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Evaluation of Physical Education Teachers in Use of First Aid in Schools Sports

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A B S T R A C T

The purpose of this study is the evaluation of knowledge of physical education teachers in using first aid in schools sports of the Dezful city in 2014 academic year. Research methods is descriptive-survey in terms of strategy, is practical in terms of purpose, and in terms of the relationships between variables it is correlational which was conducted as a field study. Study population was consisted of 210 primary and secondary school physical education teachers in Dezful city. Statistical sample was selected equal to the Study population and all in all 150 teachers (71.42 percent) participated in the study. Researcher made questionnaire was developed to assess knowledge of physical education teachers' knowledge in using first aid and the principles of safety in school sports. This questionnaire was developed by studying the theoretical foundations in the discovery process and using confirmatory factor analysis, six factors were identified. Its reliability was calculated 0.94 through Cronbach's alpha. To test research hypotheses, Pearson correlation test, independent t-test, one-sample t and chi-square at the significant level of $0.05 \leq p$ was used. The results showed that level of Knowledge and skills of teachers, respectively with 92 and 48 percent was in a favorable situation. Safety level of physical education classes also with 3.51 percent was favorable. First Aid skills of men were evaluated better than women, but in knowledge of the application of first aid and safety principles, there was no difference between male and female teachers. Given the important role of physical education teachers in the development of sports an also the inevitability of sport injuries, it seems necessary to teach first aid and safety principles during scheduled period.

Keywords: First Aid, Knowledge Of Physical Education Teachers, Schools Sports.

INTRODUCTION

Physical Education is of first and oldest curriculum during all studying periods which through physical education and sports activities, has a major role in the education of children and youth. Body needs general health and health of the human body function to supply energy for a variety of activities which is achieved by physical activity and movement¹. The main objective of physical activity, is

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maintaining health and if a physical activity bring a risk to the basic approach of physical education, it loses its credibility and value.²

Physical education is one the most fun and most interesting lessons which many students interested in participating in it and tries to enjoy it. Attractiveness and competitive nature of this course allows students to spend most of their energy to win the race. Due to the importance of winning the competition among students, normally injuries in the hours of school time happen more frequently. Lack of adequate sports facilities such as standard sports halls and equipment for physical activity of students in schools has increased the percent of sports injuries in schools.³ Although the primary objective of safety is prevention of accidents but reducing the potential unfavorable consequences of events is of special importance.⁴

Sports events at any level of physical activity may occur; but the possibility of occurrence in contact (collision) sports field is more than any other non-contact sports.⁵ Melinda (2010) in a study in America said that every year a total of 25.5 million high school students participate in various sports activities in America.⁶ Sports Medicine Association of America reports that more than one fifth of the athletes, about 3.1 million are injured as a result of participating in various sports. The majority of these injuries (0.62) occur during practice, when medical personnel such as doctors and sports physician companions are not present.

First aid is providing limited medical care for injuries and illness, by a person, with or without formal training of doctors with minimum equipment. Experiences of other countries show that training first aid to different groups of people can provide useful manpower as the first respondent at the scene of the accident.⁷ Since coaches are the first person who is present in the case of sports injuries so first aid training is very important for them. Coach and here teacher of physical education by learning the proper methods to deal with predictable and possible risks in sport environment, can bring down the level of damage by advice and care and monitoring the situation and in case of unpredictable events he can provide first aid to the injured athlete.⁸

Behboudi and Asef in their book entitled "physical education teaching guide" which is written for training of physical education in Afghanistan, in a definition of the importance of first aid for students stat that "The coach who constantly participates in sports activities and competitions, according to his duties and responsibilities in dealing with any sports-related traumatic event, should have adequate and proper information about first aid both scientific and practical. He also should possess comprehensive and consistent knowledge and information about how to deal with the following matters:

- 1- CPR, lung,
2. Head and neck injuries,
- 3-weakness and shock,
4. Internal body injuries
5. Surface bleeding injuries (Normal),
6. Fractures of the bones,
7. Joints deviation,
8. Soft fiber damage.⁹

