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## Status of Risk Management in Indoor Sports Arena of Rasht Based on Existing Standards.

Hamidreza Tayefeh Nobari<sup>1</sup>, and Sardar Mohammadi\*<sup>2</sup>

<sup>1</sup>Department of Sport Management, Kurdistan Research Science Branch, Islamic Azad University, Kurdistan, IRAN.

<sup>2</sup> Assistant Professor of sport management, university of Kurdistan, IRAN.

### ABSTRACT

Current work aims at investigating risk management status in indoor sports arenas in Rasht. It is a descriptive – survey research and all multi-purpose indoor sports arenas of Rasht are considered as the statistical population. Author-made checklist was used as tool for data collection. Questionnaire of Boloukat's (2011) work was used and its content and face validity was confirmed by sports management professors and experts. Reliability of checklists was calculated as  $r = 0.893$  using internal consistency method. descriptive and inferential statistics (Kolmogorov-Smirnov test, independent t-test) were used for data analysis. Findings indicate status of safety of entrances and exits, the spectator's seats, sanitary places, locker, shower, lighting and sound facilities and safety of building and facilities, first aid, firefighting equipment and communication facilities in Rasht arenas was acceptable. However, safety status in warning signs and special facilities for the disabled was not suitable. In general it can be said that the health and safety status of Rasht arenas were in good condition.

**Keywords:** risk management, safety, hygiene, indoor sports facilities.

*\*Corresponding author*

## INTRODUCTION

Sports today have turned to a very important social, economic, and cultural phenomenon. Most people in various communities have found significance of sports in preserving health, freshness and happiness, increasing physical and mental abilities and are active in recreational sports and some work as professional athletes in championship sports. Recreational or championship sports are done in such places as sports facilities. These facilities should be constructed, equipped and run in such a way that they can meet needs, expectations, tastes, and interests of all groups.

Public growing tendency to sports due to such reasons as increased leisure time, willingness to health, common participation in sports, increasing household income, prevalence of professional sports, and ... has increased significance of standard sports facilities. Certainly appropriate and safe sports environment is one of the factors affecting qualitative promotion of sports performance. Lack of suitable sports facilities is one of the factors which can influence development of athletes. If it is not solved, it seems improbable that athletes can achieve their highest performance level (Askarian, 2011).

Sports facilities are grounds for implementing sports activities and their quality directly affects implementation of exercise and holding sports matches. Construction of sports facilities requires high accuracy so that errors in planning, design, construction, and equipment of facilities causes loss of time, energy and budget, and it may adversely influence future plans of the country in sports and healthy recreation areas (Farsi, 2006).

Frosdick (1997) argues that sports facilities safety includes three parts: hardware or structure of sports facilities, software or management of sports facilities, and spirit ware or national and regional culture and biases. The concerning point is sports damages related to unsafe sports space and equipment. Safety status of sports facilities plays considerable role in emergence of damages which lead to financial and human damages. Accidents related to holding matches and preparation exercises of athletes may be costly. Such accidents occasionally draw attention of mass media reports. However, unfortunately, they are taken into account just transitionally and occasionally, and then they would be forgotten over the time. For example, accident in Sari Stadium can be referred which drew attention of national media and then it was forgotten after a while. Or lack of safety in soccer match between Iran's national team and Japan team in 2005 can be referred which led to death of 7 Iranians and injury of a large number of people (Askarian, 2011).

Safety issue deals with the fact that how this tool can be used for development and growth of all sports aspects so that it is compatible to international standards. In Iran, sports management is mostly traditional and innovation in sports fields appropriate to global development and national cultural and social needs has been overlooked. To this end, considering suitable management strategies for developing appropriate sports spaces scientifically and practically in national sports spaces seems necessary (Frosdick, 2003). Risk management process can be implemented as part of management system in sports and recreation field. This process is able to identify risk factors which may lead to damage, and estimate and evaluate risk levels. Such preventive information can be used by managers and participants for reducing frequency of accidents or severity of damages (Dousti, 2008). Safety management means controlling and optimizing all structural and managerial factors so that risk is minimized for users, employees, and all individuals related to the system (Rahimi, 2001). Safety in sports is defined as identifying and strategies for coping implicit risks which may negatively influence sports events. Risk in sports is inevitable and even the safest sports may not be totally free from damages. In a study in USA (2011) it was found the most common sports damages in adolescents include sprains, particularly in the knee joint, muscle sprains, bone and growth plate injuries, injuries due to repeated motions and heat exhaustion. In addition, among the 5-14 years old athletes, 15% of basketball players, 28% of American football players, 22% of football players, 22% of baseball players, and 12% of softball players were injured during the game. In 2004, about 391,800 5-14 years old adolescents were hospitalized emergency departments due to injuries related to football and baseball (quoted in Ramezani and Nazarian Madavani, 2013).

