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Sports Injury of Sanda Wushu Class of Students in Xi'an City

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Abstract

Background and Aim: Wushu is a traditional sport in China and is considered an ancient Chinese martial art. Wushu is a sport that is packaged as a teaching course about martial arts and dances and is also aimed at improving the health of people who train and learn at all ages. Therefore, in wushu martial arts when starting to practice or start playing Students or players must prepare their bodies to be able to fight, but if they learn by starting, injuries that may occur with training or playing this type of sport will always happen.

Materials and Methods: Population and sample: The population used in this research were Sanda Wushu students' a total number of 150 people. The research instrument was a questionnaire on Injury occurred during the Wushu course. created by the researcher with 3 parts, developed from a questionnaire on injuries of track and field athletes participating in the 39th National Games (Pengtee, 2011). The questionnaire has the following details: Part 1: Basic information of the buyer. Part 2: Sanda Wushu Injury Questionnaire Part 3: summarizes comments or suggestions regarding injury prevention.

Result: From the survey of the causes of injuries, there were two causes: injuries that occurred from the outside environment from studying Sanda Wushu (66%) and injuries that occurred from the athletes themselves (34%) and of body positions that were injured in most athletes' competitions. It occurred in 38.7% of the body positions, 24% of the upper limbs, 20% of the lower limbs, and 17.3% of the head positions.

Conclusion: From the summary of the above opinions, the injuries sustained in the class are injuries that are not serious and can be treated with basic first aid. Because studying at the school level is non-violent training, it is not surprising that it can be rehabilitated. In injury prevention, there were additional comments, namely the recommendation to increase protective equipment to be sufficient for the number of students and to improve the equipment appropriately. In addition, there is currently a training program for physical rehabilitation.

Keywords: Sport Injury; Wushu Class

Introduction

Wushu is a traditional sport in China. Wushu is considered an ancient Chinese martial art. Wushu has evolved along with the history of China Wushu has been used in military training as well as training with combat techniques used on the battlefield. Wushu is a sport that is packaged as a teaching course about martial arts and dances and is also aimed at improving the health of people who train and learn at all ages. Wushu sports are divided into two types, namely, Type 1, Taolu, and Sanda, where martial arts wushu training has individual and team performances, consisting of 10 types, namely Changchuan (long boxing), and Nancha. Wan (Southern Boxing), Tai Chi Chuan (Tai Chi), Tao Su (Sword), Jian Su (Sabre), Nantau (South Sword), Tai Chi Jian (Sword Tai Chi), Qian Su (Tuan), Gun Su (staves), and Nan Gun (Southern staff). Taol type competition Scoring norms for Changchuan (long boxing), Nanchuan (southern boxing), Taijiquan (tai chi), Taosu (sword), Jiangsu (sword), Nantao (sword). South), Tai Chi Jian (Tai Chi Sword), Chiang Su (Tuan), Gun Su (Staff), and Nangun (Southern Staff) will be subject to the rules and regulations of the Competition. There is also an ancient battle-type competition. It consists of different types of single battle songs. Type of combat suit (Tui Lian), type 2, combat type It is a wushu sport with opponents using a knock-out system. But if the number of contestants is less than 4 people, the competition system will be used. In the fighting type, athletes can use fighting techniques from all schools. There is a battle song in Chinese boxing disciplines to fight for victory. According to the Wushu sports information martial arts style wushu will focus on beauty strength and accuracy of dance postures as for wushu, fighting types will focus on maneuvers to win. Therefore, in wushu martial arts when starting to practice or start playing Students or players must prepare their bodies to be able to fight, but if they learn by starting, injuries that may occur with training or playing this type of sport will always happen (Fabricio et al. 2009)

Sports injuries have a broad definition. It generally refers to injuries that occur during sports. This may be caused by an accident or wrong training. lack of proper tools or equipment and lack of warm-up (warm-up) or stretching There is often a difference with a general injury in that the severity

