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Kampus Sultan Abdul Jalil Shah



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**KNOWLEDGE AND ATTITUDE OF SPORT RELATED CONCUSSION
AMONG ADOLESCENT ATHLETES IN MALAYSIA**



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SITI NUR' AIN BINTI ABANG AKIRIL @ AKIDIL

FACULTY OF SPORTS SCIENCE & COACHING

SULTAN IDRIS EDUCATION UNIVERSITY

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DECLARATION

I hereby declared that all the writings, works and the ideas
in the research report is my own ideas and concept except for reference
which have been fully acknowledged

(SITI NUR' AIN BINTI ABANG AKIRIL @ AKIDIL)

DATE:

ENDORSEMENT

This research report has been received and approved to fulfil the requirement for
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ABSTRACT

Sport-Related Concussion (SRC) is associated with a diversity of short term and long-term health implications, particularly in adolescent athletes. Therefore, adolescents' knowledge and attitude toward concussion are important to reduce the implications of concussions. This study was conducted to assess the knowledge and attitude of SRC among adolescent athletes in Malaysia. A total of 189 adolescent athletes from different State Sports School have been involved in this study. Cross sectional study design was used to assess the knowledge and attitude of sport related concussion among adolescent athletes in Malaysia using the RoCKAS-ST M questionnaire as the instrument to evaluate the Concussion Knowledge Index (CKI) and Concussion Attitude Index (CAI) of respondents. Descriptive statistic was used to determine the level of knowledge and attitude of sport related concussion among adolescent athletes who participated this survey meanwhile Independent T-test were used to analyze differences in level of knowledge and attitudes on sport concussion between genders (male, female) and type of sports (contact, non-contact). The result of this study show the level of knowledge of sport related concussion among adolescent athletes in Malaysia is considerate as poor level of knowledge (<60%) and the level of attitude of sport related concussion among adolescent athletes in Malaysia is considerate as a moderate safe response towards concussion with the CAI score of this study is between 15-75 points. There was no significant difference, $p>0.05$ for both CKI and CAI score between genders and type of sports. In conclusion, it is importance of having better knowledge of concussion because attitude of adolescent athlete on handling the concussion will reflect on the level of knowledge about concussions. Therefore, it is more studies needed before any structured sports concussion education programme can be employed to improve the knowledge and attitude of adolescent athletes in Malaysia.

Keywords: concussion, knowledge, attitude, contact sports, non-contact sports





PENGETAHUAN DAN SIKAP TERHADAP GEGARAN OTAK BERKAITAN SUKAN DALAM KALANGAN ATLET REMAJA DI MALAYSIA

ABSTRAK

Gegaran otak yang berkaitan dengan sukan dikaitkan dengan kepelbagaian implikasi kesihatan jangka pendek dan jangka panjang, terutamanya dalam kalangan atlet remaja. Oleh itu, pengetahuan dan sikap remaja ke arah gegaran otak adalah penting untuk mengurangkan implikasi gegaran otak. Kajian ini dijalankan untuk menilai tahap pengetahuan dan sikap gegaran otak berkaitan sukan dalam kalangan atlet remaja di Malaysia. Seramai 189 atlet remaja dari Sekolah Sukan Negeri yang berbeza telah terlibat dalam kajian ini. Reka bentuk kajian keratan rentas digunakan untuk menilai tahap pengetahuan dan sikap gegaran otak berkaitan sukan dalam kalangan atlet remaja di Malaysia menggunakan RoCKAS-ST M soal selidik sebagai instrumen untuk menilai Indeks Pengetahuan Konkusi (IPK) dan Indeks Sikap Konkusi (ISK) peserta kajian. Statistik deskriptif digunakan untuk menentukan tahap pengetahuan dan sikap gegaran otak berkaitan sukan dalam kalangan atlet remaja yang mengambil bahagian dalam tinjauan ini manakala ujian-T Bebas digunakan untuk menganalisis perbezaan tahap pengetahuan dan sikap terhadap gegaran otak antara jantina (lelaki, perempuan) dan jenis sukan (kontak, bukan kontak). Hasil kajian ini menunjukkan tahap pengetahuan berkaitan gegaran otak berkaitan sukan dalam kalangan atlet remaja di Malaysia mempunyai tahap pengetahuan yang lemah (<60%) manakala tahap sikap gegaran otak berkaitan sukan dalam kalangan atlet remaja di Malaysia mempunyai tindak balas selamat yang sederhana terhadap gegaran otak dengan skor ISK kajian ini adalah antara 15-75 mata. Tidak terdapat perbezaan yang signifikan, $p > 0.05$ untuk kedua-dua Gegaran Skor Indeks Pengetahuan Konkusi dan Indeks Sikap Konkusi antara jantina dan jenis sukan. Kesimpulannya, kajian ini menunjukkan kepentingan mempunyai pengetahuan yang lebih baik tentang gegaran otak kerana sikap atlet remaja dalam mengendalikan gegaran otak akan mencerminkan tahap pengetahuan gegaran otak berkaitan sukan. Oleh itu, adalah sangat penting untuk membangunkan program pendidikan berstruktur bagi gegaran otak berkaitan sukan untuk meningkatkan tahap pengetahuan dan sikap atlet remaja dalam Malaysia.

