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OCCUPATIONAL RISKS IN HEALTH CARE WORKERS AND EMPLOYEE SAFETY CONCEPT

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Abstract

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From the perspective of health sector, occupational risks encountered by employees and employee safety concepts are considered to be highly topical matters. This is mainly because health sector involves greater risks compared to many other sectors. Major occupational risk factors are classified as biological, physical, chemical, ergonomic and psycho-social. These risk factors recently have led to an increase in occupational diseases, work accidents, and health problems. As its direct consequence, planned activities have increased in number to prevent diseases and improve the health of employees. These activities originated from the ideas to determine occupational risks in health sector, take

necessary precautions, and adopt an effective risk management. In this way, it is believed that the employees would be kept away from work accidents or losing health or being injured due to an occupational disease; that employee safety would be ensured; and that health service would be presented at a higher level with more quality and safety. Protecting employees from occupational risks and giving importance to employee safety concept will not only enable

prevention of work accidents and occupational diseases, but also will ensure a peaceful and comfortable working environment.

Based on these, this article will explain occupational risks in health sector and their potential effects, include some examples of the most frequent occupational risks in Turkish health sector, and refer to employee safety concept and some precautions to ensure it.

Introduction

The concepts of occupational risks and employee safety have gained an increasing significance as a result of various factors including the increasingly more complex structure of health services, the developments in health technologies, emergence of different disease groups, presence of risk factors that cause diseases by the very nature of the sector etc. [1]. The main reason for this is that health workers are under greater risks compared to other employees in other sectors [2]. While the health service aims to protect, cure, and avoid damages, it is also possible that the health of the employees may be adversely affected by the possible risks that may appear during this serving process. This results in adopting the concept of risk management, improving patient care quality while at the same time keeping employee safety at the highest level, increasing the awareness of the employees for occupational risks and taking the necessary precautions [1]. Because the employees in health sector do not only have the mission to treat in the presentation process of health service, but also responsible to protect and improve the health of society in the long run. This is only possible when the health of employees is protected, necessary precautions are taken against occupational risks, and a safe working environment is provided [3]. From this perspective, it becomes obvious that a safe working environment has uttermost importance for a safe and qualified presentation of health service, as well as to

increase the productivity and performance of the employees [2].

A recent increase in the prevalence of particularly occupational diseases, occupational accidents and health problems connected to occupation among the health care workers has made hospital administrators interested in the employee safety and health and have more sensitive approaches to improve employee health and to prevent diseases [4]. The main reason for this is the decrease in the life quality of workers with higher occupational risks and the big damage of the labour loss because of occupational diseases and occupational accidents for not only the hospitals, but also national economy [5]. Another point of view states that it is only possible for the employees to work efficiently and to be satisfied when they work in a safe working atmosphere and when they are away from occupational risks. Besides, the interest in this subject has increased due to the fact that paying attention to employee health and eliminating occupational risks are considered as complementary to competitive atmosphere when striving to increase efficacy and productivity [6].

Accordingly, first of all, this article will address to occupational risks in health sector, which is a highly topical matter for modern world, and their possible effects on the employees. Then it will proceed to mention the most frequent occupational risks observed in health sector of Turkey within the context of literature review

conducted. This study is thought to contribute into other studies in the field and to be helpful for international comparisons.

Occupational Risks in Health Sector and their Potential Effects

It is observed that the employees encounter many risks such as occupational accidents and occupational diseases during their work life. Although it is stated that life itself includes some risks by its very nature, what is important at this stage is to protect the health of both the employees and society and to control all the risks encountered. It is thought that it is only possible in this way to avoid work accidents and occupational diseases. The reasons for occupational accidents are classified as human-related reasons such as personal characteristics leading to dangerous behaviors, age, seniority, family issues, sleeplessness, exhaustion, imprudence, carelessness etc. and physical and mechanical atmosphere driven reasons [7]. Apart from these reasons, it is reported that there are some other factors which increase the risks for the employees in health sector to have work accidents. These factors may be listed as professional working years, working duration, being informed about work accidents, having duty shifts, the department in which they work, the level of satisfaction with the work, using a device working against health (e.g. x-ray device) or a substance (e.g. anaesthetic substance), and, finally, the rate of accident reports (if it is less, then ignored) [8].