In risk factor prevention, identification of these factors and eliminating them in health and physical areas and any other areas which threatens athlete safety can prevent from risks and physical damages. It also can act as a mental factor in increasing participation and productivity of mental and physical power. Additionally, risk management is one of the legal, ethical, and professional tasks of managers, trainers, and

administrative authorities to create a safe and enjoyable environment for athletes and fans (Asgharpour, 2008; Farsi, 2006).

Safety status and risk factors in sports environment is investigated in most countries. Taylor (1991) studied sports stadiums in UK during 1986 to 1989 and found over 40 cases of accidents. Finch et al. (2000) in a study entitled Safety Measures in Hume sports Clubs in Italy found playing fields in the clubs under study were in good condition in terms of safety and 61% of the clubs reported that the club must develop safety of playing fields and fields around them. The study in USA (2002) showed most of the injuries related to sports damages in schools is due to falling. The damages are related to different organs such as craniofacial, skeletal tissue and bone. Another study showed that in the years 1990 - 2000 a total of 147 children under age 14 died due to injuries (Farsi, 2006). In Iran, the results indicate safety and hygiene of sports facilities are the most important factors affecting presence of users in sports facilities (Farsi, 2006).

Considering research findings it seems allocating adequate and suitable and safe space for implementing sports activities for all groups of the society is a challenge which should be taken into account. Reduced sports space per capita considering increasing the population in recent years, making sports spaces as multipurpose and concomitant use of them, and lack of safety in sport environments may trigger accidents for participants and in the wider aspect, as barriers to public participation in sports (the Kalantarzadeh, 2001; Mehmandust, 2007).

On the other hand, physical and mental health of the society is directly related to the youth health. Thus, investigating risk management in these places during physical activity may be useful in promoting and optimizing these spaces and preventing from injuries and problems which have adverse physical consequences and may act as inhibitor for participation in physical and sports activity (Asgharpour, 2008). Participation in sports has become one of the most common recreational activities in the societies. Most people believe that presence in sports activities brings mental and physical advantages. Of course, most of the people participating in sports activities are aware of the fact that these activities have potentials of risk and even death. Many of individuals are worry about damage to themselves or their children during sports activities (Fried and Appenzeller, 2009).

Along with public interests especially adolescents and young people to in using sports facilities and considering reduced sports space per capita and inadequate attention to observing standards in sports spaces and increasing injuries, problems related to risk management of sports facilities have increased. Thus, the author attempts to provide answer for this question: how is risk management status in Rasht indoor sports arenas?

## METHODOLOGY

Current work is a descriptive – survey research. Statistical population is composed of all Rasht indoor sports areas ( $n = 42$ ). Considering limitation of the population, the sample was considered as equal to the population ( $n = N$ ). Author-made checklist was used as tool for data collection. Questionnaire of Boloukat's (2011) work was used. The checklist included 81 items in five-point Likert scale as follows: status of entrances and exits (8 items), status of warning signs (5 items), status of special facilities for the disabled (6 items), the status of spectator's seats (5 items), status of sanitary places (8 items), status of lockers (10 items), status of showers (8 items), status of lighting and sound in facilities (6 items), status of building and facilities (13 items), status of first aid (6 items), status of firefighting equipment (6 items) and status of communication facilities (4 items).

Checklist's content and face validity was confirmed by sports management professors and experts. Reliability of checklists was calculated as  $r = 0.893$  using internal consistency coefficient method. Following collecting data from checklists, descriptive statistics were used for determining mean and SD, and findings were reported in the form of tables. Considering normal distribution of data, parametric statistical methods including one-sample t-statistics at sig level  $P \leq 0.05$  were used in SPSS 20 software.

