edad, última educación, ocupación, residencia, tipo de encuestado, historial de lesiones y frecuencia de actividad física tuvo una $sig > 0,05$, lo que significa que ningún grupo está significativamente relacionado tanto con los conocimientos como con la percepción y las expectativas. La falta de personal especializado en medicina deportiva es la causa de la mayoría de las lesiones deportivas que se tratan actualmente en los centros de atención primaria. Al mismo tiempo, el tratamiento de las lesiones deportivas debe realizarse de forma rápida y adecuada para evitar mayores riesgos. Si el tratamiento de las lesiones deportivas corre a cargo de personas con competencias inadecuadas, repercutirá en el futuro del deportista. Por lo tanto, todo deportista de alto rendimiento necesita la asistencia de personal especializado en medicina deportiva. El sistema de tutoría de atletas por parte de médicos competentes en deportes, también apoya la mejora del entrenamiento de logros deportivos.

Palabras clave: gestión de lesiones deportivas, logro deportivo, conocimientos, percepción, expectativas

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Introduction

Physical activity is a movement of the body that can increase energy expenditure. Physical exercise is a form of physical activity that is planned, measurable, sustainable, and aims to improve health and fitness (Kementrian Kesehatan Republik Indonesia, 2017). Conversely, the sport is a structured physical activity that has official rules and aims to improve physical skills also achieves measurable outcomes (Eime, Young, Harvey, Charity, & Payne, 2013). However, both physical activity and sports have similarities to give benefits of person's health if it is performed regularly (Sergio, Xavier, & Gonzalo, 2023). The benefits of performing physical activity and sports will improve the cardiovascular system, increase endurance and muscle strength, inhibit the aging process, and improve emotional well-being (Villaruel-Ojeda, Rodríguez, Moraga-Muñoz, & Hernández-

Mosqueira, 2023). Physical exercise and sports which were conducted continuously can reduce the risk of increased degenerative diseases in the community, such as coronary heart disease, diabetes mellitus, hypertension, and obesity. (Elmagd, 2016).

Over time, physical activity and sports also have a variety of risks, one of which is injury. Injuries are any form of tissue damage that occurs during competitions, exercises, or participating in physical activities and sports. Ironically, Sports injuries were the second most common type of accident after a domestic accident (3.7%) and work accidents (3.1%). The average number of sports and recreational injury incidents in a year was 8.6 million cases (Sharma, Killedar, Bagewadi, & Shindhe, 2021). There has been an increase in sports injuries in 2001-2013 with patients aged 5-18 years from varying sports injuries (Bonazza et al., 2019). Sport injuries happen because of internal factors

(anatomical factors, movement error factors, muscle weakness, and low fitness levels), and external factors (body contact and there are deficiencies in sports infrastructure) (Setiawan, 2011). Sports injuries also occur due to excessive interpretation of self-ability, miscalculation, and immeasurable risk-taking. A person who underestimates injury will be more at risk of injury because they will neglect preventive behavior (Kontos, 2004). Increased risk of injury occurs due to poor balance, agility, hypermobility, lack of heating, and previous injury history (Downs, Snodgrass, Weerasekara, Valkenborghs, & Callister, 2021).

Sport injury management is a crucial thing to do (Romero-Caballero, Varela-Olalla, Collado-Lázaro, & Álvarez-Salvador, 2022). Treatment of injuries done as soon as possible shortens the risk of chronic diseases due to exercise in the future. When an injury occurs, 50% of athletes choose to continue their competition, about 10% of the public decide to call a doctor, 4% choose to take them to the hospital, and 1% need an ambulance (Franettovich Smith et al., 2020). This case proves the low awareness of the public and athletes in terms of injury management. It would lead to a negative result on the sport achievement.

Indonesian Government mandates the law to Improve sports achievements at the regional, national, and international levels by concerning several factors in sports coaching including injury management (UU No 3 Tahun 2005, 2005). The purpose of this law is to create a breeding system that involves athletes in developing professionalism and injury management to support their achievement (Rudiansyah, Soekardi, & Hidayat, 2017). Injury management should be done by professionals who have competencies in health and sports sciences. Good injury management will support the athlete to optimize their potential during training and prevent the risk of more severe injury which potentially affects athletes' performance (Maldi & Komaini, 2020). Based on the above cases, this article aims to measure the knowledge, perception, and expectations of Indonesian sports society regarding handling sports injuries.