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Among the factors contributing to the safety of sports classes in schools are safety of PE teachers, First aid knowledge and skills of physical education teachers or safety knowledge, the first-aid supplies and equipment in schools.³ In relation to the first aid knowledge among various social groups, fairly large research was conducted overseas which all emphasized on lowness of knowledge and skills of first aid in various social groups and especially in teachers. They focus on need to re-emphasize the first aid knowledge and skills. In a report, the Queensland sports insurance committee enounced that it should be ensured that teachers have the least knowledge of first aid to sports injuries in sports facilities do not cause irreparable damage to the athlete and the coach. So, first aid training for coach is an essential principle for the prevention of sports injuries.¹⁰ If sports coaches and sports workers be properly trained, these morbidities will be minimal. Currently, prevention, diagnosis and proper care of sports injuries has a special significance.

With regard to the issues raised in relation to the important role of sports teachers in presentations of sports injuries in school sports, awareness of trainers about the potential risks, possible problems, how to deal with injuries and rehabilitation of athletes for returning quickly to the sport environment, has a significant effect in preventing possible injuries as an integral part of sport.

Now this question raise if there is a relationship between level of physical education teachers' knowledge and application of first aid in school sports?

METHODOLOGY

Research methods is descriptive-survey in terms of strategy, is practical in terms of purpose, and in terms of the relationships between variables it is correlational which was conducted as a field study.

Statistical population:

Study population was consisted of 210 primary and secondary school physical education teachers in Dezful city. Statistical sample was selected equal to the Study population and all in all 150 teachers (71.42 percent) participated in the study. Totally 210 questionnaires were distributed from which 150 (71.42 percent) were returned and were usable. The research tool consists of a researcher made questionnaire for "Evaluation of physical education teachers in using first aid and safety in school sports". It had two parts, part A) demographic characteristics (level of education, field of study and physical education teachers teaching history, sex and number of hours of first aid training) and b) specific questions related to the functional status of physical education teachers in exercise class, according to the first aid guidelines designed in three parts, including 1. First aid skills: including information on the amount of PE teachers' knowledge about the first aid skills; 2. First-aid equipment of school: information about the presence or absence of first aid supplies and equipment at school; 3. The First-aid knowledge: information about actions taken by teacher in emergency situations done in the classroom.

The internal validity of the questionnaire was calculated $r = 0.75$, $kmo = 0.77$ respectively according to the comments and guidance of supervisors and providing a number of questionnaires to teachers and graduate students. Its reliability was obtained 0.94 through Cronbach's alpha.

The results of confirmatory factor analysis using method of likelihood maximum robust estimation (R.M.L) showed that the measurement model is and all the numbers and parameters of the model is significant appropriate and all the numbers and parameters of the model is significant. Fitness indexes of measurement model are shown in Table 1 indicating the suitability of the model.

Table 1. Fitness indexes of model

| index | number |
|--------------|--------|
| χ^2/ df | 2.96 |
| P. value | 0.000 |
| RMSEA | 0.054 |
| TLI/NNFI | 0.90 |
| IFI | 0.90 |
| AGFI | 0.93 |
| CFI | 0.91 |

In order to normalize the data, Pearson correlation test, t-test, one-sample t and chi-square and Goodness of fitness at the significant level of $0.05 \leq p$ using Spss software was used.

RESULTS

Table 2. Group t-test to evaluate the knowledge of physical education teachers in using first aid

| The timing of the e-implementation | Theoretical average | actual average | S.D | df | t | Sig. level |
|---|---------------------|----------------|------|-----|---------|------------|
| knowledge of physical education teachers in using first aid | 3 | 4.61 | 0.43 | 149 | 45.77** | 0.001 |
| skill of physical education teachers in using first aid | 3 | 3.64 | 0.81 | 149 | 9.73** | 0.001 |
| first aid Equipment in schools | 3.5 | 4.72 | 2.05 | 149 | 7.29** | 0.001 |

