

# Investigation of Accidents and First Aid Incidents In-Class and Out-of-Class Activities of Physical Education and Sport Lessons

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## ABSTRACT

This study is a descriptive type of research to examine the accidents, sports injuries, and other incidents that physical education teachers working in primary school and high school had encountered (during their school hours at school, physical education lessons, training sessions, inter-school competitions) and their first aid interventions against those incidents. The research is a qualitative research type and case study design was used. 39 Physical Education teachers working in Malatya constitute the sample of the research. Semi-structured interview form was used to collect data. Content analysis and descriptive analysis techniques were used in data analysis. As a result of interviews with physical education teachers, 5 main themes were determined. It is found that the first theme is "injury types", the second theme is "injury areas", the third theme is "causes of injury", the fourth theme is "first aid interventions" and the fifth theme is "teachers' first aid knowledge level". As a result, accidents in and out of physical education classes are frequently experienced in schools. It has been determined that physical education teachers' first aid knowledge level is insufficient.

**Keywords:** Sports Injuries, Physical Education Lesson, Teacher, First Aid

## INTRODUCTION

Accidents, the last link of negligence and erroneous behavior, are controllable and preventable. In addition, it affects the health of the family in the short and long term and creates a serious economic burden on social resources<sup>1-4</sup>.

Accidents can happen in all areas of life. The possibility of accidents is also high in schools, where children spend the most time outside of their homes<sup>5</sup>. In USA, each year 10 to 25% of accidental injuries occurring in children aged fourteen and over occur in schools<sup>6</sup>. It was determined that 65% of the total injuries in European countries occurred at home, at school, during sports or leisure activities, and 1639 children (0-14 years old) died due to injuries caused by the same reasons<sup>7</sup>.

Accidents and injuries are likely to occur in sports environments. Adolescents and children are at higher risk of injury than adults<sup>8</sup>. There are some studies on sports injuries seen in physical education classes. In a study conducted in the Netherlands on 1818 students, it was determined that 20% of the sports injuries occurred in physical education classes<sup>9</sup>. Videmšek et al., found that 14.3% of the students experienced sports injuries in physical education classes in primary and secondary schools<sup>10</sup>. In a study conducted in Belgium, it was found that 56% of the injuries seen at school occurred in the field of play and 19.7% during physical education lessons<sup>11</sup>. It was found that 29.1% of accidents at schools occurred during physical education lessons<sup>12</sup> and that 20% of students experienced sports injuries an academic year<sup>13</sup>. 15 cases of sudden death were appeared during sports activities in Turkish schools between 1991-2005<sup>15</sup>. Many sportsman are injured in accidents that occur in school sports and students encountered more injury incidents in their spare time than they did in physical education classes in Slovenia<sup>14</sup>.

The study aims to determine the accidents that physical education teachers encountered with students at school and their causes, types of injuries, areas of injuries,

and other health-related problems they encountered as well as trying to determine the first aid responses they provided.

## METHODS

In this study, one of the qualitative research methods, the case study design was used<sup>16</sup>. The research group consisted of 39 physical education teachers among the purposeful sampling methods, according to the maximum variety sampling type.

"Semi-structured qualitative interview form" was used as data collection tool. The interview form developed by the researchers was applied after making arrangements in line with the opinions of the expert<sup>17</sup>. The analysis of the data obtained in the study was carried out by descriptive analysis and content analysis<sup>18</sup>. In the descriptive analysis, in physical education teachers' speeches, teachers were coded as PET-1 (Physical Education Teacher-1).

## RESULTS

As a result of interviews with physical education teachers, 5 themes were found.

### Theme 1. Types of Injuries

Table 1. Frequency Distribution of Injury Types and Categories

When the types of injuries in the first theme are examined; 5 different sub-categories have emerged. As a result of the interviews, the statements of some physical education teachers stand out.

**PET-1:** "In the nosebleed incident I experienced, the people next to her did not know how to respond, although they were healthcare professionals, they told her to hold her head back, and I said it was wrong."

### Theme 2. Areas of Injury

Table 2. Frequency distribution of Areas and Categories of Injury

In Theme 2, the areas of injury are shown. The categories consist of 4 parts: head and neck, upper extremity, and lower extremity, and torso. The statements of some physical education teachers about the injury areas

are as follows.