Occupational disease is defined as the deterioration of health of an employee because of the nature of an occupation and working conditions when conducting a job [5]. From this perspective, it is seen that employees at health sector are exposed to some occupational risks and consequently come down with occupational diseases [9]. The occupational risks which adversely affect the health of health workers and increase their incapacity is categorized as biological, ergonomic, physical, chemical, and psycho-social factors [2, 8, 10, 11].

Biological risks include stab wound [12], infections, bacteria, viruses, parasites, and diseases such as Hepatitis B or tuberculosis which appear in cases of contact with contagious body fluids [13]. In this respect, hospitals are especially seen as an environment which is rich in inflectional factors and it is observed that humid air at hospitals boosts bacteria reproduction, resulting in higher infection risks for the employees when presenting the health service. If the required and necessary precautions are not taken, it becomes inevitable that the infection transmits from patient to patient, patient to health staff, or from health staff to patient [7]. In this sense, when the risk areas for infections in health organisations and potentially risky activities are to be listed, what comes to mind first may be operation rooms, emergency and ambulance services, dialysis units, laboratories, intensive care units, departments of pathology, anatomy and forensics, clinical treatments, taking blood, bodily fluids and other clinical samples, surgical operations, treating injuries, using sharp and pointed devices or equipment [14].

Chemical Risks emerge as a result of exposure to chemicals such as formaldehyde or ethylene dioxide [12]. It is stated that such chemicals and medicines harm the body system or poison it [13]. Health staff may frequently be exposed to such chemical risks as a result of their occupational activities and these chemicals may be taken in the body through various ways such as skin, respiratory system, mouth, eyes, and being injected. Consequently, health employees may display some acute and chronic effects [7]. In particular, health employees working in laboratories and anesthesia activities and in chemotherapy departments are under risk and their health status are adversely affected [14]. What increases the risk of being exposed to chemical dangers are operation rooms in which numerous chemical agents are used and disinfectants used to clean hospital with sanitary purposes [7]. The staff working at radiology, radiation oncology, and nuclear medicine departments are also under the risk of radiation particularly as a result of occupational rays

being exposed. Being exposed to long-term influences of lower dose ionizing radiation adversely affects immune system [15].

Psycho-social risks include heavy working conditions and burn-out syndrome [12] and they cause stress related to job or working atmosphere, emotional strain in employees resulting from shift system and heavy work load, and interpersonal problems [13]. Psycho-social risks increase due to some factors as role ambiguity and conflicts experienced by health staff while conducting their work, poor physical conditions, necessity to constantly contact with patients, changes in medical technologies and adaptation problems, insufficient support from colleagues and top management, being responsible for the health and well-being of patients, and lack of proper dietary and relaxation opportunities [7]. In addition, there are some additional factors such as having duty shifts, working at night, working upon call which results in the impairment of health status of workers and problems with employee safety [2]. Depending on the level of stress, people may have some diseases such as migraine, hypertension, and coronary arterial diseases, or may have behavioural and psychological problems [7], and also there may have an increase in the instances of chronic insomnia, exhaustion, motor vehicle accidents, impairments in memory and concentration, family problems, malpractice, affective disorders, and cancer [2]. As a result, it results in some unfavourable consequences such as insufficient motivation, decrease in the efficiency and performance, withdrawal from work, increase in drug addiction etc. [7].

Ergonomic risks cover the injuries and malformations that may appear during such activities as carrying the patient and lifting the patient [12]. Ergonomics aims to improve the harmony between an individual and his environment and to maximize production. In this respect, it creates opportunities for employees to work in safety, decreases the events resulting in injuries, increases quality and production, and

positively affects the morale and motivation of the employees. However, not regulating the working environment in accordance with ergonomic rules and ignoring air conditioning and lighting may lead to some unfavourable outcomes such as an increase in work accidents and musculoskeletal injuries, or a decrease in employee success and efficiency [7]. In view of developed countries, backaches which are stated as a significant musculoskeletal injury come first among the factors which, in particular, decrease production and lead to labour loss. The main reasons to increase the pain are listed as staying often standing up depending on the task and working conditions, and lifting or positioning patients [15]. Particularly physicians, nurses, dentists, physiotherapists, and nursemaids have complaints of backache [2].

