PREDICTION OF SAFETY-RELATED BEHAVIOUR AMONG TURKISH NURSES: AN APPLICATION OF THEORY OF PLANNED BEHAVIOUR AND EFFECTS OF SAFETY CLIMATE PERCEPTIONS

A THESIS SUBMITTED TO
THE GRADUATE SCHOOL OF SOCIAL SCIENCES
OF
MIDDLE EAST TECHNICAL UNIVERSITY

BY

GÜLÇİN HAKTANIR

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR
THE DEGREE OF MASTER OF SCIENCE
IN
THE DEPARTMENT OF PSYCHOLOGY

MAY 2011

Approval of the Graduate School of Social Sciences

Prof. Dr. Meliha Altunışık
Director

I certify that this thesis satisfies all the requirements as a thesis for the degree of Master of Science.

Prof. Dr. Nebi Sümer
Head of Department

This is to certify that we have read this thesis and that in our opinion it is fully adequate, in scope and quality, as a thesis for the degree of Master of Science.

Asst. Prof. Dr. Türker Özkan
Co-Supervisor

Prof. Dr. H. Canan Sümer
Supervisor

Examining Committee Members

Assoc. Prof. Dr. Reyhan Bilgiç	(METU, PSY)	
Prof. Dr. H. Canan Sümer	(METU, PSY)	
Asst. Prof. Dr. Türker Özkan	(METU, PSY)	
Assoc. Prof. Dr. Timo Lajunen	(METU, PSY)	
Asst. Prof. Dr. F. Pınar Acar	(METU, BA)	

I hereby declare that all information in this document has been obtained and presented in accordance with academic rules and ethical conduct. I also declare that, as required by these rules and conduct, I have fully cited and referenced all material and results that are not original to this work.

Name, Last name: Haktanır, Gülçin

Signature : 

ABSTRACT

PREDICTION OF SAFETY-RELATED BEHAVIOUR AMONG

TURKISH NURSES:

AN APPLICATION OF THEORY OF PLANNED BEHAVIOUR

AND

EFFECTS OF SAFETY CLIMATE PERCEPTIONS

Haktanır, Gülçin

M.S., Department of Psychology

Supervisor: Prof. Dr. H. Canan Sümer

Co-Supervisor: Asst. Prof. Türker Özkan

May 2011, 133 pages

The aim of the present study was to examine both the individual and organizational level factors contributing to the safety related behaviours of nurses. Effects of the individual level factors on safety behaviour of nurses were analyzed within the theoretical framework of Ajzen's (1991) Theory of Planned Behaviour (TPB) and effects of the organizational level factors were analyzed through safety climate perceptions of the nurses. Data were collected from nurses (N=274) of two

different private hospitals located in Ankara and their first line supervisors (N=34). Participants filled out the questionnaires including scales of TPB (i.e., subjective norm, attitude toward the behaviour, perceived behavioural control, and intention), safety climate perceptions and compliance to Standard Safety Precautions. The outcome variable was the compliance to the Standard Safety Precautions as rated by the first line supervisors of the nurses.

Subjective norm was found to be the only significant predictor of the nurses' intention to adhere to the Standard Safety Precautions. Contrary to the hypothesized relationships, intention and perceived behavioural control did not contribute significantly to the prediction of safety behaviour rated by the first line supervisors. Furthermore, teamwork dimension of safety climate perceptions was found to be the only significant predictor of compliance to the Standard Safety Precautions.

The results are discussed with practical implications of the findings. Contributions of the study are presented followed by the limitations and some future research suggestions.

Keywords: Theory of Planned Behaviour, safety climate perceptions, compliance to Standard Safety Precautions, nurse.

ÖZ

TÜRK HEMŞİRELERİNDE İŞ SAĞLIĞI VE GÜVENLİĞİ İLE İLGİLİ DAVRANIŞLARIN TAHMİNİ: PLANLI DAVRANIŞ KURAMI UYGULAMASI VE GÜVENLİK İKLİMİ ALGISI ETKİLERİ

Haktanır, Gülçin

Yüksek Lisans, Psikoloji Bölümü

Tez Danışmanı: Prof. Dr. H. Canan Sümer

Yardımcı Danışman: Yrd. Doç. Türker Özkan

Mayıs, 2011, 133 sayfa

Bu çalışmanın amacı, hemşirelerin iş yeri güvenlik kurallarına uygun davranışlarına katkıda bulunan bireysel ve örgütsel düzeydeki bazı faktörleri incelemektir. Hemşirelerin iş yeri güvenlik davranışları üzerindeki bireysel seviye faktörlerin etkileri Ajzen'in (1991)'in Planlı Davranış Kuramı (PDK) çerçevesinde analiz edilmiş ve örgütsel düzeydeki faktör olarak da güvenlik iklimi algısı incelenmiştir. Çalışmanın verileri, Ankara'da bulunan iki farklı özel hastanenin hemşirelerinden (N=274) ve hemşirelerin birinci derece amirlerinden (N=34) toplanmıştır. Katılımcılar, Planlı Davranış Kuramını (sübjektif norm, davranışa

karşı tutum, algılanan davranışsal kontrol ve niyet), güvenlik iklimi algısını ve hemşirelerin amirleri tarafından değerlendirilen Standard Güvenlik Önlemlerine riayet etme ölçeklerini içeren anketleri doldurmuşlardır. Hemşirelerin birinci dereceden amirleri tarafından değerlendirilen Standard Güvenlik Önlemlerine riayet etme davranışı, sonuç değişkeni olarak ele alınmıştır.

Sübjektif norm, hemşirelerin Standard Güvenlik Önlemlerine riayet etme niyetlerini anlamlı düzeyde yordayan tek değişken olarak bulunmuştur. PDK çerçevesinde varsayılan ilişkinin aksine, niyet ve algılanan davranışsal kontrol birinci derece amirler tarafından değerlendirilen iş güvenliğine uygun davranışın tahminine anlamlı katkıda bulunmamıştır. Ayrıca, güvenlik iklimi boyutlarından takım çalışması algısı Standard Güvenlik Önlemlerine riayet etme davranışının tek anlamlı açıklayıcısı olarak bulunmuştur.

Elde edilen sonuçlar çalışmanın pratik önerileri ile birlikte tartışılmıştır. Çalışmanın katkıları, sınırlılıkları ve ileriki çalışmalar için bazı öneriler sunulmuştur.

Anahtar Kelimeler: Planlı Davranış Kuramı, güvenlik iklimi algısı, Standard Güvenlik Tedbirlerine riayet etme, hemşire.

To My Beloved Parents Raziye & Haluk Haktanır,
and my sister Elçin Sümerkan

ACKNOWLEDGMENTS

First of all, I would like to express my sincere appreciation to my thesis supervisor Prof. Dr. H. Canan Sümer for her support, encouragement, constructive criticisms, and reliance on me not only through this thesis study, but also during my entire graduate study period. She has been the one who instigated me to love the field of Industrial and Organizational Psychology and to continue to study in this branch as the secondary discipline of me. She has always had the patience during my academic studies, and I am very grateful not only for that but also for her affectionate motherly attitude towards me. It was my golden chance to conduct a thesis study under her guidance and also work as her assistant for a consultancy project during my graduate study. Without her support and supervision this study would not be as good as it is.

I would also like to express my deep gratitude to my co-supervisor, Asst. Prof. Dr. Türker Özkan, for his unique and innovative contributions to this study, for sharing his profound knowledge in the field of safety and statistics, and for his always positive motivation. He has been treating me differently than a supervisor, mostly like a life-coach. I also wish to thank my examining jury members: Assoc. Prof. Dr. Reyhan Bilgiç, Assoc. Prof. Dr. Timo Lajunen, and Assist. Prof. Dr. Pınar Acar for their valuable contributions and feedbacks.

Secondly, I would like to express my thanks to Prof. Dr. Tuğrul Atasoy and his wife for their help in translating the items of the scales from English to Turkish. Moreover, I would like to thank to my ex-first line manager, Sibel Bostancı Çelebi,

for her support for my thesis and during all my graduate study. She was the one helping me with all her contacts to find the first hospital where I collected some of the necessary data. Furthermore, I wish to thank Mücella Tokatlıoğlu, general director of IQ Consultancy Firm, to provide the means for me to get into contact with the second hospital participants of this study.

Many thanks also go to the chief nursing services manager of the first hospital, Emel Gürçay, and the administrative nursing services specialist, Neşe Demirtaş, for their good humor and support for my thesis. Moreover, I want to thank the nursing service manager of the second hospital, Gülizar Göl. Also, I wish to thank all participants of the study, who cannot be named here, and especially the first line supervisors for their contributions and interest.

Furthermore, I wish to thank my friends Zahriye Raşitoğlu, Gülçin Akbaş, Leman Korkmaz, and Gülbin Şengül for their help during the data entrance stage of the study. I wish to show my greatest appreciation to my ex-co workers, Çiğdem and Müge, for their moral and instrumental support. Also, I would like to express my thanks to Dr. H. Tuğba Erol for sharing her experiences, for her moral and instrumental support, for her clever ideas enlightening me, and for her friendship. Also, many thanks go to Pınar Bıçaksız for being my therapist throughout this thesis and for her friendly support.

Furthermore, I would like to thank my faithful friends Gözdem Dural Selçuk, Ayşen Dinçer, Eda Çuvaloğlu, Bahar Turunç, Vildan Doğan, Aslı Gül Buğdacı, Kocaoğlu, Mehmet Oğuz, and Ozan Efe for their joy they bring to my life

and support. Many thanks go to all my friends, too numerous to mention here, for their moral support.

Finally, I would like to express my deepest gratitude to my beloved family, Raziye and Haluk Haktanır for their endless support throughout my life, patience and love. I wish to thank my uncle, Prof. Dr. Tefaruk Haktanır, for his encouragements on conducting a graduate study and for always serving as an academician model for me. Also, I would like to thank my dear sister Elçin Sümerkan for her continuous belief in me and being always besides me.

TABLE OF CONTENTS

LIST OF TABLES

TABLES

LIST OF FIGURES

FIGURES

CHAPTER 1

INTRODUCTION

1.1 Overview

Every year workplace accidents, caused either by unsafe acts of workers or unsafe work conditions or their interactions, result in thousands of injuries and deaths across the world. To illustrate, according to the Health and Safety Executive (HSE) annual statistics report 2009/2010 of Great Britain, 152 workers were killed at work and 233,000 reportable nonfatal injuries (i.e., 840 injuries per 100,000 employees) took place in England. Furthermore, the same report indicated that there were 28.5 million lost working days, 23.4 million of which were due to work-related ill health and 5.1 million of which were due to workplace injuries (Health and Safety Executive Statistics, 2009/2010, p. 4). According to the U. S. Bureau of Labour Statistics, 4,340 fatal work place injuries took place in the year 2009. That is, per 100,000 full-time workers, 3.3 fatal work injuries were reported. In terms of nonfatal workplace injuries and illnesses of 2009, 3.3 million cases were reported for private industry and 2.3 million of these cases occurred in service providing industry. The incident rate of injuries among private industry workers was reported to be 3.4 per 100 workers between the years of 2008 and 2009. For the USA national public sector, 863,000 nonfatal workplace injuries and illnesses (i.e., 5.8 cases per 100 workers) were reported (U. S. Bureau of Labour Statistics, Workplace

Injuries and Illnesses, 2009; Census Fatal Occupational Injuries Preliminary Annual Data, 2009).

In Turkey, according to the Social Security Institution statistics of the year 2009, 64,316 employment injuries and 429 occupational illnesses were reported resulting in 1,171 death cases in the year 2009. Days of temporary incapacity (outpatient) were 1,533,749 while total inpatient days were 55.37 due to employment injuries and occupational illnesses. The incidence rate of employment injuries in 2009 was .62, representing the number of injuries per 100 full-time workers, and 2.76, representing the number of injuries per 1,000,000 working hours. The weight rate of employment injuries was reported as .51, representing the number of lost hours per 100 working hours because of employment injuries.

1.1.1 Overview of the Main Reasons of Workplace Accidents

Workplace accidents resulting from unsafe working conditions, technical setbacks, and/or human error have undesirable consequences and costs for both work organizations and working people. Workplace accidents have been shown to be linked to unsafe work behaviours and unsafe work practices (Brown, Willis, & Prussia, 2000). According to Gravan and O'Brien (2001), unsafe work behaviours of employees rather than unsafe working conditions are the reasons of majority of workplace accidents. An understanding of why employees engage in unsafe work behaviours, such as non-compliance with the safety rules, and the roots of employees' intentions of showing these behaviours can help development of the prevention methods and might reduce the workplace accidents due to individual level factors. To illustrate, according to Abdelhamid and Everett's (2000) accident

root causes tracing model (ARCTM), worker unsafe acts are one of the cornerstones for investigating the development of the root causes of accidents and eliminating them. Regardless of the risky conditions of the work, a worker may commit unsafe acts like disregarding standard safety procedures such as not wearing personnel protective equipment or driving fast (Abdelhamid & Everett, 2000).

According to a study by Çopur, Varlı, Avşar, and Şenbaş (2006), there have been studies conducted in Turkey in different years that investigate the reasons of workplace accidents. Some of these studies (Çelikol, 1977; Haksöz, 1985; Kepri, 1981; cited in Çopur et al., 2006) show that human factor is important in work place accidents. For example, in Haksöz's study, conducted in Mine and Chemical Institute of Turkey, unsafe work behaviours and not using personal protective equipment were the reasons causing 95% of the work place accidents, and according to the Kepri, 88% of the accidents were connected with human behaviour.

1.1.2 An Overview of Approaches in Understanding Human Behaviour

While talking about workers' unsafe behaviours leading to accidents, an important issue concerns the mechanism involved in workplace accidents. That is, predictors and correlates of workplace accidents need to be understood. According to Johnson (2003), emergence of behaviour is hard to explain and two theories, which have been supported by empirical evidence, can be useful in understanding the causes of behaviour. These are "*value-attitude behaviour*" and "*theory of planned behaviour.*" Johnson argued that Homer and Kahle's (1988) value-attitude-behaviour hierarchical model explains human behaviour in a mechanistic way,

independent from the environment by connecting values and behaviour through role of attitudes. The second model stated by Johnson is Ajzen's (1991) theory of planned behaviour. In theory of planned behaviour, attitudes toward the behaviour, perception of the social pressures to perform the behaviour (i.e., subjective norms), and perceived ease or difficulty of performing the behaviour (i.e., perceived control over the behaviour) affects behavioural intentions. Behaviour results from these intentions in combination with perceived behavioural control. The theory also asserts that individual's salient normative, control, and behavioural beliefs are related with the behaviour through role of attitudes, subjective norms, and perceived control (Ajzen, 1991). These two models identify attitudes as an important precursor to behaviour and seem to offer differing perspectives for the causation of behaviour. While Ajzen's model utilizes the influence of values with the use of intermediary beliefs, value-attitude behaviour model uses values as the direct predictor of attitudes (Johnson, 2003). Moreover, Ajzen's model accounts environmental and other factors as social norms and perceived control to predict the emergence of behaviour. The weakness of value-attitude model of not taking into account the environmental and other factors are handled in the Ajzen's theory of planned behaviour model (Johnson, 2003).

"*The theory of planned behaviour*" (TPB) of Ajzen (1991, 2006) can be used to examine the individuals' tendencies to engage in unsafe work behaviours or to examine the emergence of unsafe work behaviour. According to the Ajzen's TPB, intentions are the most proximal determinants of the individual's behaviour. They are influenced by subjective norm and perceived behavioural control as well

as individual's attitudes toward the behaviour (White et al., 2008). TPB also asserts that a particular behaviour and intention of this behaviour is a function of the perceived behavioural control (Johnson, 2003). Perception of the social pressures, attitudes and perceived ease or difficulty of performing the behaviour factors influence the effect of intentions on behaviour and can shed lights on the broader examination of the causes of the unsafe acts of individuals. More specifically, in the present study the role of attitudes, subjective norms, and perceived behavioural control factors through intentions to engage in unsafe work behaviour were tested using TPB as the general theoretical framework.

1.1.3 Another Factor Affecting Unsafe Work Behaviour: Organizational Climate

Although, as stated before, unsafe work behaviours of employees rather than unsafe working conditions are the reasons of majority of workplace accidents, Neal, Griffin, and Hart (2000) stated that in the safety literature a shift has been occurred on the emphasis of the responsible factors for accidents. More emphasis has been given on organizational factors, such as safety climate, and less on individual level factors such as error or non-compliance with safety procedures. Neal et al. (2000) stated that in studying workplace accidents safety climate, which describes individual perceptions of the value of safety in the work environment, should also be investigated. According to National Institute for Occupational Safety and Health (NIOSH) studies in U.S., safety climate is an important predictor of safe work practices and there is evidence that when the organizations are serious about adherence to safe work practices, employees are more likely to engage in safety

behaviours (Hahn & Murphy, 2008). Hence, in the light of the reviewed literature, in the present study, safety climate perceptions of individuals were also examined to be able to see the organizational factors' relative contribution to the prediction of unsafe work behaviours along with the application of TPB model.

In the following sections of this introduction, first, a brief review of TPB literature is presented followed by a review of the safety climate literature. Third, the literature on safety behaviours in health care is overviewed. Finally, the hypotheses of the present study are presented.

1.2 The Theory of Planned Behaviour (TPB)

The relationship between attitudes and behaviour has been a widely studied topic (Ajzen & Fishbein, 1973). Predicting and explaining human behaviour by considering the relationship between attitudes and behaviour is the goal of most researchers (Ajzen, 1991). One of the widely researched models applying the expectancy-value model of attitude-behaviour relationships to predict the actual behaviour of the individuals is "*Theory of Planned Behaviour*" (Ajzen, 1991, 2006) which is an extension of "*Theory of Reasoned Action (TRA)*" (Ajzen & Fishbein, 1973, 1980; Armitage & Conner, 1998, 2001). Both models examine the informational and motivational factors (i.e., intention) influencing the behaviour. According to these two deliberative processing models, individuals make behavioural decisions if they have the motivation and after considering the available information (Conner & Armitage, 1998).

In its original formulation, TRA (Ajzen & Fishbein, 1980) aims to predict many behaviours of everyday life under volitional control by understanding their determinants. The assumption of TRA is that humans are considering implicit or explicit implications of their actions while performing (or not performing) the behaviour. In the light of this, the intentions are the immediate determinants of the behaviour, and the stronger the intention to engage in the behaviour, the more likely should be its performance (Ajzen, 1985). In this second level of TRA, the determinants of intentions are stated to be attitudes toward the behaviour and subjective norms, the first one reflecting personal nature and the second one reflecting the social influence. According to TRA, the answer for the question of whether attitudes toward the behaviour or subjective norms are more important depends on the intention under investigation. Also, attitudinal and normative factors are expected to have differential weights depending on individual differences (Ajzen, 1985). Ajzen summarized this part of the theory symbolically as follows:

$B \sim I\ \alpha\ [w_1\ A_B + w_2 SN]$ [1]

B: Behaviour of interest

I: Individual's intention to perform

A_B: Individual's attitude toward performing the behaviour of interest

SN: Individual's subjective norm concerning to performing the behaviour

w_1 & w2: Empirically determined weighting parameters of A_B and SN

[1] The wavy line (~) suggests that intention is expected to predict the behaviour of interest and the alpha letter (α) shows that the intention itself is directly proportional to the weighted sum of A_B and SN (Ajzen, 1985).

This symbolic representation explains that behavioural intentions are a function of the weighted sum of the two variables (i.e., attitude toward performing the behaviour and subjective norm) (Ajzen & Fishbein, 1973).

The third level of TRA explains these attitudes and subjective norms in terms of beliefs. TRA explains these beliefs as behavioural and normative beliefs. The salient beliefs explaining the attitude toward the behaviour are called *behavioural beliefs*, whereas the beliefs of the individual that specific individuals or groups think he/she should or should not perform the behaviour are called *normative beliefs* (Ajzen, 1985). Ajzen (1991) stated that each belief links the behaviour to a certain outcome or to some other attribute and the value given as positive or negative to the outcome or to the attributes decide the attitude toward the behaviour. This expectancy-value model of attitude considers the person's evaluation of the consequences associated with the behaviour and the strength of these associations. That is, attitude toward the act based on the person's salient beliefs about the behaviour is the summation of the products of belief strength and outcome evaluation (Ajzen, 1985). Ajzen summarized this level of the theory symbolically as follows:

$$A_B \propto \sum_{i=1}^{n} b_i \; e_i$$

A_B: Individual's attitude toward performing the behaviour of interest

b_i: Individual's belief that performing the behaviour of interest will lead to outcome i

e_i: Individual's evaluation of outcome i

n: Number of salient beliefs

As stated before, in TRA normative beliefs and individuals' motivation to perform (or not to perform) the behaviour comply with the reference group's perceived expectations (Ajzen & Fishbein, 1973). Therefore, Ajzen (1985) showed the symbolic representation of subjective norms as follows;

$$SN \alpha \sum_{j=1}^{n} b_j m_j$$

SN: Individual's subjective norm concerning to performing the behaviour

b_i: Individual's normative belief concerning referent j

mj: Individual's motivation to comply with the referent j

n: number of salient normative beliefs

Ajzen (1985) argued two conditions for intentions to predict behaviour, both of which are the limitations of the theory. The first condition is that the measure of intention should reflect the respondent's intention of just prior to performance of the behaviour since there is a risk that intentions may change over time. The effects of time on intentions can depend on the emergence of new information or the shifts in the salience of beliefs as time draws near to the behaviour or other unanticipated events occurrence and the level of influence of the individual according to his/her personality. The behaviour must be under the volitional control is the second condition to be met to predict it from intentions. However, this second condition poses limitations on the application areas of the theory, since there is always some level of uncertainty for every intended behaviour. The factors called as "nonvolitional" are grouped as internal and external factors by Ajzen (1985). Individual differences, information, skill and abilities, power of will, emotions, and compulsions are some of the internal factors whereas time and opportunity and dependence on other people are the external ones. In the light of these, many

different factors can exist affecting the behaviour-intention relationship and an expansion in the TRA is expected to consider these nonvolitional factors as determinants of behaviour (Ajzen, 1985). Therefore, the individual's perceived control to perform the behaviour over nonvolitional factors such as skills, requisite information, willpower, presence of mind, time, opportunity, and so forth is embedded to TRA. That is, the extended version of the theory, "*Theory of Planned Behaviour"* (TPB) takes into account perceived as well as actual control over the behaviour in question (Ajzen, 1985).

In TPB, behaviour is depicted as a function of intentions and perceptions of behaviour control (Conner & Armitage, 1998). TPB also asserts that attitudes, subjective norms, and perceived control have a relationship with the behaviour through intentions. Moreover, attitudes toward the behaviour, subjective norms concerning to perform the behaviour, and perceived control over the behaviour are related with the salient beliefs of the individual. According to TPB, these beliefs are the prevailing factors of the individual's intentions and actions (Ajzen, 1991).

1.2.1 Beliefs

As stated before, beliefs constitute the antecedents of attitude, subjective norm, and perceived behavioural control. Behavioural beliefs that are "*the subjective probability that the behaviour will produce a given outcome*" are the determinants of attitudes toward the behaviour while normative beliefs that are "*the perceived behavioural expectations of such important referent individuals or groups as the person's family, friends, colleagues, etc. (depending on the population and behaviour studied*)" are constituting the underlying mechanism of

subjective norms. The third one, as an extension of TRA, is control beliefs that refer to "*the presence of absence of requisite resources and opportunities*" and constituting the prevailing factor of perceived behavioural control (Ajzen, 1991, 2006, TPB diagram section). PBC is the product of the summation of the products of each control belief and the perceived power of the particular control factor for the performance of the behaviour. The symbolic representation of PBC given by Ajzen (1991) in terms of resources and opportunities viewed is as follows;

PBC $\alpha \sum_{i=1}^{n} p_i \, c_i$

p: Perceived power

c: Control belief of the individual

n: Number of salient control beliefs

If the individual believes having more opportunities or resources and fewer obstacles, his/her perceived control over the behaviour will be greater (Ajzen, 1991).

