

THE EFFECTIVENESS OF FIRST TREATMENT OF ANKLE INJURIES WITH PRICE ON THE LEVEL OF KNOWLEDGE OF PENCAK SILAT ATHLETES IN SURAKARTA

Anni Sekar Taji¹, Yuli Widyastuti², Cemy Nur Fitria³

^{1,2,3} Faculty of Health Sciences, ITS PKU Muhammadiyah Surakarta

2020060145@students.itspku.ac.id

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Abstract

Background: Pencak silat is an exercise that is generally carried out to improve physical, technical and mental skills as well as the ability to injure in sports. The increase in injury incidence in Indonesia in 2018 was 9.2% and in Surakarta by 30.8%. One non-pharmacological treatment for early treatment when an ankle sprain occurs is to use the Protect, Rest, Ice, Compression, Elevation (PRICE) technique. **Objective:** To determine the effectiveness of early treatment of ankle injuries with PRICE on the level of knowledge of pencak silat athletes in Surakarta. Method: This research used a quasi-experimental design with one group pretest-posttest. With a total of 31 respondents and a questionnaire from Fajar Robin Pinanditto. The analysis test uses the Wilcoxon Signed Rank Test. **Results:** This research shows that the majority of athletes aged 13 years are 9 people (29.0%), 19 people are female (61.3%), and 17 people have junior high school education (54.8%). Initial treatment training for ankle injuries with PRICE is effective on the level of knowledge of pencak silat athletes in Surakarta with Asymp scores. signature. (2-tailed) 0.000. **Conclusion:** Training on the first treatment of ankle injuries with PRICE is effective on the level of knowledge of pencak silat players in Surakarta.

BACKGROUND

Pencak silat is a sport that can be the basis for success, both at the national and international level (Lubis, 2014). According to the Indonesian Pencak Silat Association (IPSI), pencak silat has the meaning of being the result of Indonesian culture which maintains life and stability for the environment so that it is harmoniously balanced in life and brings faith and devotion to God Almighty (Pratama, 2018). Pencak silat is an activity that generally aims to improve physical, technical and mental skills, but is often faced with the possibility of injury (Prasetya, 2014).

Injury is a response to a force acting on the body or body part that exceeds the body's ability to handle it. The cause of injury in the world of sports is not only due to physical contact, but also due to the forces produced by muscles when carrying out activities that have a risk of injury. In general, injuries can occur in tendons, ligaments, bones and joints and can occur at the start of sports activities or during exercise.

Causative factors include mistakes when warming up, poor flexibility, and fatigue (Okta, 2020). Sports injuries are defined as a loss of function and structure in a part of the body such as a strain, sprain or fracture (Timpka, 2014). Injuries not only have an impact on the athlete's physical condition, but also have an impact on the athlete's mentality, so they need a good recovery process (Santi, 2013).

Corresponding Author:

Edi Wibowo

Email: ferozazza@gmail.com

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The Ministry of Health of the Republic of Indonesia (2018) presents data on the types and conditions of injuries in Indonesia. In 2018, the increase in the incidence of injuries in Indonesia was 9.2%, an increase of 1% from 2013 which was 8.2%, resulting in disruption of daily activities. In Central Java, the incidence of injuries that can interfere with daily activities is 9.3% (Riskesdas, 2018). In Surakarta, the prevalence of injuries is 30.8% (Ministry of Health, 2018). The parts of the body affected by injury include the head 11.9%, chest 2.6%, back 6.5%, stomach 2.2%, upper limbs 32.7%, and lower limbs 67.9% (Health Service, 2019). Rahman's research (2023) shows that 29% of injuries experienced by pencak silat athletes in the Surakarta area are sprains, the most common area of injury is the ankle at 14%. The onset of most injuries was subacute in 55%, treated using the RICE technique in 50%.

Sprain injuries are generally experienced by competitive athletes and have a high recurrence rate. This injury can cause problems related to the development of Chronic Ankle Instability (CAI). The high incidence of strain injuries in pencak silat players is caused by many factors, so pharmacological and non-pharmacological treatment is needed. One of the non-medical primary treatment methods and improving the quality of sports injury treatment is the PRICE (Protection, Rest, Ice, Compression, Elevation) method (Herzog, 2019; Hertel, 2019; Nurwijayanti, 2016; Christoforidis, 2018; Saputri, 2020).

