05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

RELATIONSHIPS BETWEEN KNOWLEDGE AND ATTITUDE ON SPORTS INJURY PREVENTION AND MANAGEMENT WITH KINESIOPHOBIA AMONG SPORTS SCHOOL ATHLETES

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

MUHAMMAD KHAFIZY BIN KHALID

SULTAN IDRIS EDUCATION UNIVERSITY

2024

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

RELATIONSHIPS BETWEEN KNOWLEDGE AND ATTITUDE ON SPORTS INJURY PREVENTION AND MANAGEMENT WITH KINESIOPHOBIA AMONG SPORTS SCHOOL ATHLETES

MUHAMMAD KHAFIZY BIN KHALID

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

DISSERTATION PRESENTED TO QUALIFY FOR A MASTER OF EDUCATION
(SPORTS SCIENCE)
(RESEARCH AND COURSEWORK MODE)

FACULTY OF SPORT SCIENCE AND COACHING
SULTAN IDRIS EDUCATION UNIVERSITY

2024

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

UNIVERSITI PENDIDIKAN SULTAN IDRIS
SULTAN IDRIS EDUCATION UNIVERSITY

Please tick (√)
Project Paper
Masters by Research
Master by Mixed Mode
PhD

✓

INSTITUTE OF GRADUATE STUDIES

DECLARATION OF ORIGINAL WORK

This declaration is made on the .....8.....day of.....May.....20..24...

i. Student's Declaration:

I, Muhammad Khafizy bin Khalid, M20172002322, Fakulti Sains Sukan dan Kejurulatihan (PLEASE INDICATE STUDENT'S NAME, MATRIC NO. AND FACULTY) hereby declare that the work entitled Relationships Between Knowledge and Attitude on Sports Injury Prevention and Management with Kinesiophobia Among Sports School Athletes is my original work. I have not copied from any other students' work or from any other sources except where due reference or acknowledgement is made explicitly in the text, nor has any part been written for me by another person.

Signature of the student

ii. Supervisor's Declaration:

I Dr. Fairus Fariza binti Zainudin (SUPERVISOR'S NAME) hereby certifies that the work entitled Relationships Between Knowledge and Attitude on Sports Injury Prevention and Management with Kinesiophobia Among Sports School Athletes (TITLE) was prepared by the above named student, and was submitted to the Institute of Graduate Studies as a * partial/full fulfillment for the conferment of Master of Education (Sports Science) (PLEASE INDICATE THE DEGREE), and the aforementioned work, to the best of my knowledge, is the said student's work.

8/5/2024
Date

Signature of the Supervisor

FAIRUS FARIZA BINTI ZAINUDIN
PENSYARAH
FAKULTI SAINS SUKAN DAN KEJURULATIHAN
UNIVERSITI PENDIDIKAN SULTAN IDRIS
35900 TANJONG MALIM, PERAK

UNIVERSITI PENDIDIKAN SULTAN IDRIS
SULTAN IDRIS EDUCATION UNIVERSITY

INSTITUT PENGAJIAN SISWAZAH /
INSTITUTE OF GRADUATE STUDIES

BORANG PENGESAHAN PENYERAHAN TESIS/DISERTASI/LAPORAN KERTAS PROJEK
DECLARATION OF THESIS/DISSERTATION/PROJECT PAPER FORM

Tajuk / *Title*: Relationships Between Knowledge and Attitude on Sports Injury Prevention and Management with Kinesiophobia Among Sports School Athletes

No. Matrik /*Matric's No.*: M20172002322

Saya / *I* : Muhammad Khafizy bin Khalid

(Nama pelajar / *Student's Name*)

mengaku membenarkan Tesis/Disertasi/Laporan Kertas Projek (Kedoktoran/Sarjana)* ini disimpan di Universiti Pendidikan Sultan Idris (Perpustakaan Tuanku Bainun) dengan syarat-syarat kegunaan seperti berikut:-
acknowledged that Universiti Pendidikan Sultan Idris (Tuanku Bainun Library) reserves the right as follows:-