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of the injury is usually not as severe as that caused by a traffic accident. and overuse injuries. In this article, we'll cover some of the most common musculoskeletal injuries in sports. Types of sports injuries can be divided into 2 types: Type 1 Acute injury is an injury that occurs immediately after an accident or by force. An injury or accident is severe enough to cause immediate injury and often swelling. Swelling occurs most 2-3 hours after the injury. Therefore, the examination and assessment of sports injuries should be done immediately after the injury. because the swelling that occurs later may make a physical examination more difficult to assess injuries common acute injuries include broken bones Torn ligaments, dislocated joints, and bruises. (In this article, the content of broken bones and dislocations will not be discussed here.) The second type of injury is an overuse injury. The force that is applied each time is not strong enough to cause injury immediately. The body will repair and adjust. but repeated injuries until the body cannot be repaired in time cause later symptoms Therefore, the factors affecting the occurrence of this type of injury are the severity and frequency of injuries Other contributing factors that increase injury susceptibility include malalignment and muscle imbalance, incorrect training, and use of the wrong type of equipment. All trigger this injury. This type of injury is common during sports training (training). (Prieto-González, et al, 2021) corresponds to the research of Zetaruk et al. (2023) have studied Injuries in martial arts: a comparison of five styles. Purpose: To compare five martial arts concerning injury outcomes. Methods: A one-year retrospective cohort was studied using an injury survey. Data on 263 martial arts participants (Shotokan karate, n =114; aikido, n =47; taekwondo, n =49; kung fu, n =39; tai chi, n =14) were analyzed. Predictor variables included age, sex, training frequency (⩽3 h/week v >3 h/week), experience (<3 years v ⩾3 years), and martial art style. Outcome measures were injuries requiring time off from training, major injuries (⩾7 days off), multiple injuries (⩾3), body region, and type of injury. Logistic regression was used to determine odds ratios (OR) and confidence intervals (CI). Fisher's exact test was used for comparisons between styles, with a Bonferroni correction for multiple comparisons. There is also research by Shi et al. (2022) that has studied the Effect of Repairing Tendon and Ligament Injuries of Wushu Athletes by Medical Image. This research is related to the paper will take this as the main research purpose for an in-depth study. Given the problem that ligament injury is not easy to observe, this paper will use GE Lightspeed 64 row spiral CT as the main observation tool and use the method of hospital image observation to compare and analyze the repair effect of tendon and ligament injury of Wushu athletes. In this experiment, 88 professional Wushu athletes were gathered as experimental samples. After preliminary screening, 110 cases of ligament injury were counted. After analyzing the abnormal changes of tissue or structure, Lysholm, and IKDC treatment effect score data, this paper believes that for type I patients, only conservative treatment can achieve good results. However, in the more serious and complex type II patients, local fixation is used after the onset of the disease, and very serious patients can achieve good results through surgical treatment. Postoperative care is also important, which helps reduce complications. This experiment has achieved ideal results and has played a blank role in the research of the repair effect of tendon and ligament injury of Wushu athletes at home and abroad. and research of Yuanyuan (2022) have studied Sports Medical Image Modeling of Injury Prevention in Wushu Training. This research aims to solve the problem of injury prevention in Wushu training, this paper proposes research on modeling using sports medical images. The main content of this technology research is to drive the muscle strength modeling method based on the sports medical image data. According to the acquisition of MRI/CT images, through the research and application of DFIS, it is concluded that the research on sports medical image modeling has a high accuracy for injury prevention in Wushu training. The experimental results. The application of DFIS in sports medicine depends on the reliability, validity, and accuracy of the system in analyzing the 6DOF motion of the human joint internal structure.

From the above injuries, self-defense sports can cause both two types of injuries mentioned above. The wushu fighting sport has a high risk of injury. Injuries in martial arts are usually focused on competition rather than training, but when it comes to training in martial arts among teenagers, there is one potential risk of injury. The injury that may occur is interesting to study or explore and create a way to prevent injury before school, so would like to study the risk of injuries in the Wushu.

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Objectives

To study sports injury of Sanda Wushu's class of students in Xian City.

Literature review

Sports Injuries

An injury is a serious damage to the body's structure. which is caused by forces or external factors, either physical or chemical, and both on purpose or not intentionally such as an accident or sports injuries.

Injury is damage to your body. It is a general term that refers to harm caused by accidents, falls, hits, weapons, and more. In the U.S., millions of people injure themselves every year. These injuries range from minor to life-threatening. Injuries can happen at work or play, indoors or outdoors, driving a car, or walking across the street. (Zetaruk et al., 2023).

Injury often refers to physical damage, but it can be used more figuratively to describe something that's unjust or that causes harm that isn't physical. For example, your estranged grandfather might do you the injury of leaving you out of his will. The above is the definition of a general injury. In terms of injuries the researchers want to study are related to sports injuries. (Matthew et al.,2022)

Sports injuries are common and can occur throughout your body to bones, muscles, tendons, ligaments, and other structures. You can treat many minor injuries at home with rest, ice, compression, elevation, and over-the-counter pain medications. However, some injuries require medical treatment, such as immobilization, physical therapy, and surgery. Exercise is important to good health, but people often get hurt when participating in sports or other physical activities. A sports injury involves damage to part of your body due to sports, exercise, or athletic activities. (Shi et al., 2022)

Sports injuries have a broad definition. It generally refers to injuries that occur during sports. This may be caused by an accident or wrong training. the lack of proper tools or equipment.