Nor's (2021) research involving 28 samples shows that the treatment of sports injuries in pencak silat athletes at IPSI Madiun Regency is considered very high, with a percentage of 81.8%. These results were obtained from short interviews and questionnaires given to respondents regarding their understanding of sports injury management. Zahra's (2022) research on sports injury counseling interventions for Pagar Nusa Ranting Gonilan pencak silat athletes showed that the pre-test results showed that 2 people had knowledge in the poor category (16.7%), 1 person had sufficient knowledge (8.3%), 7 people had knowledge good category (58.3%), and 2 people in the very good category (16.7%). The post-test results showed an increase in knowledge in the sufficient category of 1 person (8.3%), the good category of 2 people (16.7%), and the very good category of 9 people (75%).

From the results of interviews on September 19 2023 at the Sumber Muhammadiyah Da'wah Hall Building, Banjarsari, Surakarta, it was discovered that Pencak Silat athletes Tapak Suci Putera Muhammadiyah Pimda 05 Surakarta City did not know how to treat ankle injuries and often suffered injuries during training or matches. They are often advised to apply ice or massage. Ankle injuries often occur repeatedly, both during training and competitions, so good knowledge is needed regarding how to prevent them. Based on this background, the author is interested in conducting research on "Effectiveness of First Treatment of Ankle Injuries with PRICE on the Knowledge Level of Pencak Athlete Silat in Surakarta".

The aim of this research was to determine the effectiveness of training for the first treatment of ankle injuries with PRICE on the level of knowledge of pencak silat athletes in Surakarta.

METHOD

This type of research is quantitative research which uses a quasi-experimental design (Notoatmodjo, 2018). The research design uses a one group pretest-posttest research design, which includes a pretest before the intervention and a posttest after the intervention. Researchers administered a questionnaire to measure the level of knowledge regarding the first treatment of ankle injuries. The sampling method used is non-probability sampling, namely a data sampling technique based on certain assumptions (Sugiyono, 2017). The population in this study was 45 athletes, in this study there was 1 respondent and a sampling error tolerance percentage of 0.1 (10%) was used based on sample statistics using the Slovin formula. The variables in this study were training in first handling ankle injuries and the level of knowledge of pencak silat athletes. The operational definition in this study is the level of knowledge in athletes which is measured using a closed questionnaire containing 41 questions with the Guttman scale.

This research was carried out in March 2024 at the Tapak Suci Sumber Da'wah Building. Data collection was carried out by researchers using Google-form. The provision of materials and training was carried out on Tuesday, March 5 2024 at the Sumber Muhammadiyah Da'wah Hall Building, Banjarsari, Surakarta. The training was carried out for 90 minutes with 30 minutes of material divided and 60 minutes for training and started from 15.30 to 17.00 WIB. According to Zaenal (2014) training is an effort to translate knowledge about health into desired behavior through the educational process. Therefore, providing

training to pencak silat athletes on the correct RICE technique is very necessary (Nursalam and Effendi, 2011).

The research instrument used was a questionnaire from Fajar Robin Pinanditto with the Guttman scale, namely a "right-wrong" assessment scale which aims to obtain firm answers from respondents and there are standards regarding the level of knowledge in the initial treatment of ankle injuries. The inclusion criteria in the study were: athletes who were willing to be respondents, respondents were Pencak Silat athletes at Tapak Suci Pimda 05 Tapak Suci Putera Muhammadiyah Sumber and aged ≥ 11 years. Meanwhile, the exclusion criteria in the study were: athletes with injuries, athletes with a history of fractures or ligaments and athletes who had multiple injuries.

After receiving nursing ethics permission from ITS PKU Muhammadiyah Surakarta with number 046/LPPM/ITS.PKU/III/2024, the researchers collected data on pencak silat athletes in Surakarta. Previously, researchers will contact one of the trainers (official) to collect data. After conducting outreach to athletes, the researcher asked one of them to coordinate the distribution of the Google-Form to other athletes. The contents of the Google Form include a questionnaire, aims and objectives of data collection and a knowledge level questionnaire. If respondents are willing, they are asked to sign an informed consent form and fill out the questionnaire. The data collection methods in this research were interviews and observation, the researcher was assisted by 1 research assistant who was familiar with the material and the media used were Power Point (PPT) and leaflets. This research's univariate analysis includes respondent characteristics in the form of age, gender, and education level. The bivariate analysis of this research refers to the level of knowledge before being given training with PRICE (pre-test) and the level of knowledge after being given training with PRICE (post-test). In this research, bivariate analysis will be used using the Wilcoxon test, namely by knowing the average difference of objects that have non-normally distributed data.