Physical risks arise as a result of such practices as radiation or laser which may cause tissue trauma at work [13]. Being exposed to radioactive substances may harm cells with regard to the dose being exposed; it may lead to cataract, eye impairments, mutation and chromosomal disorders; tissue losses may happen; the skin may get drier and darker; capillaries on the skin may dilate; and painful injuries and skin cancers may occur as a result. Besides, it may result in some complaints such as an increase in blood and bone disorders or lung cancers, [7], headache, blurred vision, experiencing stinging, itchiness and dilation in eye, palpitation, hearing loss, feeling exhaustion and fatigue etc. [2]. Health care workers are subjected to violence is also a subtitle of physical risks [12]. Violence may appear in forms of physical and verbal attack or sexual abuse and negatively affect the health and safety of employees. Violence seen in health organisations is usually committed by patients or their relatives or anyone else and poses a great risk for health staff. When compared with other sectors, the employees in health staff are found to face more violence. When a health staff encounters with violence, the quality of care decreases, the morale and motivation of the staff declines, quitting job or absenteeism increase, and the staff may

feel some negative things such as stress, insomnia, fear, weakness etc. and may be physically injured [7], the level of anxiety and insecurity among staff increases [2]. As the staffs of emergency service in particular is considered as the group which suffers violence most, it becomes inevitable for them to work in an unpeaceful working environment and to feel insecure. Among the health staff professions, nurses are the first to face most violence and practitioner and expert physicians follows them [15].

As can be seen from the statements, many health problems caused by the work itself, working process and work accidents deeply affect the health of health staff and health sector is considered as one of the sectors which has such problems the most. Nevertheless, the likelihood of the health staff to encounter with such health problems depends on his or her work itself, department and profession [7, 151]. When we have a look at what are the most commonly seen occupational risks and job accidents, it is seen that the reasons for such problems are listed as the injuries or incisions resulting from any kind of pointed sharp-stinging equipment and broken tubes used for health services; health problems experienced when exposed to explosive and flammable chemicals; non-protective radiation sources, insufficient personal security precautions, musculoskeletal system injuries resulting from lifting and carrying patients unconsciously [14].

These risk factors and occupational diseases encountered by health staff not only have an influence on the health and performance of the staff, but also increase the job accidents and threaten the safety of patients [2]. Moreover, as a result of their occupational activities, health staff may both get injured frequently and may display indifferent approaches towards diseases in due course. Therefore, it is highly important to get health staff to have necessary check-ups in certain intervals and to have regular inspections, to immune them, to analyse their working environment, to inquire factors impairing their health, to take protective precautions, and to increase the

awareness of the staff about these matters [7]. Apart from that, it is thought that it may yield helpful outcomes to conduct some activities to change the thought system of the society and top management leading to the perception that health staff should always self-sacrifice or they should think that they have no health problems and they will never have any in the future [2].

The Examples of the Mostly Seen Occupational Risks and Job Accidents in Turkish Health Sector

Based on the idea that all the employees have the right to work in a safe and secure environment [16,17], it is seen that there are some studies conducted with the aim of creating a secure working environment in health sector, to eliminate the reasons for job accidents and occupational diseases by identifying the reasons for them, and the study will include some results of various researches conducted with the aim of decreasing human and financial losses and increasing the efficiency and performance of the staff [16]. This part will include the results of various studies conducted in order to identify what are the most frequently seen occupational risks and work accidents in Turkish health sector. The results of these studies are thought to be used as a resource for and contribute into international comparisons.

