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SOME MEASURES TO PREVENT INJURIES FOR STUDENTS DURING THE PHYSICAL EDUCATION COURSE AT THAI NGUYEN UNIVERSITY

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ABSTRACT

Injuries during Physical Education (PE) courses are a common problem, directly affecting students' health, psychology, and academic performance. This paper aims to assess the current state of injuries, identify the main causes, and propose some measures to prevent injuries among students during PE courses at Thai Nguyen University. The research was conducted using a sociological survey method through questionnaires, collected from May 2025 to November 2025 with 1,076 valid responses. The research results show that 63% of students have experienced injuries while participating in PE courses. Subjects with high injury rates include athletics, badminton, basketball, and volleyball. Common types of injuries include muscle strains, cramps, sprains, joint pain, and minor collisions, with the ankle, knee, and lower leg being the most vulnerable areas. Most injuries are mild to moderate, however, there are still cases of severe injuries requiring medical treatment and prolonged absence from school. The main causes of injuries are inadequate warm-up, incorrect technique, and overtraining. Injuries not only disrupt learning but also negatively affect psychology, reducing students' confidence and enthusiasm for training. Based on this, the article proposes several preventive measures to improve safety and effectiveness in teaching and learning physical education.

Keyword: Sports injuries, Physical education, University students, Injury prevention, Exercise safety

1. INTRODUCTION

Physical education is a crucial component of the higher education system, playing a special role in the holistic development of students in terms of physical, intellectual, and personal qualities. Through physical education courses, students not only improve their health and physical fitness but also develop a healthy lifestyle, discipline, perseverance, and teamwork skills. In the context of the current fundamental and comprehensive reform of higher education, physical education is increasingly valued as a foundational element contributing to improving the quality of human resources, meeting the requirements of socio-economic development and international integration.

At higher education institutions, including Thai Nguyen University, the Physical Education course is offered to students in various disciplines with rich and diverse content, including sports such as athletics, football, volleyball, badminton, basketball, rhythmic gymnastics, martial arts, and general physical fitness exercises. These activities offer many practical benefits for students' physical and mental health. However, alongside the obvious benefits, participating in sports training and competitions during their studies also carries many risks leading to injuries, significantly affecting students' health, academic performance, and psychology.

In reality, sports injuries are quite common among university students, especially those who are not sports majors, have limited physical fitness, or lack sufficient knowledge and skills to prevent injuries. Common types of injuries encountered in Physical Education courses include sprains, ligament strains, dislocations, muscle strains, muscle tears, soft tissue injuries, and even fractures in severe cases. These injuries not only cause pain and limit mobility but can also leave long-term consequences if not properly treated and rehabilitated.

The causes of injuries during Physical Education courses are diverse and complex. Some causes stem from the students themselves, such as weak physical fitness, unfamiliarity with the intensity of

exercise, incorrect technique, lack of warm-up, or overconfidence during training. In addition, objective factors such as inadequate facilities, training grounds, unsafe equipment, unfavorable weather, and large class sizes also contribute to an increased risk of injury. Furthermore, a lack of knowledge about injury prevention and first aid is another significant reason why injuries can become more severe and have more serious consequences.

For students at Thai Nguyen University, a major training center in the northern midland and mountainous region, the scale of training is expanding, and the number of students participating in Physical Education courses is very large. These students come from many different regions with varying physical conditions, exercise habits, and awareness of physical training. This poses significant challenges in organizing teaching and ensuring student safety during their studies. Without effective injury prevention measures, the risk of sports accidents and injuries will increase, negatively impacting the quality of training and the reputation of the university.

Injuries in Physical Education courses not only directly affect students' health and mobility but also indirectly impact their academic performance, morale, and attitude towards physical training. Many students, after experiencing injuries, become hesitant and afraid to exercise, losing interest in participating in physical education classes, and even requesting exemptions, reductions, or dropping out of the course. This contradicts the goal of physical education, which is to improve physical fitness and create a habit of regular and sustainable exercise for students.