**significance at the level of 0.01 * significance at the level of 0.05

Table 3. Chi-square Goodness of fitness test and observed and expected frequency

| | | observed frequency | expected frequency | residual | chi-square | df | Sig |
|---|---------|--------------------|--------------------|----------|------------|----|-------|
| knowledge of physical education teachers in using first aid | Average | 12 | 75.0 | -63.0 | **105.8 | 1 | 0.001 |
| | High | 138 | 75.0 | 63.0 | | | |
| | Total | 150 | | | | | |
| skill of physical education teachers in using first aid | low | 23 | 50.0 | -27.0 | **24.76 | 2 | 0.001 |
| | Average | 55 | 50.0 | 50 | | | |
| | High | 72 | 50.0 | 22.0 | | | |
| | Total | 150 | | | | | |

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| | | | | | | | |
|---------------------------------------|---------|-----|------|-------|---------|---|-------|
| first aid Equipment in schools | low | 11 | 50.0 | -39.0 | **64.12 | 2 | 0.001 |
| | Average | 48 | 50.0 | -2.0 | | | |
| | High | 91 | 50.0 | 41.0 | | | |
| | Total | 150 | | | | | |

**significance at the level of 0.01 *significance at the level of 0.05

The results obtained from table 3 shows that the more the level of knowledge of physical education teachers, the more use of first aid skills in sports schools.

Table 4. Pearson correlation between level of education of physical education teachers skill for applying first aid in sports schools

| The criterion variable (dependent) | education of physical education teachers skill for applying first aid in sports schools | | |
|------------------------------------|---|--------------------|--------|
| Predictor variables (independent) | Pearson correlation coefficient | significance level | number |
| Knowledge level | **0.59 | 0.001 | 150 |

**significance at the level of 0.01 *significance at the level of 0.05

Table 5 - Results of independent t-test to compare the averages of skill level of male and female physical education teachers in using First aid

| skill level | Female teacher | number | average | S.D | mean difference | df | t-test | Sig |
|--------------------|----------------|--------|---------|-----|-----------------|-----|--------|-------|
| skill level | Female teacher | 80 | 28.05 | 6.1 | 2.42 | 148 | 2.29* | 0.023 |
| | Male teacher | 70 | 30.47 | 6.7 | | | | |
| Level of knowledge | Female teacher | 80 | 46.07 | 4.4 | 0.053 | 148 | 0.076 | 0.94 |
| | Male teacher | 70 | 46.12 | 4.2 | | | | |

**significance at the level of 0.01 *significance at the level of 0.05

CONCLUSION

According to the results 53.3 % (80) of the subjects were female and 46.7% (70) were male, 33.3% (50) of the subjects were under 30 years, 56% of subjects had 1-10 year teaching history, 96% of subjects had a degree related to physical education and 4 % did not have a degree related to physical education, 78.7% (118) had a bachelor degree. Other findings of descriptive research were passing first aid courses by physical education teachers that had a frequency of 96% (144). The level of teachers' knowledge of first aid with the highest rate of 92% (138 cases) and first aid skills with the highest rate of 48% (72) and first aid equipment with the highest rate of 60.7 (91) were evaluated at a desirable level. The mean and standard deviation of first aid skills of physical education teachers were (3.64 and 0.81), the mean and standard deviation of first aid knowledge of physical education teachers were (4.61 and 0.43), the mean and standard deviation of first aid equipment in schools were (4.72 and 2.05).

The inferential results of the study indicate that the knowledge and skills of teachers in using first aid and first aid equipment are at a desirable level. With an emphasis on t obtained for the first aid knowledge and skills of application of first aid as well as the quality and quantity of first-aid equipment which are 45.77, 9.73, 7.29 respectively, at the error level of 0.05 it is significant. So it can be claimed that there is a significant difference between their real mean (4.61, 3.64, 4.72) and their theoretical mean and since the real mean is higher than theoretical mean, it can be concluded that with confidence of 95%, the knowledge and skills of physical education teachers in Dezful city in the use of first aid as well as the quality and quantity of first aid for schools is at a desirable level. The real mean is obtained by dividing the total scores of questions into the number of questions and theoretical mean was obtained by dividing the sum of total ranks of range options (1,2,3,4,5) into their number. The amount of chi-square test, for knowledge and skills of applying first aid and quality and quantity of first aid for schools were (105.84, 24.76, 64.12) respectively. Respectively, degrees of freedom are (1, 2, and 2) with significance level of less than 0.001 is less than error level of 0.05. So the difference between observed frequency and expected frequency is accepted and we know the test as a significant test. Since chi-square test which is affected by most frequency, is respectively equal to (138, 72, 91), so, with confidence of 95% it can be concluded that the knowledge and skills of physical education teachers in Dezful city and the quality and quantity of first aid in schools is at a high level. The results obtained about the knowledge of first aid is consistent with the results of Hasani et al¹¹ but inconsistent with research results of Yousefi et al⁸. This lack of consistency is probably because teachers under studied in that research had a relatively low degree and their field of study were not physical education.

