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The Effect of Shred Injuries for Basketball on Increasing Leg Muscle Power in The Basketball Team of Public High School 3 Malang City

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ABSTRACT

The purpose of this study was to determine the effect of Shred Injuries on leg muscle power in the SMA Negeri 8 Malang City basketball team. The method in this study used an experimental method, with the design "One-group pretest-posttest design", which is a one-group research design that exists before (pretest) is given treatment and after (postest) is given treatment. The results in the study showed that the pretest female basketball team's leg muscle power test showed an average value of 41.16, while the posttest leg muscle power test results were 43.50. As well as a significant value of 0.014 for pretest and postest, it means that there is an effect of warm-up injury prevention using Shred Injuries on leg muscle power in the women's basketball team. While the results of research on the men's basketball team show that the pretest leg muscle power test shows that the average has a value of 57.00 for the pretest, while the postest leg muscle power test results are 59.66. As well as a significant value of 0.113 for pretest and postest, it means that there is no effect of warm-up injury prevention using Shred Injuries on leg muscle power in the men's basketball team. In this study it was found that there was no effect of Shred Injuries on the explosive power of the leg muscles in the women's basketball team, but there was an effect on the men's basketball team, so this research is a new finding.

Keywords : shred injuries; basketball; leg muscle power

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INTRODUCTION

Sport is a physical activity that is expected to create individuals who are physically and mentally healthy, besides that sports activities are also expected to form good character and personality so as to create a whole human being in sports development, so that sports can be improved and disseminated to all corners of the country in order to socialize sports. (Mustofa et al., 2020). In general, physical activity is divided into 3, namely daily physical activity, physical exercise, and sports activity. (Hadi., 2020). According to Nugroho & Yuliandra (2021) general physical condition

is a basic ability to develop the body's performance capabilities consisting of components of strength, speed, endurance and flexibility. Basketball has several basic techniques such as shooting, dribbling, deffense, pivot, and others. (Annasai., 2024). Good physical condition and optimal health are key factors in the success of an athlete's performance improvement program, to achieve this, a balanced training program and sports prevention program are needed. In basketball most of the injuries that are often experienced in the ankle, this injury is the most common in male and female players. The basketball match is a team game played by 2 teams containing 5 athletes, the length of the field is 28 meters x 15 meters. Basketball is a sport that has gained a lot of popularity in various communities, both rural and urban. To reduce the risk of injury to the lower extremities, sports injury prevention and performance enhancement programs should be conducted simultaneously. This needs to be done by balancing the training load required to improve fitness with the training load that can be tolerated to reduce the risk of injury.

In a six-season retrospective study conducted by the Women's National Basketball Association and the NBA, the most common location of injuries in basketball games was to the lower limbs (92%) namely to the ankle (Ankle 87%) and knee (Knee 5%), followed by injuries to the shoulder, elbow, and wrist (Shoulder, Elbow, Wrist 8%). (Setiawati et al., 2024). The most common injuries are sprain and strain (35-45%) in the knee and ankle, others are contusions and upper extremity fractures. (Puspitasari., 2019). In basketball games, leg muscle power is not only needed for support, but also for movements such as blocking opponents, catching the ball during *overhead passes*, *one hand pushes*, and *passing lane steals*. Leg muscles affect the ability or results of repulsion (Chandra & Mariati., 2020). In addition, that the part of the body that is most often injured while playing basketball is the lower body rather than the upper body. The lower extremities are the most affected by injury, with the ankle and knee joints having the highest prevalence of injury, regardless of gender and other categories (Sholihah., 2018). In basketball, most of the injuries experienced are the lack of warm-up before exercising, which is one of the common causes of sports injuries. Lower extremity injuries are physical damage that occurs to the lower limbs in the human body. (Tanidi et al., 2023). In connection with the risk of lower extremity injuries that often occur, prevention efforts are needed.