Based on this reality, researching and proposing measures to prevent injuries for students during the Physical Education course is an urgent requirement, significant both theoretically and practically. These preventive measures not only aim to minimize injury rates but also contribute to improving teaching effectiveness, creating a safe, friendly, and positive learning environment for students. Simultaneously, through injury prevention, students are equipped with the knowledge and skills to protect themselves, fostering a scientific, safe, and sustainable approach to physical training.

In recent years, numerous studies both domestically and internationally have addressed the issue of sports injuries and preventive measures during training and competition. However, most studies focus on professional athletes or high school students, while the number of in-depth studies on injuries and injury prevention for university students, especially in the context of Physical Education courses at multidisciplinary universities, remains limited. For Thai Nguyen University, to date, there have been few studies focusing on analyzing the current state of injuries and proposing preventive measures suitable to the specific conditions of the university and the characteristics of its students.

Therefore, the research "Some measures to prevent injuries for students during the Physical Education course at Thai Nguyen University" is necessary and has high practical significance. This study not only contributes to supplementing the theoretical basis of injury prevention in physical education at the university level but also provides scientific arguments and specific solutions to improve the quality and safety of physical education teaching at Thai Nguyen University. The research results can be used as a reference for lecturers, physical education administrators, and students in organizing, participating in, and managing physical training activities more effectively and safely.

Through analyzing the current situation, identifying causes, and proposing appropriate injury prevention measures, the study aims to contribute to building a safe, scientific, and sustainable physical education learning environment, thereby improving the health, physical fitness, and quality of life for students at Thai Nguyen University in particular and university students in general in the current period.

2. THE CURRENT SITUATION OF INJURIES AMONG STUDENTS DURING THE PHYSICAL EDUCATION COURSE.

2.1. Theoretical basis

In physical education, injuries are understood as injuries that occur to the body of learners during physical activity, training, or sports competitions, affecting the structure and function of the musculoskeletal system and related organs. In the context of higher education, sports injuries among students often arise when performing physical

education course content with high intensity, complex techniques, or under unsafe training conditions. From a scientific perspective, physical education and sports science, injury is the result of the simultaneous interaction between subjective factors belonging to the trainee and objective factors from the training environment and teaching organization.

In terms of classification, injuries in physical education can be divided into acute and chronic injuries. Acute injuries typically occur suddenly during physical activity, such as sprains, dislocations, muscle strains, or fractures, while chronic injuries develop from prolonged training, repetitive incorrect movements, or overuse, leading to cumulative damage. Furthermore, injuries can be classified as mild, moderate, or severe, depending on the degree to which they affect the student's mobility and daily life.

From a physical education theoretical perspective, injury prevention is considered one of the crucial tasks to ensure the goal of health training and physical development for learners. A thorough understanding of the theoretical basis of injuries and risk factors not only helps instructors organize appropriate teaching content but also helps students develop self-protection awareness, participate in training scientifically and safely, and contribute to improving the effectiveness and quality of learning in the Physical Education course.

2.2. The current situation of injuries among students during the Physical Education course

To assess the current state of injuries among students during their Physical Education course studies at Thai Nguyen University, the research team conducted a survey using questionnaires from May 2025 to November 2025. A total of 1076 valid survey responses were collected, reflecting relatively comprehensively the participation of students from various training programs in Physical Education courses throughout the University. The survey results show that injuries during Physical Education courses are a fairly common problem and need to be given due attention.

When asked whether they had ever suffered an injury during their Physical Education course studies, 678 students, accounting for 63% of the total participants, reported having experienced at least one injury. Only 398 students, equivalent to 37%, answered that they had never been injured (Figure 1). The relatively high rate of student injuries indicates that safety risks during physical education classes still exist and affect a large number of students. This reflects the reality that, although physical education offers many health benefits, if it is not organized and conducted scientifically and safely, the risk of injury is unavoidable.