Materials and methods

This research was descriptive quantitative research with a cross-sectional design which was conducted in December 2020. This study's respondents were derived by using convenience random sampling methods and divided into three groups: the sports community, professional athletes, and policymakers. A total of 290 research samples participated in this study with able-bodied inclusion criteria and vulnerable 18-60 year olds.

Demographic data collected include age, occupation (students, teachers, private, unemployed), types of respondents (sports community, professional athletes, and policymakers), residence (village, city), last education (high school, undergraduate, master's, doctorate), injury history (never, never), frequency of physical activity (never, 1x/day, 2x/day, 3x/day, every day). The following data is a statement of knowledge, perception, and expectations regarding general

health, injury, and sporting achievement. This statement is measured using the Likert scale. A Likert scale is a scale used to measure a person's perception or opinion of an event or social phenomenon (Pranatawijaya, Widiatry, Priskila, & Putra, 2019). The questions in this questionnaire are in the form of positive questions and are rated 1,2,3,4,5. The more appropriate the statement is to the respondent's perception, the higher the value. The study used an online questionnaire that passed the validity and reliability test. The validity of the question item is done by comparing the r-value of the table's analysis $\geq r$ (Yusup, Studi, Biologi, Islam, & Antasari, 2018). The study used an online questionnaire that passed the validity and reliability test. The validity of the question item is done by comparing the r-value of the analysis $\geq r$ of the table. The data will be tested by using the SPSS application. This study's statistical test was a descriptive statistic to find out the frequency of demographic data and the spearman correlation test to see the relationship and strong relationship between variables. The level of significance in this study was $\alpha < 0.05$, and the overall test was two-tailed. Once tested, the data will be reviewed in the discussion.

Table 1.
Frequency and percentage of respondents' demographic data

No	Group	Frequency	Percentage
Ages			
1	10-19 years	156	53.8%
	20-29 years	88	30.3%
	30-39 years	38	13.1%
	40-49 years	4	1.4%
	50-59 years	4	1.4%
Last Education			
2	Senior High School	190	65.5%
	Bachelor	71	24.5%
	Master	26	9%
	Doctor	3	1%
Job			
3	College Students	217	74.8%
	Teacher	55	19%
	Entrepreneur	7	2.4%
	Unemployed	11	3.8%
Domicile			
4	Village	173	59.7%
	City	117	40.3%
Type of Respondent			
5	Sport Community	182	62.8%
	Professional Athlete	107	36.9%
	Policy Maker	1	0.3%
Injury History			
6	Ever	141	48.6%
	Never	149	51.4%
Physical Activity Frequency			
7	Never	5	1.7%
	Once a week	29	10%
	Twice a week	125	43.1%
	Three times a week	105	36.2%
	Every day	26	9%

Results

Frequency and percentage of age groups, recent education, employment, domicile, respondent type, history of injury, and physical activity

The majority of respondents were vulnerable aged 10-19 years (53.8%), were their last education was high school

(65.5%), and current job is as a student (74.8%). A total of 59.7% of respondents live in rural areas, and a total of 62.8% of respondents are from the sports community. Respondents who had been injured were 51.4%, and the majority of the frequency of physical activity performed by respondents was 2x/week (43.1%) (Table 1).

Frequency of answers to respondents' statements about experience, knowledge, perception, and expectations about sports health, injury, and achievement

A total of 290 respondents participated in the study. Respondents are given several statements, and then respondents are instructed to choose an answer that suits their opinion. Knowledge, perception, and expectation scores are divided into five criteria (Table 2). From the table below can be seen that the understanding of fewer poor respondents was 5 people (1.7%), quite good were 35 people (12.1%), good were 46 people (15.9%), and excellent were 204 people (70.3%). For the perception aspect, the response of people who disagreed was 6 people (2.1%), doubtful as many as 33 people (11.4%), agree as many as 72 people (24.8%), and strongly agree with 179 people (61.7%). Meanwhile, the expectation of respondents who disagreed with the statement were 8 people (2.8%), doubtful were three people (7.9%), agree were 45 people (15.5%), and strongly agree with 214 people (73.8%).