1.2.2 Determinants of Intentions

As stated before in TRA, the first determinant of intention to engage in a behaviour is attitude toward behaviour that was defined as *"the degree to which a person has a favourable or unfavourable evaluation or appraisal of the behaviour in question"* by Ajzen (2006, TPB diagram section). Ajzen and Fishbein (1973) emphasized that this is the attitude toward performing a particular act in a given situation, not the more traditional attitudes towards the object or class of objects. The positive or negative evaluation of performing behaviour specifies the attitudes

toward the behaviour and the more positive the evaluation the stronger should be the intention (Armitage & Conner 2001).

The second determinant is subjective norm that was defined as "*person's perception of the social pressures put on him/her to perform or not to perform the behaviour in question*" (Ajzen, 1985, p.12). Subjective norm may be in two different forms; it may be injunctive or descriptive by nature, and Ajzen (2006) suggested considering both of these forms. Manning (2009) defined the injunctive quality norms as "*social pressures to engage in a behaviour based on the perception of what other people want you to do*" and descriptive ones as "*social pressures based on the observed or inferred behaviour of others*" (p. 651). The more perceived approval (or disapproval) of the behaviour by others, the stronger should be the intention of performing (or not performing) the behaviour (Armitage & Conner 2001).

Since exact prediction of performing the behaviour actually cannot be obtained by intentions due to the factors beyond the person's control and trying to perform a certain behaviour can only be predicted, some estimates of the extent to which individuals can control the behaviour in question should also be assessed (Ajzen, 1985). Armitage and Conner (2001) stated that information about the potential constraints on action perceived by the performer and the reasons as to why intentions always don't predict behaviour can be provided by perceived behavioural control (PBC). This is the third determinant of TPB model and defined by Ajzen (2006) as "*people's perception of their ability to perform a given behaviour*" (TPB diagram section). The relationship between the PBC and behaviour suggests that

behaviours which people have no control over prevent them to perform and behaviours that people have control over is more attractive, so the probability of performing them is higher (Conner & Armitage, 1998). Therefore, there is a correlation between behavioural performance and perceived control. However, if perceived control corresponds to only actual control it is expected that the correlation will tend to be even stronger (Ajzen, 1985).

In brief, the more positive attitude toward the behaviour, the more favourable the subjective norm, and the greater the perceived behavioural control, the intention to perform the behaviour is stronger (Ajzen, 2006, Constructing a TPB Questionnaire brief description of TPB, para. 1). TPB model is depicted in Figure 1.1.

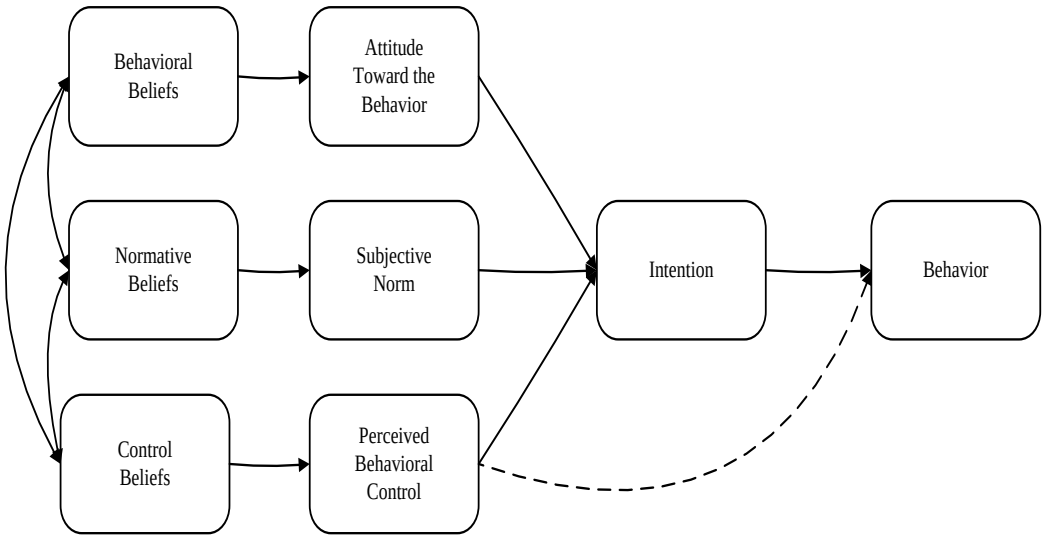

Figure 1.1 The Theory of planned behaviour model

Source: I. Ajzen (2006) Theory of Planned Behaviour Diagram section

1.2.3 Predictive Power of TPB

In a meta-analytic review of 185 different studies on TPB, Armitage and Conner (2001) found that the correlation between intention and behaviour weighted by sample size was .47 and the three determinants (attitude toward the behaviour, subjective norm, and PBC) accounted for 39% of the variance in intentions. Also, the correlation between the three determinants and intention were found in the range of .34 - .49 and subjective norm accounted for the smallest variance in intention (12%). Moreover, the power of PBC variable was also established in this meta-analytic study as both its direct effect and indirect effect, through intention, on behaviour were observed. PBC added 2% variance to the prediction of behaviour over and beyond intention. Also, PBC explained 6% additional variance in predicting intention over and above the other two determinants stated in TRA.

In another meta-analytic review of 16 different studies on TPB, Ajzen (1991) found that the multiple correlations between intention and its three predictors ranged from .43 to .94, with an average correlation of .71. Also, Ajzen (1991) showed that PBC together with intention were significant predictors of behaviour, the average multiple correlation being .51.

The general TPB framework has been used to predict a variety of intentions or behaviours, like dietary behaviour, safer sex behaviour, physical activity, etc. (Broadhead-Fearn & White, 2006). To illustrate, Conner et al. (2007) stated that traffic is an area where TPB has been applied to explain risky behaviours like speeding, drinking and driving, and dangerously overtaking. Also, Godin and Kok (1996) showed the effectiveness of TPB in predicting health-related behaviours like

condom use, exercise, etc. Three predictors of intention accounted for 41% variance in intentions and 34% variance in health-related behaviours was accounted for by TPB model (Godin & Kok, 1996). However, according to Ajzen (1991), the predictive power of determinants of intention is depends on the application area of TPB. Ajzen (1991) stated that *"The relative importance of attitude, subjective norm, and perceived behavioural control in the prediction of intention is expected to vary across behaviours and situations* (p.188)." That's why in some applications all three predictors contributed independently while in some others attitudes and perceived behavioural control can be sufficient to account for intentions (Ajzen, 1991).

Ajzen (1991) explained in his review that the theory is open to the inclusion of additional predictors if they explain additional variance of intention or behaviour over and above the current predictors of the theory. For example, Hoyt, Rhodes, Hausenblas, and Giacobbi (2009), White et al. (2008), Conner et al. (2007), and Broadhead-Fearn and White (2006) used additional predictors in their TPB studies. Accordingly, Conner and Armitage's (1998) review on the extension of TPB showed that there is growing empirical evidence supporting the inclusion of additional variables such as belief salience, past behavioural habit, the structure of PBC construct, moral norms, self-identity, and affective beliefs. The implication is that based on the nature of the behaviour different variables may need to be examined. To illustrate, it was found that 7.2% of the variance in intentions was explained after taking attitude, subjective norms, and PBC into account by past behaviour as the additional predictor to TPB model. Moreover, this additional

variable, past behaviour, explained 13% variance of behaviour after taking intentions and PBC into account.

TPB has been validated in several studies taking into account wide range of behaviours from safe driving behaviour (Conner et al., 2007) to rule following behaviours in shelters for homeless youth (Broadhead-Fearn & White, 2006). As stated by Johnson (2003) also, TPB can provide a fruitful base in understanding the mechanism and the motivational factors underlying complying or not complying with safety rules. To illustrate, Johnson and Hall (2005) examined the safe lifting behaviour among employees of a manufacturing facility and concluded that explaining the emergence of the behaviour by TPB has some potential.

Furthermore, in the literature it has been well documented that health-care sector have been subject to high rates of work injuries, long-term disabilities, absences from work, costs, and time loss related with work accidents and illnesses (Yassi & Hancock, 2005). Therefore, an attempt to understand the underlying mechanism of unsafe work behaviours in health-care organizations within the theoretical framework of TPB is believed to be quite valuable.

1.3 Safety Climate: An Overview

The concept of safety climate originally emerged from the research on organizational culture and climate (Glendon & Litherland, 2001). According to Zohar (1980), number of different climates exists in organizations and defined climate as *"a summary of molar perceptions that employees share about their work environment"* (p. 96). Zohar (1980) stated that an appropriate adjective should be

used to identify the type of the term of organizational climate like creativity climate, service climate, etc. and safety climate is a particular type of organizational climate. Neal, Griffin, and Hart (2000) defined safety climate as *"a specific form of organizational climate, which describes individual perceptions of the value of safety in the work environment"* (p.100). Therefore, perceptions of policies, procedures, and practices relating to safety in the workplace form the safety climate (Neal & Griffin, 2002). It is a construct that can be used to measure quantitatively the employee's perceptions about how safety is managed and treated within the organization (Wills, Watson, & Biggs, 2006).

The terms of safety culture and safety climate are often used interchangeably in the literature although they show different etymologies (Cox & Flin, 1998). Cooper (2000) stated that safety climate that aims to show the workforce's attitudes and perceptions at a given point in time refers to the psychological aspects of the safety culture. Neal and Griffin (2002) argued that safety culture concept is a broader term than safety climate.

According to the Guldenmund's (2000) review on safety culture and safety climate, generally it can be said that safety culture is more associated with attitudes whereas safety climate is more associated with perceptions. Clarke (2006) reviewed three approaches to workplace accident involvement in the literature and stated three approaches that have been used as attitudinal, perceptual and dispositional. According to the results of Clarke's (2006) review, perceptual approaches provided greater predictive validity than attitudinal approaches to workplace accident involvement.

Zohar (2010) stated that the aim of climate perceptions is to reveal which behaviours should be reinforced by the organizations. Through safety climate perceptions of employees, the associations between organizational policies, procedures, and practices, and the priority levels among them are aimed to be uncovered to give future directions for both organizations and individuals. Therefore, which behaviours are supported and shared perceptions of the importance of safety competing with other priorities can be examined through safety climate perceptions. In the light of these, in the present study employees' perceptions of safety climate were used as one of the critical predictors of safety-related behaviours.

1.3.1 Dimensions of Safety Climate

The importance of safety climate is its being the forewarning indicator of problems concerning safety, so it can make the organizations detect the problems before injuries occur (Shannon & Norman, 2009). Therefore, in the literature there is so much emphasis on measuring safety climate of organizations. However, safety climate dimensions and safety climate measures' factor structure are one of the no exact consensus areas in the safety literature (Neal & Griffin, 2002). Flin et al. (2000) stated that factors underlying safety climate range from two to 19 based on the reviews in the literature demonstrating safety climate measures vary significantly. Glendon and Litherland (2001) argued that there is variety of questionnaires, samples and methodologies used by different researchers and these can be the explanation for the inconsistencies in factor structure of safety climate measures.

In Zohar's (1980) study, the first measure of safety climate was developed as a 40-item questionnaire (Williamson, Feyer, Clairns, & Biancotti, 1997). Zohar developed the questionnaire based on the reviewed literature on the organizational characteristics that differentiate between the high and low accident rate companies in Israel, and tested workers' common safety climate perceptions and the variance of safety climate level in each company based on their safety records. Safety climate was found as a characteristic of industrial organizations and related to the general safety level in these organizations. The 40-item safety climate questionnaire used by Zohar consists of eight factors which are: *perceived importance of safety training programs, perceived management attitude toward safety, perceived effects of safe conduct on promotion, perceived level of risk at work place, perceived effects of required work pace on safety, perceived status of safety officer, perceived effects of safe conduct on social status,* and *perceived status of safety committee* (p.98). Among these dimensions, the ones serving for perceived relevance of safety to job behaviour and perceived management attitude toward safety are labelled as the most influential dimensions (Zohar, 1980).

Williamson et al. (1997) argued that after the first measure of safety climate based on eight factor structure, attempts have continued to model the concept of safety climate (e.g., Cox & Cox 1991; Niskanen 1994; Seppala, 1992). Although there is little agreement among these studies, perceived management attitudes to safety and worker's involvement or attitudes to safety seem to be the common factors. Williamson et al. (1997) developed a 32-item safety climate scale based on eight aspects after reviewing safety climate scales. These eight aspects are as

follows: *safety awareness, safety responsibility, safety priority, management safety commitment, safety control, safety motivation, safety activity,* and *safety evaluation.* The 32-item safety climate scale yielded an interpretable solution for five factors of *personal motivation for safety, positive safety practice, risk justification, fatalism* and *optimism.* Also, Williamson et al. (1997) developed a 17-item safety climate questionnaire as the short-version of the 32-item scale representing these five factors of safety climate. According to the results of the study, the most representative factor was *"personal motivation for safe behaviour"*. Generally, perceptions of real workplace conditions and general safety attitudes are the important components of safety climate (Williamson et al., 1997).

Flin et al. (2000) reviewed 18 published safety climate survey reports including only the industrial sectors to test whether a base taxonomy of fundamental safety climate dimensions can be obtained. Most common three dimensions assessed among the 18 published safety climate surveys were found as follows: m*anagement/supervision*, *safety system*, and *risk*. The safety theme that was the second most assessed dimension among safety climate surveys of industry included the different aspects of safety management system of the organizations in terms of safety officials, safety committees, permit to work systems, safety policies, and safety equipment. Furthermore, the third dimension, risk, appeared in different conceptual versions among the safety surveys like self-reported risk tasking, perceptions of risks/hazards, attitudes towards risk and safety. Two more themes, *work pressure* and *competence,* were detected as the two other most commonly assessed dimensions among the reviewed safety climate surveys.

Another study by Glendon and Litherland (2001) examined whether a safety climate survey that had been developed for UK electricity industry by Glendon, Stanton, and Harrison (1994) showed the same structure of safety climate in road construction industry in Australia. According to Glendon and Litherland (2001), if similar factor structures are obtained when comparable questions of safety climate are used in different organizations or industries, generic safety climate factors can be said to exist. Glendon et al.'s (1994) safety climate questionnaire has eight factor structure as *work pressure, incident investigation and development of procedures, adequacy of procedures, communication and training, relationships, personal protective equipment, spares,* and *safety rules* (as cited in Glendon & Litherland, 2001, p.180). When Glendon et al.'s (1994) questionnaire applied to the road construction organization staff a six-factor solution of safety climate was obtained. These factors are *communication and support, adequacy of procedures, work pressure, personnel protective equipment, relationships,* and *safety rules.* Among these six factors, five of them are the same with the eight factor structure of safety climate questionnaire used in road construction industry in Australia and one is found partially the same –*Communication and Training.* These results indicate that some safety climate factors may be the same across industries, organizations, and cultures whereas some of the climate factors are not appropriate to apply to all contexts.

In another study, Hahn and Murphy (2008) examined a 6-item safety climate measure, as a measure of global worker safety climate, in different samples (14 samples) to assess the convergent and discriminant validity of the construct. The

authors argued that longer safety climate measures, assessing many dimensions, were more appropriate for identifying specific aspects of safety climate dimensions whereas global, brief measures could be useful in assessing general safety perceptions of the employees. A global 6-item safety climate measure that has been developed as the short version of DeJoy, Searcy, Murphy, and Gershon's (2000) 16-item safety climate measure included the dimensions of the four factor structure of the 16-item survey as *supervisory performance feedback, worker involvement in safety, co-worker behaviour norms,* and *management commitment to safety*. This short version, tapping into the mentioned four dimensions, was best represented by a single factor solution in both health care and nuclear energy samples with considerable reliability and validity evidence (Hahn & Murphy, 2008). In brief, based on the studies conducted by different groups of researchers in different industries and/or contexts it can be concluded that the underlying factor structure of the measures used in safety climate studies varies considerably. Table 1.1 summarizes different safety climate measures and dimensions identified/used in different studies.

Guldenmund (2000) provided an explanation for the observed variation in the dimensionality of safety climate measures. The applications of questionnaires differ across sectors including industry, construction, health care, energy, etc. Therefore, Guldenmund (2000) argued that there can be differences in the attitudes of workforce, working in different organizations. Moreover, in some organizations fewer/more dimensions can be obtained because some employees may not able to distinguish the different components whereas for some others these

dimensions/factors may be clearly distinct. Also, Guldenmund (2000) identified some methodological issues that can affect the factor structure of the measures. These were the appropriateness of the commonly used techniques -Factor Analysis- with regard to the measurement level of the data, the type of rotation applied, the possibility of certain dimensions' not being bipolar, and the unclarity about the level of aggregation (i.e., work group vs. whole organization).

Table 1.1 *Summary of Safety Climate Dimensions*

Research Team	Applied Industry & Sample	Questionnaires Reviewed/Used/Developed	Factor Solutions
Williamson, Feyer, Cairns, & Biancotti (1997)	Heavy and light manufacturing & outdoor workers, n=660 (α=.75)	32-item safety climate survey developed based on 8 factor structure: *safety awareness, safety responsibility, safety priority, management safety commitment, safety control, safety motivation, safety activity, and safety evaluation*	5 factor solution obtained: *personal motivation for safety, positive safety practice, risk justification, fatalism and optimism*
	Employees in a supermarket, n=71 (α=.60)	17-item short version	
Flin, Mearns, Connor, & Bryden (2000)	Industrial sectors, mostly from energy/petrochemical	18 published safety climate surveys *	Most common themes assessed: *management/supervision, safety system, risk, work pressure, and competence*
Glendon & Litherland (2001)	Road construction industry, n=192	Glendon et al.'s (1994) adapted version of 40-item safety climate questionnaire based on 8 factors: *work pressure, incident investigation and development of procedures, adequacy of procedures, communication and training, relationships, personal protective equipment, spares, and safety rules*	6 factor solution of safety climate obtained: *communication and support, adequacy of procedures, work pressure, personnel protective equipment, relationships, and safety rules*
Hahn & Murphy (2008)	Healthcare workers, n=1450 (α=.71 - .85)	6-item global safety climate measure (as the short version of DeJoy, Searcy, Murphy, and Gershon's (2000) 16-item safety climate measure) based on 4 factors: s*upervisory performance feedback, worker involvement in safety, co-worker behaviour norms, and management commitment to safety*	Single factor solution
	Nuclear energy sector employees, n=788 (α=.84 - .92)		Single factor solution

* See Table 1 p.181-184

According to the DeJoy, Murphy, and Gershon's (1995) argument, although the recognition of safety climate's importance in terms of workplace injury rates, productivity, cost, employee satisfaction, etc. have been realized in some industrial sectors, the same interest has not been given in safety climate for health care sector, and health care employees' perceptions of safety have rarely been formally evaluated (as cited in Gershon, 2000).

Flin, Burns, Yule, and Robertson (2006) reviewed 12 studies in order to investigate the safety climate features in health care. Among the 12 studies reviewed, three of them used a specific measure called as Operating Room Management Attitudes Questionnaire (ORMAQ) that was not originally developed for measuring healthcare safety climate. In the health care organizations safety climate studies, Flin et al. (2006) identified 73 different safety dimensions and they were grouped under 10 themes similar to most commonly used factor labels in industry. These factors are as follows*; management/supervisors, safety systems, risk perception, job demands, reporting/speaking up, safety attitudes/behaviours, communication/feedback, teamwork, personal resources (e.g. stress),* and *organizational factors"*(p.109). *"Management/supervisors"*, referring to the management commitment to safety, and *"safety systems"* dimensions were found to be commonly measured dimensions in health care organizations, number one and two, respectively. As another mostly measured dimension of safety climate in this industry, work pressure was expressed in three studies among the 12 reviewed safety climate measures as "*job demands/workload*". In brief, "*management commitment to safety, safety systems,* and *work pressure*" appear to be the most

critical factors constituting the safety climate perceptions of health care employees (Flin et al., 2006).

1.4 Worker Safety in Health Care Organizations

As National Institute for Occupational Safety and Health (NIOSH) stated, different types of hazards on the job can be threatening for health care workers including needlestick injuries, back injuries, latex allergy, violence, and stress. The numbers of work accidents and illnesses are actually increasing although there are possible ways to prevent workplace hazards exposure. To illustrate, for the U.S. healthcare workers, exposure rate of these hazards have risen over the past decade while most dangerous industries, agriculture and construction, are becoming safer today than they were a decade ago (NIOSH, 2009, Workplace Safety and Health Topics-Healthcare Workers section, para. 1).

According to the Institute for Work and Health fact sheet (n.d.), health care workers, due to illness and disability, are one and a half time more prone to miss work than workers in the other sectors. Because of accidental needle-stick injuries, infections, illnesses, stress, and workplace abuse and violence, the healthcare workers are a high risk group and nurses is the most suffering group from on the job injuries among health-care workers (Institute for Work & Health). For example, according to the International Council of Nurses fact sheet (n.d.), nurses suffer from on average 1-4 needlestick and other sharps injuries per year that cause them to be exposed to over 20 different bloodborne pathogens and make them as the most exposed group among healthcare workers. According to Baumann et al. (2001),

high vulnerability to injury makes nurses have higher absenteeism and disability rates that costs the healthcare system a great deal of money.

Health care workers' safety issue is very critical for also patient safety and this is stated in the Institute of Medicine Report (2000) as "*Workers' safety is often linked with patient safety. If workers are safer in their jobs, patients will be safer also*." (p. 20; as cited in Flin et al., 2006).

Yassi and Hancock (2005) indicated that musculoskeletal injuries, infectious diseases, chemical-induced disorders and mental stress are the most occurred work-related illnesses and injuries that are caused from a wide range of occupational and safety hazards among health care workers. Moreover, the work environment of health care workers includes risk of exposure to physical hazards such as infections from contagious patients, violence from patients with dementia, or allergic reactions from chemical agents (Koehoorn, Lowe, Kent, Schellenberg, & Wager, 2002). Especially, exposure to blood put health care workers in a high risk of infection with blood borne pathogens like Hepatitis B, Hepatitis C, HIV, etc. (Kermode et al., 2005). According to Occupational Health News of Royal Society for the Prevention of Accidents (RoSPA) (2009), as a result of sharp injuries, health care workers faced with the risk of infection in 914 incidents in the years 2006 & 2007. Also, it was indicated that between the years 2000 and 2007 48% of the workplace exposures to blood borne viruses were occurred to nurses as one of the most risky group among healthcare workers.

To enhance health care worker safety – mostly against infections with blood borne pathogens – some guidelines have been developed that were emerged

predominantly in the United States and were rapidly modified and spread to other countries. Since the early 1990s, these guidelines have been called *Universal Precautions (UP)* or more recently *Standard Precautions (SP)* (Kermode et al., 2005). Standard precautions for the safe handling and disposal like wearing gloves when performing an invasive procedure or recapping needles after use before disposing them into a container, etc. can be preventive for these accidents and infectious incidents (RoSPA, 2009).

The reasons for not following the desired standard precautions by health care workers have been studied in the literature because following them are the effective cautions for work hazards, undesired consequences. Ferguson, Waitzkin, Beekman, and Doebbeling (2004) called for more work and research attending on this issue. For these standard precautions or universal precautions, Ferguson et al. tired to identify, categorize, and assess critical incidents of nonadherence to standard precautions by collecting critical incidents from 1362 nurses, physicians, and medical technicians. According to the analysis of the collected critical incidents that were describing when and why the healthcare staff hadn't adhered to universal standard precautions, nine different types of incidents were identified. The possibility of endangering the patient's life at risk while spending a few more seconds to follow the precautions was the most common reason, given by 22% of the respondents. The next common reason for not following the precautions was pronounced by 20% of the respondents as the belief of complying with precautions interfered with their ability to provide care. The belief of no need to comply in a given situation was shared by 14% of the respondents while another 14% wouldn't

anticipate to be exposed to a risky a situation. The group who had anticipated no exposure showed the highest mucocutaneous exposure in the last three months while the group who had the belief of complying with precautions interfered with their ability to provide care had the highest rate of not wearing gloves routinely (Ferguson et al., 2004). This study showed that the beliefs of health care workers play important role to behave in complying with safety rules.