Sanda Wushu

Sanda is one of the sports modalities within Wushu, a sports discipline recognized as such through the IWUF by the IOC in 2002. Wushu encompasses the different Chinese martial methods in the field of sport. Within Wushu, Sanda appears as a sport combat modality in which athletes of different martial styles can participate under a single regulation. It is considered a very rich and powerful sporting combat style, which contains a wide technical, tactical, and strategic spectrum, of great spectacularism and enormous media coverage. Sanda, as we know it today, was treated for the first time as a sport in the National Martial Arts Championships in 1989 held in Jiangxi, China. Since then, as a modality, it has been in constant evolution, as evidenced by its first official inclusion as a sporting modality in the 2Nd World Wushu Championship held in Kuala Lumpur, Malaysia, in 1993. Later, with the first Sanda World Cup in 2002 held in Shanghai (China), it was consolidated as a modality with great international representation and aroused enormous interest among combat modalities, a position it continues to maintain to date.

Wushu: The Modernization of Kung-Fu. Wushu is both an exhibition and a full-contact sport derived from traditional Chinese Kung-Fu (martial arts). Wushu is the well-spring of all Asian martial practices. Over its long history, Wushu has developed into numerous distinct styles and systems, each incorporating its techniques, tactics, principles, and methods, as well as the use of a wide variety of traditional weaponry. The differing styles that have emerged focus on many aspects of combat, but more importantly, they have absorbed the popular philosophies and moral practices of Chinese people & and culture over the past 5,000 years of development. With that, Wushu has developed into more than just a simple system of attack and defense also has become a way to cultivate the body, mind, and spirit in a positive way that is beneficial to all that practice it.

The character "Wu" in wushu is composed of two Chinese characters, namely "Zhi" which means "to stop" and "Ge" which is an ancient weapon of war. With that, the essence of the character Wu is indeed to stop conflict and promote peace. The practice of Wushu not only develops a strong and healthy body but also a strong mind with high moral values, as its practice focuses on "Wu De" or Martial Ethics, also known as Martial Virtue and Kung-Fu Virtue.

Nowadays Wushu has developed into various forms of practice, each with its focus and goals. Some practices highlight health & and well-being as their primary goal, while others stress maintaining

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the traditional culture and skills from which the arts originated. More recently, Wushu has developed into a globally competitive sport, which is practiced and enjoyed by thousands of people worldwide due to its unique and exciting content. Sport Wushu is categorized into two main categories, namely Taolu (Routines Competition) and Sanda (Free-Fighting Competition)

Sanda (Wushu Sanda), also known as Sanshou (Wushu Sanshou) & and Chinese Kickboxing, is a Chinese Self-defense system and combat sport. Sanda combines all the combat aspects of Wushu and addresses the ranges of fighting including full-contact kicking, punching, take-downs, and throws derived from the traditional application of Chinese Martial Arts. Sanda combines with punches of boxing, specialized kicks of kung-fu, throws of wrestling, also in some competitions, even elbow and knee strikes.

As an unarmed self-defense & and close combat system, Sanda includes Da (Punches), Ti (Kicks), Shuai (Grappling), and Na (throws, locks & chokes). Sanda as a sport has a very great emphasis on throws. One of its most distinguished techniques is Jie Tui Shuai (kick catches). Even though Sanda is a combat sport, we still can use Sanda training as a great fun way to develop our awareness, consciousness & and presence to keep us fit, healthy, and happy.

From the above injuries, self-defense sports can cause both two types of injuries mentioned above. The wushu fighting sport has a high risk of injury. Injuries in martial arts are usually focused on competition rather than training, but when it comes to training in martial arts among teenagers, there is one potential risk of injury. The injury that may occur is interesting to study or explore and create a way to prevent injury before school, so would like to study the risk of injuries in the Wushu.