Table 2. Frequency and percentage of answers to respondents' statements

	Very Poor	Less Poor	Good Enough	Good	Excellent
Knowledge	0	5 1.7%	35 12.1%	46 15.9%	204 70.3%
Perception	Strongly Disagree 0	Disagree 6 2.1%	Doubtful 33 11.4%	Agree 72 24.8%	Strongly Agree 179 61.7%
Expectation	Strongly Disagree 0	Disagree 8 2.8%	Doubtful 23 7.9%	Agree 45 15.5%	Strongly Agree 214 73.8%

Relationships between demographic data with health knowledge, injuries, and sports achievement

The results of the answers from the majority of respondents were in an excellent category (Table 3/Figure 1). Based on the domicile group, respondents living in the village had better knowledge than respondents living in the city. As for the group who have a history of injury, they have a better understanding than respondents who have never had a history of injury. From the data in table 3, it is known that the entire group of both ages, last education occupation, place of residence, respondent type, injury history, and frequency of physical activity has a sig > 0.05, which means no group is significantly related to knowledge.

Table 3. Relationship between demographic data with knowledge

Group	Knowledge					Correlation Coefficient	p-value
	Very Poor	Less Poor	Good Enough	Good	Excellent		
Ages							
10-19 years	0	1	19	27	109	0.027	0.646
20-29 years	0	2	13	15	58		
30-39 years	0	2	3	3	31		
40-49 years	0	0	1	1	2		
50-59 years	0	0	0	0	4		
Last Education							
Senior High School	0	1	28	27	134	0.000	0.994
Bachelor	0	2	5	14	50		
Master	0	2	2	4	18		
Doctor	0	0	0	1	2		
Job							
College Students	0	2	28	37	150	0.029	0.618
Teacher	0	2	5	6	42		
Entrepreneur	0	1	1	0	5		
Unemployed	0	0	1	3	7		
Domicile							
Village	0	2	15	34	122	-0.035	0.552
City	0	3	20	12	82		
Type of Respondent							
Sport Community	0	1	26	28	127	0.019	0.749
Professional Athlete	0	4	9	18	76		
Policy Maker	0	0	0	0	1		
Injury History							
Ever	0	3	11	23	104	-0.083	0.158
Never	0	2	24	23	100		
Physical Activity Frequency							
Never	0	0	2	2	1	0.036	0.544
Once a week	0	0	3	6	20		
Twice a week	0	0	18	17	90		
Three times a week	0	4	11	16	74		
Every day	0	1	1	5	19		