Another study investigating the factors contributing the compliance with Universal Precautions (UP) among nurses was conducted by DeJoy, Searsy, Murphy, and Gershon (2000). These authors examined the individual, job-task, and environmental/organizational factors related to compliance with the UP as three sets of diagnostic factors of predisposing, enabling, and reinforcing. Predisposing factors are the ones that facilitate or hinder the self protective behaviours like beliefs, attitudes or values of the individual whereas enabling factors block or promote self-protective action through environmental or systemic aspects. The third factor, the reinforcing factor, is related with the safety climate dimensions of behaviour-outcome expectations and the social approval/disapproval mechanisms of co-workers, managers or supervisors. Enabling and reinforcing factors were found to be important for UP compliance behaviours of nurses showing the importance of environmental factors and safety climate dimensions (DeJoy et al., 2000).

In another study, DeJoy, Gershon, and Scheffer (2004) again examined predisposing, enabling, and reinforcing factors affecting general UP compliance and personal protective equipment usage compliance behaviours of nurses. For the predisposing factors, none of them significantly predicted the personal protective

equipment compliance behaviour and among the enabling factors only job hindrances had a significant relationship with the general compliance behaviour. Safety climate, reinforcing factor of the study, was examined under four factors as *priority assigned to safety*, *formal feedback*, *informal feedback*, and *management commitment to safety*. *Priority assigned to safety*, *formal feedback*, and *informal feedback* dimensions of safety climate were found to be the significant predictors of personal protective equipment compliance behaviour while only *informal feedback* was found to predict general compliance behaviour.

As the most recent statistics of Social Security Institution of Turkey, for the year 2009, among all reported branch of activities, human healthcare services were reported having an employment injury rate of 11.82%, representing the ratio between the number of employment injuries in the branch of human healthcare services in 2009 and the product of general employment injury speed with number of insured in the branch of activities. Total days of temporary incapacity (outpatient) were 1643 while total inpatient days were 19 due to employment injuries and occupational illnesses for human healthcare service employees.

Employees working in the health sector like doctors, nurses, assistant doctors or laboratory technicians face work accidents and serious risks in Turkey as well ("İş Kolları ve iş güvenliği:", n.d.). For example, in a study by Çopur et al. (2006), workplace accident rates of housekeeping personnel in Ege University Hospital, who are responsible for the general care, cleaning and maintenance, were investigated. Needle injuries (21.8%), cut (18.2%), and open wound/scratches

(16.4%) were found to be the most frequent work place injuries among these workers.

According to Özkan and Emiroğlu (2006), occupational injuries, occupational diseases and work related health problems have increased for the past two decades among hospital health care employees. In recent days, the severity of the safety problem for health care staff become evident with the increasing rate of infectious disease like Crimean-Congo hemorrhagic fever or swine influenza. To illustrate, in June of 2008, four health care employees, three of whom were doctors and one was health personnel, were exposed to a mucocutaneous incident-splashing blood into the eyes from a Crimean-Congo hemorrhagic fever patient - due to not wearing protective eye glasses (Yeni Şafak Newspaper, 2008).

Aksan and Tanık's study (2009), which was carried out in Ege University Hospital in the year 2005 among 232 nurses working at different departments (i.e., psychiatry, internal diseases, general surgery, anaesthesia, intensive care, and emergency) to obtain the past one year accident history, revealed that 67.2% of nurses had a workplace accident in the past one year. The most common accident types were needlestick injuries (35.5%), sharp object injuries (26.5%), and injuries during lifting/carriage of patients (16.3%). Moreover, 4.3% of the nurses reported that they couldn't come to work due to these accidents in the past one year, and approximately 7.5±5.7 working days losses were reported. Moreover, Aksan and Tanık's study documented the accident notifications of 232 nurses for a six month period via a surveillance system and 224 work place accidents were recorded.

Thirty one point seven percent of these accidents were injuries, 25.4% were needlestick injuries, and 8.5% were recorded as crashes, respectively.

In the light of the reviewed literature, statistics, and news, understanding the antecedents of complying with safety behaviours for healthcare workers seem to be of great importance. The purpose of the present study was to apply TPB to understand the contributing factors to adherence to standard safety precautions at the individual level and to examine the role of safety climate perceptions of nurses, as the organizational level factor, in adherence to standard safety precautions. This way, it may be possible to understand the relative contribution of individual and organizational level factors in safe/unsafe acts in healthcare organizations.

1.5 Research Hypotheses

As stated above, the present study had two objectives. First one was to examine the utility of TPB within the context of adherence to key standard precautions as safety related behaviour among nurses working at Turkish Hospitals who seem to be more prone to on-the-job injuries within the health care sector (Institute for Work and Health, n.d.). Second aim was to assess the impact of safety climate perceptions of nurses on the behaviour of adherence to standard precautions as safety behaviour in order to compare the strength of the associations of safety climate perceptions and TPB variables with safety related behaviour of nurses. More specifically, the incremental contribution of safety climate perceptions, over and beyond the TPB factors, in explaining adherence to safety related behaviour was examined.

Based on the reviewed literature the following hypotheses were developed:

Hypothesis 1: Attitude, subjective norm, and perceived behavioural control predict nurses' intentions to engage in safety related behaviours.

Hypothesis 2: Intention and perceived behavioural control predict safety related behaviours of nurses.

Hypothesis 3: Safety climate perceptions of nurses predict their safety related behaviours over and beyond the effects of Theory of Planned Behaviour variables.

CHAPTER 2

METHOD

2.1 Participants

Participants of the study were nurses and their first line supervisors working at two different private hospitals in Ankara, Turkey. Both of the hospitals have wide range of specialties and are classified as "A Type" hospitals representing the highest level by the Social Security Institution's commission report (2009) based on the criteria like service quality standards, patient rights, patient and employee safety, capacity, etc.

At the first hospital, out of 182 nurses working at 15 different departments, 152 participated in the study. At the second hospital, out of 200 nurses who received the questionnaire booklets, 125 nurses working at 20 different departments returned them back to the researcher. There were a total of 35 different first line supervisors responsible from these 277 nurses and 34 of them participated in the study. One supervisor who chose not to participate in the study was responsible from three nurses. Therefore, 274 nurses' data were used in the present study.

There were 252 female (92%) and 22 male (8%) nurses in the sample. Ages of nurses varied between 18 and 56, with a mean of 27.78, median of 26, and standard deviation of 5.70 years. In terms of education, five of the participants (1.8%) had a master degree, 142 (51.8%) of the nurses graduated from college, 47

(17.2 %) had a two-year college degree, and 73 (26.6 %) graduated from high school.

All of the first line supervisors were woman and the mean age of them was 36.81 years (SD = 8.69) with a range of 27-68 years. Most of the first line supervisors graduated from university (70.6 %) and 14.7% of them had a two-year college degree.

The participants worked at different medical departments like emergency, neonatal, cardiovascular surgery, hematology, policlinics etc. and the list of these medical departments of two hospitals are presented in Table 2.1. The average tenure of the nurses was 77.83 months (SD = 74.95, ranging from 1 to 480 months) while the average tenure of the first line supervisors was 187.10 months (SD = 110.15, ranging from 48 to 552 months) .The demographic characteristics of the participants in the overall sample as well as participants from each hospital are presented in Table 2.2.

Table 2.1 *Medical Departments and Number of the Nurses Participated to the Present Study*

1st Hospital		2nd Hospital	
Departments	**N**	**Departments**	**N**
Policlinics	24	Intensive Care	21
Cardiovascular	16	Hematology	18
A Block 2nd Floor*	14	Surgery	13
Cardiovascular Intensive Care	13	Emergency	12
Emergency	12	Internal Diseases	8
Gynaecology	10	Policlinics	7
VIP-A Block 2nd Floor	10	Brain Surgery	7
Surgery	9	Gynaecology	7
Intensive Care	9	Cardiovascular	6
Neonatal	8	Cardiology	6
Cardiology-B Block 4th Floor	8	VIP	5
B Block 3rd Floor*	6	Inpatient Floor	2
B Block 5th Floor*	6	Gastroenterology	2
B Block 1st Floor*	6	Radiology	2
House care	1	Neonatal	1
Total	**152**	Pain Nursing	1
		Blood Bank	1
*These departments are mixed in patient units		Diabetes Training Nursing	1
		Sleep laboratory	1
		Sterilization	1
		Total	**122**

Table 2.2 *Demographic Characteristics of the Study Participants*

Variables	**Nurse**			**First Line Supervisor**		
	Total Sample	1st Hospital	2nd Hospital	Total Sample	1st Hospital	2nd Hospital
Age						
Mean	27.78	28.11	27.39	36.81	35.67	37.82
SD	5.70	5.95	5.39	8.69	11.65	5.03
Nursing Tenure*						
Mean	77.83	84.45	68.43	187.1	184.4	189.63
SD	74.95	74.71	74.66	110.15	156.14	38.73
Hospital Tenure*						
Mean	49.52	47.64	52.1	153.39	127.2	175.22
SD	52.86	45.87	61.21	77.20	103.21	36.54
Weekly Working Hour						
Mean	50.42	51.71	48.81	50.95	49.33	52.31
SD	7.53	7.49	7.30	3.74	4.56	2.22
Monthly Shift						
Mean	11.5	10.86	12.47	1.7	3.64	0
SD	7.29	6.60	8.16	5.65	7.98	0

Note. *Nursing tenure and hospital tenure are presented in months. Monthly shifts are shifts of one nurse in one month time period.

2.2 Measures

There were two questionnaire packages used in the study, one was for the nurses and the other was for the first line supervisors of these nurses. The packages printed as booklets and the nurse package was composed of four sections including the measures of theory of planned behaviour variables, the Safety Climate questionnaire, the Standard Safety Precautions compliance scale, and the demography questions. The first line supervisor booklet included Standard Safety

Compliance scale, a measure of safety behaviour. A demographic questions section was not included in the first line supervisor booklet, but it was collected separately.

Prior to explaining the content of the nurse booklet, the conceptual and operational definitions of TPB variables are presented in the following section.

2.2.1 Conceptual and Operational Definition of TPB Variables in the Study

2.2.1.1 Target Behaviour

There are some conceptual and methodological considerations that need to be taken into account while developing the questions to measure the variables of the TPB model. The behaviour should be defined in terms of its **Target, Action, Context,** and **Time** (TACT) and the other constructs (attitudes, subjective norms, and perceived behavioural control) should be compatible with the behaviour (Ajzen, 2006, Constructing a TPB questionnaire - latent variables and manifest indicators section).

In the present study, the target behaviour is adhering to the standard safety precautions among nurses while working. Like in many other studies investigating safety behaviour among health care workers (e.g. DeJoy et al., 2000; Ferguson et al., 2004; Gershon et al., 2000; Turnberg & Daniell, 2008), adherence to "Standard Precautions" was used in operationally defining safety behaviour. Since adherence to standard safety precautions is a category of behaviour, Ajzen had two recommendations to deal with assessing such criteria. The recommendations given by Ajzen as follows:

"We are often interested in predicting, explaining, or changing categories of behaviour, such as exercising, studying, or conserving energy -- not any single

action. It is possible to deal with such a criterion by assessing attitudes, subjective norms, perceptions of control, intentions, and actual behaviour with respect to each of a representative set of actions that comprise the category of interest. These measures can then be aggregated to arrive at indices representing the behavioural category. However, if the investigator has no particular interest in the individual actions that comprise the category, a simpler strategy can be adopted. Participants can be given a description of the behavioural category, and all TPB measures are obtained in relation to the category as a whole." (Ajzen, 2010, Frequently asked questions section)

In the light of this, the operationilization of the target behaviour, a categorical behaviour, which is always adherence to the standard safety precautions while working, includes different precautions. In the present study, all variables of TPB model (intention, subjective norm, attitude, and perceived behavioural control) were measured in relation to adherence to the standard safety precautions category as a whole. Hence, at the beginning of the questionnaire package, a comprehensive list of the standard safety precautions were presented to the participants (i.e., nurses) and they were asked to check the precautions that apply to their job. They were then expected to respond to the TPB measures (attitudes, subjective norm, PBC, and intentions) in the package with reference to their adherence to the standard safety precautions category as a whole.

Another issue stated by Armitage and Conner (2001) in their meta-analytic study is that all predictors being self-report make TPB be vulnerable to self-presentation bias and be a threat for the validity and reliability. Such behaviours like

speeding or compliance with safety behaviours can be more prone to socially desirability biases, so objective measures must be preferable instead of collecting self-report measures for the target behaviour (Conner et al., 2007).

In the present study due to the potential self-presentation bias and validity and reliability concerns, the level of compliance with the standard safety precautions of the target group were collected from their immediate supervisors (as well as from themselves, for exploratory purposes).

2.2.1.2 Intention

In this study, intentions were conceptualized as willingness to try and the amount of planned effort to follow the standard safety precautions while working. Intention is a motivational construct (Ajzen, 1991) contributing to an individual's adherence to safety rules.

2.2.1.3 Attitude toward the Target Behaviour

According to Ajzen and Fishbein (1973), attitude, used as the predictor of intentions, is the individual's stance toward a particular situation with respect to a given object. In the conceptual framework of TPB, individual's global evaluation or appraisal of performing the target behaviour constitutes the attitudes (Armitage & Conner, 2001). Nurses' overall evaluation about the favourability of always adhering to the standard safety precautions while working was aimed to be measured.

2.2.1.4 Subjective Norm

Subjective norm component of the model refers to the motivational aspect to comply as a result of the expectations of a referent group (Ajzen & Fishbein, 1973).

It is a global measure of approval/disapproval of important others according to the individual when to perform or not to perform the target behaviour. From the perspective of nurses, the global evaluations expected from other nurses/doctors/medical technicians working together or the immediate supervisors or patients, in some cases, about adherence (nonadherence) to the standard safety precautions constituted the subjective norm component. According to Ajzen (2006, Constructing a TPB questionnaire-subjective norm section), the subjective norm component shows both prohibitive quality for the performer and descriptive norms of important others' performing the target behaviour.

2.2.1.5 Perceived Behavioural Control

The person's perception of capability to perform the target behaviour and controllability over the behaviour after evaluation of past experience as well as anticipated possible obstacles constitute the perceived behavioural control variable (Ajzen, 2006, Constructing a TPB questionnaire-PBC section). Nurses' a) perceived control over adherence to standard safety precautions while working and b) self-efficacy level concerning the target behaviour represented the PBC variable in the present study.

2.2.2 Nurse Booklet Section I: Measure of TPB Variables

2.2.2.1 Standard Safety Precautions Checklist

A checklist of Standard Safety Precautions (also called Universal Precautions) was developed using two different sources. The 16-item Universal Precautions Behaviours compliance scale that was developed and used in several earlier Gershon et al. studies (1995, 1998, 1999, and 2000) was the first source for

the Standard Safety Precautions checklist. The second source was the 12-item Universal Precautions scale that was used in Kermode et al.'s (2005) study. A more comprehensive, hybrid checklist was formed by using these two sources. The hybrid Standard Precaution checklist with 19 items is presented in Appendix A.

The Standard Safety Precautions items were then translated from English to Turkish by three different people, one of the translators was an Industrial and Organizational Psychologist with a Ph.D., and the other two were Industrial and Organizational Psychology graduate students. Additionally, an emergency medicine physician student gave some feedback on the translation, so that the items reflected the intended meanings. The best two translations for each item in the checklist were decided by the researcher herself and a bilingual business administration professor, also a language specialist, checked the items and gave the last decision concerning the translation best reflecting the conceptual meaning of the items.

To check the Standard Safety Precautions items clarity and compatibility for the Turkish nurses working at private sector hospitals, a focus group was conducted with first line supervisors of the first hospital as subject matter experts. Prior to the focus group, all Standard Safety Precautions items were examined with the nursing service manager of the first hospital as an experienced subject matter expert. With her suggestions, two items ("*Before and after each operation wash hands with water and soap according to the proper method*" and "*Behave accordingly to the infection control program principles of the hospital*") were added to the check list. Moreover, some editing to the wording of Standard Safety Precautions was done. Feedbacks on the items and the supplementations to the check list (e.g. "*Wash*

hands before removing disposable gloves", "*Wear a bone whenever there is a possibility of blood or other bodily fluids splashing to the hair or scalp*") were noted in the focus group. Especially, the validity of the check list for different medical departments was questioned.

The final version of the Standard Safety Precautions checklist included 24 items and the respondents were asked to check the items (e.g., "*Wear gloves while drawing a patient's blood*") that apply to their present job. The purpose of asking respondents to check the item that apply was to make participants read all items of the check list before starting to answer the Theory of Planned Behaviour measures in the package. In other words, the participants were expected to answer the TPB scale questions in the light of the Standard Safety Precaution items that were checked by him/her as a categorical behaviour of adherence to standard safety precautions.

2.2.2.2 The Intention Measure

To assess the generalized intentions of nurses to always adhere the standard safety precautions, while working, two items rated on a 5-point scale (Strongly disagree = 1, Strongly agree = 5) were used (i.e., "I intent to always adhere the Standard Safety Precautions that I checked above", "I want to always adhere the Standard Safety Precautions while working").

2.2.2.3 The Attitude Measure

Six semantic differential scales were used to assess the attitude of nurses about the target behaviour (e.g., "For me to always adhere the standard safety precautions while working:") There were six different rating scale (e.g., from 1 =

extremely beneficial to 5 = extremely useless, from 1 = extremely unimportant to 5 = extremely important, from 1 = extremely essential to 5 = extremely unnecessary, from 1 = extremely hard to 5 = extremely easy, from 1 = very good to 5 = very bad, and from 1 = very unpractical to 5 = very practical). Attention was paid to counterbalance the negative and positive endpoints while listing the adjective pairs successively, as suggested by Ajzen (2006).

2.2.2.4 The Subjective Norm Scale

Five items, four of which have the injunctive quality and one is capturing a descriptive norm as Ajzen recommended, were developed. The items are rated on a 5-point scale (e.g., "I feel social pressure about the issue of always adhering to the Standard Safety Precautions while working").

2.2.2.5 The Perceived Behavioural Control Scale

Three items were developed to measure PBC. Similar to the other items, a 5-point scale was used. One item tapped into *perceived capability* of the nurse (e.g., "If I wanted to I could always adhere to the Standard Safety Precautions"); the other two items were for the behaviour's *controllability* (e.g., "While working whether or not to always adhere to the Standard Safety Precautions that I checked above is under my control" and "How much control do you have over always adherence to Standard Safety Precautions while working?")

2.2.3 Nurse Booklet Section II: Hospital Safety Climate Questionnaire

The safety climate scale used in the present study was a combination of two different safety climate scales used in Neal et al. (2000) and Gershon et al. (2000) studies. The 16-item Neal et al. (2000) safety climate scale was used to measure

safety climate perceptions of Australian hospital health care workers. The scale consists of four factors: "*management values", "communication", "training",* and *"safety systems*". The questionnaire employs a 5-point Likert scale; ranging from 1 = Strongly Disagree to 5 = Strongly Agree. The internal consistency value was reported to be .93 by Neal et al. (2000).

Gershon et al.'s (2000) 20-item safety climate scale was the second source. Gershon et al.'s 20-item scale consists of six factors as "*demonstrable management support for safety programs, the absence of hindrances to safe work practices, availability of personnel protective and engineering control equipment, minimal conflict and good communication among staff members, frequent safety-related feedback/training by supervisors,* and *cleanliness and orderliness of the work site"* (p. 214). A five point Likert scale (1 = Strongly Agree, 5 = Strongly Disagree) was used for the items. Gershon et al. (2000) reported internal consistencies for all six factors to be higher than .70, ranging from .71 to .84. Three items of *absences of job hindrances* factor of Gershon et al.'s scale and one item of "*On my unit, I know how to access information about clinic safety"* were decided to be included.

Three more items to measure the staff perceptions on *reporting* system of the organization, six more items to measure the *teamwork* perceptions, and lastly three more items for *personal protective equipment availability* were developed by the researcher and included to the final version of the safety climate scale.

The original items in the questionnaire were translated from English to Turkish by the same people who translated the other scales of the study, and the bilingual business administration professor checked the items and gave the final

decision concerning the best translation to ensure conceptual equivalence (see Appendix B for the safety climate scale items). The questionnaire items employed a 6-point Likert (1 = Strongly Disagree; to 5 = Strongly Agree, and 6 = Not Applicable/Relevant).

2.2.4 Nurse Booklet Section III: Standard Safety Precautions as the Outcome Measures

The Standard Safety Precautions checklist was used as a self-report measure of the safety behaviour like in Gershon et al.'s (2000) and Kermode et al.'s (2005) studies. Respondents were asked to indicate the frequency with which they engage in the safety behaviour presented in the item on a 6-point frequency scale (1 = Never to 5 = Always, 6 = Not Relevant). See Appendix C for the Standard Safety Precautions Compliance scale items.

2.2.5 Nurse Booklet Section IV: Demographics

Respondents' demographic characteristics were asked in this section. The characteristics included name, age, gender, education level, department, name of the first line supervisor, total weekly working hours, number of monthly shifts, average number of patients seen each work day, average minute spent per patient, tenure in the current organization, and total tenure in months. See Appendix D for the demographic questionnaire.

2.2.6 First Line Supervisor Booklet: Standard Safety Precautions as the Outcome Measures

Similar to the Nurse Booklet Section 3, the Standard Safety Precautions check list was used to measure of the safety behaviour performance of nurses by

their immediate supervisors. First line supervisors, as the respondents, were asked to indicate the frequency with which the rated subordinate engage in the safety behaviour on a 6-point frequency scale (1 = Never to 5 = Always, 6 = Not Relevant).

2.2.7 First Line Supervisor Demographics

The characteristics included name, age, gender, education level, department, number of the subordinates he/she was responsible for, total weekly working hours, number of monthly shifts, average number of patients seen each work day, average minute spent per patient, tenure in the current organization, and total tenure in months. See Appendix E for the demographic questionnaire.

The final version of the nurse and supervisor booklets can be seen in Appendix F.

2.3 Hospital Information and Procedure

As stated before, the present study was conducted in two different private hospitals in Ankara. Both of the hospitals are relatively large, well-known private hospitals of the city and are specialized in different areas. Both of the hospitals were accredited by the Joint Commission International, the most well-known and developed independent accreditation organization in health area, and ISO 9001. The first hospital has been in the sector for 30 years and has approximately 850 employees with 156 bed capacity. A total of 182 nurses work for the organization at 15 different medical departments and 16 first line supervisors are in charge of these nurses. The second hospital has been in service at two different locations in Ankara

for 18 years. There are 260 nurses working at the two locations in 38 different medical departments.

The questionnaire administration at the two different hospitals was conducted by the researcher herself in accordance with the hospitals' preferences and means. First of all, human resources and training manager of the first hospital was contacted and explained the purpose of the study. After the management and head physician's approval for the study, the nursing services manager was appointed to manage the data gathering process. Prior to the data gathering, a focus group with 15 first line supervisors was conducted to collect qualitative data from subject matter experts on the translated items of each scale, especially on the Standard Safety Precautions checklist. Also, in this focus group the purpose of the study was explained to the participants face to face to be able to further increase the participation rate. A nurse booklet and a supervisor booklet were distributed to each focus group participant. The focus group lasted approximately one and a half hour and recorded with a tape recorder. Firstly, the purpose of the present study and the planned procedure of the data gathering step were explained to the supervisors. Starting with the Standard Safety Precautions check list, all the questionnaires were examined item by item with the supervisors. Feedbacks and suggestions were noted and used for the finalization of the scales.

With the guidance of the nursing services manager and the administrative nursing services specialist, the questionnaire administrations were arranged. The management of the hospital accepted to give the permission to the study provided that only the researcher gathered the data in a separate room. Therefore, a room for

the researcher was booked at different times of the week in order to get access to all nurses working at different shifts. Each time the researcher was in the hospital, administrative nursing services specialist announced to all departments for the questionnaire administration time interval for that day and the available and volunteer nurses came to the room and filled out the questionnaire. All questionnaires were given and received in closed envelopes. Out of 182 nurses, 152 participated in the study with a return rate of 83.5%.