The data analysis method used in this research is divided into the editing stage which includes checking and correcting the contents of the form or observation sheet; coding, namely changing numeric or number data (Notoatmodjo, 2018); data entry (entering data) enters data in the form of "code" into a computer program (software); (cleaning) data cleaning, checking the data that has been entered again by looking at the frequency distribution of the variables studied; and tabulating (making tables) creating tables that suit the research objectives and wishes of the researcher. Data processing uses computer software, namely the SPSS (Statistical Package for the Social Sciences) application 26.

RESULT AND DISCUSSION

Researchers carried out thorough data collection regarding the athlete's level of knowledge regarding the initial treatment of ankle injuries in Surakarta. From the questionnaire that was distributed via Google-form, the following results were obtained:

Characteristics of Respondents Based on Age

Based on table 1, the highest number of respondents aged 13 years was 9 people (29.0%), the number of respondents aged 14, 16 and 17 years was 5 people (16.1%) and the number of respondents aged 15 was 7 people (22.6 %). The characteristics of research respondents refer to the research subjects who will receive treatment or become the focus of research or experimentation, depending on the methodology used. The definition of adolescent age according to several sources varies, including: WHO (2014), states that the age range for adolescents is 10-19 years, while Regulation of the Minister of Health of the Republic of Indonesia Number 15 of 2014, stipulates a range of 10-18 years and according to the Population and Family Planning Agency (BKKBN) age range for teenagers is 10-24 years and unmarried. Based on research characteristics, the majority of respondents were 13 years old with a percentage of 29.0%. Previous research by Syamsuddin (2021) showed that as a person gets older, their cognitive and physical development also increases.

Late adolescence is a transition period encompassing biological, cognitive and socio-emotional changes from childhood and adulthood. Biological changes include physical development, including brain development, cognitive changes include changes in the way teenagers think and intelligence, while socio-

emotional changes involve teenagers' interactions with other people, including emotions, personality and roles in social contexts. This understanding is supported by Sahrani's research as quoted in the journal by (Lestari, 2020), which shows that age greatly influences the way they think, work and their intellectual abilities. The more mature a person becomes, the more developed their thinking patterns and comprehension skills become, which has an impact on increasing knowledge and skills.

Table 1
Characteristics of respondents based on age (n=31)

Age	Frequency (f)	Presentage (%)
13 years	9	29,0
14 years	5	16,1
15 years	7	22,6
16 years	5	16,1
17 years	5	16,1
Total	31	100

Characteristics of Respondents Based on Gender

Table 2 shows that the majority of respondents were 19 female respondents (61.3%) and 12 male respondents (38.7%). In line with a study conducted by Ariyani (2022), there are differences in helping behavior between women and men, especially in the practice of providing first aid for injuries. Both male and female respondents showed a high level of empathy and concern as well as a readiness to provide help voluntarily. In general, women tend to show more thorough and diligent behavior in completing tasks, but both men and women experience increased skills and handling in treating initial injuries. Gender is explained as a biological difference that influences individual roles and characteristics (Schmidt, 2017). Both women and men have an awareness of their own potential in training which encourages them to improve their personal skills and knowledge (Eki, 2020).

Both genders have an equal level of knowledge because access to knowledge and education is not limited based on gender, so that adequate knowledge has the potential to create an equal level of knowledge between women and men. The relationship between knowledge and skills is very close; lack of knowledge can affect a person's skills in performing certain tasks, while good knowledge contributes to superior skills. Thus, the results of this study conclude that female and male respondents show comparable abilities in improving their respective skills.

Table 2
Characteristics of respondents based on gender (n=31)

Gender	Frequency (f)	Presentage (%)
Female	19	61,3
Male	12	38,7
Total	31	100

Characteristics of Respondents Based on Education Level

Table 3 shows that of the 31 respondents, 17 (54.8%) had junior high school and 14 high school education (45.2%). Middle and high school education levels are the teenage years where self-concept is formed and influences a person's thinking patterns and cognitive development (Saputri, 2020). A person's education also has an impact on the process of understanding and receiving information, which is not only limited to mass media, but also has a short-term influence that influences the development of knowledge and skills. According to research by Suparmanto (2022), the higher a person's level of education, the broader their knowledge and skills, making it easier to receive information. This research shows that both middle school and high school students have a similar understanding of how to treat ankle injuries, which makes them more prepared and skilled in dealing with injury incidents.