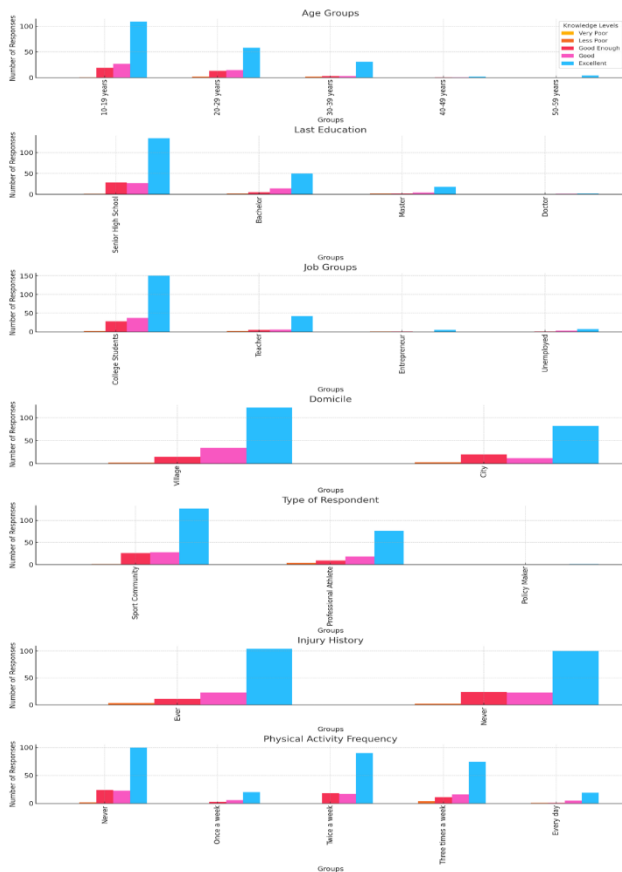


Figure 1. Comparison among sample groups' knowledge in handling sports injuries

Demographic data relationship with perceptions of health, injury, and sports achievement

The results of the answers from the majority of respondents were in the category of strongly agreed (Table 4/Figure 2). From the data in table 4, it is known that the entire group of both ages, last education occupation, place of residence, type of respondent, history of injury, and frequency of physical activity has a $sig > 0.05$, which means that no group is significantly related to perception.

Table 4. Relationship between demographic data with perception

Group	Perception					Correlation Coefficient	p-value
	Strongly Disagree	Disagree	Doubtful	Agree	Strongly Agree		
Ages							
10-19 years	0	3	21	42	90	0.110	0.062
20-29 years	0	2	10	21	55		
30-39 years	0	1	1	0	28		
40-49 years	0	0	1	1	2		
50-59 years	0	0	0	0	4		
Last Education							
Senior High School	0	3	25	48	114	0.048	0.413
Bachelor	0	1	6	18	46		
Master	0	2	1	5	18		
Doctor	0	0	1	1	1		
Job							
College Students	0	4	26	56	56	0.033	0.579
Teacher	0	2	4	4	10		
Entrepreneur	0	0	1	1	2		
Unemployed	0	0	2	2	4		
Domicile							
Village	0	1	23	38	111	-0.053	0.373
City	0	5	10	34	68		
Type of Respondent							
Sport Community	0	2	27	47	106	0.100	0.089
Professional Athlete	0	4	6	25	72		
Policy Maker	0	0	0	0	1		
Injury History							
Ever	0	4	17	28	92	-0.047	0.423
Never	0	2	16	44	87		
Physical Activity Frequency							
Never	0	0	2	1	5	0.004	0.949
Once a week	0	0	3	7	29		
Twice a week	0	0	19	27	125		

Table 4.
Relationship between demographic data with perception

Group	Perception					Correlation Coefficient	p-value
	Strongly Disagree	Disagree	Doubtful	Agree	Strongly Agree		
Three times a week	0	5	8	31	105		
Every day	0	1	1	6	26		