The first line supervisor questionnaire booklet and demographic questions were given to and collected from each supervisor in envelopes by the researcher after the nurse data gathering process had been completed. At each time maximum 7 to 10 questionnaires in an envelope were given to the first line supervisors who were responsible for more than seven nurses. One week was given to the first line supervisors to fill out a set, a batch of 7 to 10 nurse questionnaires. All first line supervisors completed their questionnaires, yielding full response rate. Data were collected over a three month period, starting from October 14 and ending at December 10, 2010.

For the second hospital, training and quality department's manager was contacted and explained the purpose of the study. After the managerial approval for the study, the nursing services manager became liable for the data gathering steps of the study. Two hundred questionnaire booklets were provided to the nursing services to distribute in the 20 medical departments. The questionnaire booklets, in envelopes, were placed by the nursing service employees to the post boxes existed for these kinds of applications at all medical departments. The nurses were allowed

to fill out the questionnaires only between two different time periods (i.e., 03:00 p.m. - 12:00 a.m. shift and 11:00 p.m. - 08:00 a.m. shift). Two weeks time period was allocated for the questionnaire administration. Out of 200 questionnaire booklets, 127 respondents returned them back, yielding a response rate of 63.5%. The first line supervisor questionnaire booklet and demographic questions were given to nursing service manager in envelopes after the nurse data gathering process had been completed. Each first line supervisor questionnaire booklets were prepared and enveloped in batches of 7 to 10 ratees. The nursing service manager coordinated the data collection process from the supervisors. The first line supervisors were also reminded by the nursing service manager for not to complete all ratings at one time. First line supervisors had two weeks to complete ratings. Among 19 first line supervisors, 18 of them returned the envelopes back in full. Data were collected over a one and half month period, starting from November 5 and ending at December 16, 2010.

CHAPTER 3

RESULTS

3.1 Overview

In this chapter, results of the analyses are presented in four different headings. In the first section, a series of principal component analyses results examining the factor structure of the safety climate and safety performance measures that were used for the first time on a Turkish sample are presented. In addition, the reliabilities of the emerging factors are provided. In the second section the correlations among the major study variables, namely TPB variables (intention, subjective norm, attitude, and perceived behavioural control), safety climate dimensions and safety related behaviour performance dimensions are presented. In addition, in this section descriptive statistics are presented. In the third section, results of the analyses conducted to test the hypotheses (i.e., Hypotheses 1 and 2) concerning the prediction of safety related behaviour performance by TPB variables are presented. In the final section, results of Hypotheses 3 regarding the ability of safety climate perceptions in predicting supervisor rated safety performance over and beyond the effects of TPB variables are provided.

3.2 Factor Structure of the Scales Used

Prior to the factor analyses and calculation of reliabilities, data were checked for the accuracy and missing values for different hospital samples separately. Inaccurate data entries were checked and corrected. All items of the three scales (i.e., TPB Scale, the Safety Climate Questionnaire, and the Compliance with the Standard Safety Precautions Scale) had missing values less than 5% of the cases. Therefore, missing values were replaced by each item's own means score including responses of "Not Relevant (6)" through SPSS 16.0 "replace missing values" function.

3.2.1 Theory of Planned Behaviour Scale

The 16-item TPB scale composed of four subscales in order to measure intention, attitude, subjective norm, and perceived behavioural control. Three items of the six item subscale of attitude variable (e.g., "*For me to always adhere the standard safety precautions while working*") were recoded as reversed items.

The reliability of the subjective norm subscale increased from .43 to .66 when one item (i.e., "*I feel under social pressure to always adhere the Standard Safety Precautions while working*") was deleted. The items and reliabilities of the TPB subscales are presented in Appendix G. The highest reliability belonged to the attitude subscale (.83) while other subscales showed rather low values (.56, .66, and .59 for perceived behavioural control, subjective norm, and intention respectively).

3.2.2 Safety Climate Questionnaire

The 32-item safety climate questionnaire was a hybrid questionnaire of two different scales used in Neal et al.'s (2000) and Gershon et al.'s (2000) studies and

also items added by the researcher. The scale included the original factors of *management values, communication, training, safety systems, absences of job hindrances, teamwork, reportin*g, and *personal protective equipment availability*. Three items of the 32-item (i.e., "*My job duties often interfere with my being able to follow Standard Safety Precautions*", "*In this workplace, a behaviour inappropriate to the Standard Safety Precautions is reported solely in a case of a work place accident",* and "*I usually have too much to do to always follow Standard Precautions*") were recoded as reversed items.

A principal component analysis (PCA) with varimax rotation was performed through SPSS 16.0 on 32 items. According to Kaiser Criterion, 6 factors explaining 64.36% of the variance were extracted. However, examination of the scree plot and the conceptual meaning of the items suggested a two factor solution. The PCA was run again by forcing the number of factors to two and this solution explained 52.57 % of the variance. With a cut-off of .30 factor loading, three items (i.e., "*My job duties often interfere with my being able to follow Standard Safety Precautions*", "*In this workplace, a behaviour inappropriate to the Standard Safety Precautions is reported solely in a case of a work place accident*", and "*I usually have too much to do to always follow Standard Precautions*") did not load on any factor and three items (i.e., "In my workplace, personal protective equipment usage is encouraged", "*I have enough time in my work to always follow Standard Precautions"*, and "*Personal protective equipments are readily available in my work area*") showed very close cross loading values. Therefore, a decision was made to drop these items

from the scale. The two factor solution PCA with varimax rotation was performed without these extracted items, and it explained 58.96 % of the total variance.

First factor explained 37.15 % of the variance including items belonging to the original dimensions of *management values, communication, training, safety systems, personal protective equipment availability,* and *reporting.* These original items were not differentiated in the Turkish sample. Hence these factors were grouped under one dimension, named *general safety climate*.

The second factor explained 21.80 % of the total variance. The six items loaded under this factor were related to teamwork aspects of safety; hence it was named *teamwork*. The loading values of the items on factors, percent of variances and the reliabilities of the factors can be seen in Appendix H.

To confirm the two-factor solution for the safety climate scale, a parallel analysis (PA) was conducted by using the computer program RANEIGEN using case number as 274 and variable number as 32 in order to compare the initial eigenvalues of the factor solution with the eigenvalues based on the random data. The PA suggested a two-factor solution for the whole sample data, also.

In addition to the PA, the factor structure of the safety climate questionnaire was also checked on the two hospital samples, separately. For the first hospital, although the minimum requirement of 160 cases for the present scale was not met, the KMO and Bartlett's test was significant. That is, it seemed appropriate to conduct a PCA with varimax rotation using data from 152 participants. According to the Kaiser criterion, a seven factor solution explaining 70.21 % of the variance was obtained. However, the examination of scree plot as well as the results of a PA

that was conducted for 32 item and 152 cases again suggested a two-factor solution. A PCA with varimax rotation with forced two-factors explained 51.01 % of the total variance for the first hospital sample.

For the second hospital sample, again the number of participants did not meet the minimum requirement of 160 cases, but KMO and Bartlett's test significance suggested feasibility of a PCA. The PCA with varimax rotation resulted in a six-factor solution. The scree plot and conceptual content of the items suggested existence of a two-factor solution which was also supported with a PA for 122 cases and 32 items. The two-factor solution explained 53.5 % of the total variance. In brief, a two-factor solution for the safety climate questionnaire was confirmed for the whole sample by PA and the factor analyses conducted with each hospital's data separately.

3.2.3 Compliance with Standard Safety Precautions Scale

The 24-item standard safety precautions scale filled by the first line supervisor of each participant was exposed to a PCA in order to be able to examine the safety performance dimensions as the major dependent variables of the study. A PCA with varimax rotation was performed for the whole data set (N=274) on 24 items using the cut-off value as .30 for the loadings. Five factors had eigenvalues bigger than one. However, examination of the scree plot suggested a four-factor solution. Moreover, a PA was conducted by using the computer program RANEIGEN for 274 cases and 24 variables. The random eigenvalues obtained and the eigenvalues of the initial PCA with varimax rotation solution comparison suggested a four-factor solution. Therefore, the analysis was conducted by forcing

the number of factors to four, which then explained 69.84 % of the variance. Conceptually, the four-factor solution made sense. When the factor loadings were examined, a decision was made to eliminate five cross-loading items (i.e, "*Protect him/herself against the blood and body fluids of all patients, regardless of their diagnosis", "Follow up Standard Safety Precautions with all patients regardless of their diagnosis", "Take extra care when using sharp, penetrating, and stinging objects", "Treat all materials that have been in contact with patient's saliva as if they were contaminated",* and *"Behave accordingly infection control programme principles of the hospital"*). After excluding these items, the factor analysis was run by forcing the number of factors to four again and 73.35% of the total variance was explained. According to the rotated component matrix, some items of the four factor solution still had cross loadings. However, these items were retained under the conceptually relevant factors. The factor loading values of the items and percent of explained variances by each factor can be seen in Appendix I.

The four factors were called *personal protective equipment usage*, *proactive standard precautions*, *preventive standard precautions*, and *hand-hygiene*, respectively. The reliability values of the factors can be seen in in Appendix I.

Among the excluded items, item 3 "*Follow up all Standard Precautions with all patients regardless of their diagnosis*" was decided to be analyzed individually as an index of performance. Conceptually, this item was the only item capturing compliance with safety rules at all situations in contact with the patients. This item was retained with the purpose of using it as a proxy measure of nurses' overall safety performance as rated by their supervisors.

To verify the four-factor solution of the standard safety precautions scale, the factor structures of the scales for the two samples were checked separately. For the first hospital, five factors were extracted with conducting a PCA using varimax rotation. Based on the examination of the scree plot and interpretability of the factors, a PCA with forced four factors was run. The resulting solution explained 68.67 % of the total variance. Moreover, a PA for 152 cases and 24 variables was conducted and the four-factor solution decision was further confirmed with this analysis.

For the second hospital, a PCA with varimax rotation was conducted, resulting in a five-factor solution. However, a PA conducted for 122 cases and 24 variables suggested existence of three factors as opposed to four-factor solution. So, the four-factor solution was not confirmed by the data from the second hospital.

In brief, although the four-factor solution was not confirmed on the second hospital data, considering the whole sample factor solution and conceptual relevance of the factors, the four-factor solution was accepted. The factors were named compliance with *personal protective equipment usage*, *proactive standard precautions*, *preventive standard precaution*s, and *hand-hygiene*, respectively.

3.3 Correlations between Study Variables and Descriptive Statistics

Prior to calculating the correlations, univariate and multivariate outlier analyses were executed. One case was determined to be both a univariate and multivariate outlier due to random responding and hence was deleted from the data set.

Correlations of demographic variables and study variables along with means, standard deviations, and internal consistency reliabilities of the variables are presented in Table 3.1. When the reliability values of the main study variables are examined, among the TPB variables although intention and subjective norm reliabilities are rather low (.59 and .56, respectively) perceived behavioural control and attitude showed acceptable values (.66 and .83, respectively). Safety climate dimensions (i.e., *general safety climate* and *teamwork*) employed satisfactory reliabilities, .95 and .94, respectively. Among the safety performance variables, personal protective equipment usage showed the highest reliability (.92) while the others were in general satisfactory (ranging from .91 to .73).

All of the mean values of the TPB variables were relatively high and above the mid-point of the scales with a little deviation. The mean values of TPB variables were in the range of 4.71 to 4.20, highest value belonging to intention.

The mean values of safety climate dimensions (i.e., *general safety climate* and *teamwork*) were above the mid-point of the scale (M = 3.90 and M = 4.20, respectively). The safety perceptions of the participants, especially teamwork, seem especially positive.

Compliance with safety behaviour performance variables rated by the first line supervisors showed mean values above the mid-point of the scale (M = 3.80, M = 3.98, M = 4.05, M = 4. 25, and M = 4.32 for *preventive standard precautions, personal protective equipment usage, proactive standard precautions, hand-hygiene*, and *overall safety performance*, respectively) suggesting that nurses' level of compliance with the safety standard precautions while working most of the time

was relatively high according to their supervisors' observations. Interestingly, first line supervisors gave highest ratings to the overall safety performance measure when assessing the nurses' compliance with the safety related behaviours.

An examination of the bivariate correlation values between TPB variables showed that all of the subscales of TPB were significantly correlated with each other, as expected. These positive correlations confirmed the TPB model in the way that the more positive the participants' attitude, subjective norm, and perceived behavioural control, the more their intention to comply the safety related behaviour. The highest correlation was obtained between subjective norm and intention, $r = .60$, $p < .01$. Additionally, between the TPB variables and demographic variables some significant negative correlations were found. The significant negative correlation between perceived behavioural control and education level ($r = -.14$, $p < .05$) suggested that higher level of education was related with lower scores on perceived behavioural control. Also, the significant negative correlation observed between attitude and age ($r = -.17$, $p < .01$) suggested that younger nurses had more positive attitudes towards adherence to standard safety precautions while working. Interestingly, a significant negative correlation was found between hospital tenure and attitude ($r = -.19$, $p < .01$) suggesting as tenure increased, attitude towards adherence to standard safety precautions became less positive.

The two safety climate dimensions were positively correlated with each other as would be expected ($r = .59$, $p < .01$). Concerning the bivariate correlations between safety climate dimensions and TPB variables, the *general safety climate* had significant correlation with *subjective norm* and *perceived behavioural control*

(r = .20, p < .01 and r = .13, p < .05, respectively). Moreover, *teamwork* was positively related with *subjective norm* and *intention* variables (r = .20, p < .01 and r = .15, p < .05, respectively). Additionally, when the demographic variables were examined, age tended to have significant positive correlations with safety climate perceptions (r = .13, p < .05 for *general safety climate* and r = .14, p < .05 for *teamwork*). That is, the older nurses had more positive safety climate perceptions. Also, both of the safety climate dimensions showed negatively significant correlations with weekly working hour variable (r = -.20, p < .01 for *general safety climate* and r = -.23, p < .01 for *teamwork*), suggesting that the weekly working hours of nurses increased, the safety climate perceptions became negative.

As expected all four of the safety performance dimensions (i.e., *personal protective equipment usage, proactive standard precautions, preventive standard precautions*, and *hand-hygiene*) showed positive correlations with *overall safety performance* and with one another. Overall safety performance had the highest significant correlation with *preventive standard precautions* dimension, r = .66, p < .01 and the lowest correlation with *proactive standard precautions* dimension, r = .30, p < .01. Considering the correlations with the demographic variables, the most salient significant negative correlations were between all safety performance dimensions and weekly working hour variable (r = -.13, p < .05 for *personal protective equipment usage*, r = -.16, p < .05 for *proactive standard precautions*, r = -.17, p < .01 for *preventive standard precautions*, r = -.22, p < .01 for *hand-hygiene*, and r = -28, p < .01 for *overall safety performance*). That is, the longer the working hours the less likely nurses show compliance with the safety related behaviours.

When the bivariate correlations between the TPB variables and safety performance dimensions were examined, no significant correlation was found, except for the negative correlation between attitude and personal protective equipment usage, $r = .-15$, $p < .05$. Drawing from here, TPB variables, which were taken as the individual level factors of safe/unsafe work behaviours in the present study, showed little or no association with the safety performance of the participants, rated by their first line supervisors. Surprisingly, the only significant correlation found between the attitude and personal protective equipment usage was in the negative direction, suggesting that the more positive attitudes of the participants towards adherence to standard safety precautions, the lower the frequency of personal protective equipment usage while working as rated by their supervisors.

General safety climate had positive significant correlations with overall safety performance measure and other safety performance dimensions (i.e., *personal protective equipment usage, proactive standard precautions, preventive standard precautions*, and *hand-hygiene*). The highest correlation value that general safety climate had was with personal protective equipment usage, $r = .25$, $p < .01$. The other safety climate dimension, *teamwork*, had relatively higher positive significant correlations with overall safety performance of the participants ($r = .22$, $p < .01$) and with other safety performance dimensions ($r = .30$, $p < .01$ with *personal protective equipment usage*, $r = .18$, $p < .01$ with *preventive standard precautions*, and $r = .21$, $p < .01$ with *hand-hygiene*) than did *general safety climate* dimension. However, *teamwork'*s correlation with *proactive standard precautions*

dimension was not significant. Overall, more positive safety climate perceptions of the nurses indicated higher frequency of their compliance with safety related behaviours as observed and rated by the first line supervisors. Additionally, it can be said that the *teamwork* dimension of safety climate perceptions had more powerful associations with the safety performance dimensions than *general safety climate* perceptions.

Table 3.1 *Correlations, Means, Standard Deviations and Reliabilities of the Study Variables*

	Variables	N	# Items	1	2	3	4	5	6	7
1	Age	266	-							
2	Gender	273	-	.11						
3	Education Level	266	-	-.15*	-.37**					
4	Weekly Working Hr	259	-	-.01	.24**	-.18**				
5	Monthly Shifts	213	-	-.10	.17*	-.08	.19**			
6	Hospital Tenure	251	-	.75**	.02	-.16*	.07	-.07		
7	Nursing Tenure	241	-	.91**	.06	-.27**	.02	-.08	.76**	
8	Intention	273	2	-.04	.04	.09	-.02	-.08	-.06	-.03
9	Perceived Behavioural Control	273	4	.07	.07	-.14*	.00	-.04	.05	.09
10	Subjective Norm	273	3	.02	.00	-.06	.00	-.06	.08	.07
11	Attitude	273	6	-.17**	-.04	-.02	-.03	-.08	-.19**	-.12
12	General Safety Climate	273	20	.13*	.00	-.07	-.20**	.00	.08	.16*
13	Teamwork	273	6	.14*	.01	.02	-.23**	.00	.08	.12
14	Personal Protective Equipment Usage	273	6	.15*	-.16**	.18*	-.13*	.07	.15*	.12
15	Proactive Standard Precautions	273	6	-.12	-.12*	.32**	-.16*	-.03	.02	-.15*
16	Preventive Standard Precautions	273	4	.11	-.08	.10	-.17**	.11	.14	.11
17	Hand-hygiene	273	3	.26**	-.05	.10	-.22**	.05	.22**	.21**
18	Overall Safety Performance	273	1	.11	-.11	15*	-.28**	.05	.12	.06
			M =	27.80	-	-	50.39	11.50	49.58	77.98
			SD =	5.70	-	-	7.54	7.29	52.96	75.07

Note. ***p* < .05 ****p* < .01. For gender 1 = "Woman", 2 = "Man". For education level 1 = "High school", 2= "Two degree college", 3 = "Four year college", and 4 = "Master's degree". Hospital tenure and nursing tenure are in months. TPB variables were assessed on five-point scales: 1 = representing negative end points and 5 = representing positive end points. A five-point Likert-type scale was used for safety climate dimensions: 1 = "Strongly disagree" and 5= "Strongly agree". A five-point frequency scale was used for compliance with safety performance scale: 1 = "Never" and 5 = "Always". Reliabilities are presented at the diagonal in bold.

Table 3.1 (continued)

	Variables	8	9	10	11	12	13	14	15	16	17	18
8	Intention	**.59**										
9	Perceived Behavioural Control	.28**	**.66**									
10	Subjective Norm	.60**	.31**	**.56**								
11	Attitude	.19**	.14*	.28**	**.83**							
12	General Safety Climate	.11	.13*	.20**	.04	**.95**						
13	Teamwork	.15*	.06	.22**	.06	.59**	**.94**					
14	Personal Protective Equipment Usage	.03	.01	.07	-.15*	.25**	.30**	**.92**				
15	Proactive Standard Precautions	.01	-.03	.04	-.10	.14*	.07	.42**	**.91**			
16	Preventive Standard Precautions	-.02	-.05	.03	-.11	.14*	.18**	.57**	.32**	**.89**		
17	Hand-hygiene	.02	.04	.04	-.11	.17**	.21**	.56**	.27**	.49**	**.73**	
18	Overall Safety Performance	.01	.00	.07	-.05	.15*	.22**	.61**	.30**	.66**	.62*	
	M =	4.71	4.30	4.32	4.20	3.90	4.20	3.98	4.05	3.80	4.25	4.32
	SD =	.45	.70	.51	.89	.69	.79	.91	.86	.31	.63	.75

Note. ***p* < .05 ****p* < .01. For gender 1 = "Woman", 2 = "Man". For education level 1 = "High school", 2= "Two degree college", 3 = "Four year college", and 4 = "Master's degree". Hospital tenure and nursing tenure are in months. TPB variables were assessed on five-point scales: 1 = representing negative end points and 5 = representing positive end points. A five-point Likert-type scale was used for safety climate dimensions: 1 = "Strongly disagree" and 5= "Strongly agree". A five-point frequency scale was used for compliance with safety performance scale: 1 = "Never" and 5 = "Always". Reliabilities are presented at the diagonal in bold.

3.3.1 Correlations between Self-Rated and Supervisor-Rated Safety Performance Measures and the Relevant Descriptive Statistics

In the present study, for exploratory purposes, frequency of compliance with Standard Safety Precautions was collected from nurses themselves in addition to their first line supervisors' ratings. Correlations of supervisor-rated and self report safety performance measures along with means and standard deviations are presented in Table 3.2.

All of the self report safety performance measures showed mean values above the mid-point of the scale (M = 3.88, M = 4.15, M = 4.44, M = 4.57, and M = 4.66 for *preventive standard precautions, personal protective equipment usage, proactive standard precautions, overall safety performance,* and *hand-hygiene,* respectively) suggesting that nurses' self-reported level of compliance with the standard safety precautions while working most of the time was relatively high. Nurses gave the highest ratings to their hand-hygiene safety performance.

An examination of the bivariate correlation values between self report safety performance measures showed that all of the self report safety performance variables (i.e., *personal protective equipment usage, proactive standard precautions, preventive standard precautions*, and *hand-hygiene*) were significantly correlated with one another and *overall safety performance*, as expected. The highest correlation was obtained between *proactive standard precautions* and *hand-hygiene* self report safety performance variables, $r = .62$, $p < .01$.

The correlations between self-report and supervisor-rated safety performance measures were all positive except for *preventive standard precautions*

safety behaviour. The highest correlation value was between the self report and supervisor rated *personal protective equipment usage* performance of nurses, $r = .57$, $p < .01$.

Table 3.2 *Correlations, Means and Standard Deviations of the Safety Performance Measures (Self-report vs. Supervisor rated)*

		Safety Performance Measures	N	1	2	3	4	5
1	Supervisor rated	Personal Protective Equipment Usage	273	1				
2		Proactive Standard Precautions	273	.42**	1			
3		Preventive Standard Precautions	273	.57**	.32**	1		
4		Hand-hygiene	273	.56**	.28**	.49**	1	
5		Overall Safety Performance	273	.61**	.30**	.66**	.62**	1
6	Self-report	Personal Protective Equipment Usage	273	.57**	.30**	.22**	.27**	.31**
7		Proactive Standard Precautions	273	.21**	.21**	.05	.13*	.12*
8		Preventive Standard Precautions	273	.17**	.11	.03	.11	.17**
9		Hand-hygiene	273	.19**	.16**	.02	.13*	.15*
10		Overall Safety Performance	273	.23**	.13*	.10	.12*	.18**
			M =	3.98	4.05	3.80	4.25	4.32
			SD =	0.91	0.86	0.31	0.63	0.75

Note. **p* < .05 ***p* < .01. A five-point frequency scale was used for compliance with safety performance scale: 1 = "Never" and 5 = "Always".

Table 3.2 (continued)

		Safety Performance Measures	6	7	8	9	10
1	Supervisor rated	Personal Protective Equipment Usage					
2		Proactive Standard Precautions					
3		Preventive Standard Precautions					
4		Hand-hygiene					
5		Overall Safety Performance					
6	Self-report	Personal Protective Equipment Usage	1				
7		Proactive Standard Precautions	.54**	1			
8		Preventive Standard Precautions	.30**	.42**	1		
9		Hand-hygiene	.48**	.62**	.55**	1	
10		Overall Safety Performance	.58**	.61**	.41**	.55**	1
		M =	4.15	4.44	3.88	4.66	4.57
		SD =	.74	.64	.27	.51	.62

Note. ***p* < .05 ****p* < .01. A five-point frequency scale was used for compliance with safety performance scale: 1 = "Never" and 5 = "Always".