1. Tesis/Disertasi/Laporan Kertas Projek ini adalah hak milik UPSI.
   The thesis is the property of Universiti Pendidikan Sultan Idris
2. Perpustakaan Tuanku Bainun dibenarkan membuat salinan untuk tujuan rujukan dan penyelidikan.
   Tuanku Bainun Library has the right to make copies for the purpose of reference and research.
3. Perpustakaan dibenarkan membuat salinan Tesis/Disertasi ini sebagai bahan pertukaran antara Institusi Pengajian Tinggi.
   The Library has the right to make copies of the thesis for academic exchange.
4. Sila tandakan (√) bagi pilihan kategori di bawah */ Please tick (√) for category below:-*

☐ **SULIT/*CONFIDENTIAL*** — Mengandungi maklumat yang berdarjah keselamatan atau kepentingan Malaysia seperti yang termaktub dalam Akta Rahsia Rasmi 1972. / *Contains confidential information under the Official Secret Act 1972*

☐ **TERHAD/*RESTRICTED*** — Mengandungi maklumat terhad yang telah ditentukan oleh organisasi/badan di mana penyelidikan ini dijalankan. / *Contains restircted information as specified by the organization where research was done.*

☑ **TIDAK TERHAD / *OPEN ACCESS***

(Tandatangan Pelajar/ Signature)

Tarikh: 8/5/2024

FAIRUS FARIZA BINTI ZAINUDIN
PENSYARAH
FAKULTI SAINS SUKAN DAN KEJURULATIHAN
UNIVERSITI PENDIDIKAN SULTAN IDRIS
35900 TANJONG MALIM, PERAK

(Tandatangan Penyelia / *Signature of Supervisor*)
& (Nama & Cop Rasmi / *Name & Official Stamp*)

Catatan: Jika Tesis/Disertasi ini **SULIT** @ **TERHAD**, sila lampirkan surat daripada pihak berkuasa/organisasi berkenaan dengan menyatakan sekali sebab dan tempoh laporan ini perlu dikelaskan sebagai **SULIT** dan **TERHAD**.

Notes: If the thesis is CONFIDENTAL or RESTRICTED, please attach with the letter from the organization with period and reasons for confidentiality or restriction.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

ACKNOWLEDGEMENT

Alhamdulillah, praise be to Allah, by His grace this dissertation is finally completed. I would like to express my deepest gratitude and appreciation to all individuals who have supported and contributed to the completion of this dissertation. First and foremost, I would like to extend my appreciation to my supervisor and co-supervisor, Dr. Fairus Fariza binti Zainudin and Dr. Ruaibah Yazani binti Tengah for their invaluable guidance, support, and expertise throughout the entire dissertation process. Furthermore, I would like to acknowledge the support and assistance provided by Faculty of Sport Science and Coaching, Sultan Idris Education University (UPSI). Lastly, I would like to express my heartfelt appreciation and gratitude to my family, friends, and colleagues for their unwavering love, encouragement, and understanding during this demanding period. Their belief in my abilities and constant support have been the cornerstone of my perseverance.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