In other research, Wren and Ambrose (1980), in Maryland showed that in 85% of schools, sports coaches are the most responsible for presenting first aid.¹² The results of this research on the first aid skills are consistent with the results of Hasani et al¹¹, but are inconsistent with research results of Yousefi et al⁸. This lack of consistency, like past hypothesis is probably because teachers under studied in that research had a relatively low degree and their field of study were not physical education.

Anthony et al (2008) in their study entitled "study of the knowledge of injuries and the technical needs of rugby coaches ", about the importance of necessity of first aid skills during exercise say that the proper first aid is effective in timely treatment of sport injuries and will help to reduce pain, swelling and recovery time. It also reduces the risk of re-injury in athletes.¹³ The results achieved in the first aid part are consistent with the results of Farzad Kia¹⁴. Frzad kia in his study of

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the health and safety of schools in Pakdasht city stated that there was a first aid box in all schools of this city.

The Pearson correlation coefficient ($r = 0.59$) between the level of knowledge of physical education teachers in using first aid skills in schools sports is significant at the level of 0.05. So the test is significant. Since correlation coefficient is positive we accept that there is a direct relationship. It means that with 95% confidence we can say that the higher the level of knowledge of physical education teachers, the greater use of first aid skills in schools sports. This result is consistent with the results of Khatami⁷ and Yousefi et al⁸.

Also, Porter et al. (1980), in a research in the Chicago School Showed that 75 %of physical education teachers in Chicago do the first aid in the sport field. It means that these coaches had both first aid knowledge and skills of presenting first aid.¹⁵

Currently, presenting first aid is one of the standard tasks of coaches. According to the results of other studies it can be said that there is a significant difference between scores mean of skill level of male and female physical education teachers in using first aid. This mean is higher in male physical education teachers than female physical education teachers. It means that level of skill in application of first aid in male physical education teachers is higher than female physical education teachers. Although no example in this case was not found to compare men and women but Hasani et al. (2008) research, which is inconsistent with findings of our study.

The Loon test results in Table 5 show that F is not significant at level of 0.05 so the assumption of homogeneity of variances is not questioned and normal t-test with equal variances were used. As calculated t- test is 0.076 and with significance level 0.94 is greater than the error level of 0.05, test is not significant. So it can be said and concluded that there is a minor differences between the mean scores of first aid use in male and female physical education teachers. This minor difference is not statistically significant. It means that male and female physical education teachers in Dezful schools are at nearly equal level of knowledge in using first aid. These results are consistent with findings of Hasani et al¹¹. Sport and adventure are basically inseparable and unavoidable. It cannot be predicted preventable. Since students are the main assets of all countries so considering the issues mentioned before, first aid training for physical education teachers is of great importance. The main duty of physical education teachers is taking care of students and knowledge of the athletes' health that does physical activities under his supervision. The coach can be informed of athlete's health in different ways: Providing a comprehensive list of equipment and facilities needed for initial relief for all school classes and forcing managers to prepare and to keep these facilities updated according to the school needs. Holding retraining first aid courses for

physical education teachers, principals, deputies and those who have a permanent presence in schools. In the academic teaching centers this course is taught in theory and practice in order to students become experienced in dealing with these situations.

The results of this study can be useful for organizations and administrations which students and children can use for sports activities; such as Education administration for training school managers and physical education teachers and Welfare administration for training kindergarten trainers to improve the quality of education and familiarity of trainers with benefits of having this knowledge and also understanding the consequences lacking knowledge and skills as well as encouraging more people to participate their children in sport through giving them confidence that their coaches have high level of knowledge and awareness.

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