One of the studies conducted with this aim in mind is a study done in order to evaluate work accidents encountered by the health staff employed in a state hospital in Isparta, Turkey. According to the results of the study, it is observed that the employees in the hospital are exposed to blood and body fluids, are injured by sharp and pointed objects (injections, ampule breaks, injury by a surgical instrument), are exposed to violence (verbal attack, physical violence, sexual abuse), have to contact with chemical staff and medicine, experience allergic reactions (to latex, food, medicine, urticarial or allergic asthma), have musculoskeletal injuries and poisoning (ingestive and respiratory) [18].

According to another study which aims to evaluate the activities conducted in order to create a safe working environment and ensure job safety for the physicians, nurses, and other health professionals employed at various state hospitals in Trabzon city centre and its provinces in Turkey, it is stated that some actions are taken in order to ensure job security in state hospitals on grounds of legislative regulations. However, other findings of the study indicate some unfavourable conditions such as problems with the occupational diseases suffered by the employees, the complaints about these problems, insufficient support from the management; though not very often, the instances of work accidents and occupational diseases; and more complaints from especially female nurses about the accidents and poisoning [6].

One more study conducted with the aim of identifying what are the occupational risks, health problems, and protective behaviours of the nurses employed in nephrology services and dialysis units in Erzurum reported that nurses have the most inflectional risks among all the occupational risks, and besides there are others other risks such as experiencing stress and psychological trauma, being exposed to verbal and physical violence, having problems resulting from allergic agents and noise. During their working hours nurses are exposed to some work accidents in the forms of contact with blood and body fluids through skin, eyes, and open wound and injury by sharp and pointed objects. Furthermore, when the most frequently observed health problem of the nurses is analysed, it is seen that they have to suffer from lower back pains, exhaustion, fatigue, arthralgia, improper sleep habits, headache, neck ache, and backache, and varicosity [19].

When the literature is reviewed, another study on the nurses employed in a university hospital in İzmir, Turkey by Ceylan [8] aimed to identify the number of accidents and the factors leading to these accidents experienced by the nurses in a month and in 6 months. According to the

results of the study, 47 % of the nurses had a work accident during the last month while 60 % of them had a work accident during the last 6 months. These accidents of the nurses are listed as injuries through a sharp object, exposure to blood and body fluids, tissue trauma resulting from sliding and falling, and exposure to violence.

The results of another study on the health problems and occupational risks of the nurses employed in a university hospital in Erzurum show that the nurses mostly suffer from sleep problems and exhaustion and fatigue; and they have some health problems such as arthralgia, leg, back, and lower back pains, varicosity, headache and stress. The nurses also stated that their family life was adversely affected from their working conditions, they had sleep and dietary problems, and they had such problems as alienation to work and isolation from social life [3].

According to the results of another study on identifying occupational risks and individual and organisational precautions to eliminate these risks faced by the nurses employed in a university hospital located in Ankara in their own departments as reported by themselves, the nurses stated that the significant factors which adversely affect their health in their working environment are infections, contagious diseases, stress and fatigue resulting from overworking and working for long hours. Besides, it becomes obvious that the employee health is adversely affected by some other factors such as exposure to anaesthetic gases and radiation, chemotherapy, noise and insufficient ventilation [9].

Some important findings are recorded by a study conducted to identify the experiences of the health staff employed in health centers and hospitals (both state and university hospitals) in Mersin about injuries through sharp and pointed objects and their precautions to decrease occupational risks. According to this study, approximately 80 % of the health staff had at least one injury through a sharp and pointed object so far in their

working life. The main reason for this is injury through a blood contaminated object. Other practices which result in injuries through sharp and pointed objects in employees are listed as injury by a clean equipment before treatment, injury during treatment, injury when closing the cap of injectors, when opening the cap of injectors, and when throwing injectors to waste bins, accidentally get injured when a friend is holding the injector, getting injured when helping to a colleague, or getting injured when cleaning materials [20].