3.4 Hypotheses Testing Concerning TPB Variables

In order to test Hypothesis 1 (Attitude, subjective norm, and perceived behavioural control predict nurses' intentions to engage in safety related behaviours) and Hypothesis 2 (Intention and perceived behavioural control predict safety related behaviours of nurses), a series of multiple regression analyses were conducted. These analyses aimed to explore the effects of TPB variables on safety related behaviours. As stated before, the data were collected from two different private hospitals and in testing Hypothesis 1 and 2, hospital type (0 = First Hospital, 1 = Second Hospital) was controlled. Therefore, for the first hypothesis, hospital type was entered in the first step of the analysis and then intention was regressed on attitude, subjective norm, and perceived behavioural control. Results of this analysis are presented in Table 3.3.

Table 3.3 *Summary of the Multiple Regression Analysis Predicting Intention*

Variable	R^2	R^2 *Change*	*F Change*	*B*	β	*t*	Sig.
Step 1	.02	.02	4.24*				
Hospital Type				.11	.12	2.06	.04*
Step 2	.36	.35	48.31***				
PBC				.07	.10	1.97	.05
Subjective Norm				.48	.54	9.91	.00***
Attitude				.01	.03	.54	.59

Note. $R = .12$, $F\ (1,270) = 4.24$, $p < .05$ in the first step, $R = .60$, $F\ (4,270) = 37.86$, $p < .001$ in the second step, $p^{*} < .05$, $p^{***} < .001$.

As can be seen from the Table 3.3, hospital type (0 = First Hospital, 1 = Second Hospital) was found to be a significant predictor of intention variable, $R = .12$, $F\ (1,270) = 4.24$, $p < .05$, and it can be said that participants from second hospital showed more strong relationship with the intention variable. The relationship between intention and the three independent variables was strong, $R =$

.60, and the TPB variables were significant predictors of intention to comply with safety precautions, F (4,270) = 37.86, $p < .001$. Among the three TPB variables, only the effect of subjective norm was significant ($\beta = .54$, $p < .001$). Also, perceived behavioural control showed a marginally significant beta weight ($\beta = .10$, $p \leq .05$). In brief, the results of the regression analysis partially supported Hypothesis 1 in that subjective norm was a significant predictor of intention.

To test the second hypothesis, a series of hierarchical regression analyses were conducted. The purpose of these analyses was to investigate the effects of intention and perceived behavioural control on safety performance after controlling for the effect of hospital type. Hence, before regressing the safety performance variables (i.e., *personal protective equipment usage, proactive standard precautions, preventive standard precautions, hand-hygiene*, and *overall safety performance*) on intention and perceived behavioural control hospital type was entered in the first step of each analysis. The results of the hierarchical regression analysis for the first dependent variable of personal protective equipment usage are presented in Table 3.4.

Table 3.4 *Predicting Personal Protective Equipment Usage Utilizing TPB Model: Summary of Hierarchical Regression Analysis*

Variable	R^2	R^2 *Change*	*F Change*	*B*	β	*T*	Sig.
Step 1	.22	.22	76.68***				
Hospital Type				.84	.47	8.76	.00***
Step 2	.23	.00	.80				
Intention				-.13	-.06	-1.11	.27
PBC				.07	.05	.91	.36

Note. $R = .47$, F (1,270) = 76.68, $p < .001$ in the first step, $R = .48$, F (3,270) = 26.06, $p > .05$ in the second step, $p^{***} < .001$.

For the first safety performance measure, hospital type was found to be a significant predictor of the personal protective equipment usage (R = .47, F (1,270) = 76.68, p < .001) and specifically, participants of the second hospital had higher level of compliance with personal protective equipment usage. After controlling for the effect of hospital type, the second step variables of intention and PBC did not contribute significantly to personal protective equipment usage of nurses (R = .48, F (3,270) = 26.06, p > .05). Examination of the beta weights indicated that neither intention nor PBC had significant beta weights.

The second hierarhical regression analysis was conducted to predict the compliance with proactive standard precautions behaviour after controlling for the effect of hospital type. The results can be seen in Table 3.5. Hospital type was again found to be a significant predictor of the behaviour in question, (R = .59, F (1,270) = 142.18, p < .001), explaining 35 % of the variance and the second hospital participants showed higher level of compliance with proactive standard precautions behaviour. As the second step variables, intention and PBC did not contribute significantly to the prediction of compliance with proactive standard precautions, R = .59, F (3,270) = 48.16, p > .05. The second hypothesis was rejected for the proactive standard precautions behaviour, meaning that intention and PBC did not show significant relationship with the behaviour.

Table 3.5 *Predicting Proactive Standard Precautions Utilizing TPB Model: Summary of Hierarchical Regression Analysis*

Variable	R^2	R^2 Change	F Change	B	β	t	Sig.
Step 1	.35	.35	142.18***				
Hospital Type				1.01	.59	11.92	.00***
Step 2	.35	.01	1.10				
Intention				-.15	-.08	-1.46	.15
PBC				.01	.01	.17	.87

Note. $R = .59$, F (1,270) = 142.18, $p < .001$ in the first step, $R = .59$, F (3,270) = 48.16, $p > .05$ in the second step, $p^{***} < .001$.

The same analysis was conducted for the third dependent variable of compliance with the preventive standard precautions (see Table 3.6). As can be seen from the table, hospital type contributed significantly to the prediction of behaviour in question and explained 15 % of the variance ($R = .39$, F (1,270) = 47.56, $p < .001$). Participants of the second hospital had higher level of compliance with preventive standard precautions. After controlling for the effect of hospital type, intention and PBC did not significantly predict the compliance with preventive standard precautions behaviour ($R = .40$, F (3,270) = 16.58, $p > .05$) and beta weights were not significant. Again for this safety performance measure, no support was obtained for the second hypothesis of the present study.

Table 3.6 *Predicting Preventive Standard Precautions Utilizing TPB Model: Summary of Hierarchical Regression Analysis*

Variable	R^2	R^2 Change	*F* Change	*B*	β	*t*	Sig.
Step 1	.15	.15	47.56***				
Hospital Type				.23	.39	6.90	.00***
Step 2	.16	.01	1.08				
Intention				-.06	-.08	-1.41	.16
PBC				.00	.00	.04	.97

Note. $R = .39$, $F(1,270) = 47.56$, $p < .001$ in the first step, $R = .40$, $F(3,270) = 16.58$, $p > .05$ in the second step, $p^{***} < .001$.

The results of the hierarchical regression analysis predicting hand hygiene is presented in Table 3.7. Contrary to the expectations, again, after controlling for the effect of hospital type in the first step, intention and PBC did not contribute significantly to the prediction of the behaviour ($R = .27$, $F(3,270) = 7.18$, $p > .05$).

Table 3.7 *Predicting Hand-Hygiene Utilizing TPB Model: Summary of Hierarchical Regression Analysis*

Variable	R^2	R^2 Change	*F* Change	*B*	β	*t*	Sig.
Step 1	.07	.07	20.59***				
Hospital Type				.34	.27	4.54	.00***
Step 2	.27	.00	.51				
Intention				-.04	-.03	-.42	.67
PBC				.06	.06	1.00	.32

Note. $R = .27$, $F(1,270) = 20.59$, $p < .001$ in the first step, $R = .27$, $F(3,270) = 7.18$, $p > .05$ in the second step, $p^{***} < .001$.

The last hierarchical regression analysis was conducted for the overall safety performance measure of the nurses and the results are presented in Table 3.8. Results again revealed that after controlling for the effect of hospital type on the

prediction of overall safey performance measure in the first step (R = .39, F (1,270) = 48.73, p < .001), intention and PBC did not contributed significantly to the prediction of the behaviour. Examination of beta weights indicated that the effects of TPB variables were not significant yielding no support for the second hypothesis, R = .40, F (3,270) = 16.64, p > .05.

Table 3.8 *Predicting Overall Safety Performance Utilizing TPB Model: Summary of Hierarchical Regression Analysis*

Variable	R^2	R^2 *Change*	*F Change*	*B*	β	*t*	Sig.
Step 1	.15	.15	48.73***				
Hospital Type				.59	.39	6.98	.00***
Step 2	.16	.00	.65				
Intention				-.11	-.06	-1.09	.28
PBC				.04	.04	.64	.52

Note. R = .39, F (1,270) = 48.73, p < .001 in the first step, R = .40, F (3,270) = 16.64, p > .05 in the second step, p^{***} < .001.

In brief, partial support was obtained for the first hypothesis; only subjective norm predicted intention significantly. Concerning the second hypothesis, intention and PBC did not contribute significantly to the prediction of none of the safety performance measures, yielding no support. Hospital type, however, was a significant predictor of supervisor-rated safety performance measures.

3.4.1 Model Testing

To be able to test the TPB model variables in predicting nurses' safety performance, as a whole, Hypothesis 1 (Attitude, subjective norm, and perceived behavioural control predict nurses' intentions to engage in safety related behaviours) and Hypothesis 2 (Intention and perceived behavioural control predict

safety related behaviours of nurses) were tested using structural equation modelling. Lisrel 8.30 (Jöreskog & Sörbom, 1999) with maximum likelihood estimation was used to test the TPB model. Initially the measurement model and then TPB model predicting the safety performance behaviour as the structural model were examined. Sample correlation matrix was used as the input and χ^2 to degrees of freedom ratio (χ^2/df), root means square error of approximation (RMSEA), goodness of fit index (GFI), comparative fit index (CFI), and non-normed fit index (NNFI) were used to evaluate the model. In general, χ^2/df ratio shows good fit when lower than 3:1 and satisfactory fit up to 5:1. The GFI values range between 0 and 1 and values higher than .90 shows good fit. For the CFI and NNFI, the range again is between 0 and 1 and the values higher than .90 are accepted as satisfactory. The RMSEA values equal or smaller than .05 shows very good fit and the values lower than .08 are satisfactory (Hoyle & Panter 1995, Hu & Bentler, 1995, and Sumer, 2000).

3.4.1.1 Measurement Model

A confirmatory factor analysis was conducted in that personal protective equipment usage, compliance with proactive standard precautions, compliance with preventive standard precautions, hand-hygiene, and overall safety performance dimensions rated by first line supervisors were taken as the indicators of safety performance latent variable. Intention, perceived behavioural control, subjective norm and attitude were treated as one indicator latent variables. In Figure 3.1, the measurement model and all path coefficients can be seen. The factor loadings of safety performance indicators were all statistically significant and in the range of .42 to .83.

Evaluating the fit indexes, χ^2 value was statistically insignificant [χ^2 (21, N = 273) = 30.91, $p > .05$] and the χ^2/df ratio was lower than 2:1, indicating very good fit. Moreover, the other fit indices yielded a good fit to the data (RMSEA = .04, GFI=.98, CFI = .99, and NNFI = .98). According to these results, without any modification these measures were used to test the structural TPB model.

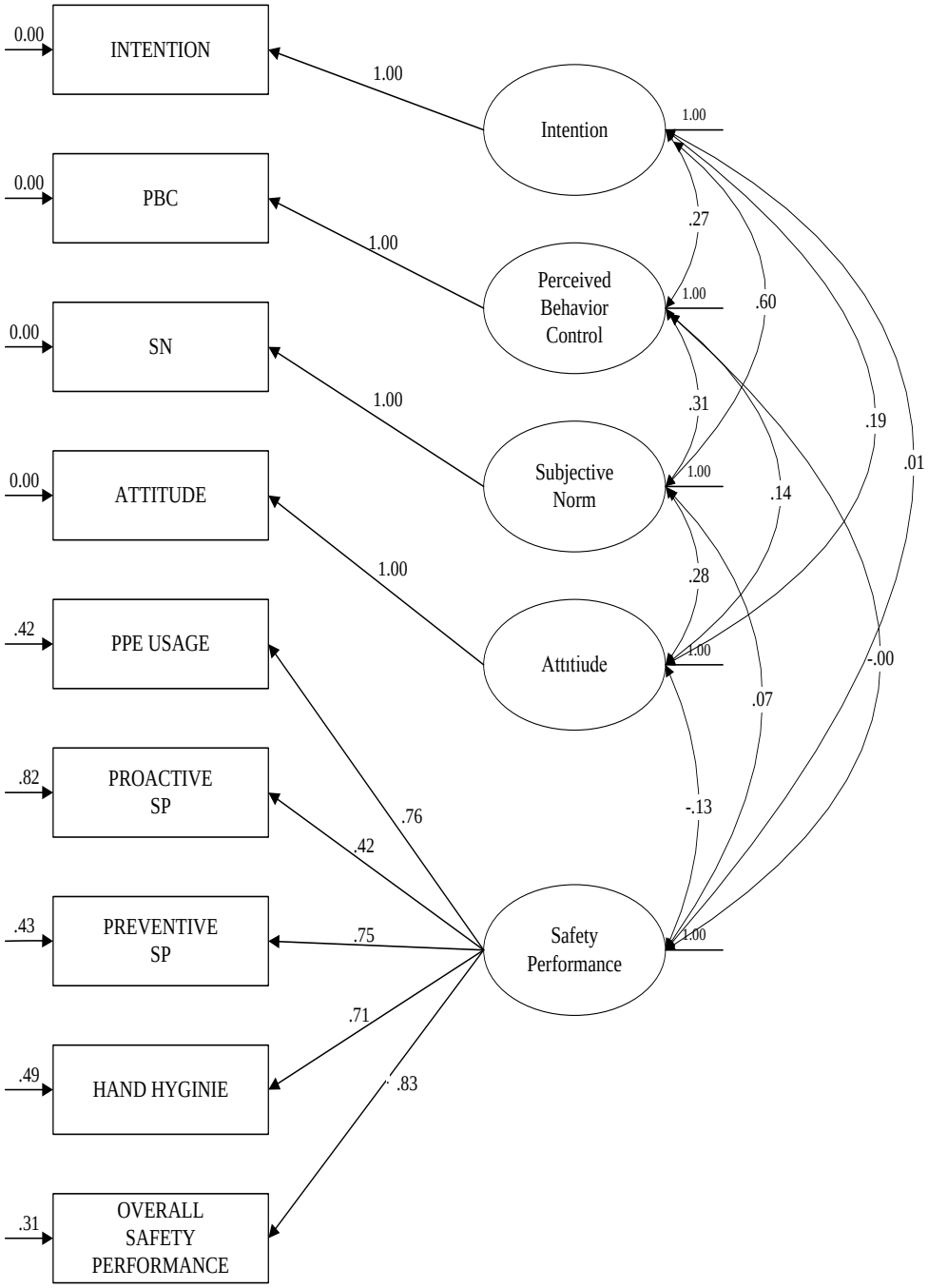

Figure 3.1 Measurement model

3.4.1.2 Structural Model

Paths among the latent variables were added in line with the research Hypotheses 1 and 2 based on TPB model (Ajzen, 1991). The TPB model was tested

as a full mediation model to be able to see all direct and indirect effect on safety performance latent variable (See Figure 3.2). The model yielded a good fit, χ^2 (21, N = 273) = 30.91, p > .05, and the other goodness-of-fit fit indexes reached satisfactory levels (RMSEA = .04, GFI=.98, CFI = .99, and NNFI = .98). The only significant path predicting intention was the one coming from subjective norm (β = .57, t = 9.11). Contrary to the proposed model, neither intention nor PBC showed direct significant effects on safety performance. Surprisingly, only attitude showed direct significant effect on safety performance (β = -.16, t = -2.39) although it was not expected to predict behaviour directly. While 37.4 % of the variance in intention was explained by subjective norm, attitude and PBC, only 3.1 % of the variance in safety performance was explained by intention, PBC, attitude, and subjective norm.

As expected, results obtained by using structural equation modelling technique were in line with the results found in section 3.4. In brief, partial support was obtained for Hypothesis 1. That is only subjective norm had direct significant effect on intention. Contrary to the Hypothesis 2, intention and PBC were not significant predictors of safety performance.

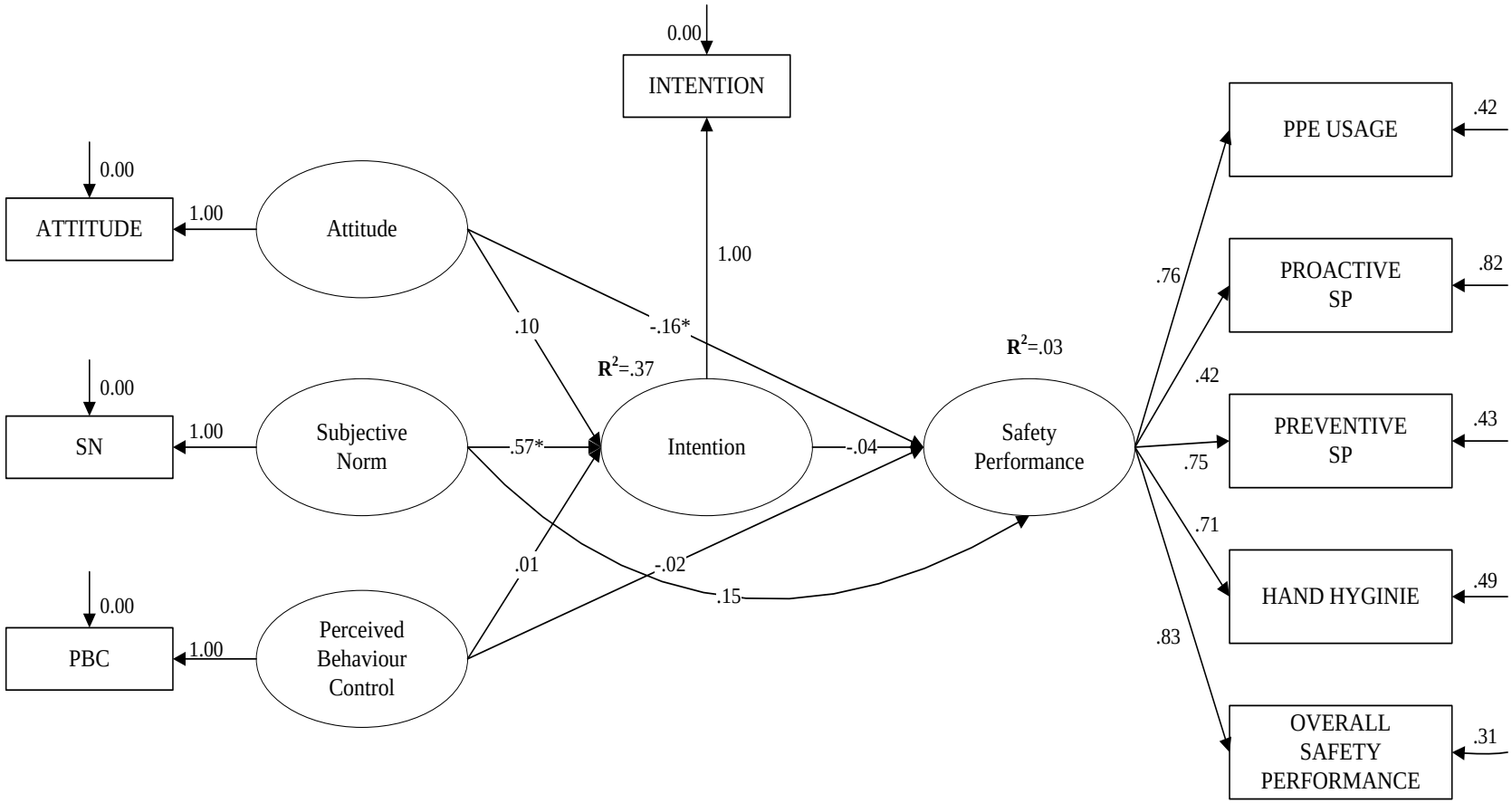

Figure 3.2 Structural model testing TPB variables in predicting safety performance of nurses

3.5 Hypothesis Concerning Safety Climate Perceptions

Hypothesis 3 stated that safety climate perceptions of nurses predict their safety related behaviours over and beyond the effects of TPB variables. In order to test this hypothesis, a series of hierarchical regression analyses were conducted. The aim of the third hypotheses was to assess the incremental effect of safety climate after controlling for the effects of the hospital type and the TPB variables on five different safety performance measures as the dependent variables.

In the first step of these analyses, hospital type was entered as the control variable followed by intention and PBC variables in the second step. In the third step, attitude and subjective norm were entered. In the final step of the analyses, safety climate variables (i.e., *general safety climate* and *teamwork)* were entered. The results of the hierarchical regression analysis for the first dependent variable, personal protective equipment usage, can be seen in Table 3.9.

Table 3.9 *Predicting Personal Protective Equipment Usage: Summary of Hierarchical Regression Analysis*

Variable	R^2	R^2 *Change*	*F Change*	*B*	β	*t*	Sig.
Step 1	.22	.22	76.68***				
Hospital Type				.84	.47	8.76	.00***
Step 2	.23	.00	.80				
Intention				-.13	-.06	-1.11	.27
PBC				.07	.05	.91	.36
Step 3	.24	.02	3.01				
Subjective Norm				.05	.03	.39	.70
Attitude				-.14	-.14	-2.45	.01*
Step 4	.28	.04	7.08*				
General Safety Climate				.04	.03	.49	.62
Teamwork				.21	.19	2.83	.00**

Note. $R = .47$, $F\ (1,270) = 76.68$, $p < .001$ in the first step, $R = .48$, $F\ (3,270) = 26.06$, $p > .05$ in the second step, $R = .49$, $F\ (5,270) = 17.07$, $p > .05$ in the third step, $R = .53$, $F\ (7,270) = 14.78$, $p < .05$ in the fourth step. $p^{***} < .001$, $p^{**} < .01$, $p^{*} < .05$.

As can be seen from the table, hospital type was found to be a significant predictor of the personal protective equipment usage, $R = .47$, $F\ (1,270) = 76.68$, $p < .001$, explaining the 22 % of the variance. Intention and PBC, entered in the second step, were not significant predictors of the personal protective equipment usage ($R = .48$, $F\ (3,270) = 26.06$, $p > .05$). In the third step, only attitude showed a significant negative beta weight ($\beta = -.14$, $p < .05$) although as a block the effect of attitude and subjective norm was not significant ($R = .49$, $F\ (5,270) = 17.07$, $p > .05$). In the last step, addition of safety climate variables resulted in a significant increase in the explained variance ($R^2_{change} = .04$), $R = .28$, $F\ (7,270) = 14.78$, $p < .05$. Examination of the beta weights indicated that the effect of teamwork on personal protective equipment usage in the last step was significant and in the positive direction ($\beta = .19$, $p < .01$). Therefore, for the personal protective equipment usage, it can be said that safety climate variables (especially teamwork) had predictive power over and beyond the effects of the TPB variables.

The same analysis was conducted for the compliance with proactive standard safety precautions behaviour. The results can be seen in Table 3.10. After controlling for the effect of hospital type, intention, PBC and other TPB variables did not contribute significantly to the prediction of the behaviour in the second and third steps, respectively. The addition of general safety climate and teamwork dimensions in the last step also did not lead a significant increase to the explained variance, $R = .60$, $F\ (7,270) = 21.07$, $p > .05$. That is, for the compliance with the proactive standard precautions safety behaviour Hypothesis 3 was not supported.

Table 3.10 *Predicting Proactive Standard Precautions: Summary of Hierarchical Regression Analysis*

Variable	R^2	R^2 Change	F Change	B	β	t	Sig.
Step 1	.35	.35	142.18***				
Hospital Type				1.01	.59	11.92	.00***
Step 2	.35	.01	1.10				
Intention				-.15	-.08	-1.46	.15
PBC				.01	.01	.17	.87
Step 3	.35	.00	.49				
Subjective Norm				.05	.03	.44	.66
Attitude				-.05	-.05	-.96	.34
Step 4	.36	.01	1.19				
General Safety Climate				.03	.03	.44	.66
Teamwork				-.10	-.09	-1.47	.14

Note. $R = .59$, F (1,270) = 142.18, $p < .001$ in the first step, $R = .59$, F (3,270) = 48.16, $p > .05$ in the second step, $R = .59$, F (5,270) = 28.98, $p > .05$ in the third step, $R = .60$, F (7,270) = 21.07, $p > .05$ in the fourth step. $p^{***} < .001$.