ABSTRACT

The objectives of this study are: (i) to evaluate the sport injury prevention and management (SIPM) knowledge and attitude among sports school athletes, (ii) to evaluate the SIPM knowledge, SIPM attitude, and kinesiophobia among sports school athletes with sport injury, (iii) to evaluate the relationships between SIPM knowledge and SIPM attitude among sports school athletes, and (iv) to evaluate the relationships between SIPM knowledge, SIPM attitude, and kinesiophobia among sports school athletes with sport injury. A survey with cross sectional study using the demographic information, SIPM knowledge questionnaire, SIPM attitude scale, and the 11-items Tampa Scale for Kinesiophobia (TSK-11) were employed to collect the data among secondary school athletes in Malaysia Sports Schools. Among 306 respondents, 170 respondents (55.6%) were reported to have sport injury for the past one year. Male athletes were reported to have higher injury rate (63%) as well as upper secondary school athletes (58%) and contact sports athletes (59%). Female athletes in all respondents ($M = 39.84$, $SD = 7.25$, $p = 0.00$) and female athletes among respondents with sport injury ($M = 38.67$, $SD = 7.89$, $p = 0.04$) were found to have more knowledge on *SIPM* compared to male athletes. Moreover, there is a significant positive correlation between SIPM knowledge and SIPM attitude among female athletes in all respondents (r (121) = 0.22, $p = 0.01$). The findings showed that high level of SIPM knowledge could bring a more positive attitude toward SIPM among female athletes. However, there were no relationships between the level of SIPM knowledge and attitude with kinesiophobia among sports school athletes with sport injury

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

HUBUNGAN ANTARA PENGETAHUAN DAN SIKAP TERHADAP PENGURUSAN DAN PENCEGAHAN KECEDERAAN SUKAN DENGAN *KINESIOPHOBIA* DALAM KALANGAN ATLET SEKOLAH SUKAN

ABSTRAK

Objektif kajian ini adalah: (i) untuk menilai pengetahuan dan sikap terhadap pengurusan dan pencegahan kecederaan sukan (*SIPM*) dalam kalangan atlet sekolah sukan, (ii) untuk menilai pengetahuan dan sikap terhadap *SIPM* serta *kinesiophobia* dalam kalangan atlet sekolah sukan yang mengalami kecederaan sukan, (iii) untuk menilai hubungan antara pengetahuan *SIPM* dengan sikap terhadap *SIPM* dalam kalangan atlet sekolah sukan, (iv) untuk menilai hubungan antara pengetahuan *SIPM* dengan sikap terhadap *SIPM* serta *kinesiophobia* dalam kalangan atlet sekolah sukan yang mengalami kecederaan sukan. Kaji selidik secara keratan rentas ini menggunakan maklumat demografi, soal selidik tentang pengetahuan *SIPM*, skala sikap terhadap *SIPM*, dan *Tampa Scale for Kinesiophobia* 11 item (*TSK-11)* bagi mengumpul data dalam kalangan atlet sekolah menengah di Sekolah Sukan Malaysia. Seramai 55.6% daripada kalangan 306 responden dilaporkan mengalami kecederaan sukan sepanjang satu tahun lepas. Atlet lelaki dilaporkan mengalami kadar kecederaan sukan yang tinggi (63%) sama seperti atlet menengah atas (58%) dan atlet sukan kontak (59%). Atlet perempuan daripada seluruh responden (M = 39.84, SD = 7.25, p = 0.00) dan atlet perempuan daripada responden yang mengalami kecederaan sukan (M = 38.67, SD = 7.89, p = 0.04) didapati mempunyai pengetahuan *SIPM* yang lebih tinggi berbanding atlet lelaki. Selain itu, terdapat korelasi positif yang signifikan antara pengetahuan *SIPM* dan sikap terhadap *SIPM* dalam kalangan atlet perempuan daripada seluruh responden (r (121) = 0.22, p = 0.01). Dapatan ini menunjukkan aras pengetahuan *SIPM* yang tinggi di kalangan atlet perempuan membawa kepada sikap yang positif terhadap *SIPM*. Walau bagaimanapun, tidak terdapat hubungan di antara aras pengetahuan dan sikap terhadap *SIPM* dengan *kinesiophobia* di kalangan atlet sekolah sukan yang mengalami kecederaan sukan.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

CONTENTS

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

LIST OF TABLES

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi
05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

LIST OF FIGURES

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi
05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