PET-16: 'When my student did an adverse move in the inter-school competition, his neck was fractured, which was one of the most serious events I have experienced. We kept his neck steady and called an ambulance. '

### 3. Theme Accident and Injury Reasons

Table 3. Reasons of the Accident and Injury and Frequency Distribution of Categories

In Theme 4, causes of accident occurrences; consists of 4 categories: environment-related, self-induced, chronic diseases, and someone else's intervention. The statements of some physical education teachers are as follows.

PET-30: "A student of mine who has epilepsy had a seizure, he locked his hands and teeth."

### 4. Theme First Aid Response

In Theme 4, it was seen that the people who performed the first aid response were mostly the physical education teachers themselves. Health officers on duty in inter-school

competitions also performed. However, according to the teachers' statements, it is understood that the kits healthcare personnel has are inadequate, they are frivolous to accidents and injuries, and they act unfairly in some cases.

### 5. Theme Physical Education Teachers' First Aid Knowledge Levels

In the interviews, when the knowledge levels of teachers were examined, it was observed that physical education teachers received only theoretical knowledge at the undergraduate level, they generally did not receive practical training, and therefore it was found to be problematic. It is understood that while they can intervene in accidents and health problems experienced in schools in simple injuries, they hesitate in injuries occurring after serious accidents. However, teachers who recently attended first aid courses found themselves more competent in practice.

Table 1. Frequency Distribution of Injury Types and Categories

Open and Closed Wounds	Fractures, Dislocations, and Cracks	Sprains
Open Wounds (30) Nose Bleeds (19) Scrapes (18) Head Injuries (14) Crush Injuries (12) Subcutaneous Haemorrhages (10) Muscle Injuries (9) Open Injury with Cutting Tool (Stabbing) (3) Injuries (3) Neck Injury (2) Bleeding in the Ear (2) Tendon Injury (2) Ligament Injury (Cruciate Ligament) (1)	Fractures (28) Arm (11) Collarbone (2) Femur (2) -Wrist (4) Elbow (2) -Foot Fractures (2) Lower Leg (1) Fingers (2) Nose (2) Dislocations (20) Finger (12) Shoulder (5) Elbow (2) Jaw Dislocation (1) Cracks (9)	Ankle Sprain (33) Hand Sprain (1) Knee Twist (1)
Chronic Conditions	Other	
Sara (Epilepsy) (13) Asthma (12) Heart Conditions (8) -Pacemaker Trouble (3) -Heart Spasm (3) Heart Attack (1) -Tachycardia (1) Diabetes (3) Shortness of breath (2) Middle Ear Disease (1)	Convulsion (Fever) (3) Food Poisoning (1) Bee Sting (2) Cold Freezing (1) Psychological Blackout (1) Shock (1)	

Table 2. Frequency distribution of Areas and Categories of Injury

Head and Neck	Upper Extremity
Nose Bleeds (19) Head Injury (15) Crushed Wounds (12) Open Wound (4) Injuries (3) Caused by Collision Traumas (2) Ear Injury (2) Neck Injury (2) Broken Nose (2) Scrapes (2) Subcutaneous Haemorrhages (2)	Dislocations (20) Shoulder (5) Finger (12) Elbow Dislocation (2) Fractures (19) Arm Fracture (11) Wrist Fractures (4) Finger Fractures (2) Elbow Fractures (2) Crushed Wounds (16) Open Wound (14) Arm, Elbow, Hand Scrapes (13)

Ear Bleeding (1) Dislocation of the Jaw (1) Open Jaw Injury (1)	Cracks (8) Injuries (3) Subcutaneous Haemorrhages (2) Hand Sprain (1)
Lower Extremity	Torso
Foot Sprain (33) Scrapes on The Knee (15) Open Wound (10) Subcutaneous Haemorrhages (6) Cracks (1) Femur Fracture (2) Injuries (3) Scrapes (3) Knee Sprain (2) Tendon Injury (2) Knife Injury (2) Knife Injuries (2) Foot Fractures (2) Cross Link Rupture (1) Knee Twist (1) Broken Leg (1) Ligament injury (cruciate ligament) (1) Cracks (1)	Collarbone Fracture (2) Knife Injury (Chest) (1)

Table 3. Reasons of the Accident and Injury and Frequency Distribution of Categories