Conceptual Framework

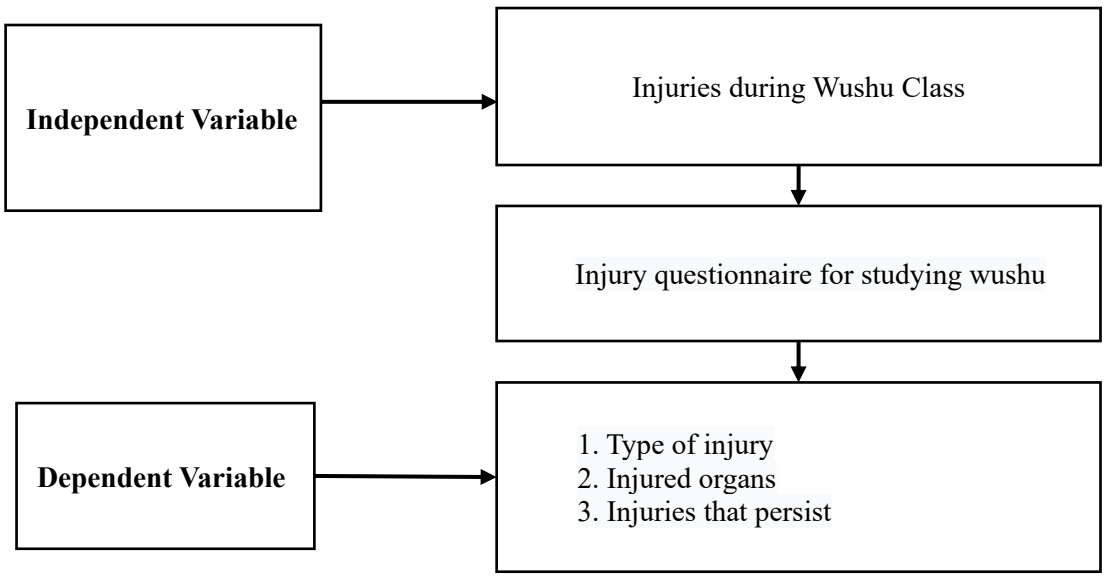

Figure 1: Conceptual Framework of Research

Methodology

Population and sample

This research is descriptive research with the following details. Population and sample: The population used in this research were Sanda Wushu students at 5 universities: Guangzhou University, 27 people, Xi'an University of Electronic Science and Technology, 30 people, Shanghai Sports University, 27. people, Zhengzhou University 30 people, and Xi'an Institute of Physical Education, 36 people, a total number of 150 people, with sample selection from volunteers to participate in data collection.

Research instruments

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Research instrument: The research instrument was a questionnaire on Injury occurred during the Wushu course. created by the researcher with 3 parts, developed from a questionnaire on injuries of track and field athletes participating in the 39th National Games (Pengtee, S., 2011). The questionnaire has the following details:

Part 1: Basic information of the buyer.

Part 2: Sanda Wushu Injury Questionnaire

Part 3: summarizes comments or suggestions regarding injury prevention.

Tool quality testing:

1. prepared a draft version of the health behavior questionnaire on Injury occurred during the Wushu course.

2. conducted content validity testing by having 3 experts with expertise consider the validity. of the content (Content Validity). The results of the analysis of the IOC found that the questions in the questionnaire had a value between 0.6-1.0, but there was a suggestion for correction, which is to divide the analysis of the questions between a positive direction and a negative direction as well. The researcher therefore brought suggestions to improve and amend according to the advice of experts.

3. Test the revised questionnaire on a group of 30 people who were not the research sample to find the confidence value. (Reliability) by the method of finding Cronbach's alpha coefficient (α), the reliability value was at the level of .81.

Data Collection

This research is divided into 5 steps as follows.

1. The researcher requests permission from 5 universities in Xi'an. In requesting to collect information on students studying Sanda wushu, the number of students at each university was 30, totaling 5 universities, 150 students, as detailed in the sample group.

2. The researcher explains to the students about this request for data collection. and asking for consent from students to participate in data collection without forcing students.

3. The researcher brought questionnaires to collect data from the students. After studying in the last week of the Sanda Wushu course.

4. The researcher used the collected questionnaires to check the accuracy of the data.

5. The researcher uses the results for statistical analysis.

Data Analysis

Statistics used to analyze data The researcher analyzed the data obtained from the questionnaire as follows:

1. Questionnaire Part 1: Frequency and percentage of general information of the sample.

2. Questionnaire Part 2: the questionnaire is about the Type of injury location of injury injured area and the nature of injuries according to various proportions Then use the frequency distribution and find the percentage. To get a summary of all the information

3. Questionnaire Part 3: summarizes comments or suggestions regarding injury prevention.

4. Use the information presented in table form.

Results

This study was on the Sports Injury of Sanda Wushu's Class of Students in Xian City. The researcher would like to present the following information: It is divided into 4 sections as follows.

Part 1: Basic information of the respondents.

Part 2: Sanda Wushu Injury Questionnaire

Part 3: summarizes comments or suggestions regarding injury prevention.

Part 1: General Data of The Sample

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Table 1: Frequency and percentage of general data of the sample

General data	Frequency (N=150)	percentage
1. Gender		
Male	92	61.3
Female	58	38.7
2. Age		
15-17 year	62	41.3
18-20-year	88	58.7
21-22 year	0	0
3. Education Level		
1st year	60	40
2nd year	82	54.7
3rd year	6	4.0
4th Year	2	1.3
4. Experience		
less than 1 year	134	89.3
1-2 years	14	9.3
2 years and up	2	1.3
5. Institution		
Guangzhou University	27	18
Xi'an University of Electronic Science and Technology	30	20
Shanghai Sports University	27	18
Zhengzhou University	30	20
Xi'an Institute of Physical Education	36	24
Total	150	100

From Table 1 it is found that the sample consisted of 92 men, accounting for 61.3 percent, and 58 women, accounting for 38.7 percent. The sample group was between 15 and 17 years of age, 62 people, representing 41.3 percent. Between 18 and 20 years of age, 88 people, representing 58.7 percent.