Hypothesis 3 concerning the compliance with the preventive standard precautions behaviour was tested again with the same method and the results are presented in Table 3.11. As can be seen from the table, the first step controlling for hospital type contributed significantly to the prediction of the behaviour, explaining 15 % of the variance. The second step TPB variables of intention and PBC did not contribute significantly to the prediction of the behaviour in question. Moreover, the third step TPB variables did not show any significant contribution. The addition of general safety climate and teamwork dimensions in the last step also did not lead a significant increase in the explained variance, $R = .43$, F (7,270) = 8.30, $p > .05$. That is, for the compliance with the preventive standard precautions safety behaviour Hypothesis 3 was not supported.

Table 3.11 *Predicting Preventive Standard Precautions: Summary of Hierarchical Regression Analysis*

Variable	R^2	R^2 Change	F Change	B	β	t	Sig.
Step 1	.15	.15	47.56***				
Hospital Type				.23	.39	6.90	.00***
Step 2	.16	.01	1.08				
Intention				-.06	-.08	-1.41	.16
PBC				.00	.00	.04	.97
Step 3	.17	.01	1.73				
Subjective Norm				.03	.05	.63	.53
Attitude				-.04	-.11	-1.84	.07
Step 4	.18	.01	2.08				
General Safety Climate				-.02	-.04	-.63	.53
Teamwork				.05	.14	1.96	.05

Note. $R = .39$, F (1,270) = 47.56, $p < .001$ in the first step, $R = .40$, F (3,270) = 16.58, $p > .05$ in the second step, $R = .41$, F (5,270) = 10.69, $p > .05$ in the third step, $R = .43$, F (7,270) = 8.30, $p > .05$ in the fourth step. $p^{***} < .001$.

For the fourth safety performance variable, hierarchical regression analysis results are presented in Table 3.12. The results indicated that after controlling for the hospital type variable in the first step, TPB variables entered in Step 2 and Step 3 did not account for a statistically significant proportion of variance in the behaviour. Entry of general safety climate and teamwork at the last step resulted in a statistically significant increment in the explained variance ($R^2_{change} = .03$), $R = .34$, F (7,270) = 4.78, $p < .05$. The examination of the beta weights showed that teamwork had a positive significant effect ($\beta = .17$, $p < .05$).

Table 3.12 *Predicting Hand-Hygiene: Summary of Hierarchical Regression Analysis*

Variable	R^2	R^2 Change	F Change	B	β	t	Sig.
Step 1	.07	.07	20.59***				
Hospital Type				.34	.27	4.54	.00***
Step 2	.07	.00	.51				
Intention				-.04	-.03	-.42	.67
PBC				.06	.06	1.00	.32
Step 3	.09	.01	1.77				
Subjective Norm				.06	.05	.64	.52
Attitude				-.08	-.12	-1.86	.06
Step 4	.11	.03	3.87*				
General Safety Climate				.00	.00	.05	.96
Teamwork				.13	.17	2.28	.02*

Note. $R = .27$, $F(1,270) = 20.59$, $p < .001$ in the first step, $R = .27$, $F(3,270) = 7.18$, $p > .05$ in the second step, $R = .29$, $F(5,270) = 5.04$, $p > .05$ in the third step, $R = .34$, $F(7,270) = 4.78$, $p < .05$ in the fourth step. $p^{***} < .001$, $p^{*} < .05$.

For the last safety performance measure, overall safety performance, the same analysis was conducted. The results are presented in Table 3.13.

Table 3.13 *Predicting Overall Safety Performance: Summary of Hierarchical Regression Analysis*

Variable	R^2	R^2 Change	F Change	B	β	t	Sig.
Step 1	.15	.15	48.73***				
Hospital Type				.59	.39	6.98	.00***
Step 2	.16	.00	.65				
Intention				-.11	-.06	-1.09	.28
PBC				.04	.04	.64	.52
Step 3	.16	.00	.24				
Subjective Norm				.07	.05	.64	.53
Attitude				-.02	-.03	-.42	.67
Step 4	.18	.02	2.77				
General Safety Climate				-.06	-.05	-.73	.46
Teamwork				.15	.16	2.27	.02*

Note. $R = .39$, $F(1,270) = 48.73$, $p < .001$ in the first step, $R = .40$, $F(3,270) = 16.64$, $p > .05$ in the second step, $R = .40$, $F(5,270) = 10.02$, $p > .05$ in the third step, $R = .42$, $F(7,270) = 8.05$, $p > .05$ in the fourth step. $p^{***} < .001$, $p^{*} < .05$.

As can be seen from Table 3.13, hospital type contributed significantly in the first step to the prediction of overall safety performance, explaining 15 % of the variance. Moreover, the results indicated that intention and PBC didn't contribute significantly to the prediction of overall safety performance (R = .40, F (3,270) = 16.64, p > .05) as well as the third step TPB variables, attitude and subjective norm (R = .40, F (5,270) = 10.02, p > .05). General safety climate and teamwork perceptions showed a marginally significant increment in the explained variance (R = .42, F (7,270) = 8.05, p = .06) and the examination of the beta weights yielded that teamwork had a positive significant effect (β = .16, p < .05).

To sum, safety climate contributed significantly to the explained variance in both personal protective equipment usage and hand-hygiene performance measures after controlling for the effects of hospital type and TPB variables. Moreover, a marginally significant increase was obtained in the explained variance for overall safety performance measure. Among the safety climate dimensions, teamwork but not general safety climate showed significant contribution to the prediction of these safety performance measures.

CHAPTER 4

DISCUSSION

4.1 Overview

The present study mainly aimed to investigate the individual and organizational level factors effecting the compliance with safety related work behaviours of nurses. The individual level factors were examined within in the framework of TPB model (Ajzen, 1991) while safety climate perceptions of the nurses were examined as the organizational level factor. Initially, the effects of TPB model variables (i.e., intention, perceived behavioural control, subjective norm, and attitude) on nurses' safety performance as rated by their first line supervisors were examined. Then, the predictive power of safety climate perceptions of nurses after controlling for the effects of the TPB variables was explored. In the following sections, first findings regarding the hypotheses of the study are discussed. Subsequently, the possible practical implications of the findings, expected contributions and limitations and suggestions for future research are presented.

4.2 Discussion of the Findings Concerning the Effects of TPB Variables

In the present study, among the TPB variables (i.e., attitude, subjective norm, and PBC), only subjective norm was a significant predictor of nurses' intention to compliance with the standard safety precautions, yielding only partial support for Hypothesis 1. Also, neither intention nor PBC was found to be

significant predictors of safety performance measures (i.e., *personal protective equipment usage, proactive standard precautions, preventive standard precautions, hand-hygiene,* and *overall safety performance*) after controlling for the effect of hospital type, yielding no support for Hypothesis 2.

Generally speaking, the results concerning the first hypothesis were contrary to the examined past TPB applications. In the present study, only subjective norm was a relatively strong predictor of the intention variable despite the fact that it had the highest mean value and was relatively restricted in range. Although perceived behavioural control was also a predictor of intention to comply with safety rules, its influence was much weaker.

For the present sample, subjective norm, defined as social pressure or approval/disapproval of the other nurses/doctors/medical technicians working together or the immediate supervisors or patients, seems more important in determining the intentions to engage in safety behaviours. As stated before, Ajzen (1991) indicated that *"The relative importance of attitude, subjective norm, and perceived behavioural control in the prediction of intention is expected to vary across behaviours and situations* (p.188)". Moreover, Ajzen stated that the lack of predictive validity belonging to attitude, subjective norm, or PBC could be an indicator for the factor's not being as important in the formation of intention in the given context (Ajzen, 2010, Frequently asked questions section). Similar to the present study, in their application of rule following behaviour in a homeless youth shelter setting Broadhead-Fearn and White (2006) found that subjective norm was the only significant predictor of the behaviour in question. The reasoning given to

this finding by Broadhead-Fearn and White was that maintaining social relationships motivation and social pressure to behave in certain ways were more important for their participants in their study. For the present study, the nature of nursing job, which involves extensive contact with others, working with or assisting others, mainly co-workers or physicians (see O*NET, Nurse practitioners, Registered nurses, Licensed practical and licensed vocational nurses work context and work activities sections), may explain the relative importance of subjective norm in the prediction of intention. Approval/disapproval of important others may play a critical role in the formation of intentions for safety behaviour for nurses.

Interestingly, in their meta-analysis Armitage and Conner (2001) reported that the relationship between subjective norm and intention was the weakest one compared to the attitude-intention and PBC-intention relationships. However, Armitage and Conner (2001) stated that the typical measurement way of subjective norm, mostly as single item, could be a possible reason for the observed weak relationship between subjective norm and intention. Multiple item measures of subjective norms tended to show higher correlation values with intention. In the present study, the variable subjective norm was measured by four items which may have also contributed to the observed significant relationship with the intention variable.

Another plausible explanation concerning the observed influence of subjective norm might be related to the cultural characteristics of the current sample. Turkish context has been described to be a relatively collectivist one despite some trends in the direction of individualism (e.g., Göregenli, 1997;

İmamoğlu & Gültekin, 1993). According to Göregenli (1997), Turkish culture still show collectivist pattern and it is hard to define Turkey as individualistic or collectivistic. In collectivist groups basic social-relationships are founded on the normative principle in that well-being of the collective is still more important than the well being of the individual (Ebren, 2009). According to Green, Deschamps, and Paez (2005), norms and group demands such as close-knit community play important role in determining behaviour and attitudes in collectivist culture. Therefore, social pressure and approval/disapproval of important others may have been especially important for the Turkish participants in the present study.

The results of the second hypothesis did not support the significant effect of intention on behaviour as the central variable of TPB model, capturing the motivational factors, and the significant effect of PBC, capturing the ability, on the volitional behaviour (Ajzen, 1991). Moreover, the results yielded that using participants from two different hospitals had a relatively important effect on the explained variance of the prediction of the safety performance measures. Although, as stated before, both of the hospitals were classified as "A Type" by the Social Security Institution's commission report (2009), participants' organization was still an important variable.

Intention's failure in predicting safety performance may be related to the different sources of ratings for these two variables (i.e., self report vs. supervisory ratings). Armitage and Conner (2001) found that TPB variables accounted for considerable significant amount of variance in both rated/observed and self-reported behaviours. However, in this meta-analysis significant difference was found

between the variances explained by the TPB variables of self-report and supervisor-rated behaviour. Majority of the published studies testing TPB use self-report measures of all critical variables in the model (e.g., Ajzen & Daigle, 2001; Jackson, Smith & Conner, 2003; Johnson & Hall, 2005; White et al., 2008). Relying on self-report measures of all TPB variables may be partially responsible for the observed (and expected) pattern of correlations among the variables. In the present study collecting behavioural measures from the supervisors may have resulted in the failure to find relationships between intention-behaviour and PBC-behaviour, contrary to the model's predictions. To evaluate this possibility, for exploratory purposes, intention and PBC relationships with the safety related behaviour were tested using nurses' self-reported safety performance measures. In these analyses, intention and PBC were found to be significant predictors of the safety performance measures (i.e., *personal protective equipment usage, proactive standard precautions, preventive standard precautions, hand-hygiene,* and *overall safety performance*). Examining the beta weights, except for the personal protective equipment usage, intention showed significant relationships with all safety performance measures ($\beta = .16$, $p < .05$ for proactive standard precautions, $\beta = .16$, $p < .05$ for preventive standard precautions, $\beta = .18$, $p < .01$ for hand-hygiene, and $\beta = .20$, $p < .01$ for overall safety performance). Considering these results, having used a different source in measuring safety performance might be a plausible explanation for the observed insignificant intention-behaviour relationship.

Also, range restriction can be considered as a plausible explanation for failure of intention in predicting supervisor rated safety performance of nurses. Intention variable had a relatively high mean, with low variability (M = 4.71, SD = .45). And this restricted variance may have affected the correlation value with supervisory-rated safety behaviour as also discussed by Deborah (2001). Also, it is important to note that in the present study the personal identities of the participants were known to the researcher with the purpose of matching data with the supervisory ratings. This might have enhanced the social desirability effect for nurses. Therefore, the social desirability effect might have caused the ratings of intention be more positively lenient and show low variability.

4.3 Discussion of the Findings Concerning the Effects of Safety Climate Perceptions

Prior to discussing the results concerning Hypothesis 3, the factor structure of safety climate measure needs to be evaluated briefly. As stated before, safety climate dimensions and safety climate measures' factor structure are one of the no exact consensus areas in the safety literature (Neal & Griffin, 2002). After factor analyses conducted in the present study, two dimensions of safety climate perceptions (i.e., *general safety climate* and *teamwork*) were identified. It is important to note that the original safety climate scale of Neal et al. (2000) used in the present study showed a four-factor structure including *management values, communication, training,* and *safety systems* among Australian hospital health care staff. Moreover, *absence of job hindrances, teamwork, reporting,* and *personal*

*protective equipment availabili*ty were the other factors included in the safety climate measure of the present study. However, in the present study the items originally representing *management values, communication, training, safety systems, reporting,* and *personal protective equipment availabili*ty dimensions merged under a single factor, named as *general safety climate*. In other words, those originally distinct dimensions of safety climate were not separable for the current sample. When the item structure of the safety climate scale was examined, the ones under the *general safety climate* dimension might have been perceived as out-group/managerial based while the items of *teamwork* dimension might have been perceived as in-group/team based ones. Also, although both of the hospitals have been accredited by the Joint Commission International (JCI) and ISO 9001, institutionalization of the safety policies and standards might still be *in progress* for these hospitals. Inability to clearly distinguish among the conceptually distinct dimensions of safety climate may have resulted from a lack of internalization of safety related policies and standards for nurses working in these hospitals.

Safety climate dimensions (i.e., *general safety climate* and *teamwork*) explained significant variance after controlling for the effects of hospital type and TPB variables in safety performance measures, except for proactive standard precautions and preventive standard precautions. Thus, in the present study nurses' perceptions on safety climate, especially the teamwork dimension seemed to be a good predictor of safety behaviours of personal protective equipment usage and hand-hygiene. Starting from Zohar (1980), in the literature there have been many studies showing the importance of safety climate for safety related behaviours of

employees (e.g., Clarke 2006; Hoffman & Mark 2006; Johnson 2007; Neal & Griffin 2002; Wills, Watson, & Biggs 2006). Like the studies investigating the contribution of safety climate to the compliance with Universal Precautions of nurses (Dejoy, Gershon & Scheffer, 2004; Dejoy et al., 2000), the present study might be another evidence for the safety climate's unique effect in the prediction of unsafe work behaviours in the healthcare context. Moreover, the effect of participants' working at two different hospitals was found to be an important factor, explaining a considerable amount of variance for each safety performance measure. Therefore, the effect of safety climate found in the present study can be said to be a conservative estimate after controlling the effects of both hospital type and individual level factors (i.e. TPB variables).

Except for the compliance with proactive standard precautions and preventive standard precautions, only the *teamwork* dimension of safety climate perception had significant beta weights in predicting the safety performance measures. Although according to Flin et al.'s (2006) safety climate features review "*management commitment to safety*, *safety systems*, and *work pressure*" were found to be the most common factors in healthcare industry, in the present study *teamwork* dimension was found to be most significant dimension and *general safety climate* did not seem to contribute significantly to the prediction of safety related performance. It can be argued that for the participants of this study, safety was especially meaningful in teamwork context. The nature of the nursing tasks, which heavily require working as part of a health care team, assisting for others and coordination, might be an explanation for the teamwork perceptions being a more

important safety climate dimension (O*Net, Nurse practitioners, Registered nurses, Licensed practical and licensed vocational nurses tasks, work context and work activities sections).

As stated before, *teamwork* failed to contribute significantly to compliance with proactive standard precautions safety performance variable. One plausible explanation for this finding comes from a cross cultural study by Aycan, Kanungo, Mendonca, Yu, Deller, Stahl, and Khursid (2000). Comparing 10 different countries including Turkey, these authors found that Turkey had very low values for the internal work culture dimension of proactivity. This relative lack of proactive internal work culture might have contributed to the insignificant relationship between teamwork and proactive safety performance in the present study. However, this finding needs to be explored by future research.

4.4 Practical Implications of the Findings

This study showed that the others' opinions, expectations and practices can be more important for nurses' adherence to the standard safety precautions while working, even if the negative outcomes of the behaviour affect the individual himself/herself only. Also, positive teamwork perceptions of the nurses, referring more operational characteristics of the work context, emerged as the only predictor of the safety performance. Norms set by the group members and positively perceived role of being and behaving as a team member play important role to direct the safety performance of each nurse. In brief, this study provided consistent results in indicating the importance of "teams/others" in understanding safety

behaviour at both individual and organizational levels. Based on the findings of this study it can be stated that one means to improve safety behaviour in such organization can be through creating a normative atmosphere and positive teamwork perceptions concerning safety compliance.

As shown in the studies of Dejoy, Gershon, and Scheffer (2004) and Dejoy et al. (2000), the importance of informal feedback on compliance with standard safety precautions should be considered. Increasing informal feedback mechanism among nurses, in which nurses remind each other of the need to comply with safety rules while working, can be used to enhance both a normative atmosphere, conducive to complying with the safety precautions, and the perception of being a team member. Thus, nurses may encourage each other to behave in accordance with the safety rules.

Given the fact that safety performance increases as perceptions of teamwork become more positive, managers can give more emphasis on increasing teamwork participation or teamwork level of the work context. Formal teamwork trainings can be designed or if there exists training programmes aimed to safety, parts like maintaining teamwork structure or improving teamwork skills can be incorporated into these programmes. Training should be given periodically and importance of such training programmes should be emphasized by the management. For example, in a study conducted among emergency department staff, formal teamwork trainings showed significant contribution in the reduction of clinical error rates and in the increase of the healthcare worker attitudes to teamwork (Morey et al., 2002). Also, the training programmes aimed to improve positive teamwork perceptions can

be supported with tools like handouts, brochures, etc. on the roles of teammates, improving communication ways between team members, etc. Moreover, like the study conducted among medical-surgical unit staff by Amos, Hu, and Herrick (2005), team-building activities can be performed.

For the medical departments like policlinics, blood bank, etc. where nurses' work context doesn't require that much teamwork as perioperative nurses or emergency units, redesigning the tasks to facilitate teamwork and coordination can also be considered by the management.

In the present study, only two factors (i.e., *general safety climate* and *teamwor*k) were found to underlie the safety climate perceptions of the participants. In the Western literature, however, safety climate perceptions are better represented by multiple factors such as *management values, communication, training, safety systems, reporting* and *personal protective equipment availabili*ty. Moreover, general safety climate has not been found as an important predictor of safety performance in the present study. However, as stated before, the dimensions of safety climate have been consistently shown to be critical determinants of safety behaviour (e.g., Clarke 2006; Dejoy, Gershon & Scheffer, 2004; Hoffman & Mark 2006; Johnson 2007; Neal & Griffin 2002; Wills, Watson, & Biggs 2006). This difference in the way Turkish and Western participants conceptualize safety perceptions may be important in understanding current findings. First of all it is critical to understand the reasons for the relatively simple conceptualization of safety climate perceptions of employees observed in the present study. Maybe, as safety perceptions get more and more sophisticated and multi-faceted, their

predictive ability may also increase. Hence, organizations may/should put in efforts to reconstruct both general safety climate perceptions of employees and perceptions of sub safety climate dimensions. To illustrate, the organization can form an effective reporting system, or if there exists one, they can enhance the existing reporting system defined by the quality processes in order to record the incidents of noncompliance with SP even if they don't cause workplace accidents. Thus, the importance given to reporting of unsafe acts by the management can enhance the positive perceptions towards safety.

Also, being aware of the determinants of safety climate is important in order to enhance the perceptions. The effect of general organizational climate was suggested as an important determinant of safety climate (DeJoy et al. 2004; Neal et al., 2000). Therefore, as Neal et al. (2000) stated organizations can design interventions to improve general organizational climate. To illustrate, developing safety policies, designing safety standards or using safety performance as a criteria can be suggested. According to Dejoy et al. (2004), especially *communication*, *organizational support* and *co-worker support* dimensions of organizational climate are the most effective determinants of safety climate. Therefore, managerial interventions to enhance these factors can yield a more positive safety climate. Moreover, Zohar (2003) stated that supervisory-safety oriented interactions affected safety climate perceptions of the staff in a positive manner. Therefore, interventions designed to improve the first line supervisors' interaction with their subordinates like feedback addressing safety issues can be considered. Another suggestion can be weekly team briefings on safety related issues conducted by the first line

supervisors, also serving for the aim of improving positive teamwork perceptions. It should also be noted that organizations can benefit from all these interventions aimed at enhancing safety if and only if management support and participation of employees at the teamwork level are guaranteed.

4.5 Contributions of the Study

According to Johnson (2003), a limitation in the safety literature is lack of a systems perspective and this study tried to explain unsafe human behaviour using this perspective. As stated before, the individual level factors were studied in the framework of TPB and organizational level factors were examined through safety climate perceptions. Moreover, the study is believed to be important as it provided support for the safety climate-safety behaviour link beyond the effects of the individual level factors.

As the second contribution, to the researcher's knowledge, this study represents the first application of TPB on safety related behaviour among Turkish nurses and there has not been an extensive literature about the factors affecting safety related performance in the healthcare context. Hence, this study is believed to contribute to the evolving local literature. Furthermore, the safety climate measure translated to Turkish and its factor analyses results were another contribution to the local literature and especially for the studies aiming to investigate the safety climate perceptions in healthcare settings.

Using supervisor report safety performance ratings instead of self report behaviour ratings in the application of TPB can be included among the

contributions of the present study to the literature of TPB. Since it was stated that using only self-report data made the theory be more vulnerable to self-presentation bias (Armitage & Conner, 2001), collecting data from both supervisors and job incumbents themselves in a real work setting seems to be an important strength of the present study.

4.6 Limitations of the Study and Suggestions for Future Research

A major limitation of the present study was the lack of generalizability of the findings to all nurse population because of the way sample was chosen. In the present study rather than the ideal sampling procedures, a convenience sampling approach was used. Hence, generalizability of the results beyond private Turkish hospitals that were classified as "A Type" by the Social Security Institution's commission report (2009) seems problematic since the representativeness of the sample is questionable. Further studies should include more representative samples including nurses from different hospital types (private vs. public, university vs. public, etc.)

The second important limitation of the present study is related to rating biases/tendencies. The data were collected from both nurses and their first line supervisors. This might have caused lenient ratings on part of both nurses and supervisors. The social desirability problem might have made the participants to give more lenient scores in a restricted range. That is, nurses may have responded to the TPB scale in a lenient fashion as they knew somehow their supervisor would also be involved in the same study rating their performance. In other words, nurses

may have been motivated to provide a positive picture concerning their attitudes, perceptions, intentions, etc. Therefore, the quality of evaluations might be affected. Future research can benefit from inclusion of social desirability scales to be able to statistically examine and control for the effects of tendency to provide socially desirable responses.

This study was a correlational one and thus making causal inferences is not possible. Conducting longitudinal studies allowing for causal inferences between both TPB and safety climate variables and the outcome variable of safety performance is preferable.

Although in the present study, intention and PBC was not found as the significant predictors of safety behaviour of nurses, additional variables to the TPB model can be included in the future research in order to explain more variance of safety related behaviour. Ajzen (1991) suggested that TPB was open to the inclusion of additional variables if they were believed to account a significant variance after controlling the effects of TPB variable. In the literature there have been examples for the inclusion of some additional variables like past behaviour, self-efficacy, moral norms, etc (e.g., Bamberg, Ajzen, & Schmidt, 2003; Broadhead-Fearn & White, 2006; Conner et al., 2007). Especially, the discipline reactions ratings of the nurses resulted from lack of compliance with Standard Safety Precautions, representing the past behaviour, can be an additional variable to be tested by the future researchers. As a final note, in the future applications of TPB in different cultural contexts, individualism and collectivism tendencies of

individual participants can be examined as potential moderators of the expected relationships.

REFERENCES

Abdelhamid, T. S., & Everett, J. G. (2000). Identifying root causes of construction accidents. *Journal of Construction Engineering and Management, January/February*, 52-60.

Ajzen, I. (1985). From intentions to actions: A theory of planned behaviour. In J. Kuhl & J. Beckmann (Ed.), *Action control from cognition to behaviour* (pp.11-39). Berlin: Springer-Verlag.