According to Nugroho & Yuliandra (2021) leg power is one of the important elements that support the achievements of athletes in almost all sports, the higher the *vertical jump*, the greater the leg power the athlete has. In this case the *vertical jump*, according to (Aguss et al., 2021) *vertical jump* is a movement to jump as high as possible upright with a focus on leg muscle strength in order to achieve maximum jumping. Before doing a *vertical jump*, it is necessary to carry out a neuromuscular *warm-up* or *warm up shred injuries* is a way to reduce the number of increased injuries. Neuromuscular *warm up* is a *warm up and stretching* that combines a series of exercises such as increasing strength, balance, agility, and muscle explosiveness and correcting several injury risks such as imbalance or lack of complexity in the muscles (*muscle im*balance). Countermovement jumps are routinely used in athlete performance to measure adaptation to training, as well as monitor neuromuscular readiness and fatigue. (Heishman et al., 2019). The neuromuscular system is needed for complex vertical jumps.

Explosive power that is mature and continuously trained will be very beneficial for individuals and teams, but if a team does not have high explosive power capabilities, it may be detrimental to the losing team because they can lose the ball when it bounces in the air. Explosiveness or *power* is needed to strengthen technical skills and achieve good performance when playing basketball. The use of leg power in the context of basketball refers to the strength of lower body performance, specifically leg power. (Aksović et al., 2020).

Of the various types of *injury prevention* exercises the researcher used *Shred Injuries for Basketball* adapted from the fifa 11+ training program which shows that it can prevent injuries

such as sprains, ankle injuries, hamstring injuries, and groin strains when done consistently before training and matches. *Shred Injuries* for *Basketball* is an injury prevention exercise program for the use of warm-up, neuromuscular training the purpose of this application is as a general basketball prevention program in young athletes. *The Shred Injuries* basketball program consists of 4 components namely aerobics, agility, strength, balance. *Shred Injuries* is an injury prevention exercise program for the use of warm-ups, neuromuscular training, the purpose of this application is as a general basketball prevention program for young athletes. Based on the results of previous studies, the researchers wanted to know the effect of *Shred Injuries for Basketball* training on leg muscle *power* in the SMA Negeri 8 Malang City basketball team.

LITERATURE REVIEW

In this component, the researcher chooses one concept or theory that is relevant to the research topic, namely Shred Injuries, which will be explained in the following description.

Shred Injuries

Based on several studies as described in this study, it is relevant to research conducted by (Liza et al. 2024) regarding the Neuromuscular Exercise Warm-Up Program "SHRed Injury Basketball" Reduces Ankle and Knee Injury Rates by 36% in Youth Basketball. The main objective is to determine the effect of the shred injuries training method using jump md on increasing power in extracurricular basketball students of SMA NEGERI 3 Malang City. In Shred Injuries aged 16-18 years, there are still many studies that have not conducted or used this experimental method, so that it can be used as an innovation to be developed better in the future. The mechanism shows that although Shred Injuries is effective for reducing the risk of injury to leg muscles, the warm-up may be different for each person in terms of increasing the power or explosive power of small muscles such as legs. Factors that affect leg muscle power when jumping, attacking, defending include athlete ability and warming up quality. The quality of warming up includes the professional competence of the coach in cognitive, affective, and psychomotor aspects. The role of the coach in warming up before core training is very important to reduce the risk of injury to the leg muscles. In order for athletes to avoid the risk of injury, it is necessary to do warming up injury pervention, the coach needs to make a varied warming up model in order to reduce the risk of injury to the leg muscles.

METHOD

The method in this study uses an experimental method, with the design used for this research is "*One-group pretest-posttest* design", which is a one-group research design that exists before (*pretest*) is given treatment and after (*posttest)* is given treatment. According to Putri et al. (2023) *one group pretest and postest* which has the aim of knowing the effect of *shred injuries* on leg muscle power on the SMA NEGERI 3 Basketball Team Malang City, East Java. This study was conducted for 18 meetings, including 16 *treatments*, 1 *postest*, and 1 *pretest* in June-August 2024. The sample in this study used a total sampling technique, namely the entire men's and women's basketball team at SMA Negeri 3 Malang City, totaling 24 athletes consisting of 12 male and female athletes. In this observation, which is carried out before the experiment (01) is called the *pretest* value and observation after the experiment (02) the *posttest* value. The research design is packaged in the following form:

Table 1. *One Group Pretest-Posttest* Design

Subject	*Pretest*	Treatment	*Posttest*

R	O_1	X	O_2

Description:
R : Participants of SMA Negeri 3 Malang City basketball team
O_1 : Initial test
X : Treatment using *shred injuries*
O_2 : Final test

This research design uses a *One-group pretest-postest design, the* researcher will first conduct an initial test to the experimental group using *Jump MD* to determine the results of the explosive power test on the leg muscles before being given treatment. After conducting an initial test, the researcher will provide training using *Shred Injuries* to provide treatment on increasing leg muscle *power* to the experimental group. After the researcher provides treatment in the form of training using *Shred Injuries*, the researcher will conduct a final test in order to determine the comparison of the initial test results (*pretest*) and the final test results (*posttest*).