Kata kunci: gegaran otak, pengetahuan, sikap, sukan kontak, sukan bukan kontak





CHAPTER 1

INTRODUCTION



1.1 Background of Study

Concussion is a term that has been used to describe the milder end of the traumatic brain injury (TBI) range, in which biomechanical forces communicated to the brain cause physiologic dysfunction and neurologic deficits without causing visible macrostructural damage (Christopher et al., 2014). It can be induced by a direct hit to the head or by an impulsive force that causes the head to accelerate without causing direct cranial trauma. The majority of the time, acute clinical symptoms are temporary and go away on their own. Concussions are a serious public health concern, especially in the context of sports. Concussion and repeated concussion may be a problem for millions of athletes of all ages.

According to the Centers for Disease Control and Prevention (CDC), a concussion is a serious condition, and while most adolescent athletes heal quickly and feel well within



a few weeks, symptoms of concussion can last months or longer in certain cases. Adolescent athletes who participate in sports, particularly contact sports, are more risk of suffering from sports-related concussions. It is because contact sports are those in which the participants must make physical contact with one another (Keller et al., 2014). Its result sports related concussion which is minor head injury caused by external force in any high-risk sports such as contact sports.

In recent years, sport concussions have been recorded in Malaysian athletes, particularly those who participate in combat and contact sports, particularly at higher levels of competition. In the 2018 SUKMA Games, the SRC incidence was reported to be two out of every 100 injuries in combat events (Aziz & George Mathew, 2020) and three out of 48 injuries in field games (Ahmad-Shushami & Abdul-Karim, 2020). According to the Centers for Disease Control and Prevention (CDC), 135,000 sports- and recreation-related TBIs, including concussions, are treated in US emergency rooms each year.

Concussions are common in athletes and often go unreported. A likely contributor to underreporting of concussions in athletes is lack of knowledge of concussion-related symptoms. This is critical for adolescent athletes expected concussion symptoms, including symptom knowledge's part in the development and maintenance of post-concussion syndrome (Fedor & Gunstad, 2015). Therefore, having a strong understanding of concussion knowledge and attitude may help with concussion injury prevention and management in sports. However, no published data on adolescent sport concussion knowledge and attitudes is currently available in Malaysia. Despite an increase in sports participation among athletes at sport schools in Malaysia.

In conclusion, it is necessary to establish and assess the present level of knowledge and attitude about sports concussion among adolescent athletes in Malaysia participating in various sport. As a result of this knowledge, the purpose of assessing the knowledge and attitudes is hoped to be effective in delivering a standard knowledge about sport concussion to adolescent athletes and improving their safe attitude toward sport concussion. This will not only boost an athlete's confidence during a game or competition, but it will also secure their safety while participating in high-risk sports.

1.2 Problem Statement

Despite the fact that the incidence of sports-related concussions (SRC) was lower than that of other sports injuries, it is nonetheless recorded annually. Following different incidents that happened during contact sports, the majority of the occurrence has been reported. The competitors are typically gathered on the same court or field for contact sports. Players will therefore always engage in dueling each other. Pushing, tugging, kicking, or punching are therefore frequently utilised to achieve victory. For instance, in the boxing game, the player had to finish off his opponent with a barrage of punches. Direct head contact is permitted and is a distinguishing feature of this game. A direct blow to the head can certainly result in a concussion, especially if the punch was delivered with great force. Some of them even develop concussion symptoms from non- contact sports as a result of unfortunate falls. This could be the result of a slick surface, a bad landing, or an unbalanced body. These events have the potential to directly harm the courts.



Concussion is the most prevalent type of traumatic brain injury (TBI), but still do not have a good understanding of how it happens and how to prevent it. In addition to a lack of information, adolescent athletes are often given inaccurate knowledge about concussion, which can lead to poor treatment and follow-up. Moreover, the effectiveness of adolescent athletes in reporting injury incidence was harmed due to a lack of knowledge and attitudes towards sport concussion incidence and clinical manifestation. Therefore, this stimulates future research in this area. In actuality, non- elite concussion symptoms and effects could be treated conventionally. It is crucial to be more aggressive in educating non-elite, young, or school athletes about concussions due to the lack of resources and references available to them. A protocol for returning to play after suffering a concussion is also essential. Therefore, action needs to be taken to ensure that this community is treated



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The absence of reported incidents may be attributable to school athletes' lack of information about concussions (Mortellaro, 2020). Additionally, among these populations, a poor attitude was stated on sport related concussion as being caused by lack of understanding. Due to ignorance and a negative attitude toward injury incidence and clinical manifestation, players were less effective at reporting incidents of injury (van Vuuren et al., 2020; Register-Mihalik et al., 2017; Register-Mihalik et al., 2013). In addition, athletes who had concussions refused to report their symptoms to coaches or law enforcement (Cournoyer & Tripp, 2014; Jinguji et al., 2011; Register-Mihalik et al., 2013). This negative perception will increase the number of head concussions that go undetected.