Ajzen, I. (1991). The theory of planned behaviour. *Organizational Behaviour and Human Decision Processes, 50*, 179-211

Ajzen, I. (2006). *TPB diagram section*, Retrieved, 2011 from http://people.umass.edu/aizen/tpb.html

Ajzen, I. (2006, January).*Constructing a TPB questionnaire: Conceptual and methodological considerations* (Rev.), Retrieved from http://people.umass.edu/aizen/tpb.html

Ajzen, I., & Fishbein, M. (1973). Attitudinal and normative variables as predictors of specific behaviours. *Journal of Personality and Social Psychology, 27* (1), 41-57.

Ajzen, I., & Fishbein, M. (1980). *Understanding attitudes and predicting social behaviour*. Englewood Cliffs, NJ: Prentice-Hall.

Amos, M. A., Hu, J., & Herrick, C. A. (2005). The impact of team building on communication and job satisfaction of nursing staff. *Journal for Nurses in Staff Development, 21*(1), 10-16.

Armitage, C. J., & Conner, M. (2001). Efficacy of theory of planned behaviour: A meta-analytic review. *British Journal of Social Psychology, 40,* 471-499.

Aycan, Z., Kanungo, R.N., Mendonca, M., Yu, K., Deller, J., Stahl, G., & Khursid, A. (2000). Impact of culture on human resource management practices: A-10 country comparison. *Applied Psychology: An International Review, 49*(1), 192-221.

Baumann, A., O Brien-Pallas, L., Armstrong-Stassen, M., Blythe, J., Bourbonnais, R., Cameron, S., et al. (2001). *Commitment and Care: The benefits of a healthy workplace for nurses, their patients and the system A policy synthesis* (Canadian Health and Research Foundation) Retrieved 2010 from http://www.chsrf.ca

Broadhead-Fearn, D., & White, K. M. (2006). The role of self-efficacy in predicting rule-following behaviours in shelters for homeless youth: A test of the theory of planned behaviour. *The Journal of Social Psychology, 146* (3), 307-325.

Brown, K. A., Willis, P. G., & Prussia, G. E. (2000). Predicting safe employee behaviour in the steel industry: Development and test of a sociotechnical model. *Journal of Operations Management, 18*, 445-465.

Clarke, S. (2006). Contrasting perceptual, attitudinal and dispositional approaches to accident involvement in the workplace. *Safety Science, 44*, 537-550.

Conner, M., & Armitage, C. J. (1998). Extending the theory of planned behaviour: A review and avenues for further research. *Journal of Applied Social Psychology, 28*, 15, 1429-1464.

Conner, M., Lawton, R., Parker, D., Chorlton, K., Manstead, A. S.R., & Straddling, S. (2007). Application of the theory of planned behaviour to the prediction of objectively assessed breaking posted speed limits. *British Journal of Psychology, 98*, 429-453.

Cooper, M. D. (2000). Towards a model of safety culture. *Safety Science, 36*, 111-136.

Cox, S., & Flin, R. (1998). Safety culture: philosopher's stone or man of straw? *Work & Stress, 12* (3), 189-201.

Çopur, Z., Varlı, B., Avşar, M., & Şenbaş, M. (2006). Ege üniversitesi hastanesinde çalışan ev idaresi personelinin iş kazası geçirme durumlarının incelenmesi. *Hacettepe Sağlık İdaresi Dergisi, 9* (2),155-172.

Deborah, W. A. (2001). Restriction of range: the truth about consequences and corrections. In *The Annual Meeting of the Southwest Educational Research Association.* New Orleans, LA.

DeJoy, D. M., Searcy, C. A., Murphy, L. R., & Gershon, R. R. M. (2000). Behavioural-diagnostic analysis of compliance with universal precautions among nurses. *Journal of Occupational Health Psychology, 5* (1), 127-141.

DeJoy, D. M., Gershon, R. R. M., & Scheffer, B. S. (2004). Assessing management and organizational influences on safety. *Professional Safety*, 50-57.

Ebren, F. (2009). Susceptibility to interpersonal influence: A study in Turkey. *Social Behaviour and Personality, 37* (8), 1051-1064.

Ferguson, K. J., Waitzkin, H., Beekman, S. E., & Doebbeling, B. N. (2004). Critical incidents of nonadherence with standard precautions guidelines among community hospital-based health care workers. *Journal of General Internal Medicine, 19*, 726-731.

Flin, R., Burns, C., Mearns, K., Yule, S., & Robertson, E. M. (2006). Measuring safety climate in health care. *Quality and Safety in Health Care, 15*, 109-115.

Flin, R., Mearns, K., & Bryden, R., (2000). Measuring safety climate: identifying the common features. *Safety Science, 34*, 177-192.

Francis, J. J., Eccles, M. P., Johnston, M., Walker, A., Grimshaw, J., Foy, R., Kaner, E. F S, et al. (2004). *Constructing questionnaires based on the theory of planned behaviour: A manual for health services researchers.* University of Newcastle, Centre for Health Services Research, from http://people.umass.edu/aizen/pdf/Francis%20etal.TPB%20research%20manual.pdf

Gershon, R. R. M., Karkashian, C. D., Grosch, J. W., Murphy, L. R., Escamilla-Cejudo, A., Flanagan, P. A., Bernacki, E. et al. (2000). Hospital safety climate and its relationship with safe work practices and workplace exposure incidents. *American Journal of Infection Control, 28* (3), 211-221.

Glendon, A. I., & Litherland, D. K. (2001). Safety climate factors, group differences and safety behaviour in road construction. *Safety Science, 39*, 157-188.

Gravan, T. N., & O'Brien, F. (2001). An investigation into the relationship between safety climate and safety behaviours in Irish organisations. *Irish Journal of Management, 22*, 141-170.

Godin, G., & Kok, G. (1996). The theory of planned behaviour: A review of its applications to health-related behaviours. *American Journal of Health Promotion*, 11, 87-98.

Göregenli, M. (1997). Individualist-collectivist tendencies in a Turkish sample. *Journal of Cross-Cultural Psychology, 28* (6), 787-794.

Green, E. G. T., Deschamps, J. & Paez, D.(2005). Variation of individualism and collectivism within and between 20 countries: A typological analysis. *Journal of Cross-Cultural Psychology, 36* (3), 321-339.

Guldenmund, F. W. (2000). The nature of safety culture: a review of theory and research. *Safety Science, 34*, 215-257.

Hahn, S. E., & Murphy, L. R. (2008). A short scale for measuring safety climate. *Safety Science, 46,* 1047-1066.

Health and Safety Executive. (2010). *The health and safety executive statistics 2009/2010.* Retrieved April, 2011, from http://www.hse.gov.uk/statistics/overall/hssh0910.pdf

Hoyle, R. H., & Panter, A. T. (1995). Writing about structural equation models. In R. H. Hoyle (Ed.), *Structural equation modeling: Concepts, issues, and application* (pp. 158-177). London: Sage.

Hoyt, A. L., Rhodes, R. E., Hausenblas, H. A., & Giacobbi, P. R. (2009). Integrating five-factor model facet-level traits with the theory of planned behaviour and exercise. *Psychology of Sport and Exercise, 10,* 565-572.

Hu, L., & Bentler, P. M. (1995). Evaluating model fit. In R. H. Hoyle (Ed.), *Structural equation modelling: Concepts issues, and application* (pp. 76–100). London: Sage.

Human Engineering Limited (2005). *A Review of safety culture and safety climate literature for the development of the safety culture inspection toolkit* (Research Report No. 367). Bristol, Health and Service Executive.

Institute for Work and Health. (n.d.) *Fact sheet the health of health-care workers*. Retrieved 2010, from http://www.iwh.on.ca/fact-sheets

International Council of Nurses (n.d.) ICN on Selecting Safer Needle Devices, *Nursing Matters fact sheet*. Retrieved 2010, from http://www.icn.ch/matters_saferneedles.htm#1

İmamoğlu, E. O., & Gültekin, Y. Y. (1993). Problems of university youth in the light of recommended balanced society-individual model: Evaluation, comment and recommendation to the studies conducted in the period between 1982-1992 (in Turkish). *Turkish Journal of Psychology*, *8*, 27-41.

İş Kolları ve iş güvenliği: Sağlık sektöründe iş sağlığı ve güvenliği. (n.d.) Retrieved 2010, from http://www.isguvenligi.net/index.php?option=com_content&task=view&id=946&Itemid=52

Johnson, S. E. (2003). Behavioural safety theory: Understanding the theoretical foundation. *Professional Safety*, 39-44.

Johnson, S. E., & Hall, A. (2005). The prediction of safe lifting behaviour: An application of the theory of planned behaviour. *Journal of Safety Research, 36,* 63-73.

Jöreskog, K. G., & Sörbom, D. (1993). *LISREL 8 structural equation modeling with The SIMPLIS command language*. Chicago: Scientific Software International.

Kermode, M., Jolley, D., Langkham, B., Thomas, M. S., Holmes, W., & Gifford, S. M. (2005). Compliance with universal/standard precautions among health care workers in rural north India. *American Journal of Infection Control, 33* (1), 27-33.

Kırım kongo doktora sıçradı (2008, July 14). *Yeni Şafak Newspaper*. Retrieved 2010, from http://www.yenisafak.com.tr/Gundem/?t=14.06.2008&c=1&i=123106

Koehoorn, M., Lowe, G. S., Kent, V., Schellenberg, G., & Wager, T. H. (2002). *Creating high quality healthcare workplaces*. Canadian Policy Research Networks discussion paper no w/14.

Maning, M. (2009). The effects of subjective norms on behaviour in the theory of planned behaviour: A meta-analysis. *British Journal of Social Psychology, 48,* 649-705.

Morey, J. C., Simon, R., Jay, G. G., Wears, L. R., Salisbury, M., Dukes, K. A., et al. (2002). Error reduction and performance improvement in the emergency department through formal teamwork training: Evaluation results of the medteams project. *Health Services Research, 37* (6), 1553-15581.

Neal, A., Griffin, M. A., & Hart, P. M. (2000). The impact of organizational climate on safety climate and individual behaviour. *Safety Science, 34*, 99-109.

Neal, A., & Griffin, M. (2002). Safety climate and safety behaviour. *Australian Journal of Management, 27*, 67-75.

O*NET, (n.d.). *Registered nurse, nurse practitioners, licensed practical and licensed vocational nurses.* Retrieved from http://www.onetonline.org/find/quick?s=nurse

Özkan, Ö., & Emiroğlu, O. N. (2006). Hastane sağlık çalışanlarına yönelik işçi ve iş güvenliği hizmetleri.*C.Ü. Hemşirelik Yüksekokulu Dergisi, 10* (3), 43-51.

Preventable injuries continue to expose healthcare staff infection risk (n.d.). *The Royal Society for the Prevention of Accidents Journal, (2009, January)*, p. 11.

Republic of Turkey Social Security Institution (SSI) (n.d.) *Statistics yearbooks: SSI 2009 Statistic yearbook* [Data file].Available from SSI Web site, http://www.sgk.gov.tr/wps/portal/Anasayfa/Istatistikler.

Shannon, H. S., & Norman, G. R. (2009). Deriving the factor structure of safety climate scales. *Safety Science, 47*, 327-329.

Sümer, N. (2000). Structural equation modeling: Basic concepts and applications (in Turkish). *Turkish Journal of Psychology, 3* (6), 49-74.

Tabachnick, B. G., & Fidell, L. (2007). *Using multivariate statistics* (5th ed.). Boston: Pearson/Allyn & Bacon.

The National Institute for Occupational Safety and Health (2009). *Niosh workplace safety & health topics: Health care workers.* Retrieved 2010, from http://www.cdc.gov/niosh/topics/healthcare/

Turnberg, W., & Daniell, W. (2008). Evaluation of a healthcare safety climate measurement tool. *Journal of Safety Research, 39*, 563-568.

United States Department of Labour Bureau of Labour Statistics (2011). *Injuries, illnesses, and fatalities: Census of fatal occupational injuries (CFOI) - current and revised data.* Retrieved 2011, from http://www.bls.gov/iif/oshcfoi1.htm#.

White, K. M., Robinson, N. G., Young, R. M., Anderson, P. J., Hyde, M. K., Greenbank, S., Rolfe, T., et al. (2008). Testing an extended theory of planned behaviour to predict young people's sun safety in a high risk area. *British Journal of Health Psychology, 13*, 435-448.

Williamson, A. M., Feyer A., Cairns, D., & Biancotti, D. (1997). The development of a measure of safety climate: The role of safety perceptions and attitudes. *Safety Science, 25* (1-3), 15-2.

Wills, A. R., Watson, B., & Biggs, H. C. (2006). Comparing safety climate factors as predictors of work-related driving behaviour. *Journal of Safety Research, 37*, 375-383.

Yassi, A., & Hancock, T. (2005). Patient safety-worker safety: Building a culture of safety to improve healthcare worker and patient well-being. *Healthcare Quarterly, 8*, 32-38.

Zohar, D. (1980). Safety climate in industrial organizations: Theoretical and applied implications. *Journal of Applied Psychology, 65* (1), 96-102.

Zohar, D. (2010). Thirty years of safety climate research: Reflections and future directions**.** *Journal of Accident Analysis and Prevention, 42,* 1517-1522.

APPENDICES

APPENDIX A: The Hybrid Standard Precautions Checklist Items

1. Dispose of sharp objects into a sharps container.
2. Protect myself against the blood and body fluids of all patients, regardless of their diagnosis.
3. Follow up Standard Precautions with all patients regardless of their diagnosis.
4. Wash my hands after removing my disposable gloves.
5. Wear a disposable outer garment that is resistant to blood and bodily fluids whenever there is a good chance of soiling my clothes.
6. Wear disposable gloves whenever there is a possibility of exposure to blood or other bodily fluids.
7. Wear protective eye shields whenever there is a possibility of a splash or splatter to my eyes.
8. Wear eye protection (goggles/glasses) whenever there is a possibility of blood or other body fluids splashing in my face.
9. Wear a mask whenever there is a possibility of blood or other body fluids splashing in my face.
10. Dispose of all potentially contaminated materials into a red (and/or labelled) bag for disposal as biomedical waste.
11. Dispose of all blood-contaminated items into the bag or bucket designated for disposal.
12. Promptly wipe up all spills of blood and other body fluids.

13. Eat or drink while working in an area where there is a possibility of becoming contaminated with blood or body fluids.
14. Take extra care when using scalpels, needles, razors, or other sharp objects.
15. Recap needles that have been contaminated with blood.
16. Unscrew needles from needle holders that have been used to draw patient's blood.
17. Wear gloves while drawing a patient's blood.
18. Treat all materials that have been in contact with patient's saliva as if they were infectious.
19. Cover broken skin before coming to work.

APPENDIX B: Items of Safety Climate Questionnaire

1. Yönetim, çalışanların güvenliği ile ilgilidir.

2. Eğitim programlarında iş yeri sağlığı ve güvenliği konusuna yüksek öncelik verilir.

3. İşteki görevlerim çoğu zaman iş yeri sağlığı ve güvenliğine yönelik Standart Güvenlik Tedbirlerini uygulayabilmeme engel olmaktadır.

4. İş yeri sağlığı ve güvenliğindeki aksaklıkları engellemek için sistematik prosedürler vardır.

5. Toplantılarda iş yeri sağlığı ve güvenliğiyle ilgili konuları tartışmak ve çözümlemek için yeterli fırsat olmaktadır.

6. Çalıştığım birimde, hemşireler uyum içinde çalışırlar.

7. Yönetim iş yeri sağlığı ve güvenliğine büyük önem vermektedir.

8. Bu iş yerinde, Standart Güvenlik Tedbirlerine uygun olmayan bir davranış, ancak bir iş kazası durumunda rapor edilir.

9. Çalışanlar iş yeri sağlığı ve güvenliği eğitim programlarına yeterli erişime sahiptirler.

10. Çalıştığım birimde hemşireler bir takımın üyesi gibi davranırlar.

11. İşyerimde, kişisel koruyucu malzemelerin/ekipmanların kullanılmaması durumunda yaptırımlar uygulanır.

12. Genellikle, fazla işim olduğu için Standart Güvenlik Tedbirlerini uygulamaya zamanım olmuyor.

13. Bu iş yerinde; çalışanların karşılaştıkları iş kazalarına ait raporlar tutulmaktadır.

14. İş sağlığı ve güvenliğine yönetim yüksek öncelik verir.

15. İş yeri sağlığı ve güvenliği eğitimleri çalışanların işyerinde karşılaştıkları durumları içerir.

16. Bu iş yerinde, iş yeri sağlığı ve güvenliği konusunda açık bir iletişim vardır.

17. Bu kurumdaki güvenlik prosedür ve uygulamaları yararlı ve etkilidir.

18. Çalıştığım birimde, hemşirelerden biri çok yoğun olduğunda diğerleri ona yardım eder.

19. İş yerimde, kişisel koruyucu malzemelerin/ekipmanların kullanımı teşvik edilir.

20. İş yeri sağlığı ve güvenliği konularında çalışanların görüşlerine düzenli olarak başvurulur.

21. Yönetim iş güvenliğini önemli bir konu olarak görür.

22. Çalışanlar iş yeri sağlığı ve güvenliği konularında kapsamlı eğitim alırlar.

23. Çalıştığım birimde, hemşireler birbirleriyle işbirliği içerisindedirler.

24. Bu iş yerinde iş yeri sağlığı ve güvenliği konularından sıklıkla bahsedilir.

25. Birimimde, klinik iş güvenliği hakkındaki bilgiye nasıl erişeceğimi biliyorum.

26. Güvenlikle ilgili prosedür ve uygulamalar olası vakaları önlemede yeterlidir.

27. Çalışanlar iş yeri sağlığı ve güvenliği ile ilgili endişelerini yönetimle paylaşabilmektedir.

28. Çalıştığım birimde, hemşireler birbirlerine yardım ederler.

29. Standart Güvenlik Tedbirlerini her zaman uygulayabilmem için işimde yeterince zamanım vardır.

30. Çalıştığım birimde, hemşireler birbirlerini desteklerler.

31. Çalışma alanımda kişisel koruyucu malzemeler/ekipmanlar hazır bulunmaktadır.

32. Bu iş yerinde, Standart Güvenlik Tedbirlerine uygun olmayan bir davranış herhangi bir olumsuz sonuca neden olmasa bile rapor edilir.

APPENDIX C: Items of Standard Safety Precautions Compliance Scale

1. Delici ve kesici cisimleri uygun atık kutusuna atmak
2. Teşhis ve tanısı ne olursa olsun, kendini tüm hastaların kan ve vücut sıvılarına karşı korumak
3. Teşhis ve tanısı ne olursa olsun, bütün hastalar için tüm Standart Güvenlik Tedbirlerine uymak
4. Tek kullanımlık eldivenleri giymeden önce elleri yıkamak
5. Tek kullanımlık eldivenleri çıkardıktan sonra elleri yıkamak
6. Kan ve vücut sıvılarının sıçrama ve bulaşma ihtimali olduğu durumlarda koruyucu bir giysi giymek
7. Kan ve diğer vücut sıvılarına maruz kalma ihtimali olduğunda tek kullanımlık eldiven giymek
8. Göze bir şey sıçrama veya bulaşma ihtimali olduğu zamanlar, koruyucu gözlük kullanmak
9. Yüze kan ya da diğer vücut sıvıları sıçrama ihtimali olduğu zamanlar, koruyucu gözlük kullanmak
10. Yüze kan ya da diğer vücut sıvıları sıçrama ihtimali olduğu zamanlar, maske kullanmak
11. Saç ve saçlı deriye kan ya da diğer vücut sıvıları sıçrama ihtimali olduğu zamanlar, bone kullanmak
12. Olası kontamine olmuş tüm tıbbi sarf malzemelerini tıbbi/enfekte atık kovasına atmak

13. Kanla kontamine olmuş her şeyi önceden belirlenmiş uygun atık kovalarının içine atmak

14. Dökülen tüm kan ve diğer vücut sıvılarının derhal prosedüre uygun olarak temizlenmesini sağlamak

15. Kan veya vücut sıvılarıyla kontamine olma ihtimali olan bir alanda çalışırken bir şey yememek veya içmemek

16. Kesici, delici veya batıcı aletleri kullanırken özellikle dikkatli olmak

17. Kanla kontamine olmuş iğnelerin kılıflarını tekrar yerine takmamak

18. Hastalardan kan almak için kullanılmış olan iğneleri enjektörden elle çıkarmamak

19. Hastadan kan alırken eldiven kullanmak

20. Hastanın tükürüğünün bulaştığı tüm materyallere, kontamine materyal gibi muamele etmek

21. Çalışmaya başlamadan önce kendi vücudundaki açık yaraları kapalı hale getirmek

22. Her işlem öncesinde uygun tekniğe göre elleri su ve sabunla yıkamak

23. Her işlem sonrasında uygun tekniğe göre elleri su ve sabunla yıkamak

24. Hastanede uygulanmakta olan enfeksiyon kontrol programı ilkelerine uygun davranmak

APPENDIX D: Demographic Questionnaire (Nurse)

Adınız-soyadınız:

Yaşınız:

Cinsiyetiniz: ___Kadın ___Erkek

Eğitim Durumunuz (En son mezun olunan okul):

Hastanede çalışmakta olduğunuz birim:

Sizden birinci dereceden sorumlu amirinizin adı-soyadı:

Bir haftada yaklaşık toplam çalıştığınız saat:

Bir ayda tuttuğunuz ortalama nöbet sayısı:

Bir günde ilgilendiğiniz tahmini ortalama hasta sayısı:

Bir hastaya bir iş günü içerisinde ortalama kaç dakika ayırıyorsunuz?

Bu hastanede hemşire olarak çalışma süreniz:

Hemşire olarak toplam çalışma süreniz:

APPENDIX E: Demographic Questionnaire (First Line Supervisor)

Adınız-soyadınız:

Yaşınız:

Cinsiyetiniz: ___Kadın ___Erkek

Eğitim Durumunuz (En son mezun olunan okul):

Hastanede çalışmakta olduğunuz birim:

Kaç hemşireden sorumlusunuz:

Bir haftada yaklaşık toplam çalıştığınız saat:

Bir ayda tuttuğunuz ortalama nöbet sayısı:

Bir günde ilgilendiğiniz tahmini ortalama hasta sayısı:

Bir hastaya bir iş günü içerisinde ortalama kaç dakika ayırıyorsunuz?

Bu hastanede hemşire olarak çalışma süreniz:

Hemşire olarak toplam çalışma süreniz:

APPENDIX F: Nurse and Supervisor Booklets

AÇIKLAMA

Bir yüksek lisans tez çalışması olan bu araştırmanın amacı hemşirelerin iş sağlığı ve güvenliğine yönelik davranışları (Standart Güvenlik Tedbirleri) göstermelerine etki eden unsurları incelemektir. Bu kitapçıktaki farklı bölümlerde, hemşirelerin Standart Güvenlik Tedbirlerine riayet etme sıklıkları, bu davranışlara etki eden unsurları ve çalışmakta olduğu hastanenin güvenlik açısından genel olarak nasıl algılandığı ile ilgili maddeler bulunmaktadır.

Tamamen gönüllülük esasına dayalı olarak yapılan bu çalışmada elde edilen veriler sadece araştırma amaçlı kullanılacak ve katılımcıların kimlikleri hiçbir kişi ve kurumla paylaşılmayacaktır.

Değerlendirmenin sağlıklı yapılabilmesi için tüm maddelerin yönergelerde belirtilen şekilde cevaplandırılması gerekmektedir. Lütfen, tüm maddeleri dikkatlice okuyunuz ve hiçbirini boş bırakmayınız. Anket süresi yaklaşık 30 dakikadır. **Anketler araştırmacı tarafından toplanacak ve anketi uygulayan kişi dışında kimse tarafından incelenmeyecektir.**

Çalışma ya da çalışmanın sonuçları hakkında daha detaylı bilgi edinmek için aşağıda belirtilen e-posta adresine başvurabilirsiniz.

Değerli katkılarınız için şimdiden teşekkür ederiz.