The sample group was at the 1st year level, 60 people, accounting for 40 percent, and 82 people were at the 2nd year level, accounting for 54.7 percent. There were 6 people at the 3rd year level, accounting for 4 percent, and 2 people at the 4th year level, accounting for 1.3 percent.

The sample group of 134 people had experience playing or studying Sanda Wushu for less than 1 year, accounting for 89.3 percent. They had experience between 1-2 years, 14 people, accounting for 9.3 percent, and between 2 years and over, 2 people. People accounted for 1.3 percent.

The total sample group came from 5 institutions as follows: Guangzhou University, 27 people, accounting for 18 percent, Xi'an University of Electronic Science and Technology, 30 people, accounting for 20 percent, Shanghai Sports University, 27 people, accounting for 18 percent, Zhengzhou University 30 people, accounting for 20 percent and Xi'an Institute of Physical Education, 36 people, accounting for 24 percent

Part 2: Questionnaire about an Injury in Sanda Wushu

Table 2: Questionnaire about an Injury in Sanda Wushu

	Question	Frequency (N=150)	Percentage
1.	**Main causes of injuries**		
	Injuries that occur are caused by the environment.	99	66
	Injuries from students themselves	51	34

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	Question	Frequency (N=150)	Percentage
2.	**Location of the body injury**		
	head	26	17.3
	Body part	58	38.7
	upper limb	36	24
	lower limb	30	20
3.	**What area was the head injury injured?**		
	crown	8	5.3
	Temple	9	6.0
	forehead	16	10.7
	Occipital	7	4.7
	ear	34	22.7
	face	19	12.7
	eye	14	9.3
	eyebrow	27	18
	nose	16	10.7
4.	**What area of the Body was injured?**		
	chest	18	12
	upper abdomen	53	20.7
	lower abdomen	31	23.3
	Back	35	35.3
	There was no injury to the body.	13	8.7
5.	**What area is the upper extremity injured?**		
	shoulder	15	10
	arm	20	13.3
	hand	13	8.7
	fingers	10	6.7
	elbow	18	12
	wrist	11	7.3
	palm	27	18
	There was no injury to the upper extremity.	36	24
6.	**What area of the lower extremity injury was injured?**		
	hip	18	12.0
	upper leg	27	18.0
	lower leg	13	8.7
	thigh	12	8.0
	knee	18	12.0
	calf	7	4.7
	Ankle	3	2.0
	soles of feet	2	1.3
	Instep	3	2.0
	foot	13	8.7
	Heel	11	7.3
	toenail	16	10.7
	There was no lower limb injury.	7	11
7.	**Characteristics of skin injuries**		
	Skin abrasions	83	55.3
	Blistering skin	9	6.0
	Bruised skin	46	30.7
	Broken wound	12	8.0
8.	**Characteristics of muscle injury**		

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	Question	Frequency (N=150)	Percentage
	cramp	57	38.0
	Bruised muscles	59	39.3
	Torn muscle	2	1.3
	Inflamed muscle tendon membrane	20	13.3
	Tendonitis	12	8.0
	Torn tendon	57	38.0
9.	**Characteristic of injuries to joints and ligaments**		
	sprain, sprain	57	38.0
	Dislocated joint	1	.7
	Stuck	3	2.0
	ligament	89	59.3
10.	**Characteristic of bone injuries**		
	There was no injury to the bone area.	0	0
11	**Severity level of injury**		
	If you have mild symptoms, you can practice.	142	94.7
	If symptoms are severe, movement must be stopped.	8	5.3
	Symptoms are so severe that you need to see a doctor.	0	0
12	**Currently, there are still injuries from training.**		
	There are still injuries.	50	33.3
	No more injuries	100	66.7
	Total	**150**	**100**

From Table 2 it is found that

1. From the survey of the causes of injuries, there were two causes: injuries that occurred from the outside environment from studying Sanda Wushu (66%) and injuries that occurred from the athletes themselves (34%)

2. From a survey of body positions that were injured in most athletes' competitions. It occurred in 38.7% of the body positions, 24% of the upper limbs, 20% of the lower limbs, and 17.3% of the head positions.

3. From the survey of the locations of head injuries, it was found that 22.7% were in the ear area, 18% in the eyebrow area, 12.7% in the face area, 10.7% in the nose and forehead area, 9.3% in the eye area, 6% in the temple area, 5.3% in the forehead area, and 4.7 in the occipital area. %

4. From the survey of the locations of injuries in the torso, it was found that 35.3% were in the back, 23.3% in the lower abdomen, 20.7 in the upper

5. From the survey of injured locations in the upper limb, it was found that the areas that were not injured were in the upper limb area: 24%, palm area, 18% arm area, 13.3 elbow area, 12% shoulder area, 10% hand area, 8.7% wrist area. 7.3 % and finger area 6.7%

6. From the survey of the injury locations in the lower limb, it was found that the upper leg area was 18%, the hip and knee area was 12%, the toe area was 10.7%, the lower leg and foot area was 8.7%, the thigh area was 8%, and the heel area was 7.3. % in the calf area 4.7%, in the ankle and instep area 2%, and in the sole area 1.3%, and no injuries were found in the lower limb area in 11%.