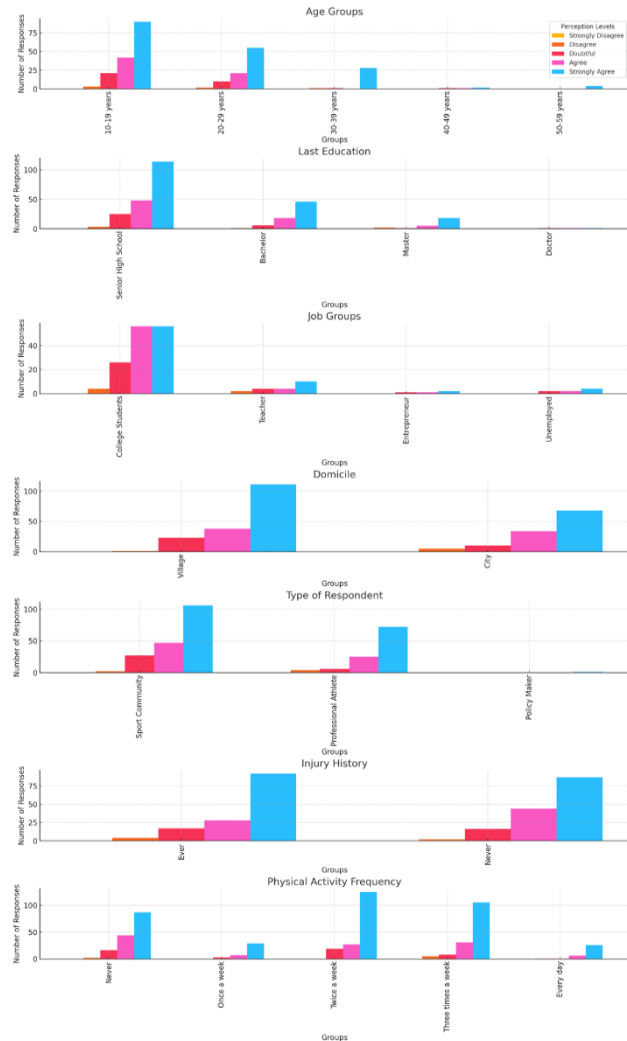


Figure 2. Comparison among sample groups' perception in handling sports injuries

Relationship between demographic data with expectations of health, injuries, and sport achievements

The results of the answers from the majority of respondents were in the category of strongly agreed (Table 5/Figure 3). Respondents from the group who were never injured had better expectations than those who had been injured. From the data shown in table 5, it is known that the entire age group, last education of work, place of residence, type of respondent, history of injury, and frequency of physical activity had a sig > of 0.05, which means no group is significantly related to expectations.

Table 5.
Relationship between demographic data with expectation

Group	Expectation					Correlation Coefficient	p-value
	Strongly Disagree	Disagree	Doubtful	Agree	Strongly Agree		
Ages							
10-19 years	0	3	15	25	113		
20-29 years	0	3	6	17	62		
30-39 years	0	2	1	3	32	0.058	0.322
40-49 years	0	0	1	0	3		
50-59 years	0	0	0	0	4		
Last Education							
Senior High School	0	3	19	34	134		
Bachelor	0	2	3	9	57	0.087	0.140
Master	0	3	0	2	21		
Doctor	0	0	1	0	2		
Job							
College Students	0	5	19	40	153	0.102	0.083

Table 5.
Relationship between demographic data with expectation

Group	Expectation					Correlation Coefficient	p-value
	Strongly Disagree	Disagree	Doubtful	Agree	Strongly Agree		
Teacher	0	3	1	2	9	0.012	0.84
Entrepreneur	0	0	2	1	4		
Unemployed	0	0	1	2	8		
Domicile						0.012	0.84
Village	0	3	17	26	127		
City	0	5	6	19	87		
Type of Respondent						-0.035	0.551
Sport Community	0	4	14	28	136		
Professional Athlete	0	4	9	16	78		
Policy Maker	0	0	0	1	0		
Injury History						0.008	0.898
Ever	0	6	10	21	104		
Never	0	2	13	24	110		
Physical Activity Frequency						-0.034	0.566
Never	0	0	1	1	3		
Once a week	0	1	2	2	24		
Twice a week	0	1	11	21	92		
Three times a week	0	5	8	16	76		
Every day	0	1	1	5	19		