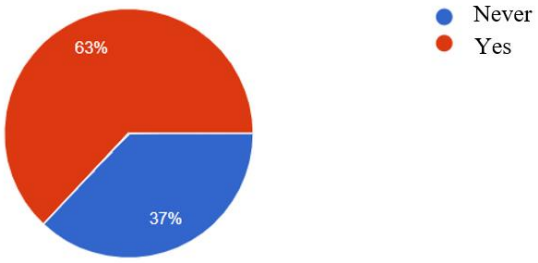

Figure 1. Results of answering the question "Have you ever been injured while studying Physical Education?"

Considering the specific courses in which students suffered injuries (Figure 2), the survey results show an uneven distribution of injuries across subjects. The Athletics course had the highest number of injured students with 268, accounting for 39.5% of all injured students. This could stem from the nature of Athletics, with many movements requiring endurance, speed, and strength, easily overloading the musculoskeletal system if students lack sufficient physical fitness or perform movements incorrectly. Following closely behind are Basketball and Badminton, with injury rates of 23.5% and 23.3% respectively. These are indirect contact sports requiring rapid movement, sudden changes of direction, and hand-eye coordination, thus posing a relatively high risk of injury.

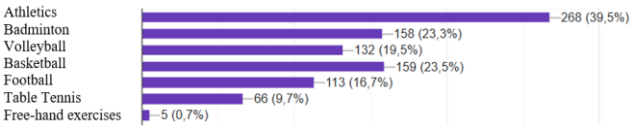

Figure 2. Proportion of course selections affected by trauma in the survey.

The Volleyball course recorded 132 student injuries, accounting for 19.5%, while Football had 113 student injuries, accounting for 16.7%. Although Football is a direct contact sport, the lower injury rate compared to some other sports may be due to the curriculum being adapted to suit non-professional students. The Table Tennis course had the lowest injury rate with 66

students, accounting for 9.7%, indicating that it is a relatively safe subject with low injury risk under current teaching conditions.

Regarding the types of injuries students experienced, the survey results showed that mild and moderate injuries accounted for the majority (Figure 3). Specifically, muscle strain or cramps were the most common type, affecting 310 students, accounting for 45.7%. This type of injury often occurs when students do not warm up properly, overexert themselves, or train in unfavorable weather conditions. Joint pain, including knee, shoulder, and ankle pain, also occurred at a relatively high rate, affecting 244 students, or 36%, reflecting overuse or repetitive movements that were inappropriate for the body.

Figure 3. Proportion of different types of injuries experienced

In addition, sprains or dislocations were recorded in 195 students, accounting for 28.8%, often occurring in subjects involving frequent jumping, landing, or rapid changes of direction. Injuries from collisions, falls, or minor abrasions also accounted for a significant proportion, with 209 students (30.4%), indicating a need for greater attention to safety during movement, competition, and field conditions. Notably, 80 students (11.8%) experienced serious injuries such as fractures or ligament damage; although the percentage is not high, the consequences can be severe, affecting students' health and studies in the long term.

Regarding the most common injury locations, the survey results show that lower limbs are the most vulnerable. Specifically, the ankle was the most common injury site, with 275 students (40.6%). Next were the lower legs with 225 students, accounting for 33.2%, and the knee with 200 students, accounting for 29.5%. This is consistent with the movement characteristics of Physical Education courses, where running, jumping, bouncing, and changing direction are frequently performed. In addition, positions such as the arms and shoulders also had relatively high injury rates, at 27.6% and 22.9% respectively, especially in sports that use many hitting, throwing, or catching movements. Back injuries were recorded in 118 students, accounting for 17.4%, indicating the impact of incorrect posture or lack of support from core strengthening exercises (Figure 4).