7. From the survey of the nature of skin injuries, it was found that 55.3% had abrasions, 30.7% bruised skin, 8% cracked wounds, and 6% blistered skin.

8. From the survey of the nature of muscle injuries, it was found that 39.3% had bruised muscles, 38% had cramps and torn tendons, 13.3% had tendon sheath inflammation, 8% had tendon inflammation, and 1.3% had torn muscle.

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9. From a survey of the nature of injuries to joints and ligaments, it was found that 38% were sprained, 59.3% were ligaments, 2% were stuck joints, and 0.7% were dislocated joints.

10. From the survey the nature of the bone injury revealed that there was no further injury.

11. From the survey of the severity of the injury, it was found that if there is a slight symptom, it can be trained 94.7% and if there is a severe symptom, the movement must be stopped at 5.3%

12. From the current survey, there are still people injured from training. It was found that there are still 33.3% injuries and no more injuries in 66.7% abdomen, 12% in the chest, and 8.7% had no injuries in the abdominal area.

Part 3: summarizes comments or suggestions regarding injury prevention.

1. First aid after injury Most of the comments were to take a break, apply for medicine, and take painkillers. In addition, some people gave the opinion that it was not a serious injury and did not require any treatment.

2. Treatment and recovery after injury in class That is, the trainers and parents are the caregivers.

3. Treatment methods and physical therapy Most of them commented that There is a massage on the aching area. And there is compression from a sprained ankle.

4. Recovery time 1 – 2 weeks.

Conclusion

Part 1: Basic information of the respondents.

It was found that the sample consisted of 92 men, accounting for 61.3 percent, and 58 women, accounting for 38.7 percent. The sample group was between 15 and 17 years of age, 62 people, representing 41.3 percent. Between 18 and 20 years of age, 88 people, representing 58.7 percent.
The sample group was at the 1st year level, 60 people, accounting for 40 percent, and 82 people were at the 2nd year level, accounting for 54.7 percent. There were 6 people at the 3rd year level, accounting for 4 percent, and 2 people at the 4th year level, accounting for 1.3 percent.
The sample group of 134 people had experience playing or studying Sanda Wushu for less than 1 year, accounting for 89.3 percent. They had experience between 1-2 years, 14 people, accounting for 9.3 percent, and between 2 years and over, 2 people. People accounted for 1.3 percent.
The total sample group came from 5 institutions as follows: Guangzhou University, 27 people, accounting for 18 percent, Xi'an University of Electronic Science and Technology, 30 people, accounting for 20 percent, Shanghai Sports University, 27 people, accounting for 18 percent, Zhengzhou University 30 people, accounting for 20 percent and Xi'an Institute of Physical Education, 36 people, accounting for 24 percent.

Part 2: Sanda Wushu Injury Questionnaire

1. From the survey of the causes of injuries, there were two causes: injuries that occurred from the outside environment from studying Sanda Wushu (66%) and injuries that occurred from the athletes themselves (34%)

2. From a survey of body positions that were injured in most athletes' competitions. It occurred in 38.7% of the body positions, 24% of the upper limbs, 20% of the lower limbs, and 17.3% of the head positions.

3. From the survey of the locations of head injuries, it was found that 22.7% were in the ear area, 18% in the eyebrow area, 12.7% in the face area, 10.7% in the nose and forehead area, 9.3% in the eye area, 6% in the temple area, 5.3% in the forehead area, and 4.7 in the occipital area. %

4. From the survey of the locations of injuries in the torso, it was found that 35.3% were in the back, 23.3% in the lower abdomen, 20.7 in the upper

5. From the survey of injured locations in the upper limb, it was found that the areas that were not injured were in the upper limb area: 24%, palm area, 18% arm area, 13.3 elbow area, 12% shoulder area, 10% hand area, 8.7% wrist area. 7.3 % and finger area 6.7%

6. From the survey of the injury locations in the lower limb, it was found that the upper leg area was 18%, the hip and knee area was 12%, the toe area was 10.7%, the lower leg and foot area was 8.7%, the thigh area was 8%, and the heel area was 7.3. % in the calf area 4.7%, in the ankle and instep area 2%, and in the sole area 1.3%, and no injuries were found in the lower limb area in 11%.

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7. From the survey of the nature of skin injuries, it was found that 55.3% had abrasions, 30.7% bruised skin, 8% cracked wounds, and 6% blistered skin.