This test tool uses *Jump MD*. The data analysis method used is univariate analysis used to determine data distribution or data normality, namely the *Shapiro Wilk Test* with the criteria if the *p value> alpha* (0.05) and bivariate by looking for the *Paired Sample T-test*. *Paired Sampele T-test* is used to compare two sets of average data, consisting of data before and after treatment.

RESULTS

Demographics Test

Table 2. Characteristics of Respondents Based on Age

Characteristics	Mean	Minimal	Maximum	Std. Deviation
Age	16.41	16.00	18.00	0.583

In the data table above, it can be concluded that the average age of respondents is 16.41 years, with the youngest age 16.00 years and the oldest 18.00 years.

Table 3. Characteristics of Respondents Based on Gender

Characteristics	n	%
Gender		
Female	12	50.0
Male	12	50.0

Based on the table above, the number of respondents in the study was evenly divided between the two genders.

Table 4. Characteristics of Respondents Based on JUMP MD Value Male

Characteristics	n	Mean	Min-Max	Std. Deviation
Pretest	12	57.00	50-68	6.120
Posttest	12	59.66	50-67	4.559

Based on table 3 above shows the average *pretest* score of 57.00 and *postest* score of 59.66, with the lowest score on the *pretest* of 50 and the highest score of 68, while the lowest score on the *pretest of* 50 and *postest of* the highest score of 67.

Table 5. Characteristics of Respondents Based on JUMP MD Value Female

Characteristics	n	Mean	Min-Max	Std. Deviation
Pretest	12	41.16	35-49	4.344
Posttest	12	43.50	38-50	4.700

Based on table 4 above shows the average *pretest* score of 41.16 and *postest* 43.50, with the lowest score on the *pretest* 35 and the highest score 49, while the lowest score on the *pretest* 38 and *postest* highest score 50.

Normality Test

Table 6. Normality Test Results

Variables	Normality Test Results	Description
Pretest		
Female	0.905	Normal data distribution
Male	0.48	Data distribution is not normal
Posttest		
Female	0.036	Data distribution is not normal
Male	0.496	Normal data distribution

The results of the data normality test on the *pretest* variable in women showed normal data distribution and the *posttest* in women showed abnormal data distribution, so that comparative analysis could be carried out using the Wilcoxon T-test. And the results of the data normality test on the *pretest* variable in men also show abnormal data distribution and *postest* in men also show normal data distribution, so comparative analysis can also be done using the Wilcoxon t-test.

Wilcoxon T-test

Table 7. Comparison of pre- and post-treatment Female

Variables	P value
Jump MD Pretest-Posttest	0.014

Based on table 7, the results of the analysis with the Wilcoxon test showed a significant relationship between pretest and posttest Jump MD values (p value = 0.014).

Table 8. Comparison of pre- and post-treatment Male

Variables	P value
Jump MD Pretest-Posttest	0.113

Based on table 8, the results of the analysis with the Wilcoxon test showed no significant relationship between the pretest and posttest Jump MD values (p value = 0.113).

DISCUSSION

The purpose of this study was to determine the effect of *Shred Injuries* on increasing leg muscle power in basketball team athletes at SMA Negeri 3 Malang City. This research was conducted as an effort to *warm-up injury prevention* alternatives that can help in warming up the muscles in the basketball team athletes. The results showed that the results of the female basketball team's leg muscle power test at the time of the *pretest* showed that the average leg muscle power had a value of 41.16, while the results of the leg muscle power test at the time of the *posttest* were 43.50. As well as a significant value of 0.014 for *pretest* and *postest*, it means that there is an effect of *warm-up injury prevention* using *Shred Injuries* on leg muscle power in the women's basketball team at SMA Negeri 3 Malang City. While the results of research on the men's basketball team showed that the results of the leg muscle power test at the time of the *pretest* showed that the average leg muscle power had a value of 57.00 for the *pretest*, while the results of the leg muscle power test at the time of the *postest* were 59.66. As well as a significant value of 0.113 for *pretest* and *postest*, meaning that there is no effect of *warm-up injury prevention*

using *Shred Injuries* on leg muscle power on the men's basketball team at SMA Negeri 3 Malang City.