Knowledge and attitudes on sport related concussion also related to gender. Despite the fact that women had a higher concussion risk (Abrahams et al., 2014), their knowledge



and attitude were thought to be superior to men's. Male athletes' lack of understanding is not always the result of ignorance; other times, it results from a careless attitude toward the occurrence, symptoms, and unwillingness to cede ground to a teammate. There is a lack of published research on adolescent athletes in Malaysia and the impacts of sports concussion. This stimulates future research in this area. It is deemed necessary to determine the rate of concussion injury among adolescent athletes who participate in high-risk sports, as well as to investigate the degree of knowledge and attitude regarding sports concussion in a larger sample of athletes in Sekolah Sukan Negeri (SSN) in Malaysia.

1.3 Objectives

1.3.1 General Objectives

To assess the knowledge and attitude of sport related concussions among adolescent athletes in Malaysia.

1.3.2 Specific Objectives

1. To determine the level of knowledge of sport related concussions among adolescent athletes in Malaysia.
2. To determine the level of attitude among adolescent athletes in Malaysia on sport related concussions.
3. To determine the level of knowledge and attitude of sport related concussions between genders and type of sports among adolescent athletes in Malaysia.

1.3.3 Research Questions

1. What is the level of knowledge of sport related concussions among adolescent athletes in Malaysia?
2. What is the level of attitude among adolescent athletes in Malaysia on sport related concussions?
3. What is the level of knowledge and attitude of sport related concussions between genders and type of sports among adolescent athletes in Malaysia?

1.4 Limitation of Study

This study will only include sports schools from all throughout Malaysia who are adolescent athletes. Malaysian primary and secondary schools are not listed as prospective subjects. All levels of schools should be considered as participants in future research so that levels of knowledge and attitudes of sport concussion can be recognized through the findings.

The COVID-19 pandemic is significantly in need of special attention. There will be a strict adherence to the standard operating procedure to prevent any face-to-face communication. As a result, a Google Form online survey will be used at a few chosen schools to gather data. However, some subjects could find it challenging to respond in terms of browser or internet speed. The subjects will indeed have enough time to finish the online survey.

1.5 Significance of Study

Therefore, it is crucial for this study to establish the actual level of knowledge and attitudes among adolescent athletes who actively participate in sports in secondary sports schools Malaysia. On the other hand, the information gathered from this data allows SRC to provide education by identifying the various levels of knowledge and attitudes.

Every secondary school should develop an appropriate sports concussion management programme to lower the risk of concussion among young athletes (Daugherty et al., 2020). The educational programme will assist all athletes since as their knowledge grows, so does their ability to self-report. Teachers, coaches, or managers will be able to assess the situation and come to a decisive decision on whether to segregate the wounded athletes and provide them with the necessary concussion medical care.

The secondary school athletes were susceptible to concussions while competing, and several of them have admitted to having experienced the symptoms (Daugherty et al., 2020). This assertion demonstrates the substantial relationship between knowledge and attitudes and reporting behaviours. The ability to recognize concussion symptoms early and the willingness to self-report have become factors in safeguarding young athletes from serious concussion-related harm (Chandran et al., 2020). Additionally, no similar study that primarily evaluated attitudes toward concussions that would reflect secondary school players' self-reported concussions could be discovered (Register- Mihalik et al., 2013).

1.6 Operational Definition

The operational definition was created in accordance with the study objective. All terminologies employed in this study have their own definitions, although they are still driven by their original meaning (Table 1.1).

Table 1.1

Operational Definition

Terminologies	Operational Definition	References
Concussion	Known as traumatic brain injury that happened due to blunt to the head or body and may lead to neurological dysfunction.	(Theadom et al., 2020)
Mild Concussion	A flash conversion in nervous system as the result of a blunt force to the head responding on brain damage.	(Howland et al., 2020)
Sport Related Concussion	A pattern of minor head injury caused by external force in any high-risk sports such as football, rugby or hockey.	(Younger, 2018)
Attitude	Progressive and continual process that includes synthesis, dissemination, exchange and ethically-sound application of knowledge.	(Mortellaro, 2020)



Knowledge	Gathered about informative sports concussion as much as possible	(Weber Rawlins et al., 2020)
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