8. From the survey of the nature of muscle injuries, it was found that 39.3% had bruised muscles, 38% had cramps and torn tendons, 13.3% had tendon sheath inflammation, 8% had tendon inflammation, and 1.3% had torn muscle.

9. From a survey of the nature of injuries to joints and ligaments, it was found that 38% were sprained, 59.3% were ligaments, 2% were stuck joints, and 0.7% were dislocated joints.

10. From the survey the nature of the bone injury revealed that there were no further injuries.

11. From the survey of the severity of the injury, it was found that if there is a slight symptom, it can be trained 94.7% and if there is a severe symptom, the movement must be stopped at 5.3%.

12. From the current survey, there are still people injured from training. It was found that there are still 33.3% injuries and no more injuries 66.7%abdomen, 12% in the chest, and 8.7% had no injuries in the abdominal area.

Discussion

From the research results in Part 2, the questionnaire on injuries in athletes studying Wushu, it was found that

1. The main cause of injuries is from the external environment, such as the surface of the field being hard and lacking flexibility, which is not suitable for studying in some institutions, the unstable temperature in some institutions, there is no room ready to directly support the body, causing the body to be unable to adapt and lose concentration in studying and competing, resulting in injury. The school equipment is old and has been used for a long time, causing less time to practice skills to prevent injuries. As for injuries caused by athletes themselves, it is caused by the body being insufficiently complete and the lack of correct movement techniques because they are still in school.

2. According to the results of a study of the body positions that were injured in most athletes' competitions. It occurred in the body position 38.7%, the upper limb 24%, the lower limb 20%, and the head 17.3%, respectively. The cause of the injury and the body position where the injury occurred is consistent with Prieto-González, et al (2021). Conducted a study on the Epidemiology of Sports-Related Injuries and Associated Risk Factors in Adolescent Athletes: An Injury Surveillance and found that the average injury rate was 2.64 per 1000 h. The most common injuries were lumbar muscle strains (Higher injury rates (12.24%), ankle sprains (11.98%), and bone fractures (9.31%). Ankles (36.12%), knees (19.32%), and shoulders (6.47%) concentrated the highest number of injuries. were associated (in this order) with the following factors: (a) Greater number of hours of practice per week. b) Not performing warm-ups. (c) Using inadequate sports facilities. (d) Being aged 14–17. (e) Not performing physical preparation. (f) Inappropriate training load. (g) Not performing injury-preventive activities. (h) Performing sports techniques without the supervision of one sports coach. (i) Inadequate sports equipment. injury risk factors are modifiable, it is imperative to implement strategies to reduce amateur and professional adolescent athletes' injury rates.

3. From the results of the study of areas that received injuries from various body positions, it was found that Head injuries were found in the ear area 22.7%, eyebrow area 18%, face area 12.7%, nose and forehead area 10.7%, eye area 9.3%, temple area 6%, forehead area 5.3% and occipital area 4.7% respectively. Injuries in the torso area were found. 35.3% in the back, 23.3% in the lower abdomen, 20.7 in the upper abdomen, 12% in the chest, and 8.7% in the abdominal area, respectively. Injuries in the upper limbs were found to be in areas that did not receive injuries in the lower limbs. Upper 24%, palm area 18%, forearm area 13.3, elbow area 12%, shoulder area 10%, hand area 8.7%, wrist area 7.3%, and finger area 6.7% respectively.

Injuries in the upper limb area were found that the area was not in the Upper limb area 24%, palm area 18%, arm area 13.3, elbow area 12%, shoulder area 10%, hand area 8.7%, wrist area 7.3% finger area 6.7% respectively. Injuries in the lower limb area were found to be in the upper leg area 18 % hip and knee area 12 % toe area 10.7% lower leg and foot area 8.7 % thigh area 8 % heel area 7.3% calf area 4.7% ankle and instep area 2 % and sole area 1.3 % and none found Injuries to the lower limbs were 11%, respectively.

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From these results, Injuries occur from studying or practicing Sanda Wushu. The areas that are injured are almost no different from injuries from other types of combat sports, namely the head, torso, and lower limbs. except the upper limb Twenty-four percent of subjects were uninjured, but overall, other areas of the upper limb still sustained injuries. Therefore, it is in line with research that examines injured areas of the body, such as Zetaruk et al. (2023). conducted a study on Injuries in martial arts: a comparison of five styles. The objective was to compare five martial arts. arts concerning injury outcomes. The results of the study found that the rate of injuries, expressed as a percentage of participants sustaining an injury that required time off training a year, varied according to style: 59% taekwondo, 51% aikido, 38 % kung fu, 30% karate, and 14% tai chi. However, when surveying injured areas and comparing them, the risks are head/neck injury, upper extremity injury, and soft tissue injury.