LIST OF ABBREVIATIONS

ACL	Anterior cruciate ligament
ANOVA	Analysis of variance
CPR	Cardiopulmonary resuscitation
CVI	Content validity index
H_0	Null hypothesis
KAP	Knowledge, attitude, and practices
KPM	Malaysia Ministry of Education
NCAA	National College Athletic Association
OSTRC	Oslo Sports Trauma Research Center
REC	Research Ethics Committee
RO	Research objective
RQ	Research questions
RMIC	Research Management and Innovation Centre
SIPM	Sports Injury Prevention and Management
SCAT	Sport Competition Anxiety Test
SPSS	Statistical Packages for the Social Science
TSK	Tampa Scale for Kinesiophobia
UPSI	Sultan Idris Education University
WHO	World Health Organization

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

APPENDIX LIST

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

CHAPTER 1

INTRODUCTION

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

1.1 Research Background

The high rate of injury in sports participation could bring negative impacts toward the athletes as it will reduce their physical performance and eventually affecting their psychological health. A study on the prevalence of injury in Australian non-elite netballers had found that 77.7% of the athletes reported of having injuries, with 25% of them had significant injuries that could reduce or prevent sports participation (Bissel & Lorentzos, 2018). Travert et al. (2017) stated that 59% of adolescents who participated in sport reported of having injuries in the last one year. A study that had been done to investigate the incidence of injury among Malaysian athletes during the 17th Asian Games 2014 reported that 83 injuries were recorded from 276 athletes and 57% of the injuries occurred during training sessions (Mohamad Shariff et al., 2016). Furthermore,

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

some other studies had found that high intensity and frequency of physical activities were associated in the increased risk of injury, with the most injured body areas reported were lower limbs (53.8%) and upper limbs (29.0%), with fractures, strains and sprains were the common types of injuries occurred in young population (Costa e Silva et al., 2018; Räisänen et al., 2018; Mohamad Shariff et al., 2016; Räisänen et al., 2016). Meanwhile, there were studies that reported the prevalence of injury during sports among young athletes were significantly higher in school sports activities rather than other leisure time physical activities due to the differences in the intensity and frequency of physical activities being performed (Räisänen et al., 2018; Räisänen et al., 2016). Further study is needed to find the prevalence of injury among sports school athletes to ensure the athlete well-being, optimizing performance, supporting long-term development, and contributing to advancements in sports injury management and prevention.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Injury in sports would lead to negative psychological and behavioural responses toward young athletes who might be experiencing depression, frustration, anger, loneliness, self-blame or self-criticism, loss of identity, and kinesiophobia (von Rosen et al., 2018; Palisch & Merritt, 2017; Vlaeyen et al., 2016). Kinesiophobia is a fear-avoidance behaviour which derived from a negative psychological response following an injury, as described in the fear-avoidance model (Vlaeyen et al., 2016). Kinesiophobia is an essential psychological factor in understanding pain, disuse, and disability (Luque-Suarez et al., 2018; Larsson et al., 2016; Vlaeyen et al., 2016). Fischerauer et al., (2018) stated that the negative response towards an injury due to fear-avoidance behaviour and emotional distress in athletes may influence the recovery process and decreased physical functions. It is an important factor affecting

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

performance of athletes after injuries and the rate of returning to sports especially among adolescent athletes who are still in a period of physical development and growth. Therefore, it is important to develop a comprehensive injury prevention and management programme to avoid kinesiophobia among adolescent athletes to improve the performance, increase rate of return to sports after injury, promoting physical and psychological welfare, as well as minimizing the risk of injuries.

Sports participation among youth provides numerous lifelong benefits including physical activity skills development, improve social skills and self-esteem, teamwork, and leadership skills, as well as effect on various health components such as cardiac health, nutrition, maturation, musculoskeletal and psychological health (Brenner, 2016). Despite the health benefits, sports participation among youth could lead to injuries and disabilities. Hence, the sports injury prevention and management (SIPM) programmes are important to reduce the risk of injury or re-injury during sport activities. SIPM among athletes requires knowledge and positive attitude towards safety in order to prevent physical and mental problems as the result of injury in sports. There is a positive correlation between the knowledge and attitude of injury prevention and management as mentioned by Wang et al. (2012). This shows the increased in student's knowledge and practical skills in injury prevention and management would change their attitudes and boost their confidence to apply their knowledge in real situation (Twomey, 2017). Moreover, knowledge on prevention and management of sports injury is essential in understanding risks and consequences of injury to reduce the negative effects of injury, prevent unhealthy behaviour, and help the athlete to return to sports activity safely (Räisänen et al., 2018; Szabó et al., 2018; Räisänen et al., 2016).