RESEARCH FINDINGS

Table 1: Type of ownership and mean of operation time of multi-purpose arenas

multi-purpose arena	Frequency	Percent	Mean of operation time
Private	3	21.87	7.14
Public	22	68.75	13.05
Public-leased	7	9.38	14.00
Sum	32	100	Total mean 11.81

According to Table 1, about 68 percent of multi-purpose arenas in Rash are owned by the government and about 22 percent are privately owned and about 10 percent of arenas are Public-leased. Also, mean of operation time in Rasht multi-purpose arenas is 11.81 years.

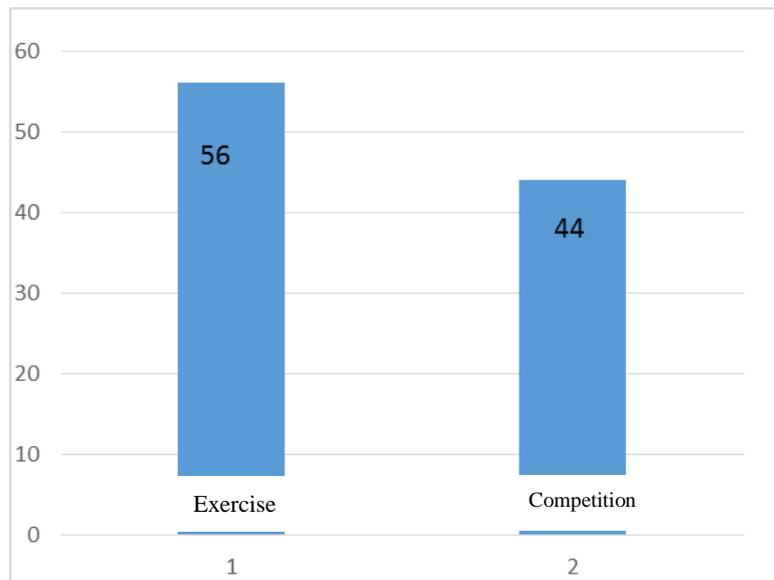


Figure 1: Type of arenas based on use

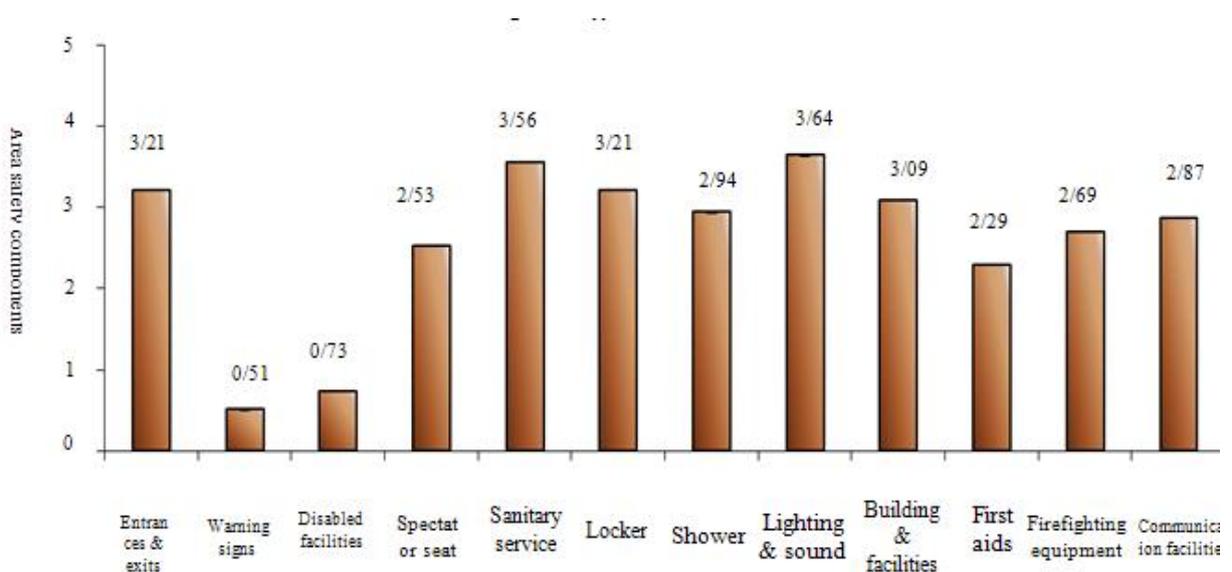


Figure 2: Status of safety components in multi-purpose sports arenas

According to Fig 2, status of lighting and sound as well as status of sanitary places was in highest score in terms of safety, and status of warning signs and special facilities for the disabled was in lowest score in terms of safety. In order to answer the question if there is match between safety of sports arenas and existing standards, one-sample t-test was used, results of which can be observed in the table.

**Table 2: one-sample t-test results regarding comparison of safety score in multi-purpose sports arenas**

Variable	SD±M	t statistics	Degree of Freedom	Sig Level	Mean Differences
Entrances & exits	1.29 ± 3.21	*3.116	31	0.004	0.711
warning signs & signals	1.10 ± 0.52	*-10.167	31	0.004	0.711
Facilities for Disabled	1.06 ± 0.73	*-9.379	31	0.001	-1.765
Spectators' seats	1.95 ± 2.52	0.072	31	0.943	0.025
Sanitary Services	1.14 ± 3.35	*4.254	31	0.001	0.859
Locker	1.56 ± 3.21	*2.609	31	0.014	0.719
Shower	1.63 ± 2.94	1.533	31	0.135	0.441
Lighting & Sound	1.11 ± 3.64	*5.823	31	0.001	0.594
Buildings & facilities	0.85 ± 3.09	*3.951	31	0.001	0.594
First Aid	1.11±2.29	-1.061	31	0.297	-0.208
Fire Fighting Equipment	1.08±2.69	0.980	31	0.335	0.188
Communication Facilities	1.22± 2.88	1.732	31	0.093	0.357