4. From the results of the study of the nature of skin injuries, it was found that 55.3% had abrasions, 30.7% were bruised, 8% were broken, and 6% were blistering, respectively. The nature of muscle injuries was found to be bruised muscles. 39.3% had cramps and 38% torn ligaments, 13.3% tendonitis, 8% tendonitis, and 1.3% torn muscles, respectively. Characteristics of injuries to joints and ligaments were found to be sprains in 38%, and ligaments in 59.3% joints. 2% were stuck and 0.7% were dislocated joints, respectively, and the nature of the bone injuries revealed that there were no more injuries. From the results of the study of the nature of this injury. Injuries to the skin, muscles, and joints are injuries from combat sports. Consistent with the research of Fabricio et al. (2009), a study was conducted on Injuries in martial arts and combat sports: Prevalence, characteristics, and mechanisms. and found that the most common were tendon injuries (39%) and sprains (39%), followed by dislocation/subluxation (23%). The nature of injuries in combat sports is relaxed. But there are some differences: In grappling MACS, as in Judo, joint injuries were the most frequent, especially the knees and shoulders. For striking modalities, such as Karate, muscle injuries were more frequent and the most common sites were feet and toes, followed by hands and fingers. The lower limbs were the most affected. A higher prevalence of injury was found in combat simulations (43%) than in technical training (26%) and competition (10%). It also discussed Injuries as follows the injuries occurred in the high extremities. The frequency of injuries to the upper limbs is the shoulders, hands, and fingers, while the lower limbs are the feet and toes. ankles and knees Most injuries occur during technical training. And for the most part, it will happen without protective equipment.

5. From the results of the study of the severity of the injuries, it was found that if there are minor symptoms, they can practice at 94.7 and if there are severe symptoms, they must stop moving. 5.3 and from the current survey, there are still people injured from training. There were still 33.3% injuries and 66.7% had no further injuries. Of the injuries that occurred from studying Sanda Wushu, they were injuries that had only minor symptoms and were still able to continue studying. And it doesn't take long to heal and recover.

Professional athletes, with injuries sustained in more severe combat sports, are still able to recover and return to playing sports, training, or competing. For example, the research of Matthew et al (2022). They studied Performance and returned to sport after injury in professional mixed martial arts. They studied injuries and collected data on MMA athletes. The purpose of this study was to analyze the impact of injuries on the return to sport and post-injury performance of professional MMA athletes. We hypothesize that increased age is associated with a lower probability of return to sport and diminished post-injury performance. The results found that 94.4% of injured athletes were able to return to professional MMA, and the injury was associated with the odds of being able to return to professional fighting after injury.

Part 3: summarizes comments or suggestions regarding injury prevention.

It was found that the first aid after injury section of the comments was to take a break, apply medicine, and take painkillers. In addition, some people gave the opinion that it was not a serious injury and did not require any treatment. The treatment and recovery section after injuries in the class That is, the trainers and parents are the caregivers. As for the treatment methods and physical Most of them commented that There is a massage on the aching area. And there is compressing from a sprained ankle, which treatment is first aid from the hospital room and physical clinic at the institute. The recovery time is 1-2 weeks. From the summary of the above opinions, the injuries sustained in

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the class are injuries that are not serious and can be treated with basic first aid. Because studying at the school level is non-violent training, it is not surprising that it can be rehabilitated. In injury prevention, there were additional comments, namely the recommendation to increase protective equipment to be sufficient for the number of students and to improve the equipment appropriately. In addition, there is currently a training program for physical rehabilitation. The training in the physical rehabilitation program will include both rehabilitation and injury prevention guidelines, consistent with Shenghai and Xin (2022). They conducted a study on the Prevention and Treatment of Sports Injuries and Rehabilitative Physical Training of Wushu Athletes. The study aims to explore the characteristics of research on the prevention and treatment of sports injuries and the rehabilitation of physical training of Wushu athletes. Where Different from traditional rehabilitation therapy, athletes' physical rehabilitation training is also different from traditional sports rehabilitation treatment by evaluating the physical condition of athletes, the causes of sports injuries were analyzed, to formulate special rehabilitation training programs. The experimental results show that physical rehabilitation training can make athletes avoid the influence of unsafe factors of sports injury, and improve the safety of training., and effectively prevent sports injury. The experimental results show that physical rehabilitation training combined with rehabilitation medicine has obvious advantages, which can make Wushu athletes recover quickly without sequelae.

Suggestions

Suggestions for this study

1. This study should collect data by interviewing to know whether there is a trend in the answers that are true or not.
2. This study should test the effects of injury by examining changes in movement after injury.
3. This study's information on recommendations is still not as clear as the general guidelines. It's not more in-depth than this.

Suggestions for use in future research

1. The next study should add more details on the method of collecting additional injury data.
2. Guide further research by increasing the results of movement testing after injury
3. The next study should collect more in-depth information. and study to improve and develop more injury prevention.

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