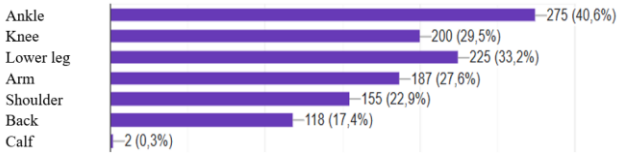

Figure 4. Proportion of most common injury locations.

Regarding the severity of injuries, the majority of students reported that the injuries they experienced were minor. Specifically, 436 students, or 64.3%, considered their injuries not too serious and believed they could continue their studies. However, 232 students, or 34.2%, experienced moderate injuries, requiring them to take a temporary leave of absence for recovery. Notably, although a small percentage, 10 students, or 1.5%, experienced severe injuries requiring medical treatment and a long period of absence from school (Figure 5). These cases not only affected individual health but also impacted students' academic progress and mental well-being.

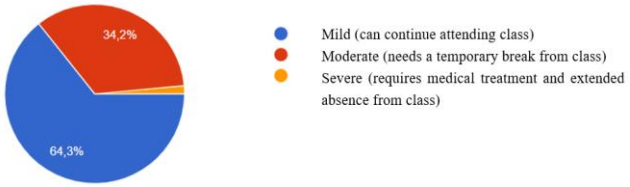

Figure 5. Injury severity ratio

The survey results indicate that injuries during the Physical Education course at Thai Nguyen University are quite common, encompassing various forms and levels of severity across different subjects. This situation highlights the urgent need to research, develop, and implement appropriate injury prevention measures to ensure student safety, enhance learning effectiveness, and contribute to achieving the goals of physical education in the current period.

2.3. Causes and effects of injuries during the Physical Education course

To clarify the factors leading to injuries and the impact of injuries on students during their Physical Education course, the research team further analyzed the survey results obtained from

1076 valid questionnaires. The survey focused on identifying the causes of injuries, the degree of learning disruption, the impact on students' psychology, awareness of first aid, and students' views on injury prevention measures.

The survey results on the causes of injuries showed that subjective factors related to students accounted for a higher percentage than objective factors. Specifically, 350 students, or 51.6%, believed that the main cause of injury was improper or insufficient warm-up before exercise. This was the most common cause, reflecting the fact that students still underestimate the role of warm-up and stretching, while this is an important step in preparing the body to adapt to the intensity of exercise. In addition, incorrect technique was chosen by 299 students, equivalent to 44.1%, as one of the main causes of injury. This shows that students' motor skills and ability to learn techniques are still limited, especially for sports requiring complex techniques.

Overtraining, exceeding one's physical capacity, was also noted by 266 students, accounting for 39.2%. This reality shows that a portion of students lack accurate self-assessment of their personal physical condition, easily getting caught up in the general pace of the class or a competitive mentality, leading to overtraining. Furthermore, factors related to training conditions also contribute to injuries, with the use of inappropriate clothing or sports shoes being chosen by 133 students, accounting for 19.6%. Unsafe training grounds and equipment conditions were reported by 125 students (18.4%), and unfavorable weather and training environment were mentioned by 124 students (18.3%). These reasons highlight the role of facilities and teaching conditions in ensuring student safety.

Besides, several other causes, although at lower rates, are still noteworthy. Sixty-seven students (9.9%) attributed injuries to a lack of safety awareness during group exercises, while 56 students (8.3%) believed that instructors' insufficient observation and guidance during lessons also contributed to the increased risk of injury. These results indicate that injuries in Physical Education are a consequence of the combined impact of multiple factors, from individual students to the organizational and management conditions of teaching.

Regarding the impact of injuries on the learning process, the survey results show that injuries caused varying degrees of disruption for students. Specifically, 345 students (50.9%) reported that injuries did not disrupt their Physical Education studies. However, 194 students, or 28.6%, had to miss less than a week of classes after an injury, and 139 students, or 20.5%, had to miss more than a week. The relatively high rate of students having to temporarily suspend their studies due to injury shows that injuries not only affect health but also directly impact the progress and learning outcomes of the Physical Education course.