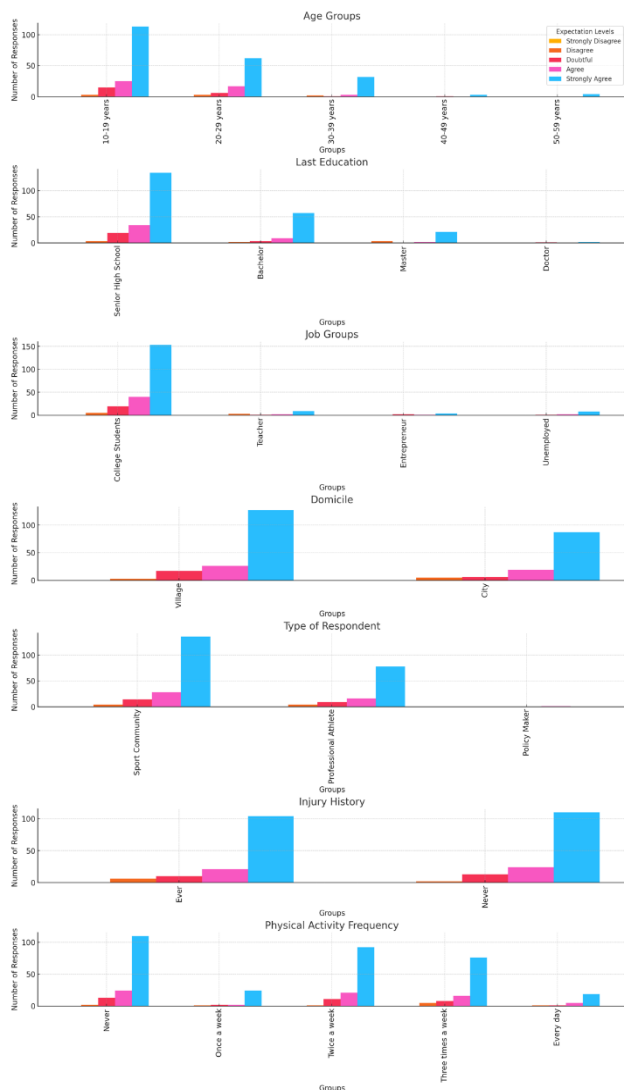


Figure 3. Comparison among sample groups' perception in handling sports injuries

Discussion

Importance of Specialized Sports Medicine Personnel

Indonesia's legal framework for sports, outlined in Law number 3/2005 about the National Sports System, mandates the development of sports personnel's education and training at both government and local levels to elevate sports achievements. This law recognizes the critical need for a multidisciplinary approach to sports training, where medical professionals play a crucial role in the health and performance of athletes. One of the sports personnel needed is a doctor equipped with sports knowledge that can provide treatment to professional athletes on promotional, preventive, and rehabilitative measures. Future research must ensure that all sports personnel who collect data must be qualified and trained in injury management to complete the handling of sports injuries. Each injury must be reviewed by a qualified health professional (Downs et al., 2021).

The role of sports medicine professionals extends beyond the treatment of injuries, encompassing preventive measures that ensure athlete longevity and promotive efforts that enhance athletic performance. These professionals are trained to understand the biomechanics of various sports, allowing them to provide targeted interventions that mitigate the risk of injury and enhance muscle and joint function, which are crucial for athletic success. However, despite this crucial role, Indonesia faces a significant gap in the availability of trained sports medicine personnel, which impacts the quality of care provided to athletes.

Society Knowledge and Perception in Sport Injury

The Indonesian society has an excellent knowledge of sports injury management and sports achievement coaching. Besides, their perceptions and expectations are in the category of agreeing with the researchers' statements on the

questionnaire. Respondents have good knowledge of; 1. Benefits of exercise to health, 2. A healthy lifestyle in athletes is one way to achieve maximum achievement, and 3. Sporting achievements are supported by an excellent physical condition. Good knowledge of injury management will impact positive behavior, where positive action can decrease injury prevalence (Hollman, Ezzat, Esculier, Gustafson, & Scott, 2019). Public health education on injury prevention is critical to reducing the risk of injury and improving safety (Santagati, Vezzosi, & Angelillo, 2016).

Society believes that; 1. Doctors equipped with sports medicine can provide sports advice following one's health status, 2. Athletes accompanied by doctors trained with sports medicine will achieve maximum achievement, and 3. Doctors equipped with sports medicine can handle injury conditions more effectively. Health promotion for injury management for athletes needs to be done to improve the strategy in competing (Osmotherly, Thompson, Rivett, Haskins, & Snodgrass, 2020). Knowledge and perception of poor injury management will be a significant obstacle in the post-injury recovery process. Therefore, education on injury management needs to be done to avoid the risk of worsening an injury (Navarro-Main et al., 2018). An athlete who suffers an injury but is not immediately reported to health experts will cause stress and reduce life quality (Heruti, Levy, & Avitsur, 2018). Therefore, the importance of sports medicine personnel is present to accompany athletes both in training and competition. If any athletes are injured, athletes can be immediately treated and treated under the procedure.