Based on this research, it was found that *warm-up injury prevention* using *Shred Injuries* can help increase faster muscle warm-up before training. *Shred Injuries* is very effective in helping basketball athletes at SMA Negeri 3 Malang City in accelerating muscle warm-up before training or competition. As a result, athletes can return to training more effectively and consistently, and reduce the risk of injury that can interfere with athlete performance. Although the men's basketball team showed no significant effect, it was proven on the women's basketball team where it showed a significant effect of providing *warm-up injury prevention* using *Shred Injuries* on leg muscle power. This occurs because the difference in testosterone hormones between the men's team and the women's team has a significant impact on muscle building during routine training.

The neuromuscular system provides a network of nerves and muscles that control movement in the leg. Functional instability comes from deficits in the neuromuscular system. (F. Nugroho, Trisnowiyanto, and Wulandari 2023).. It involves the interaction between motor neurons (nerves that send signals from the brain) and muscles in the limbs to regulate contraction and relaxation that allow movements such as walking, running, jumping, or even standing in balance. According to Asmaret (2022) shows that testosterone increases the tendency towards aggression due to reduced neural activation of impulse control circuits and self-regulation. The hormonal explanation shows that the hormone tetosterone has an increased aggressive tendency. In this view, sex differences in aggression are associated with higher testosterone levels in males. (Aulya, Ilyas, and Ifdil, 2016).. Males have higher testosterone levels than females during the growth process. The effect of the hormone testosterone is to encourage growth in men's bones and muscles, but growth in women's physique and activity is different, so the muscle explosive power that women have is not as strong as men. The magnitude of this muscle is closely related to the explosive power of the leg muscles, muscle explosiveness has an important component in increasing power in athletes. Muscle explosive power will increase according to age, height, weight, the greater a person's body weight, the more muscle mass increases, so that muscle explosive power will increase. An athlete's height will affect the growth period of organs such as arm length and leg length.

Based on the results of a research journal entitled Football Injuries of the Ankle, it is explained that in the world of soccer, injuries to the lower extremities are most common, with ankle injuries accounting for one third of all injuries. (Liza et al. 2024). Previous ankle injuries, lack of stretching, lack of warm-up, and not wearing a brace are significant risk factors (Mahesvi et al. 2024). (Mahesvi et al. 2023).. In the Long-Term Athlete Development (LTAD) model at the age of 16-18 years for the sport of basketball games is generally at the *Train to Compete* stage. Athletes at this stage begin to concentrate on preparing for heavier and more complex competitions, which include improving physical, tactical and technical abilities to compete at higher levels. However, this phase is called *train to compete*, and athletes are not yet fully *ready to compete* to compete at the highest level. In this stage it is still said to be a process of refining skills and increasing stamina to handle more rigorous competition. One of the causes of the influence of *Shred Injuries* on leg muscle power on the men's basketball team, because athletes at this age are still in the stage of physical development, the *neuromuscular system*, and adaptation to various *warm-up injury prevention* methods such as *Shred Injuries* may not be effective in more physiologically mature athletes. In addition, basketball demands the large muscles of the back, arms, and abdomen (core), compared to the leg muscles, which may not be the main focus of a training program for leg muscle training.

Specific research on the effects of *Shred Injuries* on leg muscle power is limited. Most studies have focused on large muscle groups, such as the arms and back, as they are more

associated with lower-body dominant sports activities. However, some studies such as the one described in this study are relevant to the research conducted by (Liza et al. 2024) regarding the Neuromuscular Exercise Warm-Up Program "SHRed Injury Basketball" Reduced Ankle and Knee Injury Rates by 36% in Youth Basketball. In *Shred Injuries* aged 16-18 years, there are still many studies that have not conducted or used this experimental method, so it can be used as an innovation to be developed better in the future. The mechanism shows that although *Shred Injuries* is effective for reducing the risk of injury to leg muscles, the warm-up may be different for each person in terms of increasing the power or explosive power of small muscles such as legs.