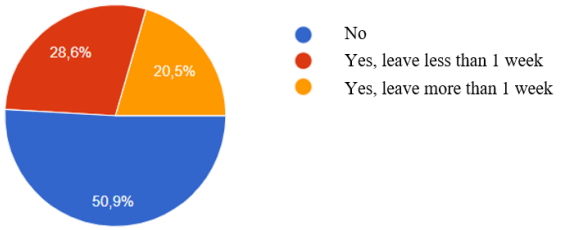

Figure 6. Rate of learning disruption after experiencing trauma

Beyond physical and time-consuming impacts, injuries also significantly affect students' psychological well-being. Survey results show that 322 students (47.5%) stated that injuries did not affect their academic performance. However, 238 students (35.1%) admitted to feeling apprehensive about participating in training after an injury, especially in subjects that had previously caused the injury. Furthermore, 118 students (17.4%) reported that injuries reduced their interest in Physical Education. These negative psychological impacts can lead to students avoiding physical activity, decreased academic participation, and long-term effects on their physical training habits (Figure 7).

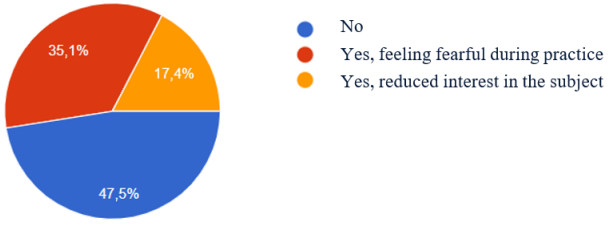

Figure 7. Survey rate of injuries affecting students' learning psychology

Regarding awareness and skills in handling injuries, the survey results showed that 438 students, accounting for 65.2%, reported having basic first aid knowledge for injuries, while 234 students, equivalent to 34.8%, still lacked basic

first aid skills. The relatively high percentage of students lacking first aid knowledge indicates the need to strengthen the dissemination, education, and training of sports first aid skills for students, in order to minimize the severity of injuries when they occur.

When asked about injury prevention measures during the Physical Education course, students gave many opinions reflecting a fairly positive understanding of this issue. Among these, the most frequently chosen measure was proper warm-up and stretching, with 390 students, accounting for 57.5%. Next, practicing proper technique and adhering to instructor instructions was considered very important by 382 students, equivalent to 56.3%. Measures related to training conditions were also of interest to students, with 269 students (39.7%) choosing to inspect the field and equipment before training; 198 students (29.2%) suggesting that the school improve its facilities; and 199 students (29.4%) highly appreciating instructors' guidance on sports safety skills.

In addition, organizing training sessions on first aid for sports injuries was also chosen by 119 students (17.6%) as one of the necessary measures. Although this rate is not yet high, given that more than one-third of students still lack basic first aid knowledge, this is a significant solution in minimizing the consequences of injuries and enhancing students' self-protection awareness.

From the above analysis, it can be seen that the causes and effects of injuries during the Physical Education course at Thai Nguyen University are multifaceted, impacting students' physical, psychological, and academic performance. This situation highlights the urgent need to develop and implement comprehensive, scientific, and practical injury prevention measures to ensure student safety and improve the quality of Physical Education teaching in the current period.

3. SOME MEASURES TO PREVENT INJURIES FOR STUDENTS DURING THE PHYSICAL EDUCATION COURSE

Based on the theoretical framework of injuries in physical education and the current state of injuries among students at Thai Nguyen University, it can be seen that injuries occur due to the combined impact of many factors, most notably inadequate warm-up, incorrect technique, overtraining, and unsafe training conditions. Therefore, the development and implementation of injury prevention measures need to be carried out synchronously, with coordination between students, lecturers, and the university to minimize the risk of injury and improve the effectiveness of the Physical Education course.