Another study on the subject was conducted to identify the perspectives of the students of educational organisations in İzmir to be appointed to 112 emergency health service ambulances (emergency medical technicians and paramedics programs) towards the occupational risks they will face during work. The study concluded that the students had lower levels of knowledge scores on the risks which are classified as ergonomic, biological, environmental, and psychological risks. On the other hand, when the results of other studies in literature on the same subject are analysed, it is seen that the ambulance staff face ergonomics-related risks mostly and they most commonly have musculoskeletal system diseases and sprains, traumatism, and pain in the upper back [21].

One more study which was conducted to identify the occupational risks and the level of awareness of the students at Akşehir Health Vocational school (second, third and fourth grade nursery students) reported that the students did not have the desired level of awareness about, occupational risks, the ways how infectious diseases spread, and the precautions to get protected from infectious diseases. Other findings of the study show that around 43% of the students did not have Hepatitis B vaccination, 23% of them had insufficient vaccination doses, and 32% of them experienced an injury due to a sharp and pointed object (while they are preparing medicine for injector, while using lancet and bistoury) [22].

As suggested by the findings of studies reported in the literature, the health staff employed in Turkey faces extremely high levels of occupational risks and work accidents. Because of these high risks and accidents, most of the employees have worse health conditions, display poor performance, and experience some unfavourable situations such as alienation to work, dissatisfaction, disability, and quitting the job etc. As a natural consequence of all these, the quality of health service decreases, the expectations of the society are not met, and all these unfavourable conditions get worse day by day and become a problematic subject which needs to be solved. All these developments caused the concept of job security to gain more importance and to take some precautions to ensure the security of employees in health sector, as it does in all the other sectors.

The Concept of Employee Safety and Precautions

In most general terms, working is defined as performing the production of goods and service using productive factors at a certain working environment. There is a bilateral relation between the employee health and working environment. Therefore, the health condition of an employee affects the life and performance of the employee and work life also has a significant influence on the health of an employee [15]. Individuals work for many reasons including to continue their lives, to have a career or to make a good service for the society etc. From this point of view, it is an incontestable right of an individual to wish a safe working atmosphere. Creating a safe working environment is physically, socially, psychologically and ergonomically highly important to increase the productivity and performance of the workers, as it causes to build organisational attachment and confidence in the organisation [7]. In order to protect health and to provide a healthy and safe working environment for employees, the factors threatening and impairing the health of employees need to be identified in the first place and the precautions to eliminate these risks need to be taken [23]. This has caused organisations to

undertake more and increasingly more activities related to employee safety [10].

The main aim of the studies on the health and safety of the employees is to protect employees from potential conditions which may hurt health and from potential dangers that arise when the work is being performed, to make regulations to maintain the health of employees, and to create a safer working environment [8]. To work in a safe and healthy environment has a great importance not only to maintain the health of an employee, but also to increase the life quality. In this way, it will be possible for an employee to prevent job related health problems, to lighten the burden of existing diseases, and to increase the efficiency and productivity of the employee [10].

Within the context of declarations from various organisations such as American Hospital Association (AHA), International Labour Organisation (ILO), National Institute for Occupational Safety and Health (NIOSH) and unions acting in health sector, it is stated that the health staff also deserves the right to be healthy and to work in a healthy and safe hospital environment, as do the employees of the other sectors [7].

The first step to give the due attention to the health of health employees and to show the necessity to make some regulations on this subject was taken when in 1956 German government took some precautions to prevent work accidents and had the employees have pre-job health examinations [18]. This development was followed by the joint declaration issued by American Medical Association (AMA) and American Hospital Association (AHA) in United States of America (USA) in 1958 [15,16]. Following this development, the works of National Institute for Occupational Safety and Health (NIOSH) conducted between 1974 and 1976 defined some criteria concerning the occupational health in hospitals. Accordingly, a healthy and safe hospital environment is defined as a place where there is not any kind of physical, chemical, biological and ergonomic danger and risk which results from the work conducted and which are

harmful for health and where there is no work accidents and occupational diseases resulting from these risks and dangers. NIOSH and occupational Safety and Health Administration (OSHA) stressed that it is necessary to primarily identify the potential risks and dangers at work place and take some precautions to eliminate these risks and dangers in order to create such an atmosphere. In this way, the employees will be able to work in a safe and healthy environment, and the working conditions and relations will be regulated in favour of health staff [15].