Table 3
Characteristics of respondents based on education level (n=31)

Education level	Frequency (f)	Presentage (%)
SMP	17	54,8
SMA	14	45,2
Total	31	100

Characteristics of Knowledge Level Before and After Being Given Ankle Injury Training

From table 4, 20 out of 31 athletes (64.5%) have a high level of knowledge and the posttest results regarding responses to injury management show that 21 athletes (67.7%) have a very high level of knowledge. In the context of research regarding the initial treatment of injuries in pencak silat athletes, there are several important relevant findings. Jurisa (2015), highlights that a lack of knowledge can influence a person's actions because knowledge is a predisposing factor for behavior. Syamsuddin (2021), stated that the injury management skills of pencak athletes are still in the deficient category due to the lack of available information regarding injury management, so intervention is needed to improve their skills.

Notoatmodjo (2012) emphasizes that information factors influence a person's knowledge. The lack of information received by athletes can affect their skills in dealing with injuries both during training and competition. According to the definition from the Ministry of Education and Culture of the Republic of Indonesia (Ridwan, 2021), knowledge is everything that is known about something, including in the context of expertise or field of study. Through training in initial treatment of ankle injuries by comparing pretest and posttest results, research shows a significant increase in respondents' knowledge. Thus, sufficient knowledge and good skills in injury management are important for athletes to reduce the risk of serious injury and speed up recovery.

Table 4
Characteristics of Knowledge Level Before and After Being Given Ankle Injury Training (n=31)

Knowledge level	Pretest		Posttest	
	Frequency (f)	Presentage (%)	Frequency (f)	Presentage (%)
Very high	10	32,3	21	67,7
Tall	20	64,5	10	32,2
Currently	1	3,2	0	0
Low	0	0	0	0
Very low	0	0	0	0
Total	31	100	31	100

According to research by Candra (2021), the PRICE technique is a conventional clinical treatment that has many variations and combinations and is useful for reducing pain, minimizing more severe injuries, and supporting early mobilization in an effort to improve the function of the injured area. According to Zaenal (2014) training is an effort to translate knowledge about health into desired behavior through the educational process. Therefore, providing training to pencak silat athletes on the correct RICE technique is very necessary (Nursalam and Effendi, 2011). Based on analysis of data and sources obtained by Syamsuddin (2021), it was concluded that training has a great influence on increasing skills and knowledge. PRICE is an important skill in the initial treatment of ankle injuries which often occur both on the field and during matches. Researchers are of the opinion that training in early treatment of ankle injuries can be an effective method for reducing the risk of more severe injuries including fractures, especially if supported by competent and experienced instructors in the emergency field. Training results were obtained by comparing the results of the pre-test and post-test, the results of the training conducted regarding the initial treatment of ankle injuries showed that the respondents' knowledge had increased significantly in terms of results.

Researchers are aware that research regarding the effectiveness of training in the first treatment of ankle injuries with PRICE on the level of knowledge of pencak silat athletes in Surakarta has limitations

in conducting research, namely; Some athletes were unable to attend due to school activities, respondents did not read the questions thoroughly.

CONCLUSIONS AND RECOMMENDATION

Conclusion

1. Based on the characteristics of the Pimda 05 Surakarta City pencak silat athletes with age, gender and education level, from a total of 31 respondents, it was found that the majority of athlete respondents were 13 years old (29.0%), the majority were female, 19 people (61.3%) and the majority of athletes are still in junior high school, 17 people (54.8%).
2. The results of the pretest measurement of athletes' level of knowledge about treating ankle injuries with PRICE had an average value of 76.94 and the results of the posttest measurement of athletes' level of knowledge regarding treating ankle injuries with PRICE had an average value of 81.10.
3. Training on the first treatment of ankle injuries with PRICE is effective on the level of knowledge of pencak silat athletes in Surakarta with Asymp scores. Sig. (2-tailed) 0.001.

Suggestion

1. Provide information to athletes and input for coaches, especially fighter athletes, in handling ankle injuries.
2. Provide useful information and insight for fighter athletes or coaches to help treat ankle injuries.
3. It is hoped that it can be used as a reference for future researchers in providing non-pharmacological therapy using the PRICE method for athletes who experience ankle injuries in training or competition.
4. It is hoped that it can be used as a source of additional information regarding treating ankle injuries and providing interventions with PRICE to pencak silat athletes

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