### DISCUSSION AND CONCLUSION

Safety status of entrances and exits with mean of 3.21 is above average (2.5) and it is acceptable, which is inconsistent with findings by Farsi (2006), Nezam and Sardar (2008), and consistent with findings by Bay (2008). Existence of suitable entrance and exit doors is essential in safe administration of sports facilities and in cases of emergency evacuation in crisis. Sohrabi et al. (2011) stated non-observance of standards in design and construction of exit doors and corridors, and staircases causes reduced safety criterion, control, and supervision in sports centers and sports complexes. Presence of obstacle-free entrances and exits, opening doors toward outside environment and open escape paths are necessities for constructing or reconstructing a sports place (Aravleson, 2005; Jalali Farahani, 2010).

Status of warning signs and signals with mean of 0.52 is smaller than average (2.5) and it is inappropriate which is consistent with findings by Elahi and Pouraghaee (2004), Dousti (2008), Bay (2008) and Agwubike and Ogbouma (2010). Acres et al. (2008) maintained that sports facilities should be healthy, safe, and protected place for all people and important issues such as clear signs which direct people should be considered in management programs. Absence of adequate equipment such as signs and signals obviously reduces effectiveness of strategies of safety and emergency preparations in sports facilities (Agwubike and Ogbouma, 2010).

Safety status of facilities for disabled with mean of 0.73 is smaller than average (2.5) and it is inappropriate and most sports arenas lack special facilities for disabled. It is consistent with findings by Elahi and Pouraghaee (2004), Dousti (2008), Nezam and Sardar (2008), Fallah et al. (2013), and Sohrabi et al. (2011). Sykes (2009) mentioned the main obstacles for participation in sports activities as lack of experience in employees, lack of time, lack of access to facilities and lack of quality in equipment or facilities. Sports facilities should be constructed, equipped and run in such a way that they can be used also by disabled people. By adopting some measures often it is possible to equip and run sports facilities so that they can be used both by normal and disabled people (Jalali Farahani, 2010).