Society Expectations in Sport Injury

Respondents have high expectations about; 1. Each sport must be accompanied by medical personnel/doctors who have competence in the field of sports medicine, 2. Every race or competition, athletes must be under the supervision of doctors who have competence in the field of sports medicine, 3. The athlete's health will be maintained by competent doctors in the area of sports, 4. Doctors equipped with sports competence can help sports achievements in Indonesia improved both at the national and international level, 5. Doctors with sports competencies can be an example for promotional and preventive activities in sports injury management efforts. People's expectations related to sports injuries are the importance of mentoring doctors with additional competencies in sports to do various things both in the pre-competition, competition, and post-competition stages. The function of a doctor equipped with sports competence will diagnose and be able to treat according to complaints. Sports medicine personnel can help athletes stay active in achievement and achieve the best performance training program (Kumar, Hornby, & Joshi, 2018).

The lack of sports medicine personnel causes most sports injuries currently managed by primary health facilities. Simultaneously, the treatment of sports injuries needs to be handled quickly and appropriately to prevent greater

risk. If the handling of sports injuries is not done correctly and managed by people who have improper competence, it will impact the future of athletes, and in the long run, will damage the order of coaching sports achievement. Therefore, every sport of achievement needs to get assistance from sports medicine personnel. Sports medicine personnel have various competencies in medicine and sports, such as sports injury management, rehabilitation, therapeutic exercise, and chronic diseases due to sports (Speed, 2009). To add insight to professional athletes on the importance of injury prevention and management understanding, there needs to be promotional action taken by people who have competence in health and sports (Bruder et al., 2020).

Sports medicine personnel focus not only on the treatment of sports injuries, but sports doctors are also tasked with educating the public about the importance of regularly doing physical activity. This action is done as a form of preventive efforts to prevent various metabolic health problems such as diabetes mellitus and obesity (Creaney, 2010). Besides, sports medicine personnel can also provide promotional efforts by introducing the benefits obtained after doing sports, namely physical, cognitive, and psychological health benefits (Morelli, Bedney, & Eric Dadush, 2017).

Direct assistance of sports medicine personnel can provide post-injury recovery rehabilitation by giving motivation and providing recommendations for appropriate training programs. Besides, sports medicine personnel's promotion can provide perceptions of the positive benefits of sports so that the public can continue to move (Truong et al., 2020) actively. With the direct assistance of sports medicine personnel, it is expected that the coaching of sports achievements will run well because mentoring will affect athletes' health both in the field of competition and outside the competition.

Conclusion

This research has underscored the critical role of specialized sports medicine personnel in advancing Indonesia's national sports achievements, as mandated by Law number 3/2005. Through the lens of this study, it is evident that while public knowledge about sports injury management is relatively robust, there is a significant gap in the actual application of this knowledge due to the shortage of specialized sports medicine professionals. This gap not only limits the effective prevention and management of sports injuries but also hampers the potential for athletic excellence at both national and international levels. The findings suggest that to truly capitalize on the benefits of physical activities and elevate sports achievements, Indonesia must enhance its focus on the development of specialized training programs for sports medicine. These programs should aim to equip medical professionals with the necessary skills to address the unique demands of sports-related injuries. Furthermore, the integration of sports medicine into the broader healthcare framework must be prioritized to ensure that all athletes, regardless of their location or the level at which

they compete, have access to qualified sports medicine care. Investments in sports medicine education and infrastructure are essential to bridge the current gap between general medical practice and specialized sports care. This approach will also facilitate a culture of prevention, which is paramount to reducing the incidence of sports injuries.

Moreover, public health initiatives should be strengthened to educate the community on the importance of sports safety and the specific roles that sports medicine professionals play in athlete care. Awareness programs can significantly alter public perceptions and expectations, leading to more informed demands for specialized sports care, which in turn will drive improvements in the training and deployment of sports medicine professionals.

In conclusion, by aligning educational, infrastructural, and public health strategies with the needs of the sports sector, Indonesia can create a sustainable ecosystem that supports the health and achievements of its athletes. This alignment is crucial not only for fostering national pride through sports but also for enhancing the health outcomes of its population through increased physical activity. The goal is to ensure that sports participants can pursue their activities in the safest possible environment, supported by qualified professionals who can provide expert care and advice.

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