In this study it was found that there was no effect of *Shred Injuries* on explosive power in the leg muscles in the women's basketball team, while there was an effect on the men's basketball team, so this study is a new finding. This is due to several aspects, including: 1) Genetic and hormonal differences between male and female athletes, 2) The neuromuscular system is quite different in each individual between men and women, 3) Different anatomical adaptations and muscle mass in women, may be more complex than men, 4) The composition of the leg muscles of each age, gender, and person may have different blood flow, so the effects of *Shred Injuries* may not be effective on large muscles.

CONCLUSION

Based on the results of research and discussion, it can be concluded that there is no effect of *warm up injury pervention* using *Shred Injuries* on leg muscle power on the men's basketball team at SMA Negeri 3 Malang City, but there is an effect of *warm up injury pervention* using *Shred Injuries* on leg muscle power on the women's basketball team at SMA Negeri 3 Malang City. This is due to several factors, namely genetic and hormonal differences between male and female athletes, different neuromuscular systems in each individual between men and women, different anatomical adaptations and muscle mass in women, may be more complex than men, then the composition of the leg muscles of each age, gender, and a person may have different blood flow, so the effect of *Shred Injuries* may not be effective on large muscles**.**

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

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REFERENCES

Aguss, R. M., Fahrizqi, E. B., & Wicaksono, P. A. (2021). Efektivitas vertical jump terhadap kemampuan smash bola voli putra. *Jurnal Pendidikan Jasmani Indonesia*, *17*(1), 1–9. https://doi.org/10.21831/jpji.v17i1.38631

Akhmadieva, R. S., Mikhaylovsky, M. N., Simonova, M. M., Nizamutdinova, S. M., Prokopyev, A. I., & Ostanina, S. S. (2021). Public relations in organizations in sportsman students view:

Development of management tools or healthy and friendly relations formation. *Journal of Human Sport and Exercise - 2021 - Winter Conferences of Sports Science*. https://doi.org/10.14198/jhse.2021.16.Proc3.43

Aksović, N., Kocić, M., Berić, D., & Bubanj, S. (2020). Explosive Power in Basketball Players. *Facta Universitatis, Series: Physical Education and Sport*, *18*(1), 119. https://doi.org/10.22190/fupes200119011a

Annasai, F. (2024). PENGEMBANGAN MODEL LATIHAN KONDISI FISIK BERBASIS CIRCUIT TRAINING UNTUK MENINGKATKAN KECEPATAN, POWER LENGAN, KELINCAHAN, DAN POWER OTOT TUNGKAI ATLET BOLA BASKET USIA 15-18 TAHUN. In *Αγαη* (Vol. 15, Issue 1).

Arai, A., Ko, Y. J., & Ross, S. (2014). Branding athletes: Exploration and conceptualization of athlete brand image. *Sport Management Review*, *17*(2), 97–106. https://doi.org/10.1016/j.smr.2013.04.003

Chandra, B., & Mariati, S. (2020). Daya Ledak Otot Tungkai dan Kelentukan Otot Pinggang Memberikan Kontribusi Terhadap Kemampuan Smash Bolavoli. *Jurnal Patriot*, *2*(1), 96–110. http://patriot.ppj.unp.ac.id/index.php/patriot/article/view/526

García, C. (2013). Strategic communication applied to nation building in Spain: The experience of the Catalan Region. *Public Relations Review*, *39*(5), 558–562. https://doi.org/10.1016/j.pubrev.2013.07.006

Hadi, F. K. (2020). Aktivitas Olahraga Bersepeda Masyarakat Di Kabupaten Malang Pada Masa Pandemi Covid-19. *Sport Science and Education Journal*, *1*(2), 28–36. https://doi.org/10.33365/ssej.v1i2.777

Heishman, A., Brown, B., Daub, B., Miller, R., Freitas, E., & Bemben, M. (2019). The influence of countermovement jump protocol on reactive strength index modified and flight time: Contraction time in collegiate basketball players. *Sports*, *7*(2). https://doi.org/10.3390/sports7020037

Joy, E. (Liz), Blair, S. N., McBride, P., & Sallis, R. (2013). Physical activity counselling in sports medicine: a call to action. *British Journal of Sports Medicine*, *47*(1), 49–53. https://doi.org/10.1136/bjsports-2012-091620