Caused by the environment	Self-induced
Situations caused by the ground (23) -Firm ground (9) -Concrete ground (6) -Asphalt ground (4) -Gritty ground (2) -Slippery ground (1) -Paving stone (1) Ball strike (5) Weather condition (2) Bee sting (2) Insufficiency of security measures in the environment (2) Slipping due to the rain (1) Food poisoning (1) Cold freezing (1)	Carelessness (23) Excitement and Stress (3) Neglect (Jumping off the wall while skipping school) (2) Malnutrition (2) Physical disability (2) Insufficient material (lack of suitable footwear) (1) Insufficient warm-up exercise (1)
Chronic ailments	Someone else's intervention
Epilepsy (13) Asthma (12) Heart conditions (8) Diabetes (3) Psychological disorders (2) Ear balance disorders (1) Kidney diseases (1) Previously unknown inflammatory conditions (1) Hemophobia (1) Middle ear disorders (1)	Collisions (8) Push off (6) Deliberate stabbing (3) Fighting (3) Friend's intervention (2)

## DISCUSSION

Erol and Karahan<sup>19</sup> determined in their study that most of the accidents occurred in the schoolyard. The reasons for this are that student's move more comfortably in the schoolyard, especially during breaks, as well as the presence of environmental factors that may cause accidents in the schoolyard. In our study, it is seen from the expressions of physical education teachers that the frequency of accidents and injuries caused by the ground in the schoolyard is high.

Erkal et al<sup>5</sup> asked the teachers, "What are the most common problems you encounter in situations where first aid is needed?", and 31.4% of the teachers who answered

the question stated that training activities related to first aid were insufficient. Results are observed to be in parallel with the findings of our study in the distribution of the problems most frequently encountered by teachers in the category of troubles experienced in the first aid application theme.

In a study examining the parents' behaviours to prevent children from having accidents at school and school accidents, parents who stated that the reasons of the accidents were caused by the child himself/herself were in the first place (47.8%)<sup>5</sup>. In our study, it is in parallel with the high output of the substance due to the student's carelessness, which is one of the causes of accidents.

In some studies, on sports injuries occurring at

school, lower extremity injuries were found to be more<sup>9, 20-23</sup>. It was found in a study that head and neck injuries were experienced more<sup>11</sup>. In our study, it was determined that there are more upper extremity injuries faced by physical education teachers.

In the study conducted with 364 teachers working in Isparta city centre, to determine the most common situations requiring first aid in schools were bleeding (51.6%) and fainting (%). 33.0), fracture-dislocations (12.9%). 86% of the teachers found that they did not find their first aid knowledge level sufficient, and 81% of them stated that they wanted to receive training in first aid<sup>24</sup>. The most common rates of fracture-dislocations in this study in schools were similar to the one we conducted. That the teachers do not find themselves competent in first aid and their desire to receive training in first aid is parallel to our work.

In the study in Turkey, It has been founded that 54% of male teachers and 76% of female teachers do not know how to perform CPR and artificial respiration<sup>25</sup>. When we asked the physical education teachers in our study, they stated that they were insufficient in artificial respiration and cardiac massage, and it is similar to this study.

In another study it was found that 68% of 149 teachers had not received training on first aid before<sup>24</sup>. In our study, it was found that physical education teachers found themselves inadequate in basic life support, which is similar to this study.

## CONCLUSION AND SUGGESTIONS

In this study, 5 main themes emerged in the analysis of the data obtained from physical education teachers. The first theme is "types of injury", the second theme is "injury areas", the third theme is "causes of injury", the fourth theme is "first aid responses", and the fifth theme is "teachers' first aid knowledge level". The fifth theme is "first aid knowledge status of physical education teachers". Most of the accidents and injuries faced by physical education teachers in schools during their career, fractures, dislocations, sprains, nosebleeds, head injuries, bruises, abrasions, muscle injuries and open wounds.

Among the reasons for the accidents, the ones stating that they are caused by the carelessness of the student are in the first place. There is a high rate of falls among students who had an accident. Ground took the first place due to the reasons arising from the environment. As a result, accidents in and out of physical education classes are mostly experienced in schools and the first aid given to these accidents is insufficient.

According to the results of the research, the following suggestions have been made:

- Compulsory first aid practice training should be given to each teacher.
- At the beginning of education, all students should go through a health check. Students with chronic diseases should be identified and reported to their advisory teacher.
- There must be a school nurse in every school.
- The Ministry of National Education should establish First Aid Response Protocols for accidents and injuries in schools.

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