Safety Status of spectators' seats in Rasht sports arenas with mean of 2.5 is appropriate which is consistent with by findings by Farsi (2006), Asgharpour and Esfahankalani (2008), Cassady and Werntraub (2002), and Aaron (2004), and it is inconsistent with findings by Elahi and Pouraghaee (2004), Bay (2008), Nezam and Sardar (2008), and Ashouri (2009) and Fallah (2013). Cassady and Werntraub (2002) found that observing safety issues in constructing spectator seats is one of the main factors preventing damage to spectators. Also, Aaron (2004) and Bezdicek (2009) found controlling the population and safety of spectators are among risk management behaviors which should be present in every program and risk management

program is defined as explicit presence of written policies and approaches related to increasing safety of athletes, coaches, and spectators. To this end, Tavella (2010) stated there are some risks for spectators in sports events. Runners and owners of events are especially responsible for protection of vulnerable people and they should provide environments which both allows enjoying the event and are safe.

Safety status of sanitary services with mean of 3.35 is above average (2.5) and it is appropriate, which is inconsistent with findings by Elahi and Pouraghaee (2004), Farsi (2006), Bay (2008), Nezam and Sardar (2008) and Fallah (2013) and it is consistent with findings by Acres et al. (2008). Sanitary services should be adequately available in sports facilities and they should be free from sliding and they should have suitable ventilation which is important point in sports facilities management (Acres et al., 2008).

Sports complexes are among public facilities which are highly important in terms of hygiene due to presence of a large numbers of people there and communication between them. Thus, it needs special attention both in construction and management so that prevalence of infectious diseases is prevented and health and confidence of all users is provided and access to the major goal which is optimal and maximum use of the facilities would be realized. Management of sports facilities and equipment requires preparing a formulated health program, using which eliminates risk for prevalence of diseases (Fallah, 2013). Hence, it should be noted that sanitary services and showers should be adequately available, their walls should be covered with high quality tile from the bottom to top, there should be adequate numbers of washstands in sanitary services proportionate to the number of athletes, there should be suitable hand wash materials and suitable ventilation should be considered for sanitary services, and specially facilities should be provided for use of disabled.

Safety status of locker and showers of arenas with mean of 3.21 and 2.94 is above average (2.5) and it is appropriate, which is consistent with findings by Farsi (2006) and Fallah (2013) and inconsistent with findings by Elahi and Pouraghaee (2004), Bay (2008), Nezam and Sardar (2008), and Acres et al. (2008). Environment of locker and showers should not be sliding and they should have suitable ventilation, the number of showers and capacity of locker should meet needs of people present in sports arena so that risk and damage does not occur (Jalali Farahani, 2010).

Sports facilities traditionally have been recognized as environments which are crucially important in providing mental and physical health of human beings. All people who refer to sports complexes and arenas intend to obtain health and joy and spend recreation time usefully. Managers in sports facilities should attempt to preserve mental and physical health of all athletes, coaches, and practitioners in sports activities (Fallah, 2013). Thus, paying attention to hygiene in sports arenas is very important, since locker and showers are vulnerable place for growth of microbes. Such wet and humid and crowded environment enables microbes to transfer to other people, hence advices on minimizing such risk in locker and showers should be considered. For example, lockers should be equipped with heaters and automatic optimal ventilation, and rooms, showers, and floor of locker should be regularly washed using disinfectants.

Safety status of light and sound in arenas with mean of 3.64 is above average (2.5) and it is appropriate and consistent with findings by Bay (2008). It is inconsistent with findings by Farsi (2006). Adequate lighting and sound in sports arena is one of the safety criteria (Aravleson, 2005). Also suitability of lighting for night use is also specially important which is one of the regulations in total quality (Ghanem, 2011).