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

1.2 Problem Statement

In the scope of SIPM, it is important for athletes to have an adequate knowledge and positive attitude toward the injury prevention programme for the utilisation of preventive measures in reducing and managing injury in sports. A study by Wang et al. (2012) had mentioned that knowledge and attitude of athletes toward SIPM were among the factors affecting safety behaviour and sports injury rate. The levels of knowledge and the attitude on SIPM should be acknowledged during training to improve performance and prevent injury. Positive attitude and good practice behaviour were seen in people who have adequate knowledge on a particular subject (Wang et al., 2012). High level of knowledge on SIPM could improve the attitude toward injury prevention programme and enhance adherence to it. This shows the positive correlation between knowledge, attitude, and practices. However, there were several findings that showed poor adherence toward injury preventive programme. There were some barriers in implementing injury prevention programmes such as lack of motivation in athletes and time-consuming programmes (Andersson et al., 2019). Szabó et al. (2018) also reported poor attitudes toward SIPM among athletes as most of the athletes still be competing in sports activity even though they were injured and had high risk of permanent damage. Despite the importance of SIPM knowledge and attitude, there is still lack of study addressing the knowledge and attitude toward SIPM among adolescent athletes particularly in Malaysia.

A high rate of injury during sports participation among secondary school athletes could bring negative impact toward both physical and psychological functions. An article by Mohamad Shariff et al. (2016) recorded that most of the Malaysian

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

athletes participated in the Asian Games 2014 were injured during training sessions due to limited number of medical staff during training and lack of follow-up for medical check-ups. This finding resembles a poor injury management of elite athletes who participating in sports activities in the international level. A thorough evaluation of knowledge and attitude toward SIPM among injured athletes could assist in reducing the negative response of injury in sport and may improve the athlete's performance. However, there have been very few studies investigating the incidence of sports injury among sports school athletes in Malaysia. Most of the published articles were focusing on higher level athletes and athletes who were competing in the major tournaments. There was also lack of previous study that evaluate the relationships between the knowledge and attitude toward SIPM with the injured sports school athletes in Malaysia. The finding from this study is important to reduce the incidence of injury or re-injury among young athlete in Malaysia.

Kinesiophobia is an avoidance behaviour that can be caused by a negative psychological response that may occur in injured athletes. Kinesiophobia also known as pain-related fear which can cause anxiety, increased in pain intensity, functional impairment, disability and reduce the quality of life (Fischerauer et al., 2018; Luque-Suarez et al., 2018; Larsson et al., 2016; Vlaeyen et al., 2016). The fear-avoidance model explained the pain-related fear as the result of catastrophic thoughts developed by individuals with pain (Vlaeyen et al., 2016). It can lead to more pain, decrease performance, and subsequently, hinder sports participation. A negative psychological response to injury among secondary school athletes is one of the important factors that may affect recovery and return to sports as injury among athletes would lead to frustration, anger, loneliness, self-blame or self-criticism, and a loss of identity (von

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Rosen et al., 2018). Therefore, it is very important to establish the relationships between SIPM and kinesiophobia to determine the effects of knowledge and attitude of SIPM on kinesiophobia. A high level of knowledge and a positive attitude on SIPM may reduce the risk of injury and prevent negative psychological responses toward injury.