In the early 1990s, Accreditation Commission of Health Organisations in USA stated the necessity of a health and safety committee in hospitals. NIOSH and OSHA figured the main purpose of this committee as elimination of all kinds of physical, chemical, psychological, biological and ergonomic risks and dangers that are harmful to health and creating a healthy and safe hospital atmosphere in which no occupational diseases or accidents occur [10]. In this respect, the committee is regarded as a primary care health service which provides outpatient services and aims to protect the health of health staff, to prevent diseases, and to improve health [2,18]. An effective hospital job health program is expected to cover pre-job health examination which includes a full medical anamnesis and periodical examinations, to provide health and safety trainings, to provide immunization, to give importance to such topics as health guidance and environmental control, to adopt a health and security recording system, and to include a planning to enable a coordination between all the departments of the hospital [2].

The services of this committee can be categorized under three subtitles: services for health care workers, services for hospital atmosphere and production process, and other services [10, 18].

The services for Health Care Workers are:

- creation of programs to improve health,

- informing the health care workers about occupational risks and dangers,
- provision of health training on health and safety matters,
- provision of consultancy service on health,
- monitoring the adaptation of the employees to the established health and safety standards,
- to have periodical examinations,
- immunization (e.g. Hepatitis B),
- paying attention to health care workers to have a healthy and balanced diet,
- increasing the usage of personal protective by health care workers,
- keeping the necessary records of occupational diseases and accidents and informing whom it may concern (health care worker, unions, administration etc.),
- caring and treating the health care workers when injured or sick.

Services for Hospital Atmosphere and Production Process:

- Involving the committee in constructing the hospital,
- drawing a workflow diagram for each occupational group and describing the production process,
- identifying and monitoring the risks for health and safety,
- monitoring the efficiency of the regulations on occupational risks and dangers.

Other Services are listed as

- Establishing a procedure and policy for health and safety in hospital,
 - developing a recording system for health and safety,

- coordinating with hospital units,
- making preparatory plans for emergency cases,
- getting the support of the hospital management [10].

Following these developments, by 2007, World Health Assembly attempted to reinforce the health systems and to create protective programs special to health staff in order to protect the health of health staff [15]. International Occupational Health Commission (IOHC) suggested to evaluate regulations on the health of health care workers through labour health approach [7, 10].

At the end of a meeting held jointly by World Health Organisation (WHO) and ILO in 2010, to protect the health of health staff was determined to be a prioritized subject. In this respect, a guidance was prepared especially for services to get protected from, to treat and care some diseases such as HIV and tuberculosis [15]. Furthermore, ILO developed some national and international standards about how to record work accidents and occupational diseases and about how to evaluate them [18].

As for Turkey, the necessity to establish an employee safety committee is stated in the Guidelines for Hospital Service Quality Standards issued by the Directorate of Performance and Quality Improvement and Department of the Ministry of Health in 2011. In this way, it is expressed that it would be possible to protect the health of the employees and to enable them to work in a safe atmosphere [24]. The Code of Providing the Safety of Patients and Employees, which was issued by the Ministry of Health in the same year, included similar regulations. Accordingly, the Article 7 of the Code specified the regulations on preparing an employee safety program, conducting health check-ups for the employees, making necessary amendments for the disabled employees, enabling the employees to personally take protective precautions, and taking the necessary precautions to avoid physical harassments to employees.

Article 8 of the Code includes regulations on the control and prevention of infections, laboratory and radiation safety, conducting coloured coding practice, performing a safe reporting system, training on patient and employee safety, and establishing patient and employee safety committees. Besides, in order to protect the health of the employees, to prevent occupational diseases and accidents, to conduct planning, researching, and auditing services, and to take necessary precautions in collaboration, The Department of Patient-Employee Rights and Safety was established under Turkish State Hospitals Authority [7].