First and foremost, special attention should be paid to raising awareness and promoting proper warm-up and stretching habits among students before and after training. Survey results show that up to 51.6% of students believe that incorrect or inadequate warm-up is the main cause of injury, while 57.5% of students consider thorough warm-up and proper stretching to be the most important measures to prevent injury. Therefore, instructors need to provide specific and systematic warm-up exercises tailored to each subject and the physical characteristics of the students, while strictly monitoring the warm-up process in each class to avoid superficial or perfunctory warm-ups.

In addition, practicing the correct technique and strictly adhering to the instructor's instructions are key factors in minimizing injuries during learning. According to survey results, 44.1% of students believe that incorrect technique is the cause of injury, and 56.3% of students choose correct technique and following instructions as an effective preventive measure. Therefore, during teaching, instructors need to increase demonstrations, clearly and understandably analyze the techniques, and promptly correct students' mistakes, especially in subjects with high injury rates such as Athletics, Basketball, and Badminton.

Another important measure is adjusting the volume and intensity of exercise to suit students' physical fitness levels. Survey results show that 39.2% of students believe that overtraining, exceeding their physical capabilities, is the cause of injuries, while the majority of students are not professional athletes. Therefore, the content and volume of exercise in the Physical Education course need to be designed flexibly, differentiated according to students' skill levels and physical conditions, avoiding applying a uniform intensity level to all learners. At the same time, students also need to be educated to self-assess their abilities, avoiding chasing achievements or a competitive mindset during training.

Improving the condition of facilities, fields, and training equipment is also indispensable in injury prevention. Survey results show that approximately 18–19% of students believe that inadequate fields, equipment, and inappropriate clothing and shoes are causes of injuries. Therefore, the school needs to regularly inspect and maintain the sports fields and training equipment, ensuring safety standards in physical education instruction. At the same time, instructors need to guide students in choosing appropriate sportswear and shoes for each subject and training condition to minimize the risk of injury.

In addition, it is necessary to strengthen education on sports safety skills and first aid for students. Although 65.2% of students reported having basic first aid knowledge, 34.8% still do not know how to handle injuries. Organizing training sessions and integrating sports first aid into the curriculum or extracurricular activities will help students improve their ability to protect themselves and assist their classmates when needed, thereby minimizing the severity and consequences of injuries.

Finally, the role of instructors in observing, guiding, and organizing safe classes needs to be more strongly promoted. Although only 8.3% of students believed that the lack of timely observation and guidance from instructors was the cause of injuries, this remains a crucial factor in preventing risks during the learning process. Instructors need to proactively monitor, remind, and intervene promptly when they detect students performing incorrect techniques or showing signs of overexertion, while simultaneously building a positive, safe, and mutually supportive learning environment.

Therefore, injury prevention in the Physical Education course needs to be implemented comprehensively, based on scientific theory and the specific situation of students at Thai Nguyen University. The synchronized application of the above measures will contribute to minimizing the injury rate, limiting negative impacts on students' health and psychology, and improving the quality and effectiveness of teaching the Physical Education course in the current context of higher education.

4. CONCLUSION

The research results show that injuries during the Physical Education course at Thai Nguyen University are quite common, with various types of injuries occurring in many subjects and influenced by both subjective and objective factors. The main causes of injuries include insufficient warm-up, incorrect technique, overtraining, and unsafe training conditions. Injuries not only affect physical health but also negatively impact students' psychology, learning enthusiasm, and academic progress. Based on this, the study proposes several feasible injury prevention measures suitable for teaching the Physical Education course at Thai Nguyen University. To improve injury prevention effectiveness, schools need to invest in facilities, instructors need to enhance guidance on training techniques and safety, and students need to raise their awareness of self-protection and proactively engage in physical training in a scientific, safe, and sustainable manner.

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