This study is focusing on the differences between genders, different age category, and type of sports among sports school athletes. The demographic factors are most likely to affect the levels of knowledge and attitude on SIPM, and kinesiophobia among the subjects. The difference in injury rate between genders have been recorded in previous studies. Although several studies have shown that female athletes were more likely to get injured during sports, some research had shown otherwise (Guzman et al., 2019; Räisänen et al., 2018; Travert et al., 2017; Mohamad Shariff et al., 2016). Thus, it is essential to do further investigation on the difference between genders. Moreover, the comparison between the type of sports is also important to be studied as there were no recent studies found to evaluate these factors on the levels of knowledge and attitude on SIPM, and kinesiophobia. The findings from this study could be essential in the development of comprehensive sports injury education programme based on the type of sports.

1.3 Purpose of the Study

The purposes of this study are to determine the levels of knowledge and attitude on SIPM, as well as the level of kinesiophobia among sports school athletes in Malaysia. This study also investigating the differences between SIPM knowledge and attitude on

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

kinesiophobia across several demographic factors such as genders, different age category, and type of sport. Other than that, this study is exploring the relationships between the SIPM knowledge and attitude with kinesiophobia among sports school athletes in Malaysia.

1.4 Research Objectives and Research Questions

The objectives and research questions for this study are presented in Table 1.1. There are four research objectives for this study and the research questions were formulated based on those research objectives.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi
05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

Table 1.1

The formulated research questions (RQ) according to research objectives (RO) of the study.

Research Objectives (RO)	Research Questions (RQ)
Research objective 1 (RO 1): To evaluate the SIPM knowledge and attitude among sport school athletes.	Research question 1 (RQ 1): What are the levels of SIPM knowledge and attitude among sport school athletes across gender, age category, and type of sports?
	Research question 2 (RQ 2): What are the differences of SIPM knowledge and SIPM attitude among sport school athletes across gender, age category, and type of sports?
Research objective 2 (RO 2): To evaluate the SIPM knowledge, SIPM attitude, and kinesiophobia among sport school athletes with sport injury.	Research question 3 (RQ 3): What are the levels of SIPM knowledge, SIPM attitude, and kinesiophobia among sport school athletes with sport injury across gender, age category, and type of sports?
	Research question 4 (RQ 4): What are the differences of SIPM knowledge, SIPM attitude, and kinesiophobia among sport school athletes with sport injury across gender, age category, and type of sports?
Research objective 3 (RO 3): To evaluate the relationships between SIPM knowledge and SIPM attitude among sport school athletes.	Research question 5 (RQ 5): What are the relationships between SIPM knowledge and SIPM attitude among sport school athletes across gender, age category, and type of sports?
Research objective 4 (RO 4): To evaluate the relationships between SIPM knowledge, SIPM attitude, and kinesiophobia among sport school athletes with sport injury.	Research question 6 (RQ 6): What are the relationships between SIPM knowledge, SIPM attitude, and kinesiophobia among sport school athletes with sport injury across gender, age category, and type of sports?

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

1.5 Operational Definitions

1.5.1 Sport Injury Prevention and Management (SIPM)

SIPM includes various injury prevention strategies and programmes such as educational programme, neuromuscular training, and other general or mixed injury prevention programmes that could improve health and fitness, improve functions, as well as reducing injuries (Mugele et al., 2018; Richmond et al., 2016).

1.5.2 Knowledge of SIPM

The knowledge on SIPM consisting of the principles of preventing sports injury, identification of the types of sports injury, principles of sports injury management, methods of supporting the limbs, cardiopulmonary resuscitation (CPR) skills, guideline for hot and cold therapeutic management, as well as managements for heat-related illnesses in sports, bleeding wounds, and sports-related shock (Wang et al., 2012; Wang & Huang, 2006).

1.5.3 Attitude toward SIPM

Mindset or approach adopted by athletes which promotes practices that lead to a safe behaviour in sport (Twomey, 2017; Wang et al., 2012).

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

1.5.4 Kinesiophobia

Kinesiophobia is known as fear of movement due to pain and can be defined as excessive, unreasonable, and irrational fear to do physical movement due to a feeling of vulnerability to injuries or re-injuries. It is a fear avoidance behaviour derives from a psychological response toward injury or re-injury (Fischerauer et al., 2018; Luque-Suarez et al., 2018; Larsson et al., 2016; Lethem et al., 1983).