In the Article 19 of the Code of Job Health and Security Number 6331 enacted after being published on the Official Gazette issue number 28339 on 30 June 2012, it is stated that “The employee is obliged not to endanger the health and safety of other staff who are affected by the employee, his work or his behaviour, in line with the training he receives on job health and safety and the instructions of the employer concerning these” [25, 26]. When this article is analysed, health staff should

- Properly and correctly use all kinds of machine, device, equipment, tools, hazardous materials, carrying equipment and all other kinds of production tools and should not use them arbitrarily,
- Properly use and protect the personal protective gears provided for them,
- Inform the employer or employee representative if they ever see any failure of protective precautions or if they ever under any kind of danger in terms of security concerning the machines, devices, equipment, tools, or buildings they use,
- Cooperate with the employer or employee representative in order to make up any sort of deficiencies observed in their own working place,
- Cooperate with the employer or employee representative in order to ensure job health and safety in

their own working place. Apart from these, other obligations of the health staff include to protect their own rights which are assured by legal regulations and which are natural consequences of being a human and an employee and to act properly in accordance with the security culture approach. When the “Regulation on the Usage of Personal Protective Equipment in Work Places” issued by the Ministry of Labour and Social Security is analysed, using personal protective gears for the work performed by the health staff is not only required by the legislation, but also it is important for the employee to protect his own health [25].

The precautions to be taken related to the occupational risks as frequently encountered in health sector are listed as follows: Sterilization should be emphasized to eliminate biological risks; sanitation standards should be identified, pointed tools should be placed in protective containers; hands should be washed after contacting with patients; gloves, masks, aprons, eyewear should be used; and periodic audits should be performed for health units [7]. The number of units at hospitals to wash hands should be increased, more attention should be given to control and properly dispose waste materials [2, 14], hygienically working conditions should be created and in-service trainings should be organized on these issues [2]. When we think that health staff is intensely exposed to infection, it is necessary for them to act according to three basic rules listed as not to stay close to the source more than necessary, to work from furthest possible distance, and to put a blocking shield between himself and the source [27]. When combating with chemical risks, high amounts of disinfectants should be avoided and ventilation should be done with care [7]. Through effective ventilation, some problems such as fatigue, headache, nausea which results from insufficient ventilation may be solved [23]. The precautions to eliminate ergonomic risks can be summarized as creating a suitable working atmosphere, establishing awareness for muscle-skeleton injuries among employees, or preferring to use ergonomic furniture [7]. It is thought that if the

health employee is given enough and proper relaxation time, it will contribute into the decrease of this risk [28]. For psycho-social risks, what would help is to use effective communication techniques, to encourage team mentality, to organize social activities and entertainments to decrease monotony, and to reinforce trust and solidarity feelings [7]. Apart from this, it is thought that to teach employees how to cope with stress is also an effective method [23]. It is also stated that to prevent violence towards employees (white code practice) to act in accordance with the Radiation Safety Code, to extend the use of appropriate safety eyeglasses and panels may help to eliminate the physical risks [7]. Among the other precautions to be taken are that monitoring the employees who are exposed to radiation by devices measuring radiation doses, to wear special outfits with respiratory devices and wearing masks in cases with internal radiation dangers (based on respiration, ingestion, and the scratches on the skin) [27].

It is highly significant to identify the risks and practice an effective risk management to cope with these risk factors each of which has a distinct nature and many negative effects [11, 12]. It is stated that, in this way, it would be possible to minimize occupational diseases and accidents, to create a healthy and safe working atmosphere, to enable employee safety, to increase the productivity, performance and satisfaction of the employees, to avoid labour and work day loss, and to eliminate financial losses in the organisation resulting from accidents [12].

As seen from the explanations made so far, several regulations have been made by ILO, OSHA, NIOSH, AHA and health unions under the context of constructional changes in health sector on employee health and safety. The major point stressed by all these regulations is that the health staff has the right to be healthy and to work in a safe environment, as do all other employees of other sectors. In line with the improvement in the world in general, Turkey has also signed some

regulations on employee health and patient safety and emphasized the significance of employee health and security. It is extremely important to evaluate both the working conditions and working environments and it is necessary to identify the factor which endangers health. In this way, it will be possible to take the required protective precautions and to increase the awareness of employees about the risk factors and thus to lower the number of work accidents and occupational disease prevalence [15].

Conclusions

Based on the peculiar characteristics of health sector, the health staff who aims to provide health service for public is exposed to a great number of occupational risks and work accidents when performing his or her work. In our country, from the perspective of health care workers in particular, it is observed that there is a dramatic increase in the number of occupational accidents and diseases resulting from the working atmosphere and relationships in that atmosphere. The most commonly observed risk factor in health sector are classified as physical, chemical, biological, ergonomically, and psycho-social risk factors. These risk factors faced and the work accidents that take place adversely affect the health of employee, and injuries or frequent disablements occur; the performance of employee decrease, and some problems arise such as alienation to work, lack of motivation, loss of labour, stress, decrease in organisational commitment, low levels of satisfaction, loss of income, and burnout syndrome etc. Consequent to these, a health service that is in line with the expectations of public may not be provided and in the long run, highly significant and sometimes irreversible losses in economy and health status of the society, as well as of the employee may be observed.

The possibility of a health employee to face occupational risks and have work accidents depend on the profession of the health employee, the work he or she performs, and the department he or she is working for. Besides these factors, personal traits of an employee also

directly affect occupational risks and work accidents. When the right of each employee to work in a healthy and safe environment is considered, the significance of the issue becomes more profound and it becomes inevitable to make some regulations. Therefore, the working conditions of the health sector should be analysed, the factors impairing the health of staff should be identified, these factors should be researched for their frequency and for especially which group is affected by them, detailed analysis should be done on occupational risks and after fixing all these, then we should head for some protective precautions. As seen above, to decrease occupational risks and to ensure employee safety, it is highly important to act with plans. Detailed programs should be organized for employee safety, health check-ups for employees should be done with certain intervals, sustainability should be ensured for the precautions taken to provide the safety of both patients and employees, and through occasional in-service trainings, the deficiencies should be remedied.

The regulations made and the precautions taken in order to make working environment a healthier and safer place will not only contribute into the health and safety of the employee, but also it closely concerns their performance. The employees in a safe working environment have more potential to provide a qualified and effective health service which is in line the expectations of public. Based on these ideas, the precaution to be taken to provide a safe working environment, to decrease occupational risks, and to prevent work accidents should cover especially some certain points. According to the regulations to be made;

- A culture of patient and staff safety in hospitals should be created and both the top management and all the staff should adopt this policy, and orientation programs should be held,
- To ensure a safe working environment, employee safety committee should be made to perform actively,
- Actions should be taken in accordance with national and international statute on patient and employee safety,

- When the employees are in need of guidance to cope with the problems they have, they should be guided and consultation services should be provided for them,
- The employees should receive trainings on job health and safety, their rights, occupational risks, work accidents, and how to avoid them and in this way they should gain awareness,
 - The employees should be encouraged to actively participate in the works on patient and employee safety and their expectations should be found out,
 - The employees should be urged to report work accidents,
 - Hospital infections should be combated,
 - The use of protective equipment should be encouraged,
 - Personal information of the employees who are required to have regular check-ups should be recorded,
 - Immunisation for infections should be made,
 - Ergonomic working conditions should be created and instructions should be prepared about how to lift and carry,
 - In order to decrease the hazardous effects of radiation and anaesthetic gases, the staff in the concerned departments should work in shifts,
- Working hours should be regulated in order to decrease the problems accompanying the busy, long and nonstop working pace,
- Sufficient security precautions should be taken for violence and the white code practice should be extended,
- All kinds of equipment, tools and devices used for work should be checked regularly,

- The employee who get the occupational disease should not be left alone, but given the necessary support,
- Protective precautions for employee safety should be given priority,

It would only be possible in this way to enable the consistency in health services and to present a high quality, effective, and accessible health service. The precautions have distinctly positive effects not only on the employees in an organisation, but also on the national economy and society.

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