Araştırmacı: Gülçin Haktanır **gulcinhaktanir@yahoo.com**
Prof. Dr. H. Canan Sümer **hcanan@metu.edu.tr**
Yrd. Doç. Türker Özkan **ozturker@metu.edu.tr**

BÖLÜM I

Yönerge: Aşağıda, hemşireler için "**Standart Güvenlik Tedbirleri**" olarak adlandırılan davranışlar yer almaktadır. Lütfen, 24 maddeden oluşan Standart Güvenlik Tedbirlerinin hepsini dikkatlice okuyunuz. **Bazı maddeler hâlihazırda yapmakta olduğunuz iş için uygun olmayabilir. Lütfen, işinizin gerektirdiği her Standart Güvenlik Tedbiri maddesini, yanındaki kutucuğa "✓" işareti koyarak belirtiniz.**

1. Delici ve kesici cisimleri uygun atık kutusuna atmak ❑
2. Teşhis ve tanısı ne olursa olsun, kendini tüm hastaların kan ve vücut sıvılarına karşı korumak ❑
3. Teşhis ve tanısı ne olursa olsun, bütün hastalar için tüm Standart Güvenlik Tedbirlerine uymak ❑
4. Tek kullanımlık eldivenleri giymeden önce elleri yıkamak ❑
5. Tek kullanımlık eldivenleri çıkardıktan sonra elleri yıkamak ❑
6. Kan ve vücut sıvılarının sıçrama ve bulaşma ihtimali olduğu durumlarda koruyucu bir giysi giymek ❑
7. Kan ve diğer vücut sıvılarına maruz kalma ihtimali olduğunda tek kullanımlık eldiven giymek ❑
8. Göze bir şey sıçrama veya bulaşma ihtimali olduğu zamanlar, koruyucu gözlük kullanmak ❑
9. Yüze kan ya da diğer vücut sıvıları sıçrama ihtimali olduğu zamanlar, koruyucu gözlük kullanmak ❑
10. Yüze kan ya da diğer vücut sıvıları sıçrama ihtimali olduğu zamanlar, maske kullanmak ❑
11. Saç ve saçlı deriye kan ya da diğer vücut sıvıları sıçrama ihtimali olduğu zamanlar, bone kullanmak ❑
12. Olası kontamine olmuş tüm tıbbi sarf malzemelerini tıbbi/enfekte atık kovasına atmak ❑
13. Kanla kontamine olmuş her şeyi önceden belirlenmiş uygun atık kovalarının içine atmak ❑
14. Dökülen tüm kan ve diğer vücut sıvılarının derhal prosedüre uygun olarak temizlenmesini sağlamak ❑
15. Kan veya vücut sıvılarıyla kontamine olma ihtimali olan bir alanda çalışırken bir şey yememek veya içmemek ❑
16. Kesici, delici veya batıcı aletleri kullanırken özellikle dikkatli olmak ❑
17. Kanla kontamine olmuş iğnelerin kılıflarını tekrar yerine takmamak ❑
18. Hastalardan kan almak için kullanılmış olan iğneleri enjektörden elle çıkarmamak ❑
19. Hastadan kan alırken eldiven kullanmak ❑
20. Hastanın tükürüğünün bulaştığı tüm materyallere, kontamine materyal gibi muamele etmek ❑
21. Çalışmaya başlamadan önce kendi vücudundaki açık yaraları kapalı hale getirmek ❑
22. Her işlem öncesinde uygun tekniğe göre elleri su ve sabunla yıkamak ❑
23. Her işlem sonrasında uygun tekniğe göre elleri su ve sabunla yıkamak ❑
24. Hastanede uygulanmakta olan enfeksiyon kontrol programı ilkelerine uygun davranmak ❑

Aşağıda, Standart Güvenlik Tedbirlerine yönelik düşünce ve görüşleri içeren maddeler yer almaktadır. Her bir maddede ifade edilen görüşe ne derecede katıldığınızı sunulan **5-basamaklı ölçek** üzerinde işaretleyiniz. Görüşünüzü en iyi yansıtan rakamı daire içine alınız. **Değerlendirmelerinizi, yukarıda işiniz için uygun olduğunu belirttiğiniz tüm Standart Güvenlik Tedbirleri davranışlarını düşünerek yapınız.**

1. İşimi yaparken yukarıda işaretlediğim Standart Güvenlik Tedbirlerine bağlı kalıp kalmamak benim kontrolümdedir.	Hiç Katılmıyorum	Katılmıyorum	Biraz Katılıyorum	Oldukça Katılıyorum	Tamamen Katılıyorum
	1	2	3	4	5
2. Beraber çalıştığım hemşire arkadaşlarım işlerini yaparken Standart Güvenlik Tedbirlerine her zaman bağlı kalırlar.	Tamamen Yanlış		Kısmen Doğru		Tamamen Doğru
	1	2	3	4	5
3. Benim için önemli olan iş arkadaşlarım, yukarıda işaretlediğim Standart Güvenlik Tedbirlerine her zaman bağlı kalmamın ..... düşünürler.	Hiç Gerekmediğini	Gerekmediğini	Biraz Gerektiğini	Oldukça Gerektiğini	Mutlaka Gerektiğini
	1	2	3	4	5
4. İşimi yaparken yukarıda işaretlediğim Standart Güvenlik Tedbirlerine her zaman bağlı kalmayı amaçlarım.	Hiç Katılmıyorum	Katılmıyorum	Biraz Katılıyorum	Oldukça Katılıyorum	Tamamen Katılıyorum
	1	2	3	4	5
5. İstersem, Standart Güvenlik Tedbirlerine her zaman bağlı kalabilirim.	Tamamen Yanlış		Kısmen Doğru		Tamamen Doğru
	1	2	3	4	5
6. İşimi yaparken Standart Güvenlik Tedbirlerine her zaman bağlı kalmam konusunda sosyal baskı hissederim.	Hiç Katılmıyorum	Katılmıyorum	Biraz Katılıyorum	Oldukça Katılıyorum	Tamamen Katılıyorum
	1	2	3	4	5
7. İşinizi yaparken Standart Güvenlik Tedbirlerine her zaman bağlı kalmak ne kadar sizin kontrolünüzdedir?	Hiç Kontrolümde Değildir	Az Kontrolümdedir	Kısmen Kontrolümdedir	Kontrolümdedir	Tamamen Kontrolümdedir
	1	2	3	4	5

8. İşimi yaparken Standart Güvenlik Tedbirlerine her zaman bağlı kalmam beklenir.	Hiç Katılmıyorum	Katılmıyorum	Biraz Katılıyorum	Oldukça Katılıyorum	Tamamen Katılıyorum
	1	2	3	4	5

9. İşimi yaparken Standart Güvenlik Tedbirlerine her zaman bağlı kalmak isterim.	Hiç Katılmıyorum	Katılmıyorum	Biraz Katılıyorum	Oldukça Katılıyorum	Tamamen Katılıyorum
	1	2	3	4	5

10. Önerilerine/Düşüncelerine önem verdiğim çalışma arkadaşlarım Standart Güvenlik Tedbirlerine her zaman riayet etmemi onaylarlar.	Hiç Katılmıyorum	Katılmıyorum	Biraz Katılıyorum	Oldukça Katılıyorum	Tamamen Katılıyorum
	1	2	3	4	5

N OT: Aşağıdaki her bir soru için görüşünüzü en iyi yansıtan rakamı daire içine alınız.

11. Benim için işimi yaparken Standart Güvenlik Tedbirlerine her zaman bağlı kalmak .....

Son Derece Yararlıdır	**1**	**2**	**3**	**4**	**5**	**Son Derece Yararsızdır**

12. Benim için işimi yaparken Standart Güvenlik Tedbirlerine her zaman bağlı kalmak .....

Son Derece Önemsizdir	**1**	**2**	**3**	**4**	**5**	**Son Derece Önemlidir**

13. Benim için işimi yaparken Standart Güvenlik Tedbirlerine her zaman bağlı kalmak .....

Son Derece Gereklidir	**1**	**2**	**3**	**4**	**5**	**Son Derece Gereksizdir**

14. Benim için işimi yaparken Standart Güvenlik Tedbirlerine her zaman bağlı kalmak .....

Son Derece Zordur	**1**	**2**	**3**	**4**	**5**	**Son Derece Kolaydır**

15. Benim için işimi yaparken Standart Güvenlik Tedbirlerine her zaman bağlı kalmak .....

Çok İyidir	**1**	**2**	**3**	**4**	**5**	**Çok Kötüdür**

16. Benim için işimi yaparken Standart Güvenlik Tedbirlerine her zaman bağlı kalmak .....

Hiç Pratik Değildir	**1**	**2**	**3**	**4**	**5**	**Çok Pratiktir**

BÖLÜM II – Güvenlik İklimi Algısı Ölçeği

Yönerge: Aşağıda, iş yerinizdeki iş sağlığı ve güvenliğine yönelik maddeler yer almaktadır. Her bir ifadenin hâlihazırda çalışmakta olduğunuz birim için ne derecede geçerli olduğunu **beş basamaklı** (1= *Hiç katılmıyorum* 5= *Tamamen katılıyorum)* ölçek üzerinde ilgili kutucuğu işaretleyerek belirtiniz. **Lütfen her ifadeyi dikkatlice okuyunuz ve düşüncenizi en iyi yansıtan rakamı daire içine alınız.**

Eğer, sıralanan maddeler arasında işyeriniz için geçeri olmayan bir ifade varsa "Uygun Değil-UD" seçeneğine karşılık gelen kutuyu işaretleyiniz. **Lütfen hiç bir maddeyi boş bırakmayınız.**

1	2	3	4	5	UD
Hiç Katılmıyorum	**Katılmıyorum**	**Biraz Katılıyorum**	**Oldukça Katılıyorum**	**Tamamen Katılıyorum**	**Uygun Değil**

1	Yönetim, çalışanların güvenliği ile ilgilidir.	1	2	3	4	5	UD
2	Eğitim programlarında iş yeri sağlığı ve güvenliği konusuna yüksek öncelik verilir.	1	2	3	4	5	UD
3	İşteki görevlerim çoğu zaman iş yeri sağlığı ve güvenliğine yönelik Standart Güvenlik Tedbirlerini uygulayabilmeme engel olmaktadır.	1	2	3	4	5	UD
4	İş yeri sağlığı ve güvenliğindeki aksaklıkları engellemek için sistematik prosedürler vardır.	1	2	3	4	5	UD
5	Toplantılarda iş yeri sağlığı ve güvenliğiyle ilgili konuları tartışmak ve çözümlemek için yeterli fırsat olmaktadır.	1	2	3	4	5	UD
6	Çalıştığım birimde, hemşireler uyum içinde çalışırlar.	1	2	3	4	5	UD
7	Yönetim iş yeri sağlığı ve güvenliğine büyük önem vermektedir.	1	2	3	4	5	UD
8	Bu iş yerinde, Standart Güvenlik Tedbirlerine uygun olmayan bir davranış, ancak bir iş kazası durumunda rapor edilir.	1	2	3	4	5	UD
9	Çalışanlar iş yeri sağlığı ve güvenliği eğitim programlarına yeterli erişime sahiptirler.	1	2	3	4	5	UD
10	Çalıştığım birimde hemşireler bir takımın üyesi gibi davranırlar.	1	2	3	4	5	UD
11	İşyerimde, kişisel koruyucu malzemelerin/ekipmanların kullanılmaması durumunda yaptırımlar uygulanır.	1	2	3	4	5	UD
12	Genellikle, fazla işim olduğu için Standart Güvenlik Tedbirlerini uygulamaya zamanım olmuyor.	1	2	3	4	5	UD
13	Bu iş yerinde; çalışanların karşılaştıkları iş kazalarına ait raporlar tutulmaktadır.	1	2	3	4	5	UD
14	İş sağlığı ve güvenliğine yönetim yüksek öncelik verir.	1	2	3	4	5	UD
15	İş yeri sağlığı ve güvenliği eğitimleri çalışanların işyerinde karşılaştıkları durumları içerir.	1	2	3	4	5	UD
16	Bu iş yerinde, iş yeri sağlığı ve güvenliği konusunda açık bir iletişim vardır.	1	2	3	4	5	UD

1	2	3	4	5	UD
Hiç Katılmıyorum	**Katılmıyorum**	**Biraz Katılıyorum**	**Oldukça Katılıyorum**	**Tamamen Katılıyorum**	**Uygun Değil**

17	Bu kurumdaki güvenlik prosedür ve uygulamaları yararlı ve etkilidir.	1	2	3	4	5		UD
18	Çalıştığım birimde, hemşirelerden biri çok yoğun olduğunda diğerleri ona yardım eder.	1	2	3	4	5		UD
19	İş yerimde, kişisel koruyucu malzemelerin/ekipmanların kullanımı teşvik edilir.	1	2	3	4	5		UD
20	İş yeri sağlığı ve güvenliği konularında çalışanların görüşlerine düzenli olarak başvurulur.	1	2	3	4	5		UD
21	Yönetim iş güvenliğini önemli bir konu olarak görür.	1	2	3	4	5		UD
22	Çalışanlar iş yeri sağlığı ve güvenliği konularında kapsamlı eğitim alırlar.	1	2	3	4	5		UD
23	Çalıştığım birimde, hemşireler birbirleriyle işbirliği içerisindedirler.	1	2	3	4	5		UD
24	Bu iş yerinde, iş yeri sağlığı ve güvenliği konularından sıklıkla bahsedilir.	1	2	3	4	5		UD
25	Birimimde, klinik iş güvenliği hakkındaki bilgiye nasıl erişeceğimi biliyorum.	1	2	3	4	5		UD
26	Güvenlikle ilgili prosedür ve uygulamalar olası vakaları önlemede yeterlidir.	1	2	3	4	5		UD
27	Çalışanlar iş yeri sağlığı ve güvenliği ile ilgili endişelerini yönetimle paylaşabilmektedir.	1	2	3	4	5		UD
28	Çalıştığım birimde, hemşireler birbirlerine yardım ederler.	1	2	3	4	5		UD
29	Standart Güvenlik Tedbirlerini her zaman uygulayabilmem için işimde yeterince zamanım vardır.	1	2	3	4	5		UD
30	Çalıştığım birimde, hemşireler birbirlerini desteklerler.	1	2	3	4	5		UD
31	Çalışma alanımda kişisel koruyucu malzemeler/ekipmanlar hazır bulunmaktadır.	1	2	3	4	5		UD
32	Bu iş yerinde, Standart Güvenlik Tedbirlerine uygun olmayan bir davranış herhangi bir olumsuz sonuca neden olmasa bile rapor edilir.	1	2	3	4	5		UD

BÖLÜM III – Standart Güvenlik Tedbirlerine Riayet Etme Ölçeği

Yönerge: Aşağıdaki ölçekte, Standart Güvenlik Tedbirleri olarak adlandırılan 21 madde yer almaktadır. Lütfen, işinizi yaparken bu davranışları ne derecede takip edebildiğinizi **beş basamaklı** (1= *Hiç bir 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 hiç bir maddeyi boş bırakmayınız.**

1	2	3	4	5	UD
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 gözlük kullanmak	1	2	3	4	5	UD
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 prosedüre 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

1	2	3	4	5	UD
Hiçbir zaman	**Nadiren**	**Zaman zaman**	**Sıklıkla**	**Her zaman**	**Uygun Değil**

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
24	Hastanede uygulanmakta olan enfeksiyon kontrol programı ilkelerine uygun davranmak	1	2	3	4	5	UD

BÖLÜM IV – Demografik Bilgiler

Aşağıda sıralanan kişisel bilgiler **sadece bu çalışmayı yürütenler tarafından başka kimseyle paylaşılmaksızın** tez çalışması analizleri için kullanılacaktır. Katılımınız için şimdiden teşekkürler.

Adınız-soyadınız:
.....

Yaşınız:
.....

Cinsiyetiniz: ___Kadın ___Erkek

Eğitim Durumunuz (En son mezun olunan okul):

.....

Hastanede çalışmakta olduğunuz birim:
.....

Sizden birinci dereceden sorumlu amirinizin adı-soyadı:
.....

Bir haftada yaklaşık toplam çalıştığınız saat:
.....

Bir ayda tuttuğunuz ortalama nöbet sayısı:
.....

Bir günde ilgilendiğiniz tahmini ortalama hasta sayısı:
.....

Bir hastaya bir iş günü içerisinde ortalama kaç dakika ayırıyorsunuz?
.....

Bu hastanede hemşire olarak çalışma süreniz:
.....

Hemşire olarak toplam çalışma süreniz:
.....

AÇIKLAMA

Bir yüksek lisans tez çalışması olan bu araştırmanın amacı hemşirelerin iş sağlığı ve güvenliğine yönelik davranışları (Standart Güvenlik Tedbirleri) göstermelerine etki eden unsurları incelemektedir. Bu kitapçıkta sorumlusu olduğunuz her bir hemşirenin Standart Güvenlik Tedbirlerine riayet etme sıklığına ait maddeler bulunmaktadır.

Tamamen gönüllülük esasına dayalı olarak yapılan bu çalışmada elde edilen veriler sadece araştırma amaçlı kullanılacak ve katılımcıların kimlikleri hiçbir kişi ve kurumla paylaşılmayacaktır.

Değerlendirmenin sağlıklı yapılabilmesi için tüm maddelerin yönergede belirtilen şekilde cevaplandırılması gerekmektedir. Lütfen, tüm maddeleri dikkatlice okuyunuz ve hiçbirini boş bırakmayınız. Anket süresi yaklaşık 15 dakikadır. Sorumlusu olduğunuz her bir hemşire için bir anket doldurmanız beklenmektedir. **Anketler araştırmacı tarafından toplanacak ve anketi uygulayan kişi dışında kimse tarafından incelenmeyecektir.**

Çalışma ya da çalışmanın sonuçları hakkında daha detaylı bilgi edinmek için aşağıda belirtilen e-posta adresine başvurabilirsiniz.

Araştırmacı: Gülçin Haktanır **gulcinhaktanir@yahoo.com**
Prof. Dr. H. Canan Sümer **hcanan@metu.edu.tr**
Yrd. Doç. Türker Özkan **ozturker@metu.edu.tr**

Çalışmamıza sağladığınız katkılardan dolayı

çok teşekkür ederiz.

Gülçin Haktanır

ODTÜ Psikoloji Bölümü

Standart Güvenlik Tedbirlerine Riayet Etme Ölçeği

Yönerge: Aşağıdaki ölçekte, hemşireler için "**Standart Güvenlik Tedbirleri**" olarak adlandırılan 24 madde yer almaktadır. Sizden, sorumlusu olduğunuz her bir hemşirenin bu davranışlara ne derecede riayet etmekte olduğunu şimdiye kadarki gözlemlerinize dayanarak değerlendirmeniz beklenmektedir. Lütfen, her bir maddeyi **beş basamaklı** (1= *Hiç bir zaman* 5= *Her zaman)* ölçek üzerinde ilgili kutucuğu işaretleyerek değerlendiriniz.

Eğer, ifadenin değerlendirmesini yapmakta olduğunuz hemşire için geçerli olmadığını düşünüyorsanız "Uygun Değil-UD" seçeneğine karşılık gelen kutuyu işaretleyiniz. **Lütfen her soruyu dikkatlice okuyunuz ve hiç bir maddeyi boş bırakmayınız.** Her bir hemşireyi ayrı ayrı değerlendirmeniz için zarfta gerekli sayıda anket verilecektir.

1	2	3	4	5
Hiçbir zaman	**Nadiren**	**Zaman zaman**	**Sıklıkla**	**Her zaman**

UD
Uygun Değil

Değerlendirilen Hemşire: _____

1	Delici ve kesici cisimleri uygun atık kutusuna atar	1	2	3	4	5	UD
2	Teşhis ve tanısı ne olursa olsun, kendini tüm hastaların kan ve vücut sıvılarına karşı korur	1	2	3	4	5	UD
3	Teşhis ve tanısı ne olursa olsun, bütün hastalar için tüm Standart Güvenlik Tedbirlerine uyar	1	2	3	4	5	UD
4	Tek kullanımlık eldivenleri giymeden önce ellerini yıkar	1	2	3	4	5	UD
5	Tek kullanımlık eldivenleri çıkardıktan sonra ellerini yıkar	1	2	3	4	5	UD
6	Kan ve vücut sıvılarının sıçrama ve bulaşma ihtimali olduğu durumlarda koruyucu bir giysi giyer	1	2	3	4	5	UD
7	Kan ve diğer vücut sıvılarına maruz kalma ihtimali olduğunda tek kullanımlık eldiven giyer	1	2	3	4	5	UD
8	Göze bir şey sıçrama veya bulaşma ihtimali olduğu zamanlar, koruyucu gözlük kullanır	1	2	3	4	5	UD
9	Yüze kan ya da diğer vücut sıvıları sıçrama ihtimali olduğu zamanlar, koruyucu gözlük kullanır	1	2	3	4	5	UD
10	Yüze kan ya da diğer vücut sıvıları sıçrama ihtimali olduğu zamanlar, maske kullanır	1	2	3	4	5	UD
11	Saç ve saçlı deriye kan ya da diğer vücut sıvıları sıçrama ihtimali olduğu zamanlar, bone kullanır	1	2	3	4	5	UD
12	Olası kontamine olmuş tüm tıbbi sarf malzemelerini tıbbi/enfekte atık kovasına atar	1	2	3	4	5	UD
13	Kanla kontamine olmuş her şeyi önceden belirlenmiş uygun atık kovalarının içine atar	1	2	3	4	5	UD

1	2	3	4	5
Hiçbir zaman	**Nadiren**	**Zaman zaman**	**Sıklıkla**	**Her zaman**

UD
Uygun Değil

14	Dökülen tüm kan ve diğer vücut sıvılarının derhal prosedüre uygun olarak temizlenmesini sağlar	1	2	3	4	5	UD
15	Kan veya vücut sıvılarıyla kontamine olma ihtimali olan bir alanda çalışırken bir şey yemez veya içmez	1	2	3	4	5	UD
16	Kesici, delici veya batıcı aletleri kullanırken özellikle dikkatli olur	1	2	3	4	5	UD
17	Kanla kontamine olmuş iğnelerin kılıflarını tekrar yerine takmaz	1	2	3	4	5	UD
18	Hastalardan kan almak için kullanılmış olan iğneleri enjektörden elle çıkarmaz	1	2	3	4	5	UD
19	Hastadan kan alırken eldiven kullanır	1	2	3	4	5	UD
20	Hastanın tükürüğünün bulaştığı tüm materyallere, kontamine materyal gibi muamele eder	1	2	3	4	5	UD
21	Çalışmaya başlamadan önce kendi vücudundaki açık yaraları kapalı hale getirir	1	2	3	4	5	UD
22	Her işlem öncesinde uygun tekniğe göre elleri su ve sabunla yıkar	1	2	3	4	5	UD
23	Her işlem sonrasında uygun tekniğe göre elleri su ve sabunla yıkar	1	2	3	4	5	UD
24	Hastanede uygulanmakta olan enfeksiyon kontrol programı ilkelerine uygun davranır	1	2	3	4	5	UD

APPENDIX G: Reliability Values of TPB Measure Subscales

Item #	Items	Reliability
Intention Subscale		**.59**
4	İşimi yaparken yukarıda işaretlediğim Standart Güvenlik Tedbirlerine her zaman bağlı kalmayı amaçlarım.	
9	İşimi yaparken Standart Güvenlik Tedbirlerine her zaman bağlı kalmak isterim.	
Subjective Norm Subscale		**.66**
2	Beraber çalıştığım hemşire arkadaşlarım işlerini yaparken Standart Güvenlik Tedbirlerine her zaman bağlı kalırlar.	
3	Benim için önemli olan iş arkadaşlarım, yukarıda işaretlediğim Standart Güvenlik Tedbirlerine her zaman bağlı kalmamın .....düşünürler.	
8	İşimi yaparken Standart Güvenlik Tedbirlerine her zaman bağlı kalmam beklenir.	
10	Önerilerine/Düşüncelerine önem verdiğim çalışma arkadaşlarım Standart Güvenlik Tedbirlerine her zaman riayet etmemi onaylarlar.	
Perceived Behavior Control Subscale		
1	İşimi yaparken yukarıda işaretlediğim Standart Güvenlik Tedbirlerine bağlı kalıp kalmamak benim kontrolümdedir