Kim, S., & Manoli, A. E. (2022). Does relationship quality matter in policy-making? The impact of government-public relationships and residents' perceptions on their support towards a mega-sport event. *International Journal of Sport Policy and Politics*, *14*(2), 207–224. https://doi.org/10.1080/19406940.2021.2013925

Kleinmann, C. M. (2020). Do We Really Want Sports Public Relations to Return to Normal? *International Journal of Sport Communication*, *13*(3), 586–592. https://doi.org/10.1123/ijsc.2020-0232

McKelvey, S., & Grady, J. (2008). Sponsorship Program Protection Strategies for Special Sport Events: Are Event Organizers Outmaneuvering Ambush Marketers? *Journal of Sport Management*, *22*(5), 550–586. https://doi.org/10.1123/jsm.22.5.550

Mitrook, M. A., Parish, N. B., & Seltzer, T. (2008). From advocacy to accommodation: A case study of the Orlando Magic's public relations efforts to secure a new arena. *Public Relations Review*, *34*(2), 161–168. https://doi.org/10.1016/j.pubrev.2008.03.017

Mustofa, R., Irawadi, H., Lemana, H. S., & Ridwan, M. (2020). Aktivitas Latihan Mahasiswa Prodi Pendidikan Kepelatihan Olahraga FIK UNP. *Jurnal Patriot*, *2*(3), 743–756.

Nettleton, S., & Hardey, M. (2006). Running away with health: the urban marathon and the construction of 'charitable bodies.' *Health: An Interdisciplinary Journal for the Social Study of Health, Illness and Medicine*, *10*(4), 441–460. https://doi.org/10.1177/1363459306067313

Nugroho, R. A., & Yuliandra, R. (2021). Analisis Kemampuan Power Otot Tungkai Pada Atlet Bolabasket. *Sport Science and Education Journal*, *2*(1), 34–42. https://doi.org/10.33365/ssej.v2i1.988

Pincus, J. D., Rimmer, T., Rayfield, R. E., & Cropp, F. (1993). Newspaper Editors' Perceptions of Public Relations: How Business, News, and Sports Editors Differ. *Journal of Public Relations Research*, *5*(1), 27–45. https://doi.org/10.1207/s1532754xjprr0501_02

Puspitasari, N. (2019). Faktor Kondisi Fisik Terhadap Resiko Cedera Olahraga Pada Permainan Sepakbola. *Jurnal Fisioterapi Dan Rehabilitasi*, *3*(1), 54–71. https://doi.org/10.33660/jfrwhs.v3i1.34

Setiawati, E., Ivan, M., Sjaaf, F., Kedokteran, F., & Padang, U. B. (2024). Edukasi & Pelatihan Teknik Pertolongan-Pertama Ketika Terjadi Cedera-Olahraga Menggunakan Metode "Rice." *Tahun*, *4*(2), 2746–1246.

Sholihah, S. (2018). Analisis faktor yang mempengaruhi pengambilan keputusan pada pasien cedera muskuloskeletal yang memilih berobat ke sangkal putung berdasarkan pendekatan teori health belief model. In *Doctoral dissertation, Universitas Airlangga*. https://repository.unair.ac.id/85163/4/full text.pdf

Sofyan, D., Saputra, Y. M., Nurihsan, J., Kusmaedi, N., & Abdullah, K. H. (2022). Stance of Sports and Fitness: A Scientometric Review. *Physical Education Theory and Methodology*, *22*(4), 596–607. https://doi.org/10.17309/tmfv.2022.4.20

Tanidi, K. D. R. S., Andiana, O., Abdullah, A., & Yunus, M. (2023). Gambaran Pengetahuan dan Sikap Atlet Bola Basket tentang Cedera Ekstremitas Bawah (Studi kasus: Klub Basket Imonoke Fakultas Ekonomi dan Bisnis Universitas Negeri Malang). *Sport Science and Health*, *5*(8Kevin Dhaniel Ryu Sisnet Tanidi, Andiana, O., Abdullah, A., Yunus, M. (2023). Gambaran Pengetahuan dan Sikap Atlet Bola Basket tentang Cedera Ekstremitas Bawah (Studi kasus: Klub Basket Imonoke Fakultas Ekonomi dan Bisnis Universitas Negeri Malang). Sp), 864–872. https://doi.org/10.17977/um062v5i82023p864-872