Safety status of building and facilities of arenas with mean of 3.09 is above average (2.5) and it is appropriate. It is consistent with findings by Elahi and Pouraghaee (2004), Sayah et al., (2006), Farsi (2006), Nezam and Sardar (2008) and Cassady and Werntraub (2002). It is inconsistent with findings by Bay (2008) and Fallah (2013). According to Acres et al. (2008), one of the safety points should be considered in management programs is that playing field should be protected for passage of people, safety and health policies should be implemented in the environment of exercise and they should be regularly reviewed. Also, Western Australian Sports and Recreation Organization (2010) stated dimensions of playing fields and equipment should be proportionate to the number of participants and their physical strength so that youths experience success and recreation and probability of damage and injury is reduced. Thus, lack of observing safe distance and absence of obstacles around the field in sports arenas are factors which can cause sports injuries in this locations. Use of protective cover for fences and obstacles around the field can prevent from many damages. National Consumers League of America has some instruction on preserving safety points in playing fields. Also, this

league provides various checklists for annual evaluation of playing fields. These checklists are generally divided into two parts of monitoring playing fields and monitoring equipment used in fields. Most sports injuries can be prevented using these checklists and similar ones in sports arenas (Fallah, 2013).

Safety status of first aid in Rash sports arenas with mean of 2.29 is suitable which is consistent with findings by Elahi and Pouraghaee (2004), Farsi (2006), Bay (2008), Dousti (2008), Nezam and Sardar (2008), Hasani et al. (2008) and Agwubike and Ogbouma (2010), and it is inconsistent with findings by Aaron (2004) and Sandta and Umansa (2009). All sports arenas should be equipped with emergency medical teams, on-duty ambulances, and shock devices which denote significance of emergency medical reactive systems (Sandta and Umansa, 2009). Presence of medical units for athletes is a risk management behavior which should be included in every risk management program (Bezdicek, 2009). Medical services include medical care and cares related to injuries (Leary, 2008). Lack of emergency equipment undoubtedly has negative influence on performing emergency approaches and measures in sports facilities. First aids and modern emergency plans and measures and adequate equipment in sports facilities are necessary to control accidents and injuries and create a safe environment for all people (Agwubike, 2010; Acres, 2008).

Safety status of firefighting equipment in Rasht areas with mean of 2.69 is suitable which is inconsistent with findings by Farsi (2006), Hasani et al. (2008) and Sohrabi et al. (2011) and it is consistent with findings by Aaron (2004). Risk management against fire includes measures which lead to reduced fire damages. Safety against fire has two goals including physical and human protection (Sajadi, 2010). Providing emergency services in case of fire and crisis, easy access to fire alarms, fire extinguishers and temperature regulators are among practical considerations which should be observed in sports facilities (Aravleson, 2005). In addition, management is bound to adopt necessary measures in order to protect all users and employees and prevent from fire, or extinguish it, in case of fire. For example, fire extinguisher should be provided and put it in the proper place, emergency exits should be clear and open and information about how to protect against fire regularly should be provided to users and staff (Jalali Farahani, 2010).

Safety status of communication facilities in Rash arenas with mean of 2.88 is appropriate which is consistent with findings by Elahi and Pouraghaee (2004), Farsi (2006), and Agwubike and Ogbouma (2010). One of the main points in risk management programs is presence of communication facilities and public calls and easy access to them in sports facilities (Aravleson, 2005; Acres, 2008). Lack of phone and communication ways in case of crisis may influence inefficiency of safety and emergency measures (Agwubike, 2010). For example, along with providing first aids, the rescuer should recognize need for emergency medical aids. To this end, emergency physician and nearest medical center phone numbers should be visible to him (Jalali Farahani, 2010).

Considering previous studies and findings in the current study it can be concluded safety points should be considered more in constructing sports facilities so that safety is more optimal in these locations. One of the main tasks of managers and authorities of sports facilities is providing safe location for users of the facilities. Paying attention to safety points in constructing sports facilities, proper maintenance of sports facilities, having timetable for repair of sports facilities, and using expert managers for running such facilities may prevent from emergence of injuries and accidents. In Iran, ideas of experts and athletes are less used in constructing sports facilities and it is done mostly by construction and architecture engineers, while construction of such facilities in most advanced countries is done by engineers' expert in construction of sports facilities.

It should be accepted that provision of perfect safety in sports facilities and equipment is difficult and complicated. However, undoubtedly it can be done in the best by proper and logical predictions. Sports damage and accidents are integral parts of sports which cannot be reached to zero, but the authorities and managers should do their best to minimize damages and vulnerability of participants and spectators. Especially allocation of material resources by respective authorities for construction and repair of sports facilities according to the existing standards may eliminate defects.

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