1.5.5 Contact Sports

Contact sports are sports that require a direct physical contact between the athletes or with inanimate objects and often associated with increased risk of traumatic injuries such as concussion, head injuries and other multiple injuries (Prien et al., 2018; Weber et al., 2018). This study will include contact sports like basketball, football, hockey, judo, karate, fencing, rugby, taekwondo, boxing, wushu, and silat (Kementerian Pendidikan Malaysia [KPM], 2019).

1.5.6 Non-Contact Sports

Non-contact sports are the opposite of contact sports. It describes the sports that are not require a direct physical contact between the athletes and often associated with lower anxiety level than contact athletes (Kumar et al., 2017). This study will include non-contact sports like weightlifting, badminton, netball, volleyball, bowling, lawn bowl,

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

gymnastics, rhythmic gymnastics, cycling, archery, shooting, track and field events, table tennis, swimming, synchronised/artistic swimming, sepak takraw, squash, as well as diving (KPM, 2019).

1.5.7 Sports School Athletes

Sports school athletes are referring to the young athletes in secondary schools who play at least one sport for Malaysia Sport Schools under Kementerian Pendidikan Malaysia (KPM), namely Sekolah Sukan Bukit Jalil (SSBJ), Sekolah Sukan Tunku Mahkota Ismail (SSTMI), Sekolah Sukan Malaysia Pahang (SSMP), Sekolah Sukan Malaysia Terengganu (SSMT), and Sekolah Sukan Malaysia Sabah (SSMS). The age category ranging from 13 to 15 years old for the lower secondary school athletes (Form 1 to Form 3), and 16 to 17 years old for upper secondary school athletes (Form 4 and Form 5) (KPM, 2019).

1.6 Significance of the Study

SIPM is important in the development of a comprehensive sports injury and re-injury education and prevention strategies among sports school athletes. The objective of SIPM is in line with the ‘sports for excellence’ motto which was coined by KPM in accordance with the National Sports Policy to produce high performance athletes and enhance sports achievement (KPM, 2019). Other than that, kinesiophobia also is one of the important aspects to be investigated to prevent mental and physiological problems

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

due to injury in sports. Hence, it is important to examine the levels of knowledge and attitude on SIPM, and kinesiophobia among athletes as well as the effects of SIPM knowledge and attitude on kinesiophobia. These findings are important to provide evidence and basic knowledge in developing a comprehensive sports injury education and prevention strategies. Thus, reducing the risk of sports injury among young athletes, prevent disability due to kinesiophobia, facilitate recovery, and improve performances. The results of this study are essential for athletes, coaches, athletic trainers, physical education teachers, sports physicians and administrators in sports injury education and management to enhance sports safety behaviour, reduce the risk of injury and re-injury in sports, prevent disability due to disuse, assist in recovery and return to sport following injury, as well as to improve the performance among sports school athletes in Malaysia.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

1.7 Conclusion

The knowledge on SIPM is important in the development of sports injury prevention strategies and education. A good attitude toward SIPM may lead to adherence to the injury prevention programme and ensure success in reducing risk of injury in sports. Nonetheless, kinesiophobia among injured athletes might interfere with recovery process and return to sports due to negative psychological response to injury, as mentioned in the fear avoidance model that may cause further damage on both physical and mental health (Vlaeyen et al., 2016). This study is concentrating on the levels, differences, and relationships between the knowledge and attitude on SIPM, as well as kinesiophobia among Malaysian sports school athletes. Therefore, this study is needed

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

to evaluate the differences in the levels of knowledge and attitude on SIPM, and kinesiophobia among different type of sports, genders, and age category among Malaysia sports school athletes. It also is needed to establish the relationships between the knowledge and attitude on SIPM with kinesiophobia.

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi
05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi