INVESTIGATION OF SAFETY CULTURE IN THE HOSPITALS AND THE ASSOCIATION BETWEEN SAFETY CULTURE AND BEHAVIOURS

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ABSTRACT

INVESTIGATION OF SAFETY CULTURE IN THE HOSPITALS AND THE ASSOCIATION BETWEEN SAFETY CULTURE AND BEHAVIOURS

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Safety culture has been thought one of the underlying reasons of the safety related behaviours and attitudes. Safety culture studies in healthcare area have mostly focused on patient safety. The main objective of this study was to investigate the safety culture in infectious and interior disease clinics of hospitals in terms of occupational perspective. Another aim is to investigate the relationship between safety culture and safety related behaviors of healthcare professionals.

It was predicted that culture level would be lying in the reactive and bureaucratic levels. The results supported the prediction except two dimensions about investigation and reporting accidents which were in the bureaucratic and proactive levels. Regression analyses have indicated that safety culture level of education and research hospitals were higher than university hospitals from many perspectives. Also, the analyses has shown the positive relationship between safety precautions training and safety culture. In terms of relationship between safety culture and behavior, only two dimensions have found to be related to behaviours. Difference between jobs group has been also determined; nurses were better than doctors at compliance to safety precautions. The implications of the results were discussed in the light of occupational and patient safety literature.

Two different measures were used for this purpose; safety culture matrix and safety precautions questionnaire. A specific matrix was developed for the infectious and interior disease clinics of hospitals by literature survey and semi-structured interviews with doctors and nurses in the fields. Also, Standard Precautions existing in the literature was enhanced by taking the opinions of the field professionals in order to determine the compliance to safety. The both measures were applied to doctors and nurses (N=151) in the university hospitals and education and research hospitals.

Keywords: Safety Culture, Healthcare, Occupational Safety, Compliance to Safety Precautions, Infectious Disease Clinic, Internal Disease Clinic

ÖZ

HASTANELERDEKİ GÜVENLİK KÜLTÜRÜNÜN VE GÜVENLİK KÜLTÜRÜ İLE DAVRANIŞLAR ARASINDAKİ İLİŞKİNİN İNCELENMESİ

Çınar, Kadriye
Yüksek Lisans, İş Sağlığı ve Güvenliği
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Ekim 2019, 112 sayfa

Güvenlik ile ilgili tutum ve davranışların altında yatan sebeplerden birinin güvenlik kültürü olduğu düşünülmektedir. Sağlık alanındaki güvenlik kültürü çalışmaları genellikle hasta güvenliği konusuna odaklanmıştır. Bu çalışmanın amacı ise hastanelerin enfeksiyon hastalıkları ve dahiliye kliniklerindeki güvenlik kültürünü çalışanlar açısından incelemek ve güvenlik kültürü ile güvenlikle ilgili davranışlar arasındaki ilişkinin araştırmaktır.

Bu amaçla, güvenlik kültürü matrisi ve güvenlik önlemleri anketi olmak üzere iki farklı ölçek kullanılmıştır. Literature çalışması ve alandaki doktor ve hemşirelerle yapılan yarı yapılandırılmış mülakatlar doğrultusunda, enfeksiyon hastalıkları ve dahiliye kliniklerine özgü bir matris geliştirilmiştir. Ayrıca, güvenliğe riayet durumunu belirlemek amacıyla, literatürde mevcut olan Standart Önlemler, profesyonellerin görüşleri alınarak genişletilmiş ve anket olarak kullanılmıştır. Ölçekler, üniversite hastaneleri ile eğitim ve araştırma hastanelerindeki doktor ve hemşirelere (N=151) uygulanmıştır.

Kültür seviyelerinin reaktif ve bürokratik seviler arasında yer alması öngörülmüştür. Araştırmanın sonuçları, kazaların raporlanması ve araştırılması hakkındaki boyutlar dışındaki diğer boyutlar için bu öngörüyü desteklemiş; bu iki boyut bürokratik ve proaktif seviyeler arasında yer almıştır. Regresyon analizleri, eğitim ve araştırma hastanesindeki güvenlik kültürü seviyesinin üniversite hastanesinden daha yüksek olduğunu göstermiştir. Ayrıca, analizlere göre eğitim ile güvenlik kültürü arasında pozitif yönlü bir ilişki bulunmaktadır. Güvenlik kültürü ile davranış araşında sadece iki boyutta ilişki tespit edilmiştir. Meslek grupları arasında fark olduğu, hemşirelerin doktorlara göre güvenlik önlemlerine daha çok riayet ettiği görülmüştür. Çalışmanın sonuçları, iş güvenliği ve hasta güvenliği literatürü ışığında tartışılmıştır.

Anahtar Kelimeler: Güvenlik Kültürü, Sağlık Hizmeti, İş Güvenliği, Güvenlik Önlemlerine Riayet, Enfeksiyon Hastalıkları Kliniği, İç Hastalıklar Kliniği

To my lovely sister and all healthcare professionals

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LIST OF ABBREVIATIONS

HcPro-SCuF	Healthcare Professionals Safety Culture Framework
MaPSaF	Manchester Patient Safety Framework
OHS	Occupational Health and Safety
PPE	Personal Protective Equipment
SC	Safety Culture
SPQ	Safety Precautions Questionnaire

CHAPTER 1

INTRODUCTION

1.1. Overview of Health and Safety

Occupational safety and health (OSH) is a multidisciplinary field that associates with from medicine to sociology as well as from technology to psychology and other disciplines like law and economy. Despite the extensive relationships are caused by the nature of the production sectors and differentiated depending on the sub-sectors, it is possible and also necessary to identify certain basic principles that are called international labor standards and are developed by International Labour Organization (ILO) (Alli, 2008). Besides OSH has various definition, according to ILO, it can be defined as a science that deal with hazards of the workplace by anticipation, recognition, evaluation, control in order to protect workers and workplaces from them and provide a better working environment.

In Turkey, first regulations about health and safety were implemented in the field of mining because of the high fatality rates. These regulations were strict during implementation and usually same for all type of industry. They were present in a section of labor law. In 2012, major changes were made by a separate law of occupational health and safety, no. 6331. The changes include management system, holistic approach to all components of the field and also emphasize the importance of safety culture. The new approaches have been started to be implemented to high risky areas as well.

In this study, the focused area is healthcare worker in the hospitals that is a subset of the human health activities. Human health activities are considered to be hazardous or very hazardous according to the Workplace Hazard Classification Disclosure.

The purpose of healthcare services is to protect the patient well-being. Technological improvement, investigation and studies generally focus on the enhancements of the patient safety and the quality of care (Lin, Lin, and Lou, 2017). For example, While protecting the patients, the healthcare workers might be under the risk. For example, Waterman, Jankowski, and Madan (1994) stated that while the infection risk of infectious equipment for patients is decreasing by using single use equipment, the healthcare workers are still at risk of infection by this way.

Although the human health activities are hazardous or very hazardous, records of health and safety have not been sufficient in Turkey. Most of the hospital do not have an active reporting system for incidents or shortage. According to Social Security Institution (SGK), there have been continuous increases in the number of accidents (about two times more for each year) year by year as shown in the Figure 1.1. The dramatic increase has shown the effect of the legal regulation in 2012 which made reporting compulsory. Also, after regulation the number of the reporting accidents has been regularly increasing year by year. The trend of the graph may show both increasing of reporting or the increasing of the accidents. However, the regular change after the legal regulation probably indicates the increase in the awareness of the reporting.

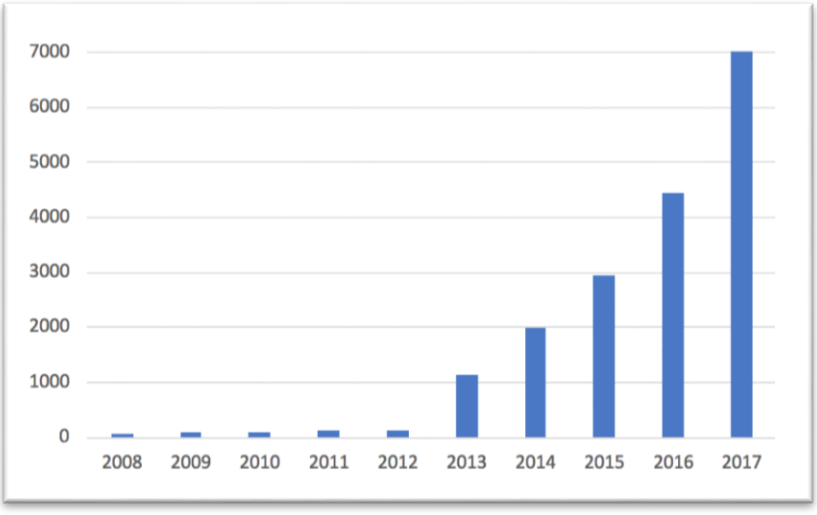


Figure 1.1. Number of accidents in human health activities in Turkey (SGK, 2019)

In a workplace, there might be various parameters that influence health and safety of the staff. The reasons of the workplace accidents may be classified as organizational and individual factors in general. According to Reason (1990), human beings contribute to the collapse of the complex system; active failures and latent conditions. Also, Brown, Willis, and Prussia (2000) stated that workplace accidents have resulted from the combination of unsafe work behaviours and a chain reaction of technical and social constructs. The acts of the individuals are as effective as the working conditions in which they work for safe work environment. In this sense, abstract and concrete conditions and safety performance might be handled together. The abstract part of the workplace may be named as safety culture, which reflect the values and attitudes of the environment; it will be main focal point of the present study.

In the following sections of this introduction, first, a brief review of safety culture literature is presented followed by a review of the safety behaviours literature in health care and other industry. Finally, the objectives and scope of the study are presented.

1.2. Understanding of the Human Behaviors

In the study of researching the root causes of the accidents, Reason (1990) collected the 387 root causes in five major categories. These were human performance problems, design deficiencies, manufacturing deficiencies, external causes, and others. The first category was found to involve more than half of the all root causes with the rate of 52%. Human performance problems may result from both unsafe acts and unsafe conditions. According to Reason (1990), unsafe acts can be classified as errors and violations in terms of intention. While individuals do not have any intention for error, they violate the rules intentionally.

Reason (2000) focused on the human error by two approaches; personal and system. The first indicates the unsafe acts (i.e. error and violations); the latter focuses on unsafe conditions, and tries to improve the workplace by implementing defenses, barriers and safeguards (Reason, 2000). Whilst personal approach deals with the acts of the sharp-end individuals, system approach focuses on the working environment

and tries to make the conditions safer with the assumption that errors will always exists. Thus, system approach more attends to latent conditions rather than active failures. The latent conditions present in the workplace but can cause accident only if meeting an active failure or a trigger. In this sense, to make environment safer can reduce latent conditions and prevent negative outcomes by a proactive approach. To develop a mature safety culture within workplace can contribute to occur the safe working environment.

In the safety literature, the common acceptance about human behaviours is that it implies the compliance to the rules. For example, many studies, like DeJoy et al. (2000), Ferguson et al. (2004) and Gershon et al. (2000), have defined the safety behavior of healthcare professionals by adherence to Standard Precautions. The precautions were developed by Centers for Disease Control and Prevention (CDC) as a guideline, at first called as Universal Precautions (UP), for healthcare professionals, in particular to prevent healthcare associated infections in 1930. The guideline was updated and termed Standard Precautions (SP) in 1996 (Hessel, 2005). The issues of hand hygiene, personal protective equipment, usage of sharps, environment contamination, equipment contamination, patient placement and linen and waste control are included by the guideline (Siegel et al., 2007). There are some studies in the literature, which have explored the influencing factors of the adherence to SP (Efstathiou et al., 2011, Whitby et al., 2006, Haktanır, 2011 and Hessels and Larson, 2015). Haktanır (2011) developed the measure by means of the two sources; Universal Precautions used in Gershon et al. studies (1995, 1998, 1999, and 2000) and in Kermode et al.'s (2005) study, there have been different approaches to human behaviors. On the other hand, Neal and Griffin (2004) handle the human behavior having two components; compliance to the rules and participation in the safety.

1.3. Understanding the Characteristics of Safety Culture

The concepts of culture and climate are controversial between researches within different disciplines for two decades. Yet, Guldenmund (2000) distinguished the two

concepts based on the previous studies; while climate is expression related to attitudes and behaviors, culture refers beliefs and values underlying the attitudes and behaviors shared by most members within the organization. Notwithstanding, the debate is more valid for the extent of organization. The both concepts are used changeably within the field of safety. In this study, the term of safety culture was preferred.

In literature different approaches to make workplaces be safer and healthier; the common feature of them is to focus on three components of workplaces; people that may be named as human factor, process that may be management factor and plant that may be hardware of the workplace. Clarke (1999) states that the approach emphasizes the mission of social forces that affect the people within an organization in the study, which is focus on the issue of accident reduction by the application regarding safety culture. The social forces refer to organizational culture that reaches into all parts of the organizational system. Also, many researches from different disciplines, i.e. economy, sociology, psychology, state that culture is crutial for the occurrence of organizational behavior (Scott, Mannion, Davies, and Marshall, 2003). Although the literature is rich in terms of the definitions of organizational culture, it can be described as "a complex framework of national, organizational and professional attitudes and values within which groups and individuals' function" (Helmreich and Merritt, 1998). The culture shows the way things work in the organization.

The subset of the culture which is related to belief and values about safety and health forms safety culture (Clarke, 1999). Safety culture, which is safety and health related aspect of the organizational culture, reflects the ''ability of individuals or organizations to deal with risks and hazards so as to avoid damage or losses and yet still achieve their goals'' Reason (2000). Besides Hudson et al. (2000) states that safety culture means the attitudes, beliefs, values and assumptions that are shared within organization and the underlying reason of the way people's perception and action about safety issues. In another study, Parker (2008) says that belief is determinant factor in performing behaviors. Also, even if behavior may change, the beliefs that underlies may be in existence. Thus, the positive change may not be

permanent without supportive beliefs. Hudson et al. (2000) proposed a model to understand how and why people behave, shown in Figure 1.2. In this sense, the root cause of the undesirable behaviors might be values and belief and they are components of the safety culture.

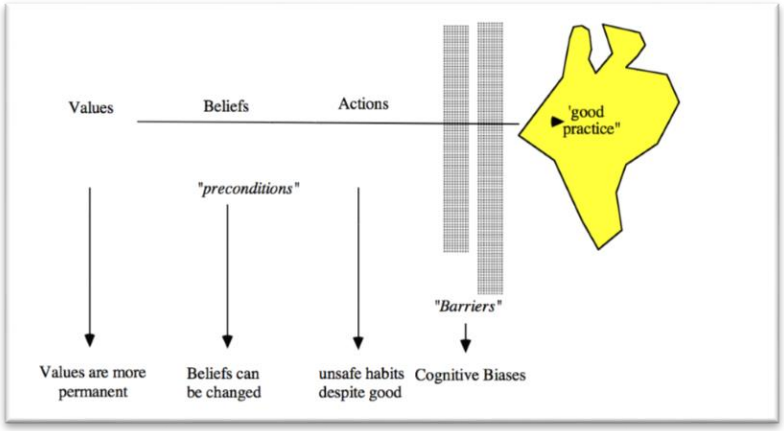


Figure 1.2. Hudson et al.'s model for positive outcomes

In order to get such a culture, it has to be acknowledged and understood by means of well-defined safety culture assessment tools with an effective guidance on how to improve the current culture (Lawrie, Parker, and Hudson, 2006). The earlier studies have been developed more safety culture assessments for high risk industries earlier with practical purpose but far from theoretical basics (Hudson, 2003).

Reason (2000) has proposed the main characteristics of an effective safety culture that may be a driving force for organizations to reach the goal of maximum operational safety. Briefly, such a safety culture has information system, reporting system, no blame atmosphere within organization as well as it is flexible and learning culture. Hudson et al. (2000) named such a culture that is formed by the five elements as culture of trust and also combined with the Westrum's typology of cultures. Thus, a new approach to establish a desirable safety culture has been present in the safety literature.

1.4. Understanding of Dimensional Structure and Maturity of Safety Culture

In modern times, an organization has been producing in various areas and ways, therefore, multiple departments and groups that specialized for different task with particular risks and priorities have existed. In this sense, Parker, Lawrie, and Hudson (2006) states that since perception of safety may have variation within a single organization, is possible to conceptualize several safety cultures for the organization. Hence, safety culture is "likely to vary within a single organisation". Zohar's study (2000) has supported to this approach by demonstrating both within-group homogeneity and between-group variation in safety-related perceptions of 53 work groups within a manufacturing company. Moreover, some issues in safety culture may establish and develop more quickly than the others. Also, some areas may be found more important to improve safety. In the light of the literature, Parker et al. (2006) says that the most useful way of handling safety culture is to approach by a multi-dimensional concept.

Besides the two features, a 'desirable' safety culture needs to be "amenable to change". Since, safety culture might be affected by any change or development in the organization, the tool or framework that is used to describe the safety culture should also comply with this changeable structure of safety culture (Parker et al., 2006). Parker et al. specify that an evolutionary ladder is the best way to conceptualizing safety culture, and proposed a typology of cultures developed by Westrum whose suggestion states that organizations can be distinguished according to the way they handle safety-related information within organization (Westrum, 2004). The classification of the culture was depending on their reactions to the information; these were denial, repair and reform actions (Reason, 1990). Thus, the more effective an organization, the more successful to use the information with reformist approach. Depending on this classification, Reason defined the levels of organization as pathological, calculative, and generative in terms of their improvement about safety (Reason, 1990). Afterwards, with two additional levels of reactive and proactive, the original framework has become more detailed and clarified the idea of maturity

(Ashcroft, Morecroft, Parker, and Noyce, 2005). Furthermore, Parker & Hudson applied the framework specifically to the safety culture. The maturity levels of safety culture with their meanings are provided in Table 1.1 (Hudson et al., 2000; Reason, 1990; Westrum, 2004).

Table 1.1. Levels of the safety culture

Levels of maturity	Characterization
Pathological	Safety issues are not in the agenda of the organization because of production and economic pressure. Individuals and the nature of work are thought to be reasons of the incidents. – blame culture. There is no learning from incidents and communication on safety issues.
Reactive	Safety comes up after accidents happen. Communication about safety and learning from incidents depends on individuals and stay within the groups. There is no safety system and documentation. Safety responsibilities are not identified.
Bureaucratic (Calculative)	Procedures and responsibilities about safety issues are existing. The implementation of procedures and application is inadequate. By-the-book organization can be said; documentation is good but safety is not internalized. The management is more interested in the number than the quality.
Proactive	A working system about safety issues, individuals know their responsibilities and how to handle information. Investigation accident, learning from accidents, communication on safety issues and feedback mechanism are encouraged.

Table 1.1. Levels of the safety culture (continued)

Levels of maturity	Characterization
Generative	Safety issues are intangible parts of the work. Safety is completely integrated into all actions of the organization. Everyone within the organization is responsible for safety. All information is used for improvement. Openness and new ideas are encouraged.

Within the scope of the above literature, Hudson et al. (2000), has been developed a tool for the oil and gas industry in order to understand safety culture. The structure of the tool consists of five dimensions based on Reason's proposal with five maturity levels; the dimensions are listed in Table 1.2. The tool allows organizations to understand their safety culture in multi-dimensional way and recognize the stages which they are currently in. Moreover, since the tool includes not only the current level of culture but also more and less developed levels, it may be used as a guide to transit from one stage to the next (Hudson et al., 2000).

After the oil and gas industry, the tool was first adapted to develop patient safety for primary healthcare organizations in Manchester. It was based on an original tool and named as Manchester Patient Safety Framework (MaPSaF) (Parker, Lawrie, Carthey, and Coultous, 2008). Since the sector was completely different, the characteristics of safety culture in healthcare were specified following a comprehensive review of literature and interviews (Kirk, Parker, Claridge, Esmail, and Marshall, 2007). Afterwards, five stages of maturity for each dimension are described by interviews with managers and clinicians from different professional groups. The list of defined dimensions for primary care organizations are shown in the Table 1.2.

The MaPSaF was modified for the ambulance service, then it was subsequently adapted to mental health organisations, community pharmacies and hospitals

(Marshall et al., 2017). The dimensions are not completely same for all areas but similar, yet the dimensions were defined specifically for each.

In another study, Gershon et al. (2000) developed a questionnaire with 20 safety climate items in terms of occupational safety and collected into six different factors that are listed in Table 1.2. Moreover, Lin, Lin, and Lou (2017) have stated in their literature analysis of safety climate concepts from healthcare providers' perspective that three characteristics of the safety climate are commonly defined in the reviewed studies. These are safe workplace created by senior management, perceptions about safety shared by healthcare providers, information about safety disseminated effectively.

Besides, a review for the safety literature summarizes the commonly measured features of patient safety climate in healthcare field. In the review, there have been 12 papers and they have had their definition of safety climate, but similar fashion listed in Table 1.2 (Flin, Burns, Mearns, Yule, and Robertson, 2006). The paper focuses on the patient safety but climate dimensions may be similar for patient with professionals. Indeed, the definitions of the dimensions may differ.

Table 1.2. Dimensions of Safety Culture in the Literature

Resources	Study Area	Dimensions
Parker et al. (2006)	Oil and gas industry	(1) benchmarks, trends and statistics (2) audits and reviews (3) incident / accident reporting; investigation, analysis (4) hazard / unsafe act reports (5) work planning (6) contractor management (7) competency, training (8) work site job safety techniques (9) safety checks (10) HSE department (11) reward system
Kirk et al. (2007)	Patient safety in primary care organizations	(1) overall commitment to quality (2) priority given to patient safety (3) perceptions of the causes of patient safety incidents and their identification (4) investigating patient safety incidents (5) organisational learning following a patient safety incident (6) communication about safety issues (7) personnel management and safety issues (8) staff education and training about safety issues (9) teamworking around safety issues

Table 1.2. Dimensions of Safety Culture in the Literature (continued)

Resources	Study Area	Dimensions
Gershon et al. (2000)	Occupational safety in the hospitals	(1) senior management support for safety programs (2) absence of workplace barriers to safe work practices (3) cleanliness and orderliness of the work site (4) minimal conflict and good communication among staff members (5) frequent safety-related feedback/training by supervisors (6) availability of personal protective equipment and engineering controls
Flin et al. (2006)	Review for patient safety	(1) management/supervisors (2) safety systems (3) risk perception (4) job demands (5) reporting/speaking up (6) safety attitudes/behaviours (7) communication/feedback (8) teamwork (9) personal resources (10) organisational factors

On the other hand, some guides for health and safety in the hospitals (e.g. Sorra, Gray, and Streagle, 2016). The guide also handles the patient safety. The guide defines one dimension differing from the above researches; handoffs and transitions. This is about the transfer of information about patient care both across the units and during shift changes.

1.5. Understanding the Relationship between Safety Culture and Behavior

The management approaches have commonly three components in safety literature; they might be summarized as process-plant-people or enforcement-engineering-employment. Indeed, the first two is very crutial, and the best approach to reduce accidents might start with eliminating safety hazards and risks through direct engineering or administrative controls (Wirth and Sigurdsson, 2008). However, it is hard to say that any system, which does not take human factor into consideration, will prevent workplace accidents especially in the existence of persistent risk after all controls. Since, according to Reason's study (1990) focusing on some major disasters states that human dominates all of the catastrophes but rather technical deficiency. The origin of this thought is based on that Herbert W. Heinrich identified the human behavior as a crutial part of the occupational safety in 1930s. Also, it was stated that most of workplace injuries were resulted from unsafe actions by workers. Reason (1993) defined human error as "all occasions in which a planned sequence of mental or physical activity fails to achieve its intended outcome". According to Reason, almost all negative incidents contain the combination active failure and latent conditions. Therefore, the necessitate of the change the working conditions of human was emphasized (Reason, 2000a). The following researches of the author were about the safety culture as the factor affecting the latent conditions, and mentioned the characteristics of an optimal safety culture (i.e. informed, reporting, flexible, learning culture) (Reason, 2000b). Clarke (1999) states that the fundamentals of safety performance is shaped by the attitude and behavior of the management. Furthermore, Neal, Griffin, and Hart (2000) stated that safety climate ought to take into consideration while studying workplace accidents.

The safety literature has many studies that are about the relationship between the safety climate and the safety behavior and workplace accident in different industrial areas such as manufacturing, mining, rail industries (e.g., (Huang et al., 2006, Clarke, 2010; Andrew, Neal and Griffin, 2006). Safety culture is knowledge that related to diverse organizational factors, which have great effect on effectiveness of behavioral

interventions(Wirth and Sigurdsson, 2008). Cooper and Phillips (2004) have also shown that the analysis of safety climate has usually been predictive effect on the safety performance. For example, the study focusing on the relationship between climate and behavior in the Chinese production industries acknowledged that management commitment to safety and safety communication and safety knowledge and training have a significant relationship with safety-related behaviors (Zhu, Fan, Fu, and Clissold, 2010). Another study in manufacturing has revealed that safety-related behaviors are strong mediators between safety climate and unintentional injuries (Liu et al., 2015). Morrow et al. (2010) have studied in the rail industry, and found that all aspects of safety climate (i.e. management safety, coworker safety, and work-safety tension) are associated with safety behavior. Moreover, the other study, which has been about the safety management practices, has stated that some of the safety management practices (i.e. workers' involvement in safety, safety promotion, safety training) are related to the safety performance directly and indirectly with some mediators (Vinodkumar and Bhasi, 2010). The findings of the study demonstrated that each dimension of safety climate played a significant influence on safety performance. Also, the study, performed in the manufacturing plant, has demonstrated that all dimensions of safety climate (Chief Executive Officers' (CEO) safety commitment and action, managers' safety commitment and action, employees' safety commitment and action, perceived risk, emergency response) have significant impacts on safety performance (Jusoh and Panatik, 2016).

1.5.1. Understanding the Relationship in the Concept of Healthcare

The relationship between culture and behaviors have also been attracted by researches in healthcare concepts. However, the major focus has been especially on the patient safety since low patient safety causes death and so costs much for healthcare institutions in especially high-income countries. But, work-related injury and illness experienced by healthcare workers influence both the workers, and accordingly patient safety. For instance, healthcare workers' compliance with safety instructions provide to enhance quality of patient safety. On the other hand, since they share

organizational culture, the dimensions of safety culture or climate are similar for patient and workers. Therefore, both patient safety and healthcare worker safety may come up together within the scope of safety in healthcare settings. In this sense, although, the data collection and analysis have been made for healthcare worker safety, the studies about patient safety are taken into consideration during the discussion of the findings in the present study. Some studies from the safety literature are exemplified here. Gershon et al. (2000) stated that safety climate in hospital environment is correlated not only workers' compliance to safety instructions but also reduction of workplace incidents. Also, their study emphasized that the perception of workers about administrations' support of strong safety climates influences workers' adoption of the safety related issues. Furthermore, Zadow, Dollard, Mclinton, Lawrence, and Tuckey (2017) have emphasized that safety climate is obviously related to self-report injuries. Startlingly, they did not find the effects of climate on registered injuries. There have been many studies focusing on patient safety that have revealed the direct or indirect relationship between climate, behaviors and accidents in healthcare settings (Hessels and Larson, 2016; Kim and Lee, 2019; Lin et al., 2017; Mark et al., 2007). The other studies have investigated the impact of the safety climate on the rate of injuries in healthcare settings (Smith et al., 2009). Thus, in the above literature, the study focused on the healthcare workers' perception of the worker safety culture in order to see culture's contribution to the prediction of safety related behaviors.

1.6. Objectives and Scope of the Study

Safety culture was investigated as a factor in shaping safety related behavior and stated as a critical determinant of the workplace safety. The present study will focus on human factors in workplaces in terms of perception of safety culture and compliance to safety related behaviors in the infectious and interior clinics of the hospitals.

In the light of these, the study has two main objectives; one is to develop a tool to determine the safety culture levels at infectious and internal disease clinics and the

other is to investigate the relationship between safety culture level and safety related behaviors.

The following questions were researched within the scope of the literature:

Does safety culture perception differentiate between groups (i.e. clinic types, hospital types, receiving training, getting injury, getting infection)?

Do safety related behaviours of healthcare workers differentiate between groups (i.e. clinic types, hospital types, receiving training, getting injury, getting infection)?

Does safety culture perception of healthcare workers in the clinics predict their safety related behaviours?

Does safety culture perception of healthcare workers in the clinics predict their occupational incidence?

Do safety related behaviours of healthcare workers in the clinics predict their occupational incidence?

CHAPTER 2

SUB-STUDIES

The safety culture is the combination of values, attitudes, perceptions within the organization. The culture extends to all parts of the organization, and hence influences workplace environment completely including performance, behaviour and accidents. Gershon et al. (2000) emphasize the influence of a safe environment on the compliance of individuals with safe behaviours and the improvement of positive perception of the safety within the working environment. The result of another study supports that the more positive safety culture an organization has, the better the healthcare workers have safety outcomes (Gershon et al., 2007).

In this sense, this study, which focuses on the occupational health and safety in the hospitals, has two sub-studies; development a matrix to measure safety culture that is called Healthcare Professionals Safety Culture Framework (HcPro-SCuF) and application of HcPro-ScuF and safety precautions questionnaire to professionals in order to investigate safety performance.

2.1. Study I: Development of Healthcare Professionals Safety Culture Framework (HcPro-SCuF)

2.1.1. Aim of Study

The culture dimensions of health and safety are dependent on the sectors, workplaces and even the departments in the workplace. Accordingly, the definition of the dimensions with respect to maturity level also differ from somewhere to somewhere. The aim of the study is to determine the safety culture dimensions and maturity level in infectious and internal diseases clinics and to develop an instrument to measure safety culture.

2.1.2. Method

2.1.2.1. Participants

Participants were chosen in accordance with voluntariness. The safety culture matrix was developed by in-depth and semi-structured interviews with 5 doctors and 5 nurses that had different tenure in infectious diseases clinic where totally 15 doctors and 10 nurses has worked. The average tenure of the doctors was 44 months (*SD* = 48.46) while the average tenure of the nurses was 86.8 months (*SD* = 87.79). The descriptive statistics were given in Table 2.1.

Table 2.1. Descriptive Statistics of the Participants

Job	Hospital Tenure (Months)	Group	Total
Doctor 1	130		
Doctor 2	30	*M* = 44	
Doctor 3	24	*SD* = 48.46	
Doctor 4	23		
Doctor 5	13		*M* = 65.4
Nurse 1	240		*SD* = 70.6
Nurse 2	80	*M* = 86.8	
Nurse 3	48	*SD* = 87.79	
Nurse 4	36		
Nurse 5	30		

2.1.2.2. Procedure

The study was based on the approach of The Manchester Patient Safety Framework (MaPSaF). As mentioned before, the framework and also its dimensions were about patient safety. Moreover, the dimensions were prepared for healthcare organizations in United Kingdom and were likely to be reflected in the countries' working practices. Therefore, the dimensions were determined for this study. The dimensions and related interview questions were based on AHRQ Hospital Survey Patient Safety (Sorra et al.,

2016), Manchester Patient Safety Framework – MaPSaF (Kirk et al., 2007), Safety Climate Scale (Gershon et al., 2000) and Flin et al.'s study (2006). After literature survey, 12 dimensions were determined. The specified dimensions were reviewed by one occupational physician and one safety expert and one professional in the field. In that stage, the dimension of *teamwork within units and across hospital units* were removed since some questions, which identify this dimension, are mutual with the other dimensions. Therefore, its questions were distributed to other dimensions and 11 dimensions were supposed to be more appropriate for this study. Table 2.2 listed the dimensions and the identifying questions of dimensions that the interview based on (see Appendix B for Turkish version). The questions were selected in order to give all aspects of the dimensions to the interviewee but not to convey the answers.

Table 2.2. Dimensions and Questions of HcPro-SCuF

Dimensions	Questions
Hospital management support for health provider safety (SC1)	How is the attitude of the hospital management to OHS? Is there any OHS policy? What are management's priorities? To OHS? Does the health investigation conduct before employment? Is compliance with legal requirements monitored? Are regular OHS targets set? Does risk assessment make and share with the employee? Are there teams working on OHS?
Approaches to promoting safety in clinic (SC2)	What is the response of senior staff to the OHS criteria? Are the ideas and suggestions of the staff on OHS taken into consideration by the professors/supervisors? Do professors/supervisors ignore the OHS criteria for the fast execution of the work when the workload is heavy? What is the attitude towards the repeated error/accident? Are the improvements originated from risk assessment?
Organizational learning, continuous improvement, commitment to safety (SC3)	Are studies carried out on the targets determined in order to make the working environment healthier and safer? Does the organization learn from mistakes or cover them? When an OHS-related change is made, is its efficiency assessed? Does the management periodically check and review the achievement of the target?

Table 2.2. Dimensions and Questions of HcPro-SCuF (continued)

Dimensions	Questions
Communication transparency (SC4)	To what extent does staff share their ideas when they notice a situation that threatens a healthy and safe work environment? Is their idea taken or included in the issue when making OHS decisions? Is there a documentation system / database on OHS? Are there difficulties in accessing?
Reporting of errors/accidents and response to error/accidents (SC5)	Are errors/accidents notified to the relevant units? Is there a unit dealing with notification? How long will it be notified? Is there a reporting system? Are records checked? How do staff behave when they make mistakes? Do staff hide errors/accidents for fear of being used against them? Or if there is a problem, do staff report the error / accident, knowing that a solution will be found?
Investigation of error/accident and feedback mechanism (SC6)	Are the causes of the error/accident investigated? During investigation, is the focal point the event or the person? Is a precaution taken to prevent error/accident repetition? How is the change/improvement made to staff notified? When the change/improvement is made, do the staff give feedback? Does the approach be systematic with root analysis, especially when detecting human error and providing improvements?
Employment and competency (SC7)	Is the number of staff sufficient to overcome the workload? Are the personnel professionally compatible with the task? Is there positive/negative effects of the working hours on a healthy and safe working condition? In crisis mode, do the staff work too much and quickly? What is given priority - to work or safety? Are duties, authorities and responsibilities defined on the basis of safety? Do people know this? Are there obstacles in practice?
Health and safety training (SC8)	Is there a training program? How, why, when are the staff trained on OHS? What do staff think about these trainings?
Excessive workload and stress recognition (SC9)	Does the workload prevent a healthy and safe working environment? Is there a mechanism that controls the intensity of work? Does the workload and its stress affect staff health? Is a detection or improvement mechanism available?
Personal protective equipment (SC10)	Is PPE appropriate to the risk factor exposed? Does staff use it when necessary? What is the attitude of inappropriate or uncomfortable PPE use?
Approach to emerging risks and controlling healthcare associated infections (SC11)	What kind of precautions are taken when unusual infection risks/incidents are encountered? OHS Trainings? PPE suitable for the nature of risk? Is it known which emergency situations can be encountered ? And how? Are there emergency teams?

The study was implemented in infectious and internal diseases clinics at education and research hospitals and university hospitals. The reason of the clinic selection, the tasks of the clinics are similar therefore same safety matrix could be used. Accordingly, the structure of the hospitals was taken into consideration in the selection of hospital types. Both hospital types are categorized into tertiary healthcare organizations.

In-depth and semi-structured interviews were carried out in order to tailor safety culture matrix. The interview questions were prepared based on safety culture dimensions. The questions designated to cover all items within dimensions but not to convey the answers. The interviews were conducted in infectious disease clinic because the clinics was considered as more comprehensive with respect to tasks and risks. At the beginning of interviews, purpose of research and how to conduct the interview were explained. The one-to-one interviews, which carried out by the researcher, lasted approximately 60-90 minutes. The interviews were recorded and deciphered by the researcher. First, two separate matrices were constituted for each group, doctors and nurses. Generally, interviewees of both groups depicted similar description in relation to different levels of culture and the matrices were realized to be very similar. At the end of discussion with one doctor and one nurse, who were also in the participants for interview, and one occupational physician, the matrices were determined to combine. Therefore, two matrices were merged and Healthcare Professionals Safety Culture Matrix (HcPro-SCuF) was composed (Appendix E).

2.2. Study II: Application of HcPro-SCuF, Safety Precautions Questionnaire (SPQ) and Demographic Information Form to Professionals

2.2.1. Aim of Study

The study was implemented for two main objectives; one is to determine the safety culture levels at infectious and internal disease clinics and the other is to investigate the relationship between safety culture level and safety related behaviors. In this sense, the perception of safety culture was investigated and compared according to five groups (i.e. clinic types, hospital types, receiving training, getting injury, getting

infection). The difference between the groups was researched with respect two safety-related behaviours. Also, it was investigated if the perception of safety culture predicts the safety-related behaviours and occupational incidence. Lastly, the relationship between safety-related behaviours and occupational incidence was researched.

2.2.2. Method

2.2.2.1. Participants

The questionnaires were applied to 151 health care professionals who worked in infectious or interior disease clinics and were participated as anonymously. The data was collected from totally 6 hospital; 2 education and research hospitals and 4 university hospitals. Some responses of participants were not used for analysis because they have student nurses and did not have inadequate experience to determine the maturity level of safety culture (N = 140). The ages of the participants ranged between 16 and 52 with a mean age of 29.9 years. The participants were doctors or nurses; percent of doctors were 80.9 % whereas nurses had 19.1 % of whole participants. The study was performed mainly in two clinics; internal and infectious diseases, and the percent of participants were 57.1 and 33.6, respectively.

2.2.2.2. Measures

2.2.2.2.1. Demographic Information Form

The form contains multiple choice and open-ended questions by which participants' educational background, work-related information, work experience, occupational incidence details were collected (Appendix D).

2.2.2.2.2. Healthcare Professionals Safety Culture Framework

The matrix, which was developed in Study 1, was used to analyze the clinics' level of development with respect to the value that they place on staff safety. The matrix contains eleven dimensions of staff safety and for each of these describes what the clinic would look like at five safety maturity levels, which are pathological, reactive, bureaucratic, proactive, generative. Therefore, a long questionnaire has been occurred,

by means of which, participants were asked to select the level closest to the clinic he/she worked in (Appendix E).

2.2.2.2.3. Safety Precautions Questionnaire

The Safety Precautions Questionnaire was prepared using the checklist of Standard Safety Precautions. The checklist with 24 items was developed by Haktanır (2011). Because the study was performed in infectious and internal disease clinics instead of whole hospital, compatibility of the checklist was checked by one doctor and one nurse from the infectious disease clinic and one occupational physician, one by one. Therefore, a revision of the questionnaire was determined to collect more specific data related to the things of the chosen clinics. The revision was performed in the light of near-misses and work accidents. Due to the lack of reporting system for near-misses or accidents, experience was taken into consideration by the means of face to face interviews. With their suggestions in the light of the near-misses and work accidents, the last twelve items were added to the questionnaire. Finally, questionnaire has 36 items with 5 – Likert type scale (Appendix F). The item score differs from 1 (never) to 5 (always) and not applicable choice for the situations that are not applicable to the tasks performed by participants.

The safety precautions behaviours were decomposed into four factors. The first factor, *measures for contamination and compliance with the instructions*, (α = .916) including 13 items. The second factor, *measures for contamination by inhalation and body fluid*, (α = .905) including 10 items. The third factor, *special bins for contamination and careful usage of sharp materials*, (α = .755) including 6 items. The forth factor, *usage of personal protective equipment for body fluid splash*, (α = .802) including 6 items. One item was removed from the forth factor because the *Cronbach Alfa* value is .636 with this item. Therefore, the last version of the scale with 35 items has been more reliable. In the scale, participants responded to items on a six-point scale (1 = never to 5 = always and not applicable). Higher scores represent higher frequency of the behavior related to that factor.

2.2.2.3. Procedure

The ethical approval from Middle East Technical University Ethical Committee was obtained before collecting data. Moreover, second ethical approval from Republic of Turkey Ministry of Health was obtained for the hospitals where the triple questionnaire package was distributed by researcher herself. The package was also entered into Qualtrics and then it was distributed by electronic mail. While majority of participants (N = 96) filled out the package by hand, the rest of participants (N = 55) filled out the package on Qualtrics.

In order to analyze the collected data, factor analysis was employed to seek the commonalities between the items in the SPQ; correlation analysis was carried out to investigate the mutual relationship within and between culture dimensions and safety-related behaviors factors; analysis of variance (ANOVA) was used to determine whether there are any statistically significant differences between the means of personal information, culture and behaviours; regression analysis was applied to detect the associations between personal information, culture and behaviors.

CHAPTER 3

RESULTS

3.1. Descriptive Analyses

The ages of the participants ranged between 16 and 52 with a mean age of 29.9 years. Because the assistant doctors constituted the majority of participants, the group of 26 and 35-year old participations were the largest range, 69.5%. Less than 3% of the workers were older than 45 years old (Table 3.1).

Table 3.1. Descriptive Statistics of Age Groups

Age Group	Frequency	%
16-25	26	17.2
26-35	105	69.5
36-45	16	10.6
46-52	4	2.6

The majority of the participants were female (71.4%) and the percent of the male participant was 28.6%. Participants from two different types of hospital were involved in the study. The 61.4 percent of participants worked at the education and research hospital while the percent of participants from university hospital was 38.6%.

The majority of the participants were doctors with different positions. The percent of the assistant doctor participants were 65.7 whereas the specialist doctors had 28.6% of whole participants. Nurses constitute 5.7% of the participants without student nurses which was not taken into consideration during analysis.

The study was performed mainly in both internal and infectious diseases clinics, and the percent of participants were 57.1 and 33.6, respectively. Also, small number of participants were from other clinics, 9.3% of whole participants.

The majority of participants were graduated from undergraduate program, 73.7%. The percent of high school graduate was 5.7%, the percent of participant with associate degree was 2.9% and the remaining participants, 17.9%, completed their specialty training (Table 3.2).

Table 3.2. Descriptive Statistics of Education Levels

Level	Frequency	%
High School	19	12.6
Associate's Degree	4	2.6
Undergraduate	103	68.2
Speciality	25	16.6

The mean working experience was around 5.8 years with a maximum of 30 years. Since majority of participants were young, only 26.8 % of the workers had a working experience in whole life more than 5 years. On the other hand, the mean working experience in this clinic was around 3.5 years with a maximum of 23 years. The 10.7% of the whole participants had a working experience in this clinic more than 5 years (Table 3.3).

Table 3.3. Descriptive Statistics of Experience

Experience	Frequency	%
0-5 years	110	73.8
5-10 years	19	12.8
10-15 years	5	3.4
15-20 years	7	4.7
20-25 years	4	2.7
25-30 years	2	1.3
missing	2	1.3

The percent of participants receiving safety precautions training in infectious disease clinics is higher than in the interior disease clinics. While 82.9 % of the participants had received training in first clinic, the interior disease clinics has only 30.8 % of the participants receiving.

3.2. Factor Analysis

3.2.1. Factor Analysis on Safety Behavior Questionnaire

A factor analysis on the 36 items of Safety Behavior Questionnaire was conducted by using principal component analysis. The scores for the items were from 1 (never) to 5 (always) while "u.d" term in the scores, which represented "not applicable", was coded missing in the analysis. Principal components analysis with the rotation of promax with Kaiser Normalization was performed through SPSS 25.0 to see underlying factor structure by virtue of assumption that the items would correlate with each other. The *Kaiser-Meyer-Olkin Measure of Sampling Adequacy* was found as .841 and *Bartlett's Test of Sphericity* was found to be significant (df = 630, p = .000) showing that the correlation matrix from the items of the scale is factorable. According to the theoretical framework of questionnaire and principal components analysis, four factors solution was decided as the best factor structure, and these four factors explained 60.14% of the total variance. Cronbach alpha (α) reliability analysis was applied in order to test the reliability of the questionnaire.

The first factor (α = .916) including 13 items, which could be named as "*Measures for contamination and compliance with the instructions*", explained 41.30% share of total variance. The communalities of these items were between .759 and .365; the initial eigenvalue of the factor was 14.87.

The second factor (α = .905) including 10 items, which could be named as "*Measures for contamination by inhalation and body fluid*", explained 9.36% share of total variance. The communalities of these items were between .710 and .479; the initial eigenvalue of the factor was 3.37.

The third factor (α = .755) including 6 items, which could be named as "*Special bins for contamination and careful usage of sharp materials*", explained 5.26% share of total variance. The communalities of these items were between .635 and .485; the initial eigenvalue of the factor was 1.89.

The forth factor (α = .802) including 6 items, which could be named as "*Usage of personal protective equipment for body fluid splash*", explained 4.22% share of total variance. One item with the number of 26 was removed from this factor. The Cronbach Alfa value increased by .166 (from .636 to .802) when the item was ignored. The communalities of these items were between .697 and .512; the initial eigenvalue of the factor was 1.52.

Total variance explained by four factors was found as 60.14%. The factor loadings of the items for corresponding factors and their communality values are shown in Table 3.4.

Table 3.4. Factor Loadings and the Communality Values of the Items of the Safety Behavior Questionnaire with Promax Rotation

#	*Precaution Items*	*Component*				*Communality*
		Factor 1	*Factor 2*	*Factor 3*	*Factor 4*	
15	Not to eat or drink while working in an area where there is a possibility of becoming contaminated with blood and body fluids.	**.892**				.759
21	To cover my broken skin before starting to the task	**.854**				.695
34	To check the classification of the patient safety before treatment to the patient (such as yellow leaf, green clover)	**.845**				.733
33	To wear double glove when necessary	**.756**				.484
35	To follow safe shipping procedure for body fluids	**.699**				.737
25	To follow the order of putting on and taking off for personal protective equipment	**.651**				.666

Table 3.4. Factor Loadings and the Communality Values of the Items of the Safety Behavior Questionnaire with Promax Rotation (continued)

#	Precaution Items	Component				Communality
		Factor 1	Factor 2	Factor 3	Factor 4	
32	To wear a clean non-sterile gown in addition to the glove in case of blood, urine / fecal incontinence, open drainage or wound	**.598**				.606
19	To wear gloves while drawing a patient's blood	**.571**	-.409	.396		.426
23	To wash my hands with water and soap after each process in appropriate way	**.536**		.324		.552
22	To wash my hands with water and soap before each process in appropriate way	**.513**				.664
36	To report the case if it is contamination	**.502**				.581
24	To behave in accordance with the principles of the infection control program in the hospital	**.420**				.665
20	To treat all materials that have been in contact with patient's saliva as contaminated	**.402**		.333		.365
18	Not to remove the needle that has been used to draw blood from injector by hand		**.820**			.479
28	To take special precautions if airway precautions is necessary		**.742**			.615
30	To check my immunity against infectious diseases that can be prevented by vaccination with blood tests		**.740**			.517
29	To use N95 respirator to approach these patients (I am not immune to measles and chickenpox)		**.715**			.601
31	To use N95 respirator for the diagnosis or suspicion of pulmonary and laryngeal tuberculosis		**.713**			.675
27	During intubation and aspiration, use a mask suitable for the diagnosis of the disease (surgical mask or N95)		**.658**			.710
8	To wear safety glasses when there is a possibility of splashing or contamination of the eye		**.564**			.689
17	Not to recap the needles contaminated with blood		**.540**		.406	.515

Table 3.4. Factor Loadings and the Communality Values of the Items of the Safety Behavior Questionnaire with Promax Rotation (continued)

#	*Precaution Items*	*Component*				*Communality*
		Factor 1	*Factor 2*	*Factor 3*	*Factor 4*	
14	To ensure that all spilled blood and other body fluids are immediately removed in accordance with the procedure	.375	**.534**			.700
11	To use a bone if there is a possibility of blood or other body fluids splashing on the hair and scalp		**.481**		.491	.692
12	To dispose of all possibly contaminated medical supplies into the medical/infected waste bin			**.811**		.597
1	To dispose of sharp objects into a sharps container	-.303		**.774**		.585
13	To dispose of everything contaminated with blood into suitable pre-determined waste bins		.493	**.679**		.584
16	To be careful when using cutting, piercing or pricking tools	.343		**.663**		.635
7	To wear disposable gloves if exposed to blood and other body fluids			**.614**		.551
5	To wash hands after removing disposable gloves			**.588**		.485
2	To protect yourself from blood and body fluids of all patients, regardless of diagnosis			.485	**.656**	.651
26	To use personal protective equipment for face and body measurements				.582	.257
3	To comply with all Standard Safety Precautions for all patients, regardless of diagnosis			.444	**.543**	.697
9	To use protective shield if there is a possibility of splashing blood or other body fluids on the face		.482		**.506**	.662
6	To wear protective clothing if blood and body fluids are likely to splash and contamination		.444		**.506**	.677

Note. Factor loadings < .3 are suppressed. First factor = *Measures for contamination and compliance with the instructions*, Second factor = *Measures for contamination by inhalation and body fluid*, Third factor = *Special bins for contamination and careful usage of sharp materials*, Forth factor = *Usage of personal protective equipment for body fluid splash.*

3.3. Correlation Analysis

In order to detect the correlation between variables, bivariate correlations were computed (Table 3.5). Hospital type (0 = Education and research, 1= University) was negatively correlated with three factors of safety related behavior; *measures for contamination and compliance with the instructions* (r = -.282, p = .001), *measures for contamination by inhalation and body fluid* (r = -.239, p = .004), *usage of personal protective equipment for body fluid splash* (r = -.187, p = .027). Furthermore, hospital type was negatively correlated with four dimensions of safety culture; *hospital management support for health provider safety* (r = -.289, p = .001), *approaches promoting safety in units* (r = -.274, p = .001), *personal protective equipment* (r = -.309, p < .001), *approach to emerging risks and preventing and controlling healthcare associated infections* (r = -.216, p = .012).

Job (0 = Doctor, 1 = Nurse) was found to be positively correlated with all factors of the safety related behaviors; *measures for contamination and compliance with the instructions* (r = .446, p < .001), *measures for contamination by inhalation and body fluid* (r = .279, p = .001), *special bins for contamination and careful usage of sharp materials* (r = .278, p = .001), *usage of personal protective equipment for body fluid splash* (r = .280, p = .001). Moreover, job was also positively correlated with nine dimensions of the safety culture; *hospital management support for health provider safety* (r = .288, p = .001), *approaches promoting safety in units* (r = .384, p < .001), *organizational learning, continuous improvement and commitment to safety* (r = .251, p = .003), *communication transparency* (r = .174, p = .044), *employment and competency* (r = .201, p = .020), *staff education and training about safety issues* (r = .175, p = .043), *excessive workload and stress recognition* (r = .293, p = .001), *personal protective equipment* (r = .249, p = .004), *approach to emerging risks and preventing and controlling healthcare associated infections*(r = .180, p = .037).

The factors of safety related behaviors were found to be positively correlated to each other and dimensions of safety culture. The first factor of *measures for contamination*

and compliance with the instructions was positively correlated with *measures for contamination by inhalation and body fluid* (r = .729, p < .001), *special bins for contamination and careful usage of sharp materials* (r = .506, p < .001), *usage of personal protective equipment for body fluid splash* (r = .693, p < .001).

The first factor was also positively correlated with ten dimensions of the safety culture; *hospital management support for health provider safety* (r = .256, p = .003), *approaches promoting safety in units* (r = .275, p = .001), *organizational learning, continuous improvement and commitment to safety* (r = .258, p = .003), *communication transparency* (r = .229, p = .008), *investigation of error/accident and feedback mechanism* (r = .176, p = .042), *employment and competency* (r = .240, p = .005), *staff education and training about safety issues* (r = .209, p = .015), *excessive workload and stress recognition* (r = .253, p = .003), *personal protective equipment* (r = .296, p = .001), *approach to emerging risks and preventing and controlling healthcare associated infections*(r = .360, p < .001).

Also, the second factor of *measures for contamination by inhalation and body fluid* has positive correlation with other factors and some dimensions; *special bins for contamination and careful usage of sharp materials* (r = .408, p < .001), *usage of personal protective equipment for body fluid splash* (r = .766, p < .001); also positively correlated with ten dimensions of the safety culture; *hospital management support for health provider safety* (r = .182, p = .035), *communication transparency* (r = .200, p = .021), *staff education and training about safety issues* (r = .178, p = .040), *excessive workload and stress recognition* (r = .187, p = .031), *personal protective equipment* (r = .235, p = .006), *approach to emerging risks and preventing and controlling healthcare associated infections*(r = .309, p < .001). The third factor of *special bins for contamination and careful usage of sharp materials* was positively correlated with *usage of personal protective equipment for body fluid splash* (r = .468, p < .001); also positively correlated with just two dimensions of the safety culture; *excessive workload and stress recognition* (r = .183, p = .034), *approach to emerging risks and preventing and controlling healthcare associated infections* (r = .215, p < .013).

Besides, forth factor of *usage of personal protective equipment for body fluid splash* was found positively correlated with all dimensions except *reporting of errors/accidents and response to error/accidents*; *hospital management support for health provider safety* (r = .238, p = .006), *approaches promoting safety in units* (r = .213, p = .013), *organizational learning, continuous improvement and commitment to safety* (r = .190, p = .028), *communication transparency* (r = .253, p = .003), *investigation of error/accident and feedback mechanism* (r = .194, p = .025), *employment and competency* (r = .259, p = .003), *staff education and training about safety issues* (r = .236, p = .006), *excessive workload and stress recognition* (r = .272, p = .002), *personal protective equipment* (r = .293, p = .001), *approach to emerging risks and preventing and controlling healthcare associated infections*(r = .330, p < .001).

The dimensions of safety culture were found to be positively correlated to almost each other. All of the correlations were found statistically significant (p < .001). In particular the first three dimensions; *hospital management support for health provider safety*, *approaches promoting safety in units*, and *organizational learning, continuous improvement, commitment to safety*, are highly correlated to each other. Moreover, *excessive workload and stress recognition* and *personal protective equipment* are found to be highly correlated to other dimensions.

Table 3.5. Correlations between Variables in the Present Study

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1 Hospital	1																
2 Job	-.350**	1															
3 Factor 1	-.282**	.446**	1														
4 Factor 2	-.239**	.279**	.729**	1													
5 Factor 3	-.115**	.278**	.506**	.408**	1												
6 Factor 4	-.187**	.280**	.693**	.766**	.468**	1											
7 SC1	-.289**	.288**	.256**	.182**	.159	.238**	1										
8 SC2	-.274**	.384**	.275**	.147	.163	.213*	.651**	1									
9 SC3	-.020	.251**	.258**	.088	.089	.190*	.597**	.724**	1								
10 SC4	-.078	.174*	.229**	.200*	.085	.253**	.476**	.656**	.744**	1							
11 SC5	.065	.148	.137	.109	.124	.111	.370**	.508**	.650**	.592**	1						
12 SC6	.161	.059	.176*	.140	.053	.194*	.359**	.456**	.677**	.638**	.685**	1					
13 SC7	.041	.201*	.240**	.132	.146	.259**	.465**	.593**	.749**	.660**	.710**	.698**	1				
14 SC8	-.133	.175*	.209**	.178*	.105	.236**	.455**	.586**	.646**	.561**	.457**	.550**	.588**	1			
15 SC9	-.161	.293**	.253**	.187*	.183*	.272**	.519**	.606**	.643**	.591**	.447**	.538**	.701**	.748**	1		
16 SC10	-.309**	.249**	.296**	.235**	.168	.293**	.516**	.576**	.610**	.604**	.457**	.479**	.580**	.604**	.617**	1	
17 SC11	-.216**	.180*	.360**	.309**	.215*	.330**	.544**	.542**	.668**	.666**	.446**	.588**	.586**	.693**	.730**	.763**	1

SC1: Hospital management support for health provider safety, SC2: Approaches promoting safety in units, SC3: Organizational learning, continuous improvement, commitment to safety, SC4: Communication transparency, SC5: Reporting of errors/accidents and response to error/accidents, SC6: Investigation of error/accident and feedback mechanism, SC7: Employment and competency, SC8: Staff education and training about safety issues, SC9: Excessive workload and stress recognition, SC10: Personal protective equipment, SC11: Approach to emerging risks and preventing and controlling healthcare associated infections. Factor 1: Measures for contamination and compliance with the instructions, Factor 2: Measures for contamination by inhalation and body fluid, Factor 3: Special bins for contamination and careful usage of sharp materials, Factor 4: Usage of personal protective equipment for body fluid splash. **Note I:** Hospital type and job were dummy coded as Hospital type: 0: Education and research, 1: University, Job: 0: Doctor, 1: Nurse. **Note II**: * Correlation is significant at the 0.05 level (2-tailed) ** Correlation is significant at the 0.01 level (2-tailed).

3.4. Cultural and Behavioural Differences

3.4.1. Relationship between Hospital Type and Safety Culture

In order to compare the maturity of safety culture dimensions between two different hospital types, education and research hospital and university hospital, 11 analysis of variance were conducted (Table 3.6).

Education and research hospitals were evaluated significantly higher than university hospitals in terms of four dimensions; *hospital management support for health provider safety, approaches promoting safety in units, personal protective equipment and approach to emerging risks and preventing and controlling healthcare associated infections dimensions*. On the other hand, the hospitals were not significantly different from each other in terms of the other dimensions; *organizational learning, continuous improvement, commitment to safety, communication transparency, reporting of errors/accidents and response to error/accidents, investigation of error/accident and feedback mechanism, employment and competency, staff education and training about safety issues, excessive workload and stress recognition*.

Table 3.6. Descriptive of Safety Culture Dimensions Based on Hospital Type

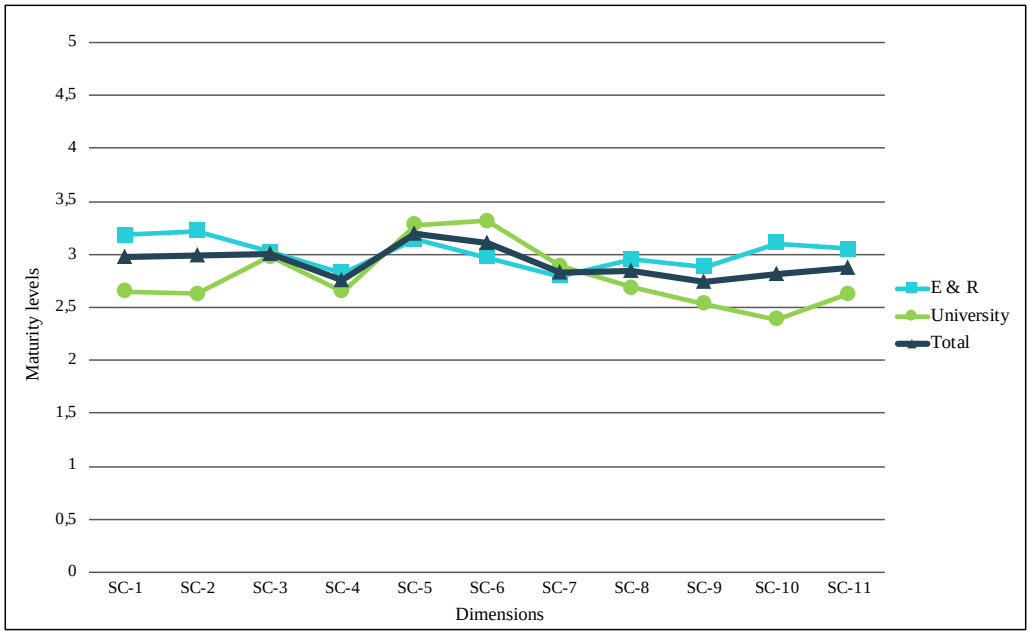
Dimensions	Hospital Types	*N*	*M*	*SD*	*df*s	*F*	*p*	ηp^2
Hospital management support for health provider safety (SC1)	Education & Research	81	3.18	.90				
	University	54	2.65	.85	1, 133	12.12	.001	.08
	Total	135	2.97	.91				
Approaches to promoting safety in clinic (SC2)	Education & Research	81	3.22	1.02				
	University	54	2.63	1.03	1, 133	10.76	.001	.08
	Total	135	2.98	1.06				
Organizational learning, continuous improvement, commitment to safety (SC3)	Education & Research	81	3.02	1.02				
	University	54	2.98	1.11	1, 133	.05	.817	.00
	Total	135	3.01	1.05				
Communication transparency (SC4)	Education & Research	80	2.82	1.06				
	University	54	2.65	1.22	1, 132	.802	.372	.01
	Total	134	2.75	1.12				
Reporting of errors/accidents and response to error/accidents (SC5)	Education & Research	80	3.14	0.99				
	University	54	3.28	1.16	1, 132	.56	.454	.00
	Total	134	3.19	1.06				
Investigation of error/accident and feedback mechanism (SC6)	Education & Research	80	2.96	1.04				
	University	54	3.31	1.01	1, 132	3.52	.063	.03
	Total	134	3.12	1.04				

Table 3.6. Descriptive of Safety Culture Dimensions Based on Hospital Type (continued)

Dimensions	Hospital Types	*N*	*M*	*SD*	*df*s	*F*	*p*	ηp^2
Employment and competency (SC7)	Education & Research	80	2.80	1.04	1, 132	.22	.637	.00
	University	54	2.89	1.11				
	Total	134	2.84	1.06				
Health and safety training (SC8)	Education & Research	80	2.95	1.02	1, 132	2.38	.125	.02
	University	54	2.68	.91				
	Total	134	2.84	.98				
Excessive workload and stress recognition (SC9)	Education & Research	80	2.89	1.04	1, 132	3.50	.064	.03
	University	54	2.54	1.09				
	Total	134	2.75	1.07				
Personal protective equipment (SC10)	Education & Research	80	3.10	1.04	1, 132	13.97	.000	.10
	University	54	2.39	1.14				
	Total	134	2.81	1.13				
Approach to emerging risks and controlling healthcare associated infections (SC11)	Education & Research	80	3.05	.90	1, 132	6.46	.012	.05
	University	54	2.63	1.00				
	Total	134	2.88	.96				

The relationship between the means of safety culture dimension levels and hospital types is presented in the Figure 3.1. The maturity levels of *hospital management support for health provider safety*, *approaches promoting safety in units*, and *personal protective equipment*, and *approach to emerging risks and preventing and controlling healthcare associated infections dimensions* in university hospitals are better than education and research hospitals.

Figure 3.1. Comparison of Hospital Types by Safety Culture Maturity



The overall trend of the graph shows the safety culture is lying around bureaucratic level for both hospital types. While education and research hospitals are more consistent for all dimensions, university hospitals come close to almost reactive level at the dimension of *personal protective equipment*. On the other hand, it is rather above the border of the bureaucratic level at the dimension of *investigation of error/accident and feedback mechanism*. When the both hospital types are taken into consideration together, the hospitals in this study are said to be at the bureaucratic level in term of safety culture.

3.4.2. Relationship between Clinic Type and Safety Culture

In order to compare the maturity of safety culture dimensions between two different clinic types, infectious diseases and internal diseases clinics, 11 analysis of variance were conducted (Table 3.7).

Safety culture level of infectious diseases clinic was evaluated significantly higher in terms of *personal protective equipment dimension*. On the other hand, infectious diseases clinics and internal diseases clinics were not significantly different in terms of other dimensions; *hospital management support for health provider safety, approaches promoting safety in units, organizational learning, continuous improvement, commitment to safety, communication transparency, reporting of errors/accidents and response to error/accidents, investigation of error/accident and feedback mechanism, employment and competency, staff education and training about safety issues, excessive workload and stress recognition, approach to emerging risks and preventing and controlling healthcare associated infections*.

Table 3.7. Descriptive of Safety Culture Dimensions Based on Clinic Type

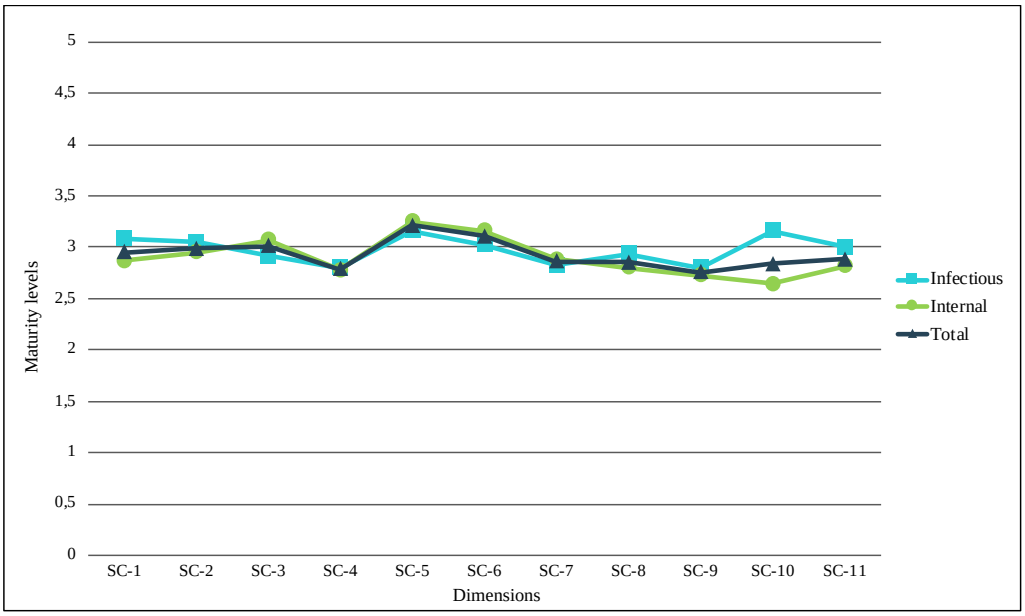
Dimensions	Clinic Types	*N*	*M*	*SD*	*df*s	*F*	*p*	ηp^2
Hospital management support for health provider safety (SC1)	Infectious diseases	46	3.09	.81	1, 120	1.67	.199	.01
	Internal diseases	76	2.87	.96				
	Total	122	2.95	.91				
Approaches to promoting safety in clinic (SC2)	Infectious diseases	46	3.04	.99	1, 120	.231	.632	.00
	Internal diseases	76	2.95	1.12				
	Total	122	2.98	1.07				
Organizational learning, continuous improvement, commitment to safety (SC3)	Infectious diseases	46	2.91	.98	1, 120	.606	.438	.00
	Internal diseases	76	3.06	1.09				
	Total	122	3.01	1.05				
Communication transparency (SC4)	Infectious diseases	45	2.80	1.04	1, 119	.013	.911	.00
	Internal diseases	76	2.78	1.17				
	Total	121	2.78	1.12				
Reporting of errors/accidents and response to error/accidents (SC5)	Infectious diseases	45	3.16	1.06	1, 119	.227	.635	.00
	Internal diseases	76	3.25	1.05				
	Total	121	3.21	1.05				
Investigation of error/accident and feedback mechanism (SC6)	Infectious diseases	45	3.02	1.20	1, 119	.472	.493	.00
	Internal diseases	76	3.16	.95				
	Total	121	3.11	1.05				

Table 3.7. *Descriptive of Safety Culture Dimensions Based on Clinic Type (continued)*

Dimensions	Clinic Types	*N*	*M*	*SD*	*df*s	*F*	*p*	ηp^2
Employment and competency (SC7)	Infectious diseases	45	2.82	1.11	1, 119	.088	.767	.00
	Internal diseases	76	2.88	1.03				
	Total	121	2.86	1.06				
Health and safety training (SC8)	Infectious diseases	45	2.93	1.07	1, 119	.518	.473	.00
	Internal diseases	76	2.80	.89				
	Total	121	2.85	.96				
Excessive workload and stress recognition (SC9)	Infectious diseases	45	2.80	1.01	1, 119	.150	.699	.00
	Internal diseases	76	2.72	1.06				
	Total	121	2.75	1.04				
Personal protective equipment (SC10)	Infectious diseases	45	3.16	1.15	1, 119	6.04	.015	.05
	Internal diseases	76	2.64	1.08				
	Total	121	2.83	1.13				
Approach to emerging risks and controlling healthcare associated infections (SC11)	Infectious diseases	45	3.00	.93	1, 119	1.04	.309	.01
	Internal diseases	76	2.82	.98				
	Total	121	2.88	.96				

The relationship between the clinics in terms of the means of safety culture dimension levels is presented in the Figure 3.2. The maturity levels look similar for both infectious disease and internal disease clinics for all dimensions but only personal protective equipment dimension is shown better in infectious diseases clinic.

Figure 3.2. Comparison of Clinic Types by Safety Culture Maturity



The overall trend of the graph shows the safety culture is lying around bureaucratic level for both clinic types. It can be said that the infectious and internal clinics in this study are said to be at the bureaucratic level in term of safety culture.

3.4.3. Relationship between Safety Precautions Training and Safety Culture

In order to compare the maturity of safety culture dimensions between the participants who receive safety precautions training and the participants who did not receive, 11 analysis of variance were conducted (Table 3.8).

Safety culture perception of participants receiving safety precautions training was evaluated significantly higher in terms of *hospital management support for health provider safety, approaches promoting safety in units, staff education and training about safety issues, excessive workload and stress recognition, personal protective*

equipment dimension, approach to emerging risks and preventing and controlling healthcare associated infections. On the other hand, the perception of participants receiving training were not significantly different from each other in terms of other dimensions; *organizational learning, continuous improvement, commitment to safety, communication transparency, reporting of errors/accidents and response to error/accidents, investigation of error/accident and feedback mechanism, employment and competency*.

Table 3.8. Descriptive of Safety Culture Dimensions Based on Training

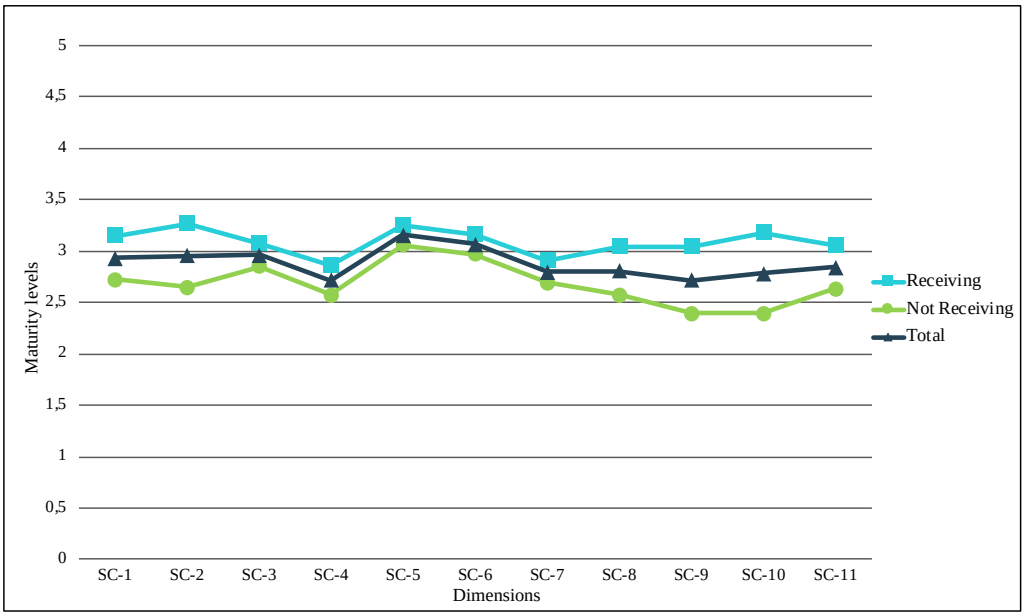
Dimensions	Training	*N*	*M*	*SD*	*df*s	*F*	*p*	ηp^2
Hospital management support for health provider safety (SC1)	Not Receiving	66	2.80	.84	1, 131	4.88	.029	.04
	Receiving	67	3.15	.96				
	Total	133	2.98	.92				
Approaches to promoting safety in clinic (SC2)	Not Receiving	66	2.73	.97	1, 131	9.10	.003	.06
	Receiving	67	3.27	1.10				
	Total	133	3.00	1.07				
Organizational learning, continuous improvement, commitment to safety (SC3)	Not Receiving	66	2.94	1.04	1, 131	.54	.465	.00
	Receiving	67	3.07	1.09				
	Total	133	3.01	1.06				
Communication transparency (SC4)	Not Receiving	66	2.65	1.03	1, 130	1.17	.281	.01
	Receiving	66	2.86	1.21				
	Total	132	2.76	1.13				
Reporting of errors/accidents and response to error/accidents (SC5)	Not Receiving	66	3.15	1.00	1, 130	.328	.568	.00
	Receiving	66	3.26	1.13				
	Total	132	3.20	1.06				
Investigation of error/accident and feedback mechanism (SC6)	Not Receiving	66	3.06	.87	1, 130	.338	.562	.00
	Receiving	66	3.17	1.20				
	Total	132	3.11	1.04				

Table 3.8. *Descriptive of Safety Culture Dimensions Based on Training (continued)*

Dimensions	Training	*N*	*M*	*SD*	*dfs*	*F*	*p*	ηp^2
Employment and competency (SC7)	Not Receiving	66	2.77	1.00	1, 130	.535	.466	.00
	Receiving	66	2.91	1.13				
	Total	132	2.84	1.07				
Health and safety training (SC8)	Not Receiving	66	2.65	.87	1, 130	5.46	.021	.04
	Receiving	66	3.04	1.06				
	Total	132	2.85	.98				
Excessive workload and stress recognition (SC9)	Not Receiving	66	2.47	.98	1, 130	10.21	.002	.07
	Receiving	66	3.04	1.09				
	Total	132	2.76	1.07				
Personal protective equipment (SC10)	Not Receiving	66	2.47	1.03	1, 130	14.29		.10
	Receiving	66	3.18	1.14				
	Total	132	2.82	1.14				
Approach to emerging risks and controlling healthcare associated infections (SC11)	Not Receiving	66	2.71	.91	1, 130	4.44	.037	.03
	Receiving	66	3.06	.99				
	Total	132	2.88	.96				

The relationship between the means of safety culture dimension levels and training is presented in the Figure 3.3. The maturity level means of participants for six dimensions are evaluated to be highly affected from the training.

Figure 3.3. Comparison of Safety Culture Maturity by Training



3.4.4. Relationship between Injury Incidents and Safety Culture

In order to compare the maturity of safety culture dimensions between participants without any injury and participants with at least one injury, 11 analysis of variance were conducted (Table 3.9).

Safety culture perception of participants with injury was evaluated significantly higher only in terms of *hospital management support for health provider safety*. On the other hand, safety culture perception of participants without injury and participants with at least one injury were not significantly different in terms of other dimensions; *approaches promoting safety in units, organizational learning, continuous improvement, commitment to safety, communication transparency, reporting of*

errors/accidents and response to error/accidents, investigation of error/accident and feedback mechanism, employment and competency, staff education and training about safety issues, excessive workload and stress recognition, personal protective equipment, approach to emerging risks and preventing and controlling healthcare associated infections.

Table 3.9. Descriptive of Safety Culture Dimensions Based on Injury

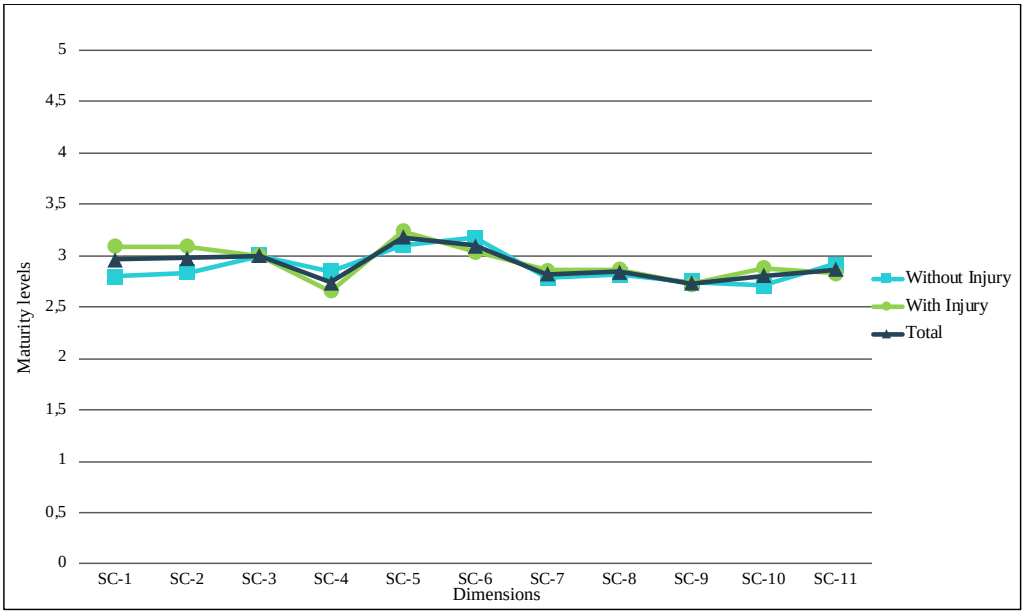
Dimensions	Injury	*N*	*M*	*SD*	*df*s	*F*	*p*	ηp^2
Hospital management support for health provider safety (SC1)	Without injury	56	2.75	.96	1, 129	5.18	.025	.04
	With injury	75	3.10	.83				
	Total	131	2.95	.90				
Approaches to promoting safety in clinic (SC2)	Without injury	56	2.82	1.03	1, 129	2.34	.128	.01
	With injury	75	3.11	1.07				
	Total	131	2.98	1.06				
Organizational learning, continuous improvement, commitment to safety (SC3)	Without injury	56	2.95	.98	1, 129	.129	.720	.00
	With injury	75	3.01	1.11				
	Total	131	2.98	1.05				
Communication transparency (SC4)	Without injury	55	2.80	1.02	1, 128	.368	.545	.00
	With injury	75	2.68	1.18				
	Total	130	2.73	1.11				
Reporting of errors/accidents and response to error/accidents (SC5)	Without injury	55	3.09	.95	1, 128	.876	.351	.00
	With injury	75	3.27	1.13				
	Total	130	3.19	1.06				
Investigation of error/accident and feedback mechanism (SC6)	Without injury	55	3.13	.92	1, 128	.108	.744	.00
	With injury	75	3.07	1.12				
	Total	130	3.09	1.04				

Table 3.9. Descriptive of Safety Culture Dimensions Based on Injury (continued)

Dimensions	Injury	*N*	*M*	*SD*	*df*s	*F*	*p*	ηp^2
Employment and competency (SC7)	Without injury	55	2.76	.86	1, 128	.372	.543	.00
	With injury	75	2.88	1.21				
	Total	130	2.83	1.07				
Health and safety training (SC8)	Without injury	55	2.76	.88	1, 128	.358	.551	.00
	With injury	75	3.87	1.03				
	Total	130	2.82	.97				
Excessive workload and stress recognition (SC9)	Without injury	55	2.74	.97	1, 128	.00	.995	.00
	With injury	75	2.75	1.15				
	Total	130	2.75	1.07				
Personal protective equipment (SC10)	Without injury	55	2.67	1.14	1, 128	1.22	.270	.00
	With injury	75	2.89	1.11				
	Total	130	2.80	1.12				
Approach to emerging risks and controlling healthcare associated infections (SC11)	Without injury	55	2.87	.94	1, 128	.013	.909	.00
	With injury	75	2.85	.95				
	Total	130	2.86	.94				

The relationship between the means of safety culture dimension levels and injury incident is presented in the Figure 3.4. The graphs look close to each other for all dimensions except for hospital management support dimension.

Figure 3.4. Comparison of Safety Culture Maturity by Injury Incidents



3.4.5. Relationship between Infection Incidents and Safety Culture

In order to compare the maturity of safety culture dimensions between participants without any infection and participants with at least one infection, 11 analysis of variance were conducted (Table 3.10).

The participants who had no infectious experience evaluated the maturity level of *excessive workload and stress recognition dimension* better than the participants with infectious. On the other hand, safety culture perception of participants without infection and participants with at least one infection were not significantly different in terms of other dimensions; *hospital management support for health provider safety, approaches promoting safety in units, organizational learning, continuous improvement, commitment to safety, communication transparency, reporting of*

errors/accidents and response to error/accidents, investigation of error/accident and feedback mechanism, employment and competency, staff education and training about safety issues, personal protective equipment, approach to emerging risks and preventing and controlling healthcare associated infections.

Table 3.10 Descriptive of Safety Culture Dimensions Based on Infection

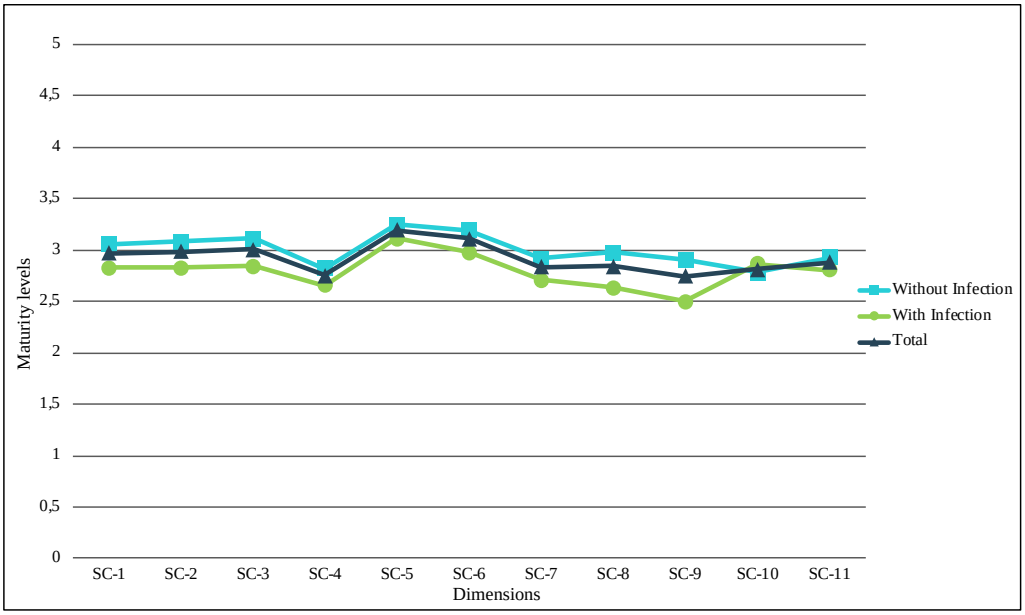
Dimensions	Infection	*N*	*M*	*SD*	*df*s	*F*	*p*	ηp^2
Hospital management support for health provider safety (SC1)	Without infection	78	3.04	.94	1, 128	1.71	.193	.01
	With infection	52	2.82	.83				
	Total	130	2.95	.90				
Approaches to promoting safety in clinic (SC2)	Without infection	78	3.10	1.12	1, 128	2.13	.147	.02
	With infection	52	2.83	.94				
	Total	130	2.99	1.06				
Organizational learning, continuous improvement, commitment to safety (SC3)	Without infection	78	3.09	1.12	1, 128	1.68	.197	.01
	With infection	52	2.85	1.11				
	Total	130	2.99	.94				
Communication transparency (SC4)	Without infection	77	2.80	1.28	1, 127	.476	.491	.00
	With infection	52	2.65	.81				
	Total	129	2.74	1.11				
Reporting of errors/accidents and response to error/accidents (SC5)	Without infection	77	3.26	1.13	1, 127	.578	.448	.00
	With infection	52	3.12	.94				
	Total	129	3.20	1.06				
Investigation of error/accident and feedback mechanism (SC6)	Without infection	77	3.17	1.13	1, 127	1.01	.316	.01
	With infection	52	2.98	.90				
	Total	129	3.09	1.04				

Table 3.10. Descriptive of Safety Culture Dimensions Based on Infection (continued)

Dimensions	Infection	*N*	*M*	*SD*	*df*s	*F*	*p*	ηp^2
Employment and competency (SC7)	Without infection	77	2.94	1.10	1, 127	1.37	.243	.01
	With infection	52	2.71	1.00				
	Total	129	2.84	1.06				
Health and safety training (SC8)	Without infection	77	2.95	1.01	1, 127	3.28	.072	.03
	With infection	52	2.63	.89				
	Total	129	2.82	.97				
Excessive workload and stress recognition (SC9)	Without infection	77	2.94	1.15	1, 127	5.34	.022	.04
	With infection	52	2.50	.87				
	Total	129	2.76	1.07				
Personal protective equipment (SC10)	Without infection	77	2.77	1.20	1, 127	.239	.625	.00
	With infection	52	2.86	1.01				
	Total	129	2.81	1.12				
Approach to emerging risks and controlling healthcare associated infections (SC11)	Without infection	77	2.77	1.20	1, 127	.354	.553	.00
	With infection	52	2.86	1.01				
	Total	129	2.81	1.12				

The relationship between the means of safety culture dimension levels and infectious incident is presented in the Figure 3.5. The distance between graphs at the excessive workload and stress recognition dimension looks bigger than the other dimensions.

Figure 3.5. Comparison of Safety Culture Maturity by Infection Incidents



3.4.6. Relationship between Hospital Types and Safety-Related Behaviours

In order to compare the compliance to the safety-related behaviours between two different hospital types, education and research hospital and university hospital, 4 analyses of variance were conducted (Table 3.11).

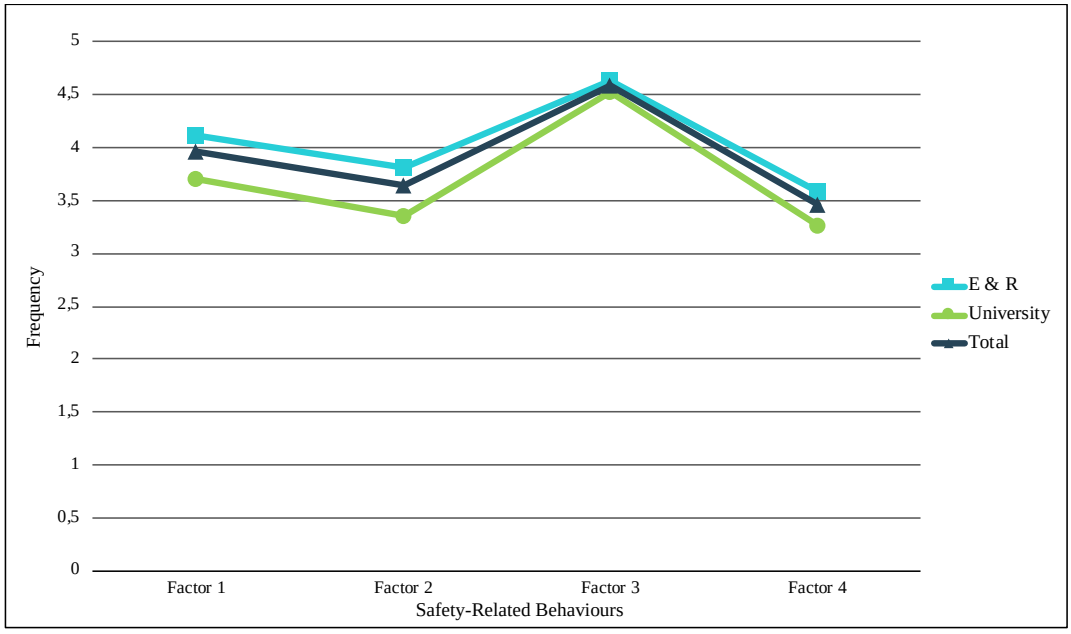
The compliance to safety precautions of participants in the education and research hospitals were found significantly higher than in the university hospitals at three factors; *measures for contamination and compliance with the instructions, measures for contamination by inhalation and body fluid, usage of personal protective equipment for body fluid splash*. On the other hand, the compliance of participants was not significantly different from each other with respect to hospital types at the factor of *special bins for contamination and careful usage of sharp materials*.

Table 3.11. Descriptive of Safety-Related Behaviours Based on Hospital Type

Behaviours	Hospital	*N*	*M*	*SD*	*df*s	*F*	*p*	ηp^2
Measures for contamination and compliance with the instructions (Factor 1)	Education & Research	86	4.12	.71	1, 138	11.92	.001	.079
	University	54	3.70	.69				
	Total	140	3.96	.73				
Measures for contamination by inhalation and body fluid (Factor 2)	Education & Research	86	3.81	.93	1, 138	8.35	.004	.057
	University	54	3.36	.80				
	Total	140	3.64	.90				
Special bins for contamination and careful usage of sharp materials (Factor 3)	Education & Research	86	4.63	.45	1, 138	1.86	.175	.013
	University	54	4.52	.50				
	Total	140	4.59	.47				
Usage of personal protective equipment for body fluid splash (Factor 4)	Education & Research	86	3.59	.82	1, 138	5.02	.027	.035
	University	54	3.27	.82				
	Total	140	3.46	.83				

The relationship between the mean of the compliance to safety precautions and hospital type is presented in the Figure 3.6.

Figure 3.6. Comparison of Safety-Related Behaviours by Hospital Type



3.4.7. Relationship between Clinic Types and Safety-Related Behaviours

In order to compare the compliance to the safety-related behaviours between two different clinic types, infectious disease and interior disease clinics, 4 analyses of variance were conducted (Table 3.12).

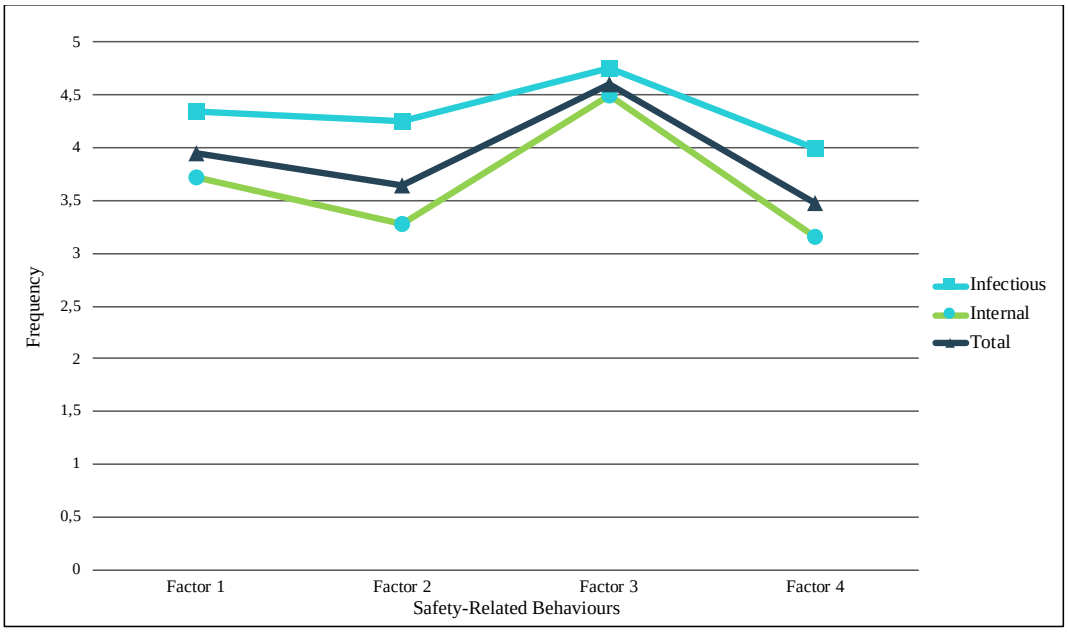
The compliance to safety precautions of participants in the infectious disease clinics were found significantly higher than in the interior disease clinics at all factors; *measures for contamination and compliance with the instructions, measures for contamination by inhalation and body fluid, special bins for contamination and careful usage of sharp materials, usage of personal protective equipment for body fluid splash.*

Table 3.12. Descriptive of Safety-Related Behaviours Based on Clinic Type

Behaviours	Clinic	*N*	*M*	*SD*	*df*s	*F*	*p*	ηp^2
Measures for contamination and compliance with the instructions (Factor 1)	Infectious diseases	47	4.34	.62	1, 125	27.34	.000	.180
	Internal diseases	80	3.72	.67				
	Total	127	3.95	.71				
Measures for contamination by inhalation and body fluid (Factor 2)	Infectious diseases	47	4.26	.83	1, 25	48.42	.000	.279
	Internal diseases	80	3.28	.73				
	Total	127	3.65	.90				
Special bins for contamination and careful usage of sharp materials (Factor 3)	Infectious diseases	47	4.76	.32	1, 25	9.71	.002	.072
	Internal diseases	80	4.50	.52				
	Total	127	4.60	.48				
Usage of personal protective equipment for body fluid splash (Factor 4)	Infectious diseases	47	4.00	.75	1, 125	40.27	.000	.244
	Internal diseases	80	3.16	.70				
	Total	127	3.47	.83				

The relationship between the mean of the compliance to safety precautions and clinic type is presented in the Figure 3.7.

Figure 3.7. Comparison of Safety-Related Behaviours by Clinic Type



3.4.8. Relationship between Safety Precautions Training and Safety-Related Behaviours

In order to compare the compliance to the safety-related behaviours between the participants who receive safety precautions training and the participants who did not receive, 4 analyses of variance were conducted (Table 3.13).

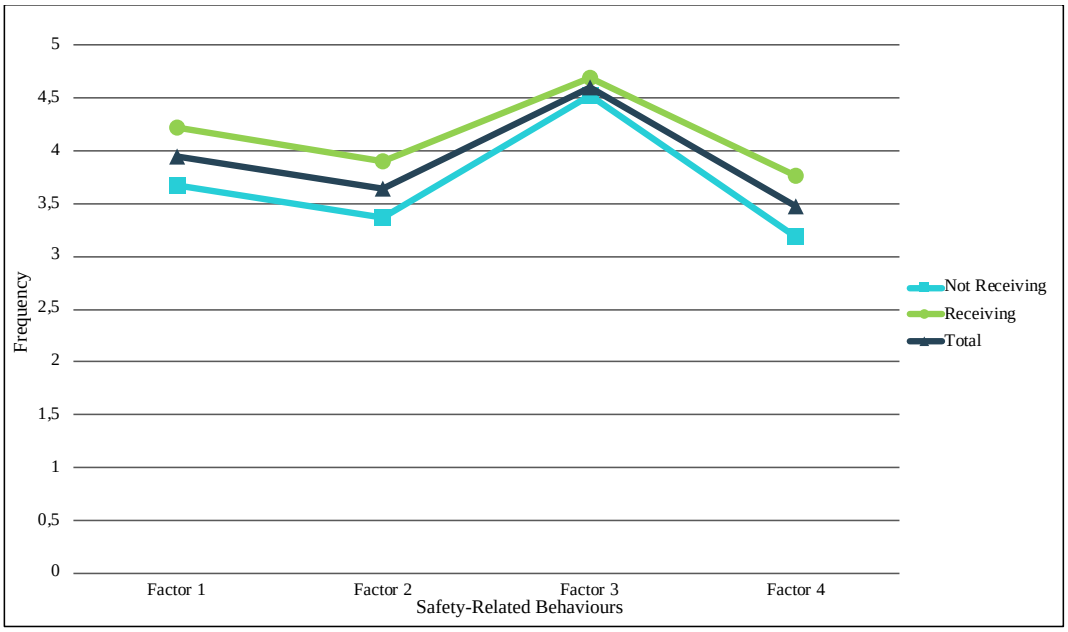
The compliance to safety precautions of participants receiving safety precautions training was found significantly higher than participants who did not receiving safety precautions training at all factors; *measures for contamination and compliance with the instructions, measures for contamination by inhalation and body fluid, special bins for contamination and careful usage of sharp materials, usage of personal protective equipment for body fluid splash*.

Table 3.13. Descriptive of Safety Culture Dimensions Based on Training

Behaviours	Training	*N*	*M*	*SD*	*df*s	*F*	*p*	ηp^2
Measures for contamination and compliance with the instructions (Factor 1)	Not Receiving	62	3.67	.65	1, 123	21.78	.000	.150
	Receiving	63	4.22	.67				
	Total	125	3.95	.71				
Measures for contamination by inhalation and body fluid (Factor 2)	Not Receiving	62	3.37	.79	1, 123	11.77	.001	.087
	Receiving	63	3.90	.93				
	Total	125	3.64	.90				
Special bins for contamination and careful usage of sharp materials (Factor 3)	Not Receiving	62	4.53	.41	1, 123	5.146	.025	.040
	Receiving	63	4.70	.41				
	Total	125	4.61	.42				
Usage of personal protective equipment for body fluid splash (Factor 4)	Not Receiving	62	3.18	.67	1, 123	18.91	.000	.133
	Receiving	63	3.77	.83				
	Total	125	3.48	.81				

The relationship between the mean of the compliance to safety precautions and training is presented in the Figure 3.8.

Figure 3.8. Comparison of Safety-Related Behaviours by Training



3.4.9. Relationship between Injury Incidents and Safety-Related Behaviours

In order to compare the compliance to the safety-related behaviours between participants without any injury and participants with at least one injury, 4 analyses of variance were conducted (Table 3.14).

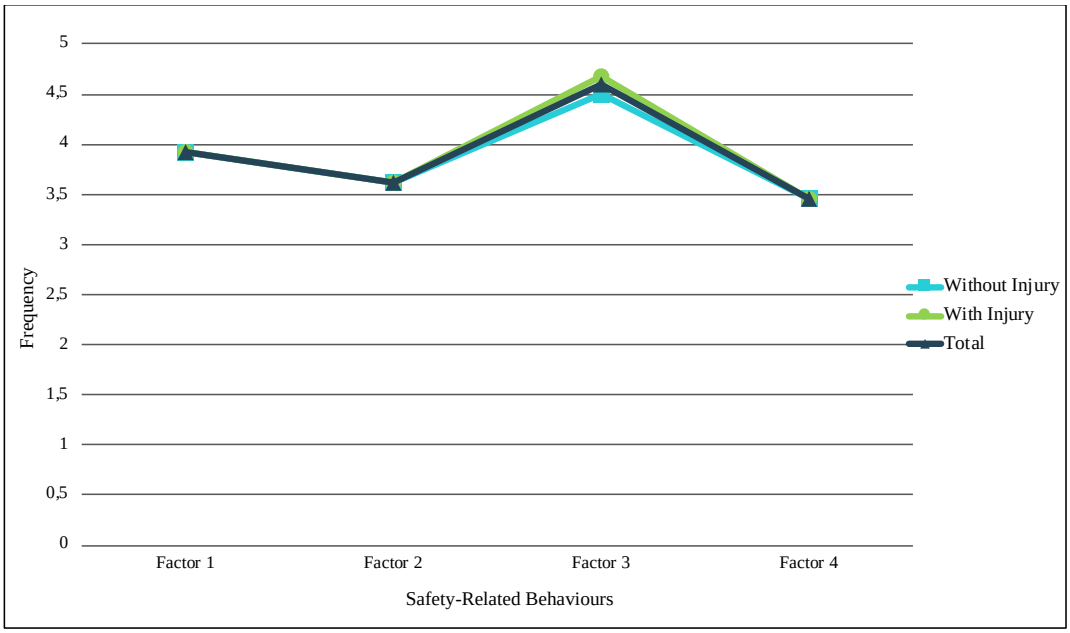
The compliance to safety precautions of participants with injury was evaluated significantly higher than participants without injury only at the factor of *special bins for contamination and careful usage of sharp materials*. There is no significant difference at the other three factors depending on the injury; *measures for contamination and compliance with the instructions, measures for contamination by inhalation and body fluid, usage of personal protective equipment for body fluid splash.*

Table 3.14. Descriptive of Safety-Related Behaviours Based on Injury

Behaviours	Injury	*N*	*M*	*SD*	*df*s	*F*	*p*	ηp^2
Measures for contamination and compliance with the instructions (Factor 1)	Without injury	54	3.93	.71	1, 120	.05	.945	.000
	With injury	68	3.93	.71				
	Total	122	3.93	.71				
Measures for contamination by inhalation and body fluid (Factor 2)	Without injury	54	3.62	.86	1, 120	.003	.953	.000
	With injury	68	3.62	.93				
	Total	122	3.62	.90				
Special bins for contamination and careful usage of sharp materials (Factor 3)	Without injury	54	4.50	.49	1, 120	5.81	.017	.046
	With injury	68	4.68	.34				
	Total	122	4.60	.42				
Usage of personal protective equipment for body fluid splash (Factor 4)	Without injury	54	3.45	.77	1, 120	.001	.973	.000
	With injury	68	3.46	.82				
	Total	122	3.46	.80				

The relationship between the mean of the compliance to safety precautions and injury is presented in the Figure 3.9.

Figure 3.9. Comparison of Safety-Related Behaviours by Injury



3.4.10. Relationship between Infection Incidents and Safety-Related Behaviours

In order to compare the compliance to the safety-related behaviours between participants without any infection and participants with at least one infection, 4 analyses of variance were conducted (Table 3.15).

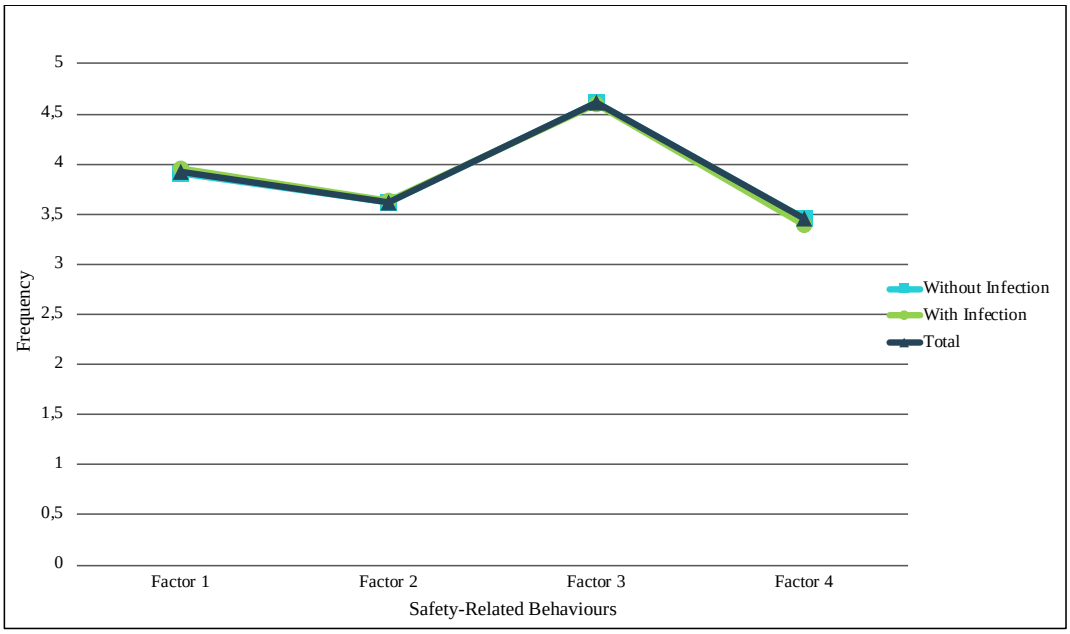
The compliance to safety precautions of participants with injury was not evaluated significantly different from participants without injury only at any factors. The safety-related behaviours performance of participants does not depend on getting infection.

Table 3.15. Descriptive of Safety-Related Behaviours Based on Infection

Behaviours	Infection	*N*	*M*	*SD*	*df*s	*F*	*p*	ηp^2
Measures for contamination and compliance with the instructions (Factor 1)	Without infection	75	3.91	.76	1, 121	.100	.752	.001
	With infection	48	3.96	.62				
	Total	123	3.93	.71				
Measures for contamination by inhalation and body fluid (Factor 2)	Without infection	75	3.61	.93	1, 121	.029	.866	.000
	With infection	48	3.64	.85				
	Total	123	3.62	.90				
Special bins for contamination and careful usage of sharp materials (Factor 3)	Without infection	75	4.61	.40	1, 121	.021	.886	.000
	With infection	48	4.60	.45				
	Total	123	4.61	.42				
Usage of personal protective equipment for body fluid splash (Factor 4)	Without infection	75	3.45	.85	1, 121	.328	.568	.003
	With infection	48	3.40	.70				
	Total	123	3.45	.79				

The relationship between the mean of the compliance to safety precautions and infection is presented in the Figure 3.10. The all graphs are almost same and seem like just one line, hence getting infection does not affect the performance of the safety-related behaviours.

Figure 3.10. Comparison of Safety-Related Behaviours by Infection



3.5. Hierarchical Regression Analyses

The relationships between demographic variables, safety behavior, safety culture and occupational incidence were investigated deeply by regression analyses. Hierarchical regression was employed and was applied with enter method where variables were added successively. The hospital type (i.e. education and research hospital and university hospital) and job (i.e. doctor and nurse) were introduced to the analysis formerly as control variables while four factors (i.e. *measures for contamination and compliance with the instructions, measures for contamination by inhalation and body fluid, special bins for contamination and careful usage of sharp materials, usage of personal protective equipment for body fluid splash*), safety culture dimensions and the number of injury and infection incidence were entered secondly.

3.5.1. Relationship between Safety-Related Behavior and Safety Culture

The relationship between four factors of safety behavior and culture dimensions with the control variables were investigated by four separate hierarchical regression analyses. In the first step, hospital type and job were included. In the second step, 11 dimensions of safety culture were entered into the model (Table 3.16).

For the first factor, contamination and compliance, the first step of model was significant (F (2, 133) = 22.590, p = < .001) and explained 25.6% of the total variance (R^2 = .256). However, the total model was not significant (F (13, 133) = 5.096, p = .086) and explained 35.6% of the total variance (R^2 = .356). Only job (95% *CI* [.561, 1.156]) was found to be positively related to contamination and instructions. Nurses were found to more tend to take measures for contamination and comply with the instructions.

For the second factor, inhalation and body fluid, the model was significant (F (13, 133) = 3.222, p < .001) and explained 25.9% of the total variance (R^2 = .259). Job (95% *CI* [.420, 1.251]) and the dimension of *emerging risks and preventing and controlling healthcare associated infections* (95% *CI* [.110, .710]) were found to be positively related to inhalation and needle stick while the dimension of *organizational learning, continuous improvement, commitment to safety* (95% *CI* [-.624, -.068]) was found to be negatively related to inhalation and needle stick. The results showed that nurses and participants with higher maturity level of *emergency risk dimension* more tend to take measures for infection through inhalation and needle stick. On the other hand, participants with the higher maturity level of *organizational learning* take less measures for such infection.

For the third factor, special bins and careful use, the first step of model was significant (F(2, 133) = 7.296, p = .001) and explained 10.0% of the total variance (R^2 = .100). However, the total model was not significant (F (13, 133) = 1.914, p < .05) and explained 17.2% of the total variance (R^2 = .172). Only job (95% *CI* [.147, .611]) was

found to be positively related to waste control and careful use. Nurses were found to more tend to use special bins for contamination and use carefully sharp materials.

For the forth factor, personal protective equipment, the first step of model was significant (F (2, 133) = 9.053, $p < .001$) and explained 12.1% of the total variance (R^2 = .242). However, the total model was not significant (F (13, 133) = 2.941, $p > .05$) and explained 24.2% of the total variance (R^2 = .242). Only job (95% *CI* [.311, 1.081]) was found to be positively related to personal protective equipment. Nurses more tend to use personal protective equipment in case of body fluid.

To sum up, nurses have been found to be more compatible with the safety related behaviours for all factors. Also, the higher maturity level of *emergency risk dimension is the better compliance the professionals have with the safety related behaviors only at the second factor (i.e. inhalation and body fluid).* Lastly, higher maturity level of *organizational learning* has shown less compatible with safety related behaviours with respect the same factor.

Table 3.16. Relationship Between Safety-Related Behaviors and Safety Culture Dimensions

	Factor 1				Factor 2				Factor 3				Factor 4			
Variables	R^2	$F\Delta$	β	p	R^2	$F\Delta$	β	p	R^2	$F\Delta$	β	p	R^2	$F\Delta$	β	p
1.Personal info	.256	22.590		.000	.133	10.073		.000	.100	7.296		.001	.121	9.053		.000
Hospital type			-.104	.198			-.129	.139			.011	.900			-.072	.413
Job			.460	.000			.298	.001			.320	.000			.316	.000
2.Dimensions	.356	1.680		.086	.259	1.853		.052	.172	.942		.503	.242	1.729		.075
SC1			-.010	.925			.069	.543			.036	.764			.089	.434
SC2			-.012	.930			-.089	.531			.092	.542			-.091	.528
SC3			-.024	.875			-.408	.015			-.271	.123			-.277	.100
SC4			-.032	.798			.161	.238			-.105	.463			.140	.308
SC5			-.112	.343			.022	.859			.134	.316			-.178	.164
SC6			.055	.663			.085	.529			-.126	.377			.085	.533
SC7			.203	.166			.080	.610			.119	.472			.287	.072
SC8			-.032	.799			.079	.554			-.074	.598			.074	.580
SC9			-.236	.102			-.191	.214			-.018	.912			-.151	.330
SC10			-.082	.515			-.071	.597			-.044	.758			.009	.949
SC11			.461	.003			.437	.008			.404	.020			.271	.099

Dfs, F-tests: 1st Step = 2, 133; 2nd Step = 13, 133. SC1: Hospital management support for health provider safety, SC2: Approaches promoting safety in units, SC3: Organizational learning, continuous improvement, commitment to safety, SC4: Communication transparency, SC5: Reporting of errors/accidents and response to error/accidents, SC6: Investigation of error/accident and feedback mechanism, SC7: Employment and competency, SC8: Staff education and training about safety issues, SC9: Excessive workload and stress recognition, SC10: Personal protective equipment, SC11: Approach to emerging risks and preventing and controlling healthcare associated infections. Factor 1: Measures for contamination and compliance with the instructions, Factor 2: Measures for contamination by inhalation and body fluid, Factor 3: Special bins for contamination and careful usage of sharp materials, Factor 4: Usage of personal protective equipment for body fluid splash. **Note:** Hospital type and job were dummy coded as Hospital type: 0: Education and research, 1: University, Job: 0: Doctor, 1: Nurse

3.5.2. Relationship between Occupational Incidence and Safety Culture

The relationship between four incidence (i.e. the number of injury and infection, also the number of witness to injury and witness to infection cases) and culture dimensions with the control variables were investigated by four separate hierarchical regression analyses. The data with Z score, which was not in the range of -4 and +4, was not taken for analysis. In the first step, hospital type and job were included. In the second step, 11 dimensions of safety culture were entered into the model. It was not found any significant relationship between occupational incidence and safety culture dimensions. (Table 3.17)

In the test of relationship between the number of injury and culture dimensions, one participant was excluded due to being an outlier. For the number of injuries, the model was not significant (F (13, 128) = 1.026, p = .432) and explained 10.4% of the total variance (R^2 = .104).

In the test of relationship between the number of witness to injury and culture dimensions, one participant was excluded due to being an outlier. For the number of witness to injury, the model was not significant (F (13, 127) = .535, p = .899) and explained 5.7% of the total variance (R^2 = .057).

For the number of infections, the model was not significant (F (13, 128) = 1.138, p = .335) and explained 11.4% of the total variance (R^2 = .114).

In the test of relationship, the number of witness to infection and culture dimensions, one participant was excluded due to being an outlier. For the number of witness to infection, the model was not significant (F (13, 125) = .666, p = .792) and explained 7.2% of the total variance (R^2 = .072).

Table 3.17. Relationship Between Occupational Incidence and Safety Culture Dimensions

	# of injury				# of witness to injury				# of infection				# of witness to infection			
Variables	R^2	$F\Delta$	β	p	R^2	$F\Delta$	β	p	R^2	$F\Delta$	β	p	R^2	$F\Delta$	β	p
1.Personal info	.001	.094		.910	.010	.620		.540	.004	.279		.757	.023	1.419		.246
Hospital type			.019	.841			.007	.942			-.039	.686			-.075	.437
Job			-.027	.777			-.096	.316			.042	.662			.106	.270
2.Dimensions	.104	1.195		.298	.057	.524		.884	.114	1.293		.237	.072	.540		.872
SC1			-.131	.310			-.175	.184			-.038	.772			-.097	.467
SC2			.216	.185			.050	.767			-.028	.862			-.075	.649
SC3			-.323	.080			.075	.699			-.279	.126			.067	.722
SC4			.021	.889			.042	.790			.281	.062			-.005	.973
SC5			.022	.876			-.101	.485			.170	.217			.095	.524
SC6			-.223	.139			-.086	.588			-.015	.918			-.049	.752
SC7			.282	.104			.048	.788			-.237	.164			.053	.763
SC8			.118	.433			.190	.223			.130	.382			.223	.151
SC9			-.374	.030			-.155	.379			.015	.930			-.105	.551
SC10			-.087	.560			-.046	.768			.290	.053			.123	.428
SC11			.342	.057			-.017	.926			-.112	.529			-.101	.595

Dfs, F-tests: 1st Step = 2, 133; 2nd Step = 13, 133. SC1: Hospital management support for health provider safety, SC2: Approaches promoting safety in units, SC3: Organizational learning, continuous improvement, commitment to safety, SC4: Communication transparency, SC5: Reporting of errors/accidents and response to error/accidents, SC6: Investigation of error/accident and feedback mechanism, SC7: Employment and competency, SC8: Staff education and training about safety issues, SC9: Excessive workload and stress recognition, SC10: Personal protective equipment, SC11: Approach to emerging risks and preventing and controlling healthcare associated infections. **Note:** Hospital type and job were dummy coded as Hospital type: 0: Education and research, 1: University, Job: 0: Doctor, 1: Nurse

3.5.3. Relationship between Occupational Incidence and Safety Behavior

The relationship between four incidence (i.e. the number of injury and infection, also the number of witness to injury and witness to infection cases) and safety behavior factors with the control variables were investigated by four separate hierarchical regression analyses. The data with Z score, which was not in the range of -4 and +4, was not taken for analysis. In the first step, hospital type and job were included. In the second step, 4 factors of safety behavior were entered into the model. It was not found any significant relationship between occupational incidence and safety behavior. (Table 3.18)

In the test of relationship between the number of injury and safety behavior factors, one participant was excluded due to being an outlier. For the number of injuries, the model was not significant (F (6, 133) = .569, p = .754) and explained 2.6% of the total variance (R^2 = .026).

In the test of relationship between the number of witness to injury and safety behavior factors, one participant was excluded due to being an outlier. For the number of witness to injury, the model was not significant (F (6, 133) = .913, p = .488) and explained 4.1% of the total variance (R^2 = .041).

For the number of infections, the model was not significant (F (6, 134) = .432, p = .857) and explained 2.0% of the total variance (R^2 = .020).

In the test of relationship, the number of witness to infection and culture dimensions, one participant was excluded due to being an outlier. For the number of witness to infection, the model was not significant (F (6, 131) = 1.119, p = .355) and explained 5.1% of the total variance (R^2 = .051).

Table 3.18. Relationship Between Occupational Incidence and Safety Behaviour Factors

	# of injury				# of witness to injury				# of infection				# of witness to infection			
Variables	R^2	$F\Delta$	β	p	R^2	$F\Delta$	β	p	R^2	$F\Delta$	β	p	R^2	$F\Delta$	β	p
1.Personal info	.003	.186		.831	.006	.380		.684	.009	.591		.555	.035	2.363		.098
Hospital type			.010	.917			.021	.822			-.020	.833			-.054	.561
Job			-.049	.604			-.066	.483			.085	.359			.162	.083
2.Safety behavior	.026	.761		.553	.041	1.178		.324	.141	.358		.838	.051	.515		.725
Factor 1			-.170	.258			-.159	.299			-.149	.324			-.009	.952
Factor 2			.096	.528			.009	.952			.154	.313			-.142	.347
Factor 3			.048	.648			.150	.157			.030	.776			.087	.406
Factor 4			.131	.369			-.102	.488			-.027	.853			.022	.881

Dfs, F-tests: 1st Step = 2, 133; 2nd Step = 13, 133. SC1: Hospital management support for health provider safety, SC2: Approaches promoting safety in units, SC3: Organizational learning, continuous improvement, commitment to safety, SC4: Communication transparency, SC5: Reporting of errors/accidents and response to error/accidents, SC6: Investigation of error/accident and feedback mechanism, SC7: Employment and competency, SC8: Staff education and training about safety issues, SC9: Excessive workload and stress recognition, SC10: Personal protective equipment, SC11: Approach to emerging risks and preventing and controlling healthcare associated infections. Factor 1: Measures for contamination and compliance with the instructions, Factor 2: Measures for contamination by inhalation and body fluid, Factor 3: Special bins for contamination and careful usage of sharp materials, Factor 4: Usage of personal protective equipment for body fluid splash.

Note: Hospital type and job were dummy coded as Hospital type: 0: Education and research, 1: University, Job: 0: Doctor, 1: Nurse

CHAPTER 4

DISCUSSION

4.1. Overview

The present study has two main objectives; one is to develop a tool to determine the safety culture levels at infectious and internal disease clinics and the other is to investigate the relationship between safety culture level and safety related behaviors. In this sense, in Study 1, safety culture matrix with 11 dimensions and 5 maturity levels were developed. Also, in Study 2, safety behavior questionnaire was developed by the revision of an existing checklist. Finally, in Study 3, the developed safety culture matrix and safety behavior questionnaire were applied together to the clinics.

In the following section, the summary and discussion of the findings in terms of the factor structure of the questionnaire, and regression predictions are discussed in the light of literature. In addition to these, the contributions of the present study, and limitations and suggestions for future studies are also addressed.

4.2. Discussion of Study Findings

4.2.1. The Evaluation of Safety Culture: Framework and Maturity Levels

Safety culture is an abstract but meanwhile underlying concept of the majority organizational issues. Therefore, a measurement tool to define qualitatively the existing safety culture as concrete is very crutial. The framework is not only for determination, but also it can be used as a guide for improvement. In this sense, this study has been used the same methodology and theoretical framework with the Manchester Patient Safety Framework (Kirk et al., 2007). The dimensions were determined by literature review and the receiving the opinions of the professionals; however, any workshop have not been arranged to determinate dimensions unlike the

reference study. Also, since insufficient reporting the accidents, incidents or near misses, and hence the archival data could not have been taken into consideration during the determination of dimensions. The specified dimensions have been informed to interviewee before description the levels and they have been determined.

In the present study, eleven dimensions have been determined. When the dimensions have been compared the reference study, both studies suggested five common dimensions (i.e. *management support, organizational learning, incident investigation, communication* and *education*). However, the dimensions have not been described exactly in a same manner. For instance, the dimension of *hospital management support for health provider safety* in the present study have covered the dimensions of overall commitment to quality and priority given to patient safety (Kirk et al., 2007). Moreover, the description of the present study has been more comprehensive and detailed. The other study in pharmacy (Ashcroft et al., (2005) also contains same dimensions except for *priority to safety*. On the other hand, a review, which about patient safety climate in acute hospital settings, determined the common seven dimensions covered by the reviewed tools (Alsalem, Bowie, and Morrison, 2018). The present study has also included all common dimensions except for *teamwork*. Although most work has handled teamwork as a separate dimension, the present study has not. While determination of the dimensions, a dimension of *teamwork within units and across hospital units* was added to the framework. However, the professionals have suggested to distribute the questions of the dimension to the others in order to avoid repetition and confusion.

During the interviews, some interviewees have confused especially reactive with bureaucratic, and proactive with generative level. Therefore, the detailed description of maturity levels is crutial.

When the overall evaluation has been made, the clinics have been found in the level of bureaucratic for majority of dimensions. Besides, some of them have extended towards the proactive level and some of them towards the reactive level. This situation

might be originated from the management policy that the government put into action but that is not adopted by the hospitals. Thus, according to the research that was conducted by Öztürk, Babacan, and Anahar (2012), the communiqué that is related to the safety of patient and worker and follows the international standards, is being applied in the hospitals but the most of the workers are not aware of it. This situation has been compatible with the top-bottom nature of bureaucratic level (Hudson et al., 2000b). Organizations moves away from their current level if the workers involve in the safety. Awareness and informed individuals are needed for this involvement. Marshall et al. (2017) states that the speaking up and discussion about the safety issues is stimulated in order to improve their weaknesses in the area when the staff's awareness raises.

All dimensions of safety culture have been found to be correlated to each other. Haktanır (2011) also found positive correlation between dimensions. In particular, the three dimensions (i.e. *hospital management support for health provider safety, approaches promoting safety in units* and *organizational learning, continuous improvement, commitment to safety*) are highly correlated to each other. The definition of the (see Table 2.2) first two dimensions are mostly about the attitude of the managers or the senior staff. The result shows the importance of the leaderships for improvement of the safety culture. The safety literature also has many studies that emphasize the positive relationship between them (Du and Sun, 2012; Wu, Chen, and Li, 2008; Zohar, 2003). Also, Pekpak Fındıkçıoğlu, (2018) states that leadership was positively correlated with concerning and reporting accidents, communication and feedback, occupational health and safety in daily task. At the same time, the three dimensions of *approaches promoting safety in units* and *organizational learning, continuous improvement, commitment to safety* and *communication transparency* are highly correlated to the other dimensions. Namely, if the more enthusiastic and dedicated the management is the more commitment, improvement and openness are. Thus, the other dimensions might become more mature.

The four factors of the SPQ have been found to be positively correlated to each other and some of the dimensions of safety culture. (Haktanır, 2011) also found positive correlation between the factors.

4.2.2. Factor Analysis of the Safety Precautions Questionnaire

In the present study, according to the principal components analysis with the rotation of promax with Kaiser normalization, the factor structure of the Safety Behaviors Questionnaire was found to be four different factors. Likewise, Haktanır (2011), whose study is reference of the questionnaire, also accepted four-factor solution. However, the factor structure and names are different; yet two studies have a mutual factor whose name is personal protective equipment. In fact, the names of other factors in the previous study are not preferred because the factor structure of the present study includes more versatile items so it needs more inclusive names.

The item of "to use of personal protective equipment that is suitable for my face and body size" was excluded because of getting more reliable. The omission is plausible since the item is actually about the physiological ergonomics; it is not directly related to workers safety.

4.2.3. Relationships between Safety Culture, Safety-Related Behaviors and Occupational Incidences

Education and research hospitals were evaluated higher than university hospitals in terms of hospital management support for health provider safety, approaches promoting safety in units, personal protective equipment and approach to emerging risks and preventing and controlling healthcare associated infections dimensions. One of the reasons of the difference may be the frequency of the change in workers with respect to hospital type. For example, since the internship of the medicine students for several months in university hospitals, education and research hospitals are relatively more stable than university. New comings' adaptation to the existing safety culture, and the difference in the culture in this course may result to lower safety culture. On the other hand, the correlation between dimensions may also contributed to this

difference. Analysis has shown positive correlation between the higher hospital management support for health provider safety and the other four dimensions. Likewise, the participants in the education and research hospitals have been found to be better at the compliance to safety precautions (i. e. *measures for contamination and compliance with the instructions, measures for contamination by inhalation and body fluid, usage of personal protective equipment for body fluid splash*.). The positive correlation between safety culture and safety-related behaviours may also contribute to the difference.

Safety culture level of infectious diseases clinic was evaluated higher than interior disease clinic only in terms of *personal protective equipment dimension*. Moreover, the compliance to safety precautions in the infectious disease clinic higher than the interior disease clinic at all factors; *measures for contamination and compliance with the instructions, measures for contamination by inhalation and body fluid, special bins for contamination and careful usage of sharp materials, usage of personal protective equipment for body fluid splash*. The nature of this clinic necessitates more tasks that are prone to get infection. Because of the high risk, the attitude of management to safety issues may differ. For example, in this study, the number of workers receiving safety precautions training is higher in the infectious disease clinic. Such situation may results the difference.

The participants receiving safety precautions training evaluated the maturity level of safety culture as higher in terms of hospital management support for health provider safety, approaches promoting safety in units, staff education and training about safety issues, excessive workload and stress recognition, personal protective equipment (PPE) dimension, approach to emerging risks and preventing and controlling healthcare associated infections. Training raises the awareness of the trainees; the hospitals' actions may be informed and so workers may determine their states within this scope. For example, the description of first and second dimensions has a question like "Is there any safety policy?" or "Is the risk assessment and related improvement shared with workers?" or "Is improvement based on risk assessment". The responds

of such questions may differ after training. More mature dimension of education and training is quite plausible after training. Usage of the PPE's is usually positively related to knowledge of how and why they have to use (Efstathiou, Papastavrou, Raftopoulos, and Merkouris, 2011). These dimensions have been rated as higher nevertheless they have still stood around bureaucratic level, have not reach proactive level. So, training may have raised awareness about safety issues, and hence the awareness may have increased the maturity of safety culture. Therefore, in order to acquire more mature safety culture, training may be necessary but not enough.

Likewise, training have increased the compliance to the safety precautions. The participants, who receive training, take measures for contamination, inhalation and body fluid more frequently than the participants who do not receive the training. Moreover, the trained participants use sharp materials and personal protective equipment more carefully and frequently. The effect of the training has also been declared in other studies. Fugas, Silva, and Meliá (2012) have also stated that the number of safety trainings have positively impact on proactive safety behaviors. Another study that investigates the influencing factors to compliance with standard precautions has revealed that continuous reminders and education is required to implement the rules and to improve compliance (Efstathiou et al., 2011).

The participants with injury have evaluated the maturity level of safety culture higher only in terms of *hospital management support for health provider safety* than the participants without injury. The reason why this dimension was found statistically significant might be the fact that when workers get some trouble about safety and health, they might meet the attitude of the management to this issue and might get awareness about management support. On the other hand, the experience of injury has not changed the perception of the management support much. The dimension has been still lying around bureaucratic level. That is, participants do not expect management to take a proactive approach, whether have experienced injury or not. On the other hand, participants with injury were found to behave more carefully to use sharp metarials and contaminated waste control. However, the performance of the other

factors of the safety-related behaviours (i.e. *measures for contamination and compliance with the instructions, measures for contamination by inhalation and body fluid, usage of personal protective equipment for body fluid splash*) do not differentiate depending on the injury. This may also result from the way of experience of the injury. In order to check the prediction, the detailed report of the incident should be investigated.

The participants who had no infection evaluated the maturity level of excessive workload and stress recognition dimension better than the participants with infection. The evaluation shows that the more excess workload is, the more frequently the participants experience infections. Thus, if the workload is reduced or distributed in a more planned manner, the frequency of infection may be reduced. On the other hand, getting infection was not found to be related to the frequency of the safe behaviours performance. Depending on the self-reporting of the participants, there is no direct relationship between the compliance to safety-related behaviours and getting infection. However, the finding should be controlled by the incidence report or any other methods.

The regression analysis shows that nurses are better than doctors at all factors of safety related behavior (i.e. contamination and instructions, inhalation and needle stick, waste control and careful use, personal protective equipment). Several reasons may be underlying; for example, nurses do these tasks more frequently than doctors and do them as main occupation. Another reason might be the fact that doctors' perspective to managerial hierarchies. Flin and Yule (2004) states that the difference between healthcare and industry and states that doctors do not always approve managerial hierarchies, and so the management commitment to safety does not affect their behaviors as much as the others.

The present statistical results already show that doctors' evaluation of the dimension of hospital management support for health provider safety is lower than nurses. Nurses have thought that the hospital management support are tend to be away from the

bureaucratic level and closer to proactive level. In the study of Yang, Wang, Chang, Guo, and Huang (2009), the physicians have been also found to have lower perception of safety culture and safety performance than the other jobs in healthcare (i.e. nurses and technologists). On the other hand, in patient safety, some studies have showed that doctors' perceptions of hospital management support are better than the nurses (Çelen, Teke, and Cihangiroğlu, 2014; Nazik et al., 2018). There have been also the studies that stated no difference between job groups like Filiz's study (2009). In this sense, although the dimensions for patient and worker safety are common, their evaluation might differentiate.

The other regression analysis has shown that the participants, which have perceived the dimension of organizational learning, continuous improvement and commitment to safety more mature, have been found to take less measures for the infection through inhalation and needle stick. According to Hudson et al. (2000), some extrinsic motivators may prevent intrinsic motivation. When the workplace environment is open to learning, and improvement but there is lack of mechanism for adoption of the learnings, workers might not act in safe manner. On the contrary, the participants, which have perceived the dimension of approach to emerging risks and preventing and controlling healthcare associated infections, have been more tend to take measures for contamination and comply with the instructions, and also for infection through inhalation and needle stick. Also, the participants are also more tend to use special bins for contamination and use carefully sharp materials. The reference study (Haktanır, 2011) found that perceptions on safety climate' dimension of teamwork was a good predictor of personal protective equipment usage and hand-hygiene factors of the safety behaviors. Obviously, there have been different settings of the studies; such as the study had only nurses as participant, different factors of behaviour questionnaire and different dimensions of the safety culture.

In this study, any relationship between the occupational incidences and safety culture dimensions has not been found. However, many studies have revealed the relationship in various areas. For example, Lin et al. (2017) have stated that, the approach of senior

management to improve the safety climate affect the managements' attitude towards safe workplace. The existing safe environment influence the perception of healthcare workers of safety climate and safety behaviours and outcomes. The present study has investigated the direct impact of safety culture upon the safety behavior. However, Griffin and Neal (2004) have acknowledged that managements send implicit and explicit messages to their workers with supporting and developing a safety climate within an organization; the messages says about the expectation of management about safety. Furthermore, in the literature, there are many studies that researches both direct and indirect effect of safety by modelling study with some mediator. For example, Cooper and Phillips (2004) found direct relationships between safety climate and safety behavior presented at the different rates (e.g. management actions and the perception about importance of safety training are predictive of behavior). On the other hand, their model of Christian, Bradley, Wallace, and Burke (2009) model covers safety behavior, safety knowledge and motivation, and safety climate; they handle safety climate as distal-person related factor, and knowledge and motivation as proximal person-related factors. Hence, the distal factor has impact on proximal person-related factors and they affect safety in working environment, as well. Furthermore, Fugas et al. (2012) states that the factors, which have impact on the safety behavior, are important to classify as the antecedents and the determinants; or distal and proximal. This is crutial since the relation with proximal determinant is expected to be stronger than the relation with distal antecedents. In their study, mediation analysis demonstrates safety climate as indirect predictor of safety behaviors. In this sense, the reason of no relationship between the nine dimensions of safety culture and behaviours may be associated the modelling of the study.

In addition, Neal and Griffin (2006) have stated that perceptions of safety climate have shown to have positive correlation with safety behaviors. However, the present study has positive relation in only one dimension and negative relation in one dimension; there is no relationship for nine dimensions. This situation may result from the structure of the safety behavior questionnaire. Neal and Griffin (2006) have measured

safety behaviours by combining safety compliance and safety participation. In the present study, though, safety behavior measure comprises only the component of safety compliance.

4.3. Implication

The developed safety culture matrix is not just a tool for measurement. It also raises the awareness and guides the clinics to move their safety culture forward since it does not only profile the current situation but also explain how more mature level have to be.

Also, the tool may be used to determine the differences in perceptions between professional groups in one department or organization. Thus, different approach to improve safety can be adopted for each group. During the implementation of the safety culture matrix, in the stage of the planning and awareness, some workers are also included. Therefore, the tool does not come from top to bottom; instead is occurred in the application area itself.

Moreover, the tool could be used as before-after measure to assess the change in the level of the safety culture after the developments or the intervention regarding safety.

The training and getting injuries have been found to increase the perception of the safety culture. This may be indication of raising of awareness. Since culture levels have still stayed around bureaucratic and could not reach the proactive level. In that point, participation of the workers in the safety system may improve the safety culture effectively.

4.4. Limitation & Future Suggestions

The safety culture matrix is slightly long and complicated according to ordinary 5-likert scale questionnaires. Thus, a protected time is required to grasp the logic of the matrix, to distinguish the five levels of the culture maturity and to complete the assessment without time pressure. In this sense, management support for the application of the matrix is crutial in order to define the safety culture level correctly.

In the present study, any significant relationship between occupational incidence (i.e. injuries and infections) and safety culture dimensions was not found. Also, safety related behavior had not statically significant relationship with occupational incidence. Although the model explained 10.4% and 11.4% of the total variance for the number of injuries and infections, respectively, it was not significant. This may result from the small number of data set. Also, the data in this study was self-reported. When it comes to self-reporting, it would not be surprising to meet with social desirability, under-reporting and response bias. In future research, more reliable data, which may be taken from the self-reported past behavior or accident, should be used (Fugas et al., 2012) . In this study, however, since the clinics did not have an active working report system, archival data was not used. Therefore, an analysis for incidence-culture relation may be realized by more data collected from the accident reports or with observation in future studies in order to determine the association between them. Lastly, the use of qualitative data instead of quantitative data will provide to collect more eligible information (Fugas et al., 2012).

In this study, just two dimensions predict the safety-related bahviours. This may be because of the content of the questionnaire. The questionnaire contains items especially related to infection. More comprehensive questionnaire that covers the other safety issues may be more associated to safety culture. On the other hand, the culture has not predicted to the incidence. In the future study, the relationship between safety culture and incidence may be investigated with some mediator factors.

In the present study, safety meetings or workshops were not organized in order to give information to participants prior to interview. Instead, all interviewees were informed individually. Nevertheless, a workshop could have been better to provide participants with a clear and detailed view of the whole study, thus, they could have been more focus on the project.

4.5. Conclusions

The safety culture, which covers the belief and attitudes of all individuals within the organizations, extends to all parts of the organization, and hence influences workplace environment, workers' performance, underlying reasons of behaviors, accidents and injuries. Since the importance and abstract characteristic of the safety culture, the tool to determine how safety culture occurs in the clinics has been developed. The tool will be helpful for understanding and improvement of the culture. HcPro-SCuF has shown that the safety culture of education and research hospitals (Figure 4.1) is mainly at bureaucratic level like university hospitals (Figure 4.2). Besides, while some dimensions are close to reactive level, the others are close to proactive level. Infectious disease clinics (Figure 4.3) are similar safety culture with internal disease clinics (Figure 4.4), and the culture are lying around bureaucratic level.

Moreover, when the safety performance was researched, the nurses have been found to be better than the doctors. The training has shown a significant impact on the safety performance. Safety culture dimensions are highly correlated to each other. Some of the safety culture dimensions have relationship with some factors of the safety related behaviors.

Dimensions	Pathological	Reactive	Bureaucratic	Proactive	Generative
Hospital management support for health provider safety					
Approaches to promoting safety in clinic					
Organizational learning, continuous improvement, commitment to safety					
Communication transparency					
Reporting of errors/accidents and response to error/accidents					
Investigation of error/accident and feedback mechanism					
Employment and competency					
Staff education and training about safety issues					
Excessive workload and stress recognition					
Personal protective equipment					
Approach to emerging risks and controlling healthcare associated infections					

Figure 4.1. Safety Culture Maturity Level of Education and Research Hospitals

Note I: The scores were between 1 – 1.5, the level was admitted as pathological: 1.5 - 2.5 as reactive; 2.5 – 3.5 as bureaucratic; 3.5 – 4.5 as proactive; 4.5 – 5 as generative.Note II: If the difference between level score and real value of the level (pathological: 1, reactive: 2; bureaucratic, 3; proactive, 4; generative, 5) was greater than .10, the second closest level was also marked with lighter colour.

Dimensions	Pathological	Reactive	Bureaucratic	Proactive	Generative
Hospital management support for health provider safety					
Approaches to promoting safety in clinic					
Organizational learning, continuous improvement, commitment to safety					
Communication transparency					
Reporting of errors/accidents and response to error/accidents					
Investigation of error/accident and feedback mechanism					
Employment and competency					
Staff education and training about safety issues					
Excessive workload and stress recognition					
Personal protective equipment					
Approach to emerging risks and controlling healthcare associated infections					

Figure 4.2. Safety Culture Maturity Level of University Hospitals

Note I: The scores were between 1 – 1.5, the level was admitted as pathological: 1.5 - 2.5 as reactive; 2.5 – 3.5 as bureaucratic; 3.5 – 4.5 as proactive; 4.5 – 5 as generative. Note II: If the difference between level score and real value of the level (pathological: 1, reactive: 2; bureaucratic, 3; proactive, 4; generative, 5) was greater than .10, the second closest level was also marked with lighter colour.

Dimensions	Pathological	Reactive	Bureaucratic	Proactive	Generative
Hospital management support for health provider safety					
Approaches to promoting safety in clinic					
Organizational learning, continuous improvement, commitment to safety					
Communication transparency					
Reporting of errors/accidents and response to error/accidents					
Investigation of error/accident and feedback mechanism					
Employment and competency					
Staff education and training about safety issues					
Excessive workload and stress recognition					
Personal protective equipment					
Approach to emerging risks and controlling healthcare associated infections					

Figure 4.3. Safety Culture Maturity Level of Infectious Disease Clinics

Note I: The scores were between 1 – 1.5, the level was admitted as pathological: 1.5 - 2.5 as reactive; 2.5 – 3.5 as bureaucratic; 3.5 – 4.5 as proactive; 4.5 – 5 as generative. Note II: If the difference between level score and real value of the level (pathological: 1, reactive: 2; bureaucratic, 3; proactive, 4; generative, 5) was greater than .10, the second closest level was also marked with lighter colour.

Dimensions	Pathological	Reactive	Bureaucratic	Proactive	Generative
Hospital management support for health provider safety					
Approaches to promoting safety in clinic					
Organizational learning, continuous improvement, commitment to safety					
Communication transparency					
Reporting of errors/accidents and response to error/accidents					
Investigation of error/accident and feedback mechanism					
Employment and competency					
Staff education and training about safety issues					
Excessive workload and stress recognition					
Personal protective equipment					
Approach to emerging risks and controlling healthcare associated infections					

Figure 4.4. Safety Culture Maturity Level of Internal Disease Clinics

Note I: The scores were between 1 – 1.5, the level was admitted as pathological: 1.5 - 2.5 as reactive; 2.5 – 3.5 as bureaucratic; 3.5 – 4.5 as proactive; 4.5 – 5 as generative. Note II: If the difference between level score and real value of the level (pathological: 1, reactive: 2; bureaucratic, 3; proactive, 4; generative, 5) was greater than .10, the second closest level was also marked with lighter colour.

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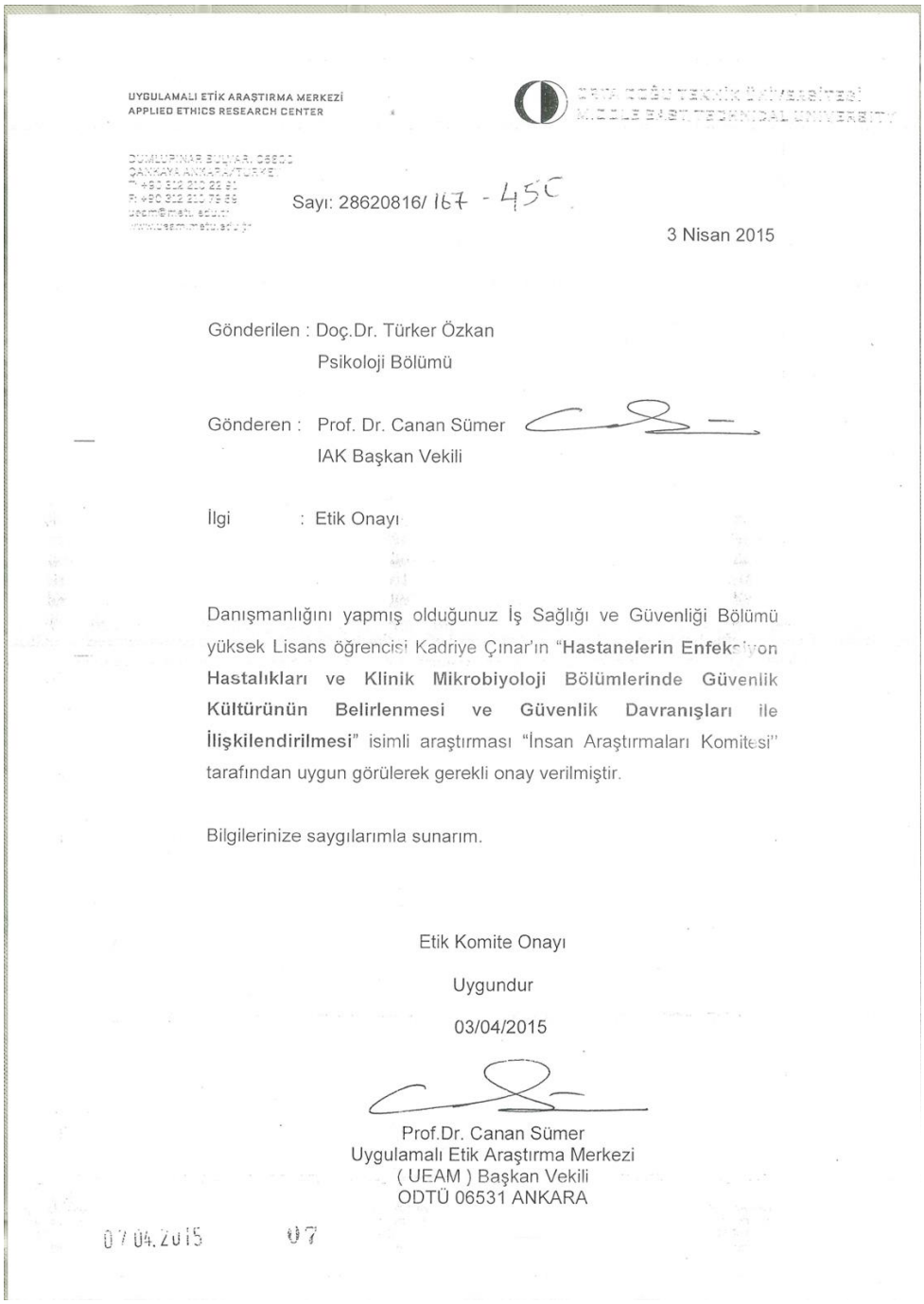
APPENDICES

A. Ethical Permissions



UYGULAMALI ETİK ARAŞTIRMA MERKEZİ
APPLIED ETHICS RESEARCH CENTER

ORTA DOĞU TEKNİK ÜNİVERSİTESİ
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3 Nisan 2015

Gönderilen : Doç.Dr. Türker Özkan
Psikoloji Bölümü

Gönderen : Prof. Dr. Canan Sümer
IAK Başkan Vekili

İlgi : Etik Onayı

Danışmanlığını yapmış olduğunuz İş Sağlığı ve Güvenliği Bölümü yüksek Lisans öğrencisi Kadriye Çınar'ın "**Hastanelerin Enfeksiyon Hastalıkları ve Klinik Mikrobiyoloji Bölümlerinde Güvenlik Kültürünün Belirlenmesi ve Güvenlik Davranışları ile İlişkilendirilmesi**" isimli araştırması "İnsan Araştırmaları Komitesi" tarafından uygun görülerek gerekli onay verilmiştir.

Bilgilerinize saygılarımla sunarım.

Etik Komite Onayı

Uygundur

03/04/2015

Prof.Dr. Canan Sümer
Uygulamalı Etik Araştırma Merkezi
(UEAM) Başkan Vekili
ODTÜ 06531 ANKARA

07.04.2015 07

FBE

ANKARA İLİ 1. BÖLGE KAMU HASTANELERİ BİRLİĞİ
GENEL SEKRETERLİĞİ - ANKARA İLİ 1. BÖLGE KHBGS
EĞİTİM BİRİMİ
22/04/2016 17:02 - 51700877 - 806.01.03 - E.403
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T.C.
SAĞLIK BAKANLIĞI
Türkiye Kamu Hastaneleri Kurumu
Ankara 1. Bölge Kamu Hastaneleri Birliği Genel Sekreterliği

Sayı : 51700877/806.01.03
Konu : Anket Çalışması

ORTA DOĞU TEKNİK ÜNİVERSİTESİ REKTÖRLÜĞÜNE

Üniversiteniz İş Sağlığı Ve Güvenliği Programında yüksek lisans yapmakta olan Kadriye ÇINAR'ın "Hastanelerde Güvenlik Kültürü" konulu araştırma tezi anket çalışmasını Genel Sekreterliğimize bağlı Ulucanlar Göz Eğitim ve Araştırma Hastanesi, Ankara Eğitim ve Araştırma Hastanesi, Numune Eğitim ve Araştırma Hastanesi, Türkiye Yüksek İhtisas Eğitim ve Araştırma Hastanesi ile Fizik Tedavi ve Rehabilitasyon Eğitim ve Araştırma Hastanesinde yapması hastane Yöneticiliklerince uygun görülmüştür.

Söz konusu araştırma sonucunun Bakanlığımız bilgisi dışında ilan edilmemesi, bir örneğinin Genel Sekreterliğimize gönderilmesi, tez çalışmasının yapılması planlanan bağlı sağlık tesisinde hizmeti aksatmayacak şekilde yürütülmesi, araştırmaya katılımların gönüllülük esasına göre yapılması, araştırmanın amacı, yöntemi, kapsamı, araştırma metodu ve kavramsal çerçevesini açıklayan bilgiler göz önünde bulundurularak yapılması hususunda;

Gereğini arz ederim.

Dr. Ertuğrul ÜNKOÇ
Genel Sekreter a.
İdari Hizmetler Başkanı

GÜVENLİ ELEKTRONİK
İMZALI ASLİ İLE AYNISIDIR
27.04.2016

Hulusi ŞİMŞEK
Memur

27/4
Fen Bil.Enst.Müd.
Bilgilerinize
saygılarımla
Prof. Dr. Canan AYVAŞIK
Rektör Danışmanı

27.04.16 - 7263

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Selvinaz YÜCEL Tel: 0 312 306 36 76-3718 Fax: 0 312 306 36 32

28 Nisan 2016
980

B. Dimensions and Questions of HcPro-ScuF in Turkish

Güvenlik Kültürü Boyutları ve Soruları

Boyutlar	Sorular
Hastane yönetiminin çalışan güvenliğine desteği (SC1)	Hastanenin İSG konusunda tutumu nasıldır? Bir politikası var mıdır? Önceliği neye vermiştir, İSG'nin önceliği hangi safhadadır? İşe alımlarda sağlık/işe uygunluk kontrolü yapılır mı? Yasal şartlara uygunluk izleiyor mu? Düzenli İSG hedefleri oluşturuluyor mu? Risk değerlendirme ve çalışanla paylaşım yapılıyor mu? İSG konusunda çalışan takımlar mevcut mu?
Kliniklerde güvenliği iyileştirici yaklaşımlar (SC2)	Kıdemli personelin İSG kriterleri çerçevesinde çalışan personel tepkisi nasıldır? Personelin İSG konusundaki fikir ve önerileri hocalar/supervisorlar tarafından dikkate alınır mı? İş yoğunluğunun fazla olduğu zamanlarda hocalar/supervisorlar işin hızlı yürütülmesi için İSG kriterlerini göz ardı ederler mi? Tekrar eden hata/kaza karşısındaki tutum nasıldır? İyileştirmeler risk değerlendirme kökenli mi?
Organizasyonel öğrenme-sürekli iyileşme-güvenliğe bağlılık (SC3)	Çalışma ortamının daha sağlıklı ve güvenli olması için saptanan hedeflere yönelik çalışmalar yapılır mı? Hatalardan dersler mi çıkarılır yoksa üzeri mi örtülür? İSG ile ilgili bir değişiklik yapıldığında verimi değerlendirilir mi? Yönetim, düzenli aralıklarla hedefe ulaşma durumunu kontrol ediyor mu ve gözden geçiriyor mu?
İleşitim şeffaflığı (SC4)	Personel sağlıklı ve güvenli iş ortamını tehdit eden bir durum farkettiğinde fikirlerini ne ölçüde/ne şekilde paylaşır? İSG konusunda kararlar alınırken fikri alınır mı, konuya dahil edilir mi? İSG ile ilgili bir dokümantasyon sistemi/veri tabanı var mı? Erişimde güçlük yaşanıyor mu?
Hatayı/Kazayı raporlama ve hata/kaza karşısındaki tepki ve hesap verebilirlik (SC5)	Hata/Kaza olduğunda ilgili birimlere bildirir mi? Böyle bir birim bulunur var mıdır ve ne kadar zamanda bildirim yapılır? Bir raporlama sistemi var mıdır ve kayıtlar kontrol edilir mi? Personel hata/kaza yaptığında nasıl davranır? Aleyhine kullanılması korkusuyla gizler mi? Ya da bir sorun varsa, çözüm bulunacağı bilinciyle hatayı/kazayı bildirir mi?

Hata/Kaza araştırması ve geri bildirim mekanizması (SC6)	Hata/kazanın sebepleri araştırılır mı? DÖF araştırma sırasında odak noktası olay mıdır yoksa kişi mi? Hata/Kaza tekrarını önlemeye yönelik bir önlem alınır mı? Alındığında yapılan değişiklik/iyileştirme personele nasıl bildirilir? Alınan önleme yönelik geribildirimde bulunma durumu nasıldır? Özellikle insan hatası tespit edip iyileştirmeleri sağlarken yaklaşımın kök analizine yönelik, sistematik olmasına dikkat ediliyor mu?
İstihdam, yeterlilik ve yetkinlik (SC7)	Personel sayısı iş yükünün üstesinde gelmek için yeterli midir? Personel, verilen göreve mesleki açıdan uygun mudur? Personelin çalışma saatleri işin sağlıklı ve güvenli bir şekilde yürütülmesinde olumlu/olumsuz etkisi var mıdır? Kriz modunda, çok fazla ve hızlı bir şekilde mi çalışılır, öncelik nereye verilir, işin bitmesi vs. güvenlik? Güvenlikle ilgili kişi bazında görev, yetki ve sorumluluklar tanımlanmış mı, kişiler bunu biliyor mu, uygulamada engeller var mı?
Personelin İSG Eğitimi (SC8)	Personel, İSG konusunda nasıl, niçin ve ne zaman eğitilir, bir eğitim programı var mıdır? Personel bu eğitimler hakkında ne düşünür?
Aşırı iş yükü ve stress faktörleri (SC9)	İş yoğunluğu sağlıklı ve güvenli çalışma ortamının sağlanmasını engelleyecek nitelikte midir? İş yoğunluğu ve bundan kaynaklanan stres faktörü personeli sağlığını etkileyebileceğini kontrol eden bir mekanizma var mı? (tespit, iyileştirme?)
Kişisel koruyucu donanım (SC10)	Maruz kalınan risk faktörüne uygun KKD sağlanır mı? Personel gerektiğinde kullanır mı? Kullanımında zorluk çekilen ya da uygun olmayan KKD kullanımı sağlandığında takınılan tutum nasıl olur?
Beklenmeyen risklerle karşılaşıldığında, acil durumlarda risklere yaklaşım şekli ve enfeksiyon kaynaklarının kontrolü (SC11)	Olağandışı enfeksiyon risklerle/vakalarla karşılaşıldığında ne çeşit önlemler alınır? İSG Eğitimleri? Riskin niteliğine göre KKDler? Hangi acil durumlarla karşılaşılabileceği ve ne yapılacağı biliniyor mu? Acil durum müdahale ekipleri var mı?

C. Informed Consent Form

Gönüllü Katılım Formu

Bu çalışma, ODTÜ İş Sağlığı ve Güvenliği Programında yüksek öğrenimini devam ettirmekte olan Kadriye Çınar tarafından Ankara'da birtakım hastanelerin enfeksiyon hastalıkları ve dahiliye kliniklerinde sürdürülmesi planlanan bir çalışmadır. Çalışmanın amacı, hastanelerde güvenlik kültür seviyesini tespit etmek ve kültür seviyesini, güvenlik davranışları ile ilişkilendirmektir. Çalışmaya katılım, tamamıyla gönüllülük temelinde dayanmaktadır. Ankette, sizden kimlik belirleyici hiçbir bilgi istenmemektedir. Cevaplarınız tamamıyla gizli tutulacak ve sadece araştırmacılar tarafından değerlendirilecek; elde edilecek bilgiler bilimsel yayınlarda kullanılacaktır.

Anket, genel olarak kişisel rahatsızlık verecek soruları içermemektedir. Ancak, katılım sırasında sorulardan ya da herhangi başka bir nedenden ötürü kendinizi rahatsız hissederseniz cevaplama işini yarıda bırakıp çıkmakta serbestsiniz. Böyle bir durumda anketi uygulayan kişiye, anketi tamamlamadığınızı söylemek yeterli olacaktır. Anket sonunda, bu çalışmayla ilgili sorularınız cevaplanacaktır. Katıldığınız için şimdiden teşekkür ederim. Çalışma hakkında daha fazla bilgi almak için Kadriye Çınar (E-posta: cinarkadriye@gmail.com) ile iletişim kurabilirsiniz.

Bu çalışmaya tamamen gönüllü olarak katılıyorum ve istediğim zaman yarıda kesip çıkabileceğimi biliyorum. Verdiğim bilgilerin bilimsel amaçlı yayımlarda kullanılmasını kabul ediyorum. *(Formu doldurup imzaladıktan sonra uygulayıcıya geri veriniz).*

D. Demographic Information Form

Yönerge: *Aşağıda sıralanan kişisel bilgiler* ***sadece bu çalışmayı yürütenler tarafından başka kimseyle paylaşılmaksızın*** *tez çalışması analizleri için kullanılacaktır.*

Katılımınız için şimdiden teşekkürler..

Yaşınız: ……..……..…

Cinsiyetiniz: _____Kadın ____Erkek

Eğitim Durumunuz (En son tamamlanan okul/uzmanlık/yan dal programı):

……..…….

Mezuniyet yılınız: …….……

Çalışmakta olduğunuz hastanenin türü:

___Eğitim ve Araştırma ___Üniversite ___Devlet ___Özel

Göreviniz:

___ Uzman Doktor ___Asistan Doktor ___Hemşire

Çalışmakta olduğunuz klinik:

___Enfeksiyon Hastalıkları ve Mikrobiyoloji ___ Dahiliye ___ Diğer

Doktor/Hemşire olarak toplam kaç yıl çalıştınız? .....

Bu hastanede kaç yıldır çalışıyorsunuz? ….....

Bu klinikte kaç yıldır çalışıyorsunuz? .....

Bir haftada toplam kaç saat çalışıyorsunuz? .....

Bir ayda ortalama kaç nöbet tutuyorsunuz?.....

Bir günde ortalama kaç hasta ile ilgileniyorsunuz? .....

Standart güvenlik tedbirleri konusunda eğitim aldınız mı? Evet/Hayır

Bu eğitimler hangi periyotla tekrar alıyorsunuz? (Yılda/Ayda kaç defa?)
.....

Çalışma hayatınız boyunca hafif bile olsa kaç kere yaralandınız? ..…….....,,,,,,,,,,,,,,,,,,,…….,,,

Bu hastanedeki çalışma hayatınız boyunca hafif bile olsa kaç kere yaralandınız? …….....

Çalışma hayatınız boyunca meslektaşınızın hafif bile olsa kaç kere yaralandığına şahit oldunuz? …….,,,,,,,,,.…….

Bu hastanedeki çalışma hayatınız boyunca meslektaşınızın hafif bile olsa kaç kere yaralandığına şahit oldunuz? ……

Çalışma hayatınız boyunca uygulama esnasında kaç kere enfeksiyona yakalandınız? ……

Bu hastanedeki çalışma hayatınız boyunca uygulama esnasında kaç kere enfeksiyona yakalandınız? ……..

Çalışma hayatınız boyunca meslektaşınızın uygulama esnasında kaç kere enfeksiyona yakalandığına şahit oldunuz? …….....

Bu hastanedeki çalışma hayatınız boyunca meslektaşınızın uygulama esnasında kaç kere enfeksiyona yakalandığına şahit oldunuz? ….....

Çalışma hayatınız boyunca bir kaza/hata olduğunda "Tüm önlemler alınmasına rağmen, kendi hatamdan dolayı bu olay başıma geldi." şeklinde bir yazı imzaladınız mı? Kaç kere? …….....

Bu hastanedeki çalışma hayatınız boyunca bir kaza/hata olduğunda "Tüm önlemler alınmasına rağmen, kendi hatamdan dolayı bu olay başıma geldi." şeklinde bir yazı imzaladınız mı? Kaç kere? …….....

Çalışma hayatınız boyunca meslektaşınızın bir kaza/hata olduğunda "Tüm önlemler alınmasına rağmen, kendi hatamdan dolayı bu olay başıma geldi." şeklinde bir yazı imzaladığına şahit oldunuz? Kaç kere? …….....

Bu hastanedeki çalışma hayatınız boyunca meslektaşınızın bir kaza/hata olduğunda "Tüm önlemler alınmasına rağmen, kendi hatamdan dolayı bu olay başıma geldi." şeklinde bir yazı imzaladığına şahit oldunuz? Kaç kere? …….....

E. Healthcare Professionals Safety Culture Framework (HcPro-SCuF)

Yönerge: *Lütfen çalıştığınız klinik için boyutlar sütununda belirtilen konu ile ilgili en uygun tanımlamayı işaretleyiniz.*
Lütfen hiç bir maddeyi boş bırakmayınız.

Boyutlar	1	2	3	4	5
Hastane Yönetiminin Çalışan Güvenliğine Desteği (SC1)	İSG politika ve hedefleri yoktur. Daha fazla hastanın en az iş gücü ve malzeme ile tedavi edilmesi için çalışılır, olaylara tamamen kar odaklı yaklaşırlar. Öncelik her zaman iştedir. İşe alımlarda yasal şartlara uygunluk aranır. Çalışan güvenliğine hiç önem verilmez. Sadece enfeksiyondan korunma konusunda görevlendirilmiş ekip vardır, fakat çalışmazlar. Çalışan memnuniyetine önem verilmez.	Zorunlu ise göstermelik İSG hedef ve politikaları vardır. Kliniği uzun zamandır meşgul eden ve kârlı durumlar için hedefler vardır. Öncelik iştedir, çalışanı önemsenmez. İşe alımlarda kontroller kâğıt üzerinde yapılır. Yöneticiler İSGyi bir dert olarak görür. Kaza, vaka olduktan sonra harekete geçip, geçici çözümler bulunur. Daha önce sorun yaşadığı konularda daha iyidir.	İSG politika ve hedefleri mevzuata göre belirlenmiştir. Hedeflere ulaşılıp ulaşılmadığı Bakanlık isterse diye kayıt edilir. Sistem sorumluların kendilerini koruması üzerine inşa edilir. Yasal zorunluluktan dolayı İSG'yi çalışma hayatlarına almışlardır. Risk değerlendirmesi, yasal zorunluluğun olduğu durumlarda, görevli birkaç kişi tarafından çalışanlar dahil edilmeden yapılır. Kaza öncesi için bir çalışma yapılmaz.	Gerçekçi İSG politikası ve potansiyelin biraz üstünde hedefler vardır ve hedeflere ulaşılıp ulaşılmadığı kontrol edilir. Ulaşılamayan hedefler çok can sıkıcı değildir. İSG konusunda akademik destek alınır. İSG konusunda katı kurallar vardır. İş yürürken personele zarar gelmesin anlayışı benimsenmiştir. İşe alımlarda sağlık ve işe uygunluk kontrolleri yapılır, uygun olmayan personel alınmaz.	İSG hedef ve politikaları çalışan memnuniyeti ön planda tutularak hazırlanır. Hedeflerin tamamına ulaşılmaya çalışılır. Öncelik, personelin sağlığı ve güvenliğidir, iş bundan sonra gelir. İşe alımlarda sağlık veya işe uygunluk kontrolleri yapılır; personele uygun iş belirlenir. Risk değerlendirmesi, olaylardan önce ve tüm çalışanların katılımı ile yapılır, çözümler çalışanlarla planlanır.
Kliniklerde Güvenliği İyileştirici Yaklaşımlar (SC2)	Hocaların/Süpervizörlerin, İSG konusunda teorik bilgileri vardır ancak gereksiz görülür. İSG'nin gündeme gelmesi rahatsızlık oluşturur. İSG kararlarını hocalar/süpervizörler verirler, diğerlerinin fikirlerini almazlar. Rutin çalışmalar ve yoğun iş temposunda İSG kriterleri göz ardı edilir, işin bitmesine odaklanılır. Tekrar eden hata/kazalarda, zarar gören kişinin kim olduğuna göre harekete geçilir. Suçlayıcı yaklaşım vardır.	Hocalar/Süpervizörler İSG konusunda bilgi sahibidir ancak kazalardan sonra uygulanır. Çalışanlar fikir önerisinde bulunur ancak fikirleri dikkate alınmaz. İşin çok riskli olduğu düşünülmüyorsa İSG kriterleri göz ardı edilir. Hatalardan sonra harekete geçilir, geçici çözüm bulunur ama ders çıkarılmaz. Kaza sebepleri, çok büyük olaylarda ve tekrar eden kazalarda denetim korkusu ile araştırılır.	Hocaların/süpervizörler İSG konusunda her şeyin tam olarak yapıldığı sanır. Kararlar yüzeysel ama mevzuata uygun alınıp uygulanır. Kaynak mevzuattır ve çalışanların fikirlerini almaya gerek duymazlar. Çalışanlar görüşlerini vermeye çalışır, fakat sistem bunu zorlaştırır. Yoğun iş temposunda nedeniyle sadece mevzuatta yer alan konularda İSG kriterleri göz ardı edilmez.	Hocalar/Süpervizörler İSG'ye önem verir, düzenli toplantılarla fikir alışverişinde bulunulur. Çalışanlar fikir üretme için cesaretlendirilir. Fikirler, veren kişinin kıdemine göre dikkate alınır. İSG gerekliliklerine her durumda dikkate alınır. Yoğun zamanda İSG göz ardı edilmez, ancak rahat zamanlara nazaran daha az önem verilir. Tekrar eden hata/kaza kök-sebep analizleri yapılır.	Çalışanların İSG konusunda fikirleri karar alma aşamasından itibaren alınır. Çalışanlar kendi bölümü olmasa bile bir aksaklık gördüğünde bunu açıkça ifade etmekten çekinmez. Rutin dönemde de yoğun zamanlarda da İSG gerekliliklerine, uyulur.. Hatta yoğun zamanların daha tehlikeli olduğu düşünülerek önlemlere daha çok dikkat edilir. Çözümler çalışanlarla birlikte planlanır.

Yönerge: *Lütfen çalıştığınız klinik için boyutlar sütununda belirtilen konu ile ilgili en uygun tanımlamayı işaretleyiniz.*
Lütfen hiç bir maddeyi boş bırakmayınız.

Boyutlar	1	2	3	4	5
Organizasyonel Öğrenme-Sürekli İyileşme-Güvenliğe Bağlılık (SC3)	İyileştirmeler, sistematik bir şekilde yapılmaz, işin yürütümünü engelledikçe ve çok gerekliyse yapılır, verimi ölçülmez. Personele zarar veren konularla pek fazla ilgilenilmez. Tekrar eden hata/kazalar, işin yürütümüne engelliyorsa ve büyük maddi hasarlara sebep oluyorsa dikkate alınır. Hataların üzerini örtme eğitimi yaygındır. Hata genellikle araştırılmaz ve suçlayıcı bir tutum sergilenir.	İyileştirmeler, sistematik bir şekilde yapılmaz, sorun çıktıkça yapılır. İyileştirmeler neticesinde geri bildirim alınmaz. İyileştirmeler sonucunda verim anlık, gözleyerek değerlendirilir. Hata/Kazaların üzeri örtülmez ancak gidermek için de çalışılmaz. Tekrar eden hata/kazalarda yüzeysel inceleme yapılır, geçiştirmelik çözümler bulunur, ceza almamak için göstermelik birkaç dokuman hazırlanır.	İyileştirmeler hedeflere yönelik yapılmaz, yasaların öngördüğü öncelikle ve kurallarla yapılır. Olumsuzluklar mevzuat temelli ele alınır. Yönetim, iyileştirmeleri daha çok kendini korumak adına yapar. İyileştirmelerin verimi, zorunlu ise, ölçülür; iyi olanlar raporlanır. Tekrar eden hata/kazalardan sonra araştırma yapılır, bir kısmı kağıt üzerinde kalır. Hata/Kazalar, olay odaklı araştırılır ve dersler çıkarılır.	İyileştirmeler hedeflere ve DÖFlere göre sistematik bir şekilde yapılır. İyileştirmelerin verimi ölçülür ve verimi yükseltmek için çalışılır. Sorunlar personelle fikir alış-verişi yaparak çözülür ve sonuçlar ilgili çalışanlarla paylaşılır. Tekrar eden hata/kazalarda kök sebep araştırılır, önlemler alınır, dersler çıkarılır.	İyileştirmeler hedeflere ve DÖFlere göre sistematik ve çalışan katılımı ile yapılır. Geri bildirimler alınır. İyileştirmelerin verimi ölçülür ve personelin daha fazla katılımı ile artırılır. Tekrar eden hata/kazaların kök sebebi araştırılır, önlemler alınır. Çıkarılan dersler hem tüm personelle hem de diğer birimlerle paylaşılır.
İletişim Şeffaflığı (SC4)	Çalışan, çalışma ortamını tehdit eden durumu genellikle fark etmez. Fark ettiğinde fikir vermekten çekinir ya da dikkate alınmayacağı için paylaşmaz. Eksiklikler örtbas edilir. İSG konusunda kararlar alınırken personel dahil edilmez. Kayıt tutmak önemsenmez, zaman kaybı olarak görülür.	Çalışanlar, kendileri ile ilgili değil de hastane ve hastalarla ilgili olumsuzlukları bildirir. Bu bildirim, ölüm ya da çok ciddi tehlikeler barındırıyorsa dikkate alınır. Çalışanlar, İSG kararları alınırken dahil edilmez. Çalışan, fikir verdiği işin başına kalması korkusu ile fikrini vermekten çekinir. Yönetim, kendini koruma amaçlı bir veri tabanı kurmuştur, çalışanların erişimi yoktur ve genelde sadece adli olaylar için kayıt tutulur.	Çalışanlar, tehlikeli bir durum fark ettiğinde yazılı olarak bildirir. Yönetim bildirimi değerlendirir. Uygulamaya geçmesi için aynı konuda çok sayıda şikâyet/öneri olması ya da konu hayati önem taşıması gerekir. Çalışanlar, İSG kararları alınırken dahil edilmez. Zorunlu bir veri tabanı vardır, ancak kurumun notunu yükseltecek bilgiler içerir, erişim kısıtlıdır. İSG kararları ortak alana bırakılır, ilgilenen ilgilenir.	Çalışanlar, tehlikeli bir durum fark edildiğinde ya da rutin işleyişi daha güvenli hale getirecek fikri varsa anında bildirilir. Öneriler ve bildirim hiyerarşiye göre değerlendirilir, gerekli uygulamalar hayata geçirilir. İSG kararları alınırken sadece sorumlu personellerden fikir alınır. Yapılan uygulamalar ve alınan kararlar herkesle paylaşılır. Veri tabanı vardır ve etkin kullanılır, erişim herkes için sağlanır.	Çalışanlar, tehlikeli bir durumda ya da rutin işleyişi daha güvenli hale getirecek bir fikri varsa anında bildirir. Bildirimler incelenir, personele bilgi verilir ve uygulamalar herkesin katılımı ile hayata geçirilir. Çalışan İSG kararları alma ve uygulama sırasında kendiliğinden dahil olur. Düzenli veri girişi olan, istatistikleri tutulan bir veri tabanı vardır, güvenli bir erişim herkese sağlanır. İlgili dış kurumlarla iletişim vardır.

Yönerge: *Lütfen çalıştığınız klinik için boyutlar sütununda belirtilen konu ile ilgili en uygun tanımlamayı işaretleyiniz.*
Lütfen hiç bir maddeyi boş bırakmayınız.

Boyutlar	1	2	3	4	5
Hatayı/Kazayı Raporlama ve Hata/Kaza Karşısındaki Tepki ve Hesap verebilirlik (SC5)	Hata/Kaza bildirimi için bir birim, raporlama sistemi yoktur, her hata/kaza raporlanmaz. Çalışan, kendisinden kaynaklanan olayları raporlamazken hastaneden/yönetimden kaynaklı olanları raporlayabilir. Çalışanlar kendisine zarar gelmesi, dikkate alınmayacağı düşüncesi taşır, hata/kazayı fark ettiğinde gizleme eğilimdedir.	Hata/Kaza bildirimi için bir birim, raporlama sistemleri yoktur. Hata/Kazalar gizlenmez, ancak küçük görülen olaylar dikkate alınmaz düşüncesiyle bildirilmez. Çalışanlar, sorumluluğu üzerlerinden atmak için olayları raporlar. Raporlamanın zorunluluk olduğu durumlarda, ceza almayacak kadar ve denetime yakın zamanlarda göstermelik birkaç kayıt tutulur.	Hata/Kaza bildirimi için bir birim yoktur, enfeksiyonlara karşı çalışan Enfeksiyon Kontrol Komitesi vardır. Mevzuatta özellikle belirtilmiş hata/kaza raporlanır, prosedür uğraştırıcıdır. Olayların, kurumun başına dert açabilecek tarafları raporlanmaz. Çalışan, kendisine zarar gelmesi endişesi taşır. Raporlama sistemi vardır. Olayların bildirilip bildirilmediğini kontrol eden bir mekanizma yoktur.	Hata/Kaza bildirimi için bir kurul vardır, raporlama sistemi vardır ve çalışanlar yaşadığı olumsuzlukları raporlar. Hata/Kazalar İSG açısından önemli olduğu bilinci ile raporlanır. Çalışanlar raporlama yaparken bir korku taşımaz. Raporların sisteme işlenip işlenmediğini kontrol eden bir mekanizma vardır, olaylara çözümler aranır.	Hata/Kaza bildirimi için bir kurul vardır, raporlama sistemi vardır ve çalışanlar yaşadığı her türlü olumsuzluğu olaydan hemen sonra bu sistemi kullanarak raporlar. Sistemi kontrol eden bir mekanizma vardır. Olaylar bilinçli ve sistematik bir şekilde ve bazen çözüm önerisi sunar nitelikte raporlanır, çalışanlar bir endişe taşımaz.
Hata/Kaza Araştırması ve Geri bildirim Mekanizması (SC6)	Hata/Kazalar kaynağına inerek araştırılmaz. Bir suçlu bulmak için hata/kaza araştırması yapılır. Suçu çalışana yıkmak için sorumluluğu aldığına dair kâğıt imzalama yoluna gidebilirler. Yapılan hatanın bir daha gerçekleşmemesi için emir verilir, herhangi bir çalışma yapılmaz, önlemler alınmaz. Genelde her türlü soruna çözümü çalışanın bulması beklenir.	Hata/Kazalar olay odaklı ve gecikmeli araştırılır, kişiyi suçlama eğilimi sözde yoktur yine de sorumlu tespit edilmeye çalışılır ve yönetim bunu kendini korumak için yapar. Kök-sebep analizi yapılmaz. Alınan önlemler/iyileştirmeler personele bildirilmez. Hatalar/kazalar büyük ise bir kaza sonrası sebepleri araştırılabilir.	Hata/Kazalar mevzuat odaklı araştırılır, sistem kaynaklı hatalardan ziyade kişi kaynaklı hataları tespit eder. Kaza araştırmalarında kök-sebep analizi adı altında çalışmalar yapılır, ancak aslına uygun, detaylı bir şekilde değildir. Yapılan iyileştirmeler, zorunlu ise, personele bildirilir ancak geri bildirim alınmaz.	Hata/Kazalar kişiyi suçlamaktan uzak ama kişi de göz önünde bulundurularak ve kök sebep odaklı araştırılır. Kazalar neticesinde bunu düzeltmeye ve tekrarını önlemeye yönelik DÖF raporları düzenlenir. Yapılan iyileştirmeler, sistematik bir şekilde personele bildirilir. Personelden geri bildirim alınır.	Kaza/hata olduğunda küçük bile olsa önemsenir, çözüm yolu aranır. Hata/Kazalar kişiyi suçlamaktan uzak, olay ve kök sebep odaklı araştırılır. Alınan önlemler/iyileştirmeler personele sistematik olarak bildirilir, personel geri bildirim verir. Kazalar neticesinde DÖF düzenlenir, çalışanla beraber çözüm bulmaya çalışılır.

Yönerge: *Lütfen çalıştığınız klinik için boyutlar sütununda belirtilen konu ile ilgili en uygun tanımlamayı işaretleyiniz.*
Lütfen hiç bir maddeyi boş bırakmayınız.

Boyutlar	1	2	3	4	5
İstihdam ve Yeterlilik ve Yetkinlik (SC7)	İş yükü, mevcut personelin yapabileceğinden fazladır. Personelin çalıştığı saat kontrol edilmez, sağlıklı ve güvenli çalışma ortamını tehdit edecek düzeydedir. Buna çözüm aranmaz, dahası şikayet eden personel işten çıkarılır. Personelin yetkinliğine bakılmaz, en az maaş verebileceği personeli tercih eder. İş verildikten sonra öğretme yoluna gidilir.	İş yükü ile iş gücü orantılı değildir, iş yükü fazladır ancak buna çözüm aranmaz. Personelin çalıştığı saat kontrol edilmez ancak sağlıklı ve güvenli çalışma ortamını tehdit edecek düzeydedir. Çok sikayet olması durumunda çare aranabilir. Personel alımında yeterliliğe bakılmaz, referans sistemi yerleşmiştir. Mesleki yeterlilik, çok tehlikeli görünen bölümlerde kontrol edilir.	İş saati ve iş yükünü mevzuata uygun gibi gösterir ancak fazla çalıştırır. Fazla iş yükü konusunda şikayetler, yasal sınırlar aşılmamışsa dikkate alınmaz. Çalışma saatleri ISG açısından değerlendirilmez. İstihdam sırasında, yasal zorunlulukları sağlayan tercih edilir, yetkinlik kontrolü yapılmaz.	İş yükü ile iş gücü orantılıdır. Personelin çalıştığı saat kontrol edilir; sağlıklı ve güvenli çalışma ortamını tehdit edecek düzeye erişmesine izin verilmez, gerektiğinde personel takviyesi yapılır. Personel, yaptığı işe mesleki yeterlilik ve yetkinlik anlamında uygundur. İSG konusunda görev ve yetkiler tanımlanmış, ekipler kurulmuştur.	İş yükü ile iş gücü orantılıdır, bunu kontrol eden bir mekanizma vardır ve kapasiteyi aşan iş alınmaz, öncelik sağlıklı ve güvenli çalışma koşullarıdır. Personelin çalışma koşulları çok önemsenir ve yeterli sayıda ve yetkinlikte personel istihdam edilir. Diplomanın yanında yetkinlik kontrolü de vardır. Doğru personel doğru pozisyonda değerlendirilir. İSG konusunda görev ve yetkiler tanımlanmıştır, uygulanır.
Personelin İSG Eğitimi (SC8)	Eğitim programı vardır, eğitimler genellikle yapılmaz ama yapılmış gibi gösterilir. Eğitimlerin verimi ölçülmez. Çalışanlar, bu tür eğitimi gerekli görür ama konu başlıkları önemli olduğu halde dersin içeriği ve sunumu efektif olmadığı için imza atıp çıkılır. Bazen çalışanlar bu mevzuları zaten bildiğini düşünür ancak doğru uygulamasını bilmezler.	Eğitimler zorunluluk olduğu için ya da büyük kazalar veya olumsuz medya imajı oluştuğu zaman düzenlenir; içeriği yetersizdir, göstermeliktir. Olay unutulunca eğitimler de ihmal edilir. Kimi zaman eğitim düzenlenmez, personelden katıldığına dair imza alınır, ve bildirimler ile personel bilgilendirilebilir. Çalışan, başına bir kaza gelmişse, ya da yakın gelecekte gelme ihtimali yüksekse eğitimlere önem verir. Eğitimin verimi ölçülmez.	Mevzuatın öngördüğü şekilde eğitim programı vardır ve eğitimler düzenlenir. Çalışanların katılımı zorunludur, ancak sadece imza atıp çıkma eğilimi hakimdir. Eğitimlerin amacı, hedef kitlesi tam olarak belirlenmemiştir. Verimi göstermelik olarak ölçülür. Mevzuat zorunlu tuttuğu için sınavlar düzenlenir.	Eğitimler, bir program dahilinde ve yeterli bir içerikle düzenlenir. Henüz riskler oluşmadan, literatür ve bilimsel veriler kullanılarak eğitimler düzenlenir. Eğitici, eğitimin içeriği ve işlevselliği önemsenir. Katılım zorunludur ve personelin katılımı özendirilir. Personel eğitimlere iştirak eder, geri bildirim verir. Verimi ölçülür. İşe de olumlu katkı sağlayacak olan eğitimlere daha çok önem verilir.	Eğitimler, bir program dahilinde, olay öncesini, anını ve sonrasını kapsayacak niteliktedir. Eğitimler, literatür ve bilimsel veriler kullanılarak düzenlenir. Her departmana/işe özgü(risk faktörüne göre) eğitimler düzenlenir, paket eğitimler değildir. Katılım zorunludur ve personel katılmak için isteklidir. Telafi eğitimi düzenlenir. Eğitimin verimi ölçülür. Hata ve kazaların yaşandığı noktalarda eğitimler tekrarlanır.

Yönerge: *Lütfen çalıştığınız klinik için boyutlar sütununda belirtilen konu ile ilgili en uygun tanımlamayı işaretleyiniz.*
Lütfen hiç bir maddeyi boş bırakmayınız.

Boyutlar	1	2	3	4	5
Aşırı İş yükü ve Stres Faktörleri (SC9)	İş yoğunluğu, sağlıklı ve güvenli çalışma ortamını tehdit edecek ve strese sebep olacak niteliktedir. Ancak, çalışanlar bu durumu kanıksamıştır. Yoğunluğu kontrol eden bir mekanizma yoktur. "İş olsun da stressli olsun" düşüncesi hakimdir.	İş yoğunluğu, sağlıklı ve güvenli çalışma ortamını tehdit eder niteliktedir ancak yönetim bunu reddeder. Bunu kontrol eden bir mekanizma yoktur. Çözüm için hocaların/supervisorların yönetime bu konuda baskı yapması, çalışanların çok fazla şikayet etmeleri, bu konuyla ilgili ciddi sıkıntılar yaşanması gerekir.	Sağlıklı ve güvenli çalışma ortamını tehdit eden bir yoğunluk yaşanabilir, bunu kontrol eden referansı yasal zorunluluklar olan bir mekanizma vardır ancak herhangi bir önlem alınmaz. Bu yoğunluğu gidermek için göstermelik uğraşlar verilir.	İş yükü iş gücü orantılıdır, iş yükünü kontrol eden mekanizmaları vardır ve bunun kaynağı ulusal, uluslararası ölçeklerdir. İş yoğunluğu zaman zaman olabilir ancak yoğunluktan kaynaklanan strese, çalışanların şikayetlerine çözüm bulmaya çalışılır. Çalışan, yapması gerekenden fazla işe zorlanmaz.	İş yükü ile iş gücü orantılıdır. İş yükünü kontrol eden mekanizmaları vardır ve bunun kaynağı ulusal, uluslararası standartlardır. Kapasite fazlası iş alınmaz.
Kişisel Koruyucu Donanım (SC10)	KKDler sağlanır, ancak nitelikleri risk faktörüne uygun olmayabilir ve sayıları yetersizdir. Çalışanlar, doğru kullanımını bilmezler, gereksiz olduğunu düşünür, kullanmayabilirler, bu konuda eğitim verilmez. Çalışan sağlığını etkiliyen KKD uygunsuzluğu tespit ettiğinde bildirir.	Yeterli sayıda KKD bulunur. Ancak nitelikleri her zaman risk faktörüne uygun değildir, sayıları yeterli olmayabilir. Çalışanlar KKD nin doğru kullanımını bilmeyebilir. Çalışanlar, söz konusu KKD nin yokluğu ile ilgili bir olumsuz olay yaşamışsa kullanır, uygunsuzlukları bil dirir. Ancak, yönetim konu ile ilgili şikayet defalarca gelince dikkate alır, çok maliyetli değilse iyileştirir.	KKDler sağlanır, niteliği mevzuata uygundur ancak her zaman risk faktörüne uygun olmayabilir. Sayısı personel kadardır, yedeği yoktur. Çalışanlar kullanımını bilir ve zorunlu olduğu durumlarda kullanır, KKD nin uygunsuzluğu bildirildiğinde mevzuata uyun değilse / tehlike oluşturuyor ise dikkate alınır. Ancak yapılacak iyileştirme hemen gerçekleşmez eldeki malzemelerin bitmesi beklenir.	Risk faktörüne uygun, yeterli sayıda KKD sağlanır. KKDler olay üzerine sağlanmaz, olası riskler önceden değerlendirilip tedarik edilir, veya temin mekanizması ayarlanmıştır. Personel kullanımını bilir ve yerinde, zamanında kullanır. Uygunsuz KKD bildirilir ve dikkate alınır. Ancak ergonomik rahatsızlıklar dikkate alınmayabilir.	Olası riskler önceden değerlendirilip, riskin niteliğine uygun KKD ler sağlanır, yedekleri de vardır. KKDler sağlanırken kullanımı, işlevselliği, rahatlığı da dikkate alınır. Çalışan, kullanımını bilir ve yerinde, zamanında kullanır. Uygunsuz KKD veya ergonomik rahatsızlıklar bildirilir, çözüm bulunur.

Yönerge: *Lütfen çalıştığınız klinik için boyutlar sütununda belirtilen konu ile ilgili en uygun tanımlamayı işaretleyiniz.*
Lütfen hiç bir maddeyi boş bırakmayınız.

Boyutlar	1	2	3	4	5
Beklenmeyen Risklerle Karşılaşıldığında, Acil Durumlarda Risklere Yaklaşım Şekli ve Enfeksiyon Kaynaklarının Kontrolü (SC11)	İş yoğunluğu, sağlıklı ve güvenli çalışma ortamını tehdit edecek ve strese sebep olacak niteliktedir. Ancak, çalışanlar bu durumu kanıksamıştır. Yoğunluğu kontrol eden bir mekanizma yoktur. "İş olsun da stressli olsun" düşüncesi hakimdir.	İş yoğunluğu, sağlıklı ve güvenli çalışma ortamını tehdit eder niteliktedir ancak yönetim bunu reddeder. Bunu kontrol eden bir mekanizma yoktur. Çözüm için hocaların/supervisorların yönetime bu konuda baskı yapması, çalışanların çok fazla şikayet etmeleri, bu konuyla ilgili ciddi sıkıntılar yaşanması gerekir.	Sağlıklı ve güvenli çalışma ortamını tehdit eden bir yoğunluk yaşanabilir, bunu kontrol eden referansı yasal zorunluluklar olan bir mekanizma vardır ancak herhangi bir önlem alınmaz. Bu yoğunluğu gidermek için göstermelik uğraşlar verilir.	İş yükü iş gücü orantılıdır, iş yükünü kontrol eden mekanizmaları vardır ve bunun kaynağı ulusal, uluslararası ölçeklerdir. İş yoğunluğu zaman zaman olabilir ancak yoğunluktan kaynaklanan strese, çalışanların şikayetlerine çözüm bulmaya çalışılır. Çalışan, yapması gerekenden fazla işe zorlanmaz.	İş yükü ile iş gücü orantılıdır. İş yükünü kontrol eden mekanizmaları vardır ve bunun kaynağı ulusal, uluslararası standartlardır. Kapasite fazlası iş alınmaz.

Kısaltmalar:
İSG : İş Sağlığı ve Güvenliği
DÖF: Düzenleyici, Önleyici Faaliyet Raporu
KKD: Kişisel Koruyucu Donanım

F. Safety Precautions Questionnaire

Yönerge: *Aşağıdaki ölçekte, Standart Güvenlik Tedbirleri olarak adlandırılan 36 madde yer almaktadır. Lütfen, işinizi yaparken bu davranışları ne derecede takip edebildiğinizi beş basamaklı (1= Hiçbir zaman 5= Her zaman) ölçek üzerinde ilgili kutucuğu işaretleyerek belirtiniz.*

Eğer, sıralanan maddelerde yaptığınız iş için geçeri olmayan bir ifade varsa "Uygun Değil-UD" seçeneğine karşılık gelen kutuyu işaretleyiniz.
Lütfen hiçbir maddeyi boş bırakmayınız.

		Hiçbir zaman	**Nadiren**	**Zaman zaman**	**Sıklıkla**	**Her zaman**	**Uygun Değil**
1	Delici ve kesici cisimleri uygun atık kutusuna atmak	1	2	3	4	5	UD
2	Teşhis ve tanısı ne olursa olsun, kendini tüm hastaların kan ve vücut sıvılarına karşı korumak	1	2	3	4	5	UD
3	Teşhis ve tanısı ne olursa olsun, bütün hastalar için tüm Standart Güvenlik Tedbirlerine uymak	1	2	3	4	5	UD
4	Tek kullanımlık eldivenleri giymeden önce elleri yıkamak	1	2	3	4	5	UD
5	Tek kullanımlık eldivenleri çıkardıktan sonra elleri yıkamak	1	2	3	4	5	UD
6	Kan ve vücut sıvılarının sıçrama ve bulaşma ihtimali olduğu durumlarda koruyucu bir giysi giymek	1	2	3	4	5	UD
7	Kan ve diğer vücut sıvılarına maruz kalma ihtimali olduğunda tek kullanımlık eldiven giymek	1	2	3	4	5	UD
8	Göze bir şey sıçrama veya bulaşma ihtimali olduğu zamanlar, koruyucu gözlük kullanmak	1	2	3	4	5	UD
9	Yüze kan ya da diğer vücut sıvıları sıçrama ihtimali olduğu zamanlar, koruyucu siperlik kullanmak	1	2	3	4	5	UD

		Hiçbir zaman	Nadiren	Zaman zaman	Sıklıkla	Her zaman	Uygun Değil
10	Yüze kan ya da diğer vücut sıvıları sıçrama ihtimali olduğu zamanlar, maske kullanmak	1	2	3	4	5	UD
11	Saç ve saçlı deriye kan ya da diğer vücut sıvıları sıçrama ihtimali olduğu zamanlar, bone kullanmak	1	2	3	4	5	UD
12	Olası kontamine olmuş tüm tıbbi sarf malzemelerini tıbbi/enfekte atık kovasına atmak	1	2	3	4	5	UD
13	Kanla kontamine olmuş her şeyi önceden belirlenmiş uygun atık kovalarının içine atmak	1	2	3	4	5	UD
14	Dökülen tüm kan ve diğer vücut sıvılarının derhal prosedür uygun olarak temizlenmesini sağlamak	1	2	3	4	5	UD
15	Kan veya vücut sıvılarıyla kontamine olma ihtimali olan bir alanda çalışırken bir şey yememek veya içmemek	1	2	3	4	5	UD
16	Kesici, delici veya batıcı aletleri kullanırken özellikle dikkatli olmak	1	2	3	4	5	UD
17	Kanla kontamine olmuş iğnelerin kılıflarını tekrar yerine takmamak	1	2	3	4	5	UD
18	Hastalardan kan almak için kullanılmış olan iğneleri enjektörden elle çıkarmamak	1	2	3	4	5	UD
19	Hastadan kan alırken eldiven kullanmak	1	2	3	4	5	UD
20	Hastanın tükürüğünün bulaştığı tüm materyallere, kontamine materyal gibi muamele etmek	1	2	3	4	5	UD
21	Çalışmaya başlamadan önce kendi vücudundaki açık yaraları kapalı hale getirmek	1	2	3	4	5	UD
22	Her işlem öncesinde uygun tekniğe göre elleri su ve sabunla yıkamak	1	2	3	4	5	UD
23	Her işlem sonrasında uygun tekniğe göre elleri su ve sabunla yıkamak	1	2	3	4	5	UD

		Hiçbir zaman	Nadiren	Zaman zaman	Sıklıkla	Her zaman	Uygun Değil
24	Hastanede uygulanmakta olan enfeksiyon kontrol programı ilkelerine uygun davranmak	1	2	3	4	5	UD
25	Kişisel koruyucu ekipmanları (önlük, eldiven, maske, gözlük) giyme ve çıkarma sırasına uygun giyip, çıkarmak	1	2	3	4	5	UD
26	Yüz ve beden ölçülerime uygun kişisel koruyucu ekipmanlar kullanmak	1	2	3	4	5	UD
27	Entübasyon ve aspirasyon sırasında hastalığın tanısına uyun maske (cerrahi maske ya da N95) kullanmak	1	2	3	4	5	UD
28	Hava yolu önlemlerinin gerekli olduğu durumlarda (Tüberküloz, kızamık, su çiçeği, SARS) özel önlemler almak (Hastanın negatif basınçlı odaya alınması, oda kapısının kapalı tutulması gibi)	1	2	3	4	5	UD
29	Kızamık ve su çiçeği karşı bağışıklığım yok, bu hastalara yaklaşırken N95 kullanmak	1	2	3	4	5	UD
30	Aşı ile önlenebilen bulaşıcı hastalıklara karşı bağışıklığımı kan testleri ile kontrol etmek	1	2	3	4	5	UD
31	Akciğer ve larenks tüberküloz tanısı veya şüphesi olan hastaya yapacağım işlemlerde N95 solunum maskesi kullanmak	1	2	3	4	5	UD
32	Kan, idrar/gaita inkontinansı, açık direnaj, akıntılı yara gibi durumlar söz konusu ise eldivene ek olarak steril olmayan temiz bir önlük giymek	1	2	3	4	5	UD
33	Gerekli durumlarda çift eldiven giyme tedbirini uygulamak	1	2	3	4	5	UD
34	Her hastaya muameleden önce, çalışan sağlığı ve güvenliği için de önemli olan hasta güvenliği sınıflamasını kontrol etmek (sarı yaprak, yeşil yonca vb.)	1	2	3	4	5	UD
35	Vücut sıvılarının taşınması sırasında güvenli taşıma prosedürünü takip etmek	1	2	3	4	5	UD
36	Bir kontaminasyon ile karşılaştığımda olayı raporlamak	1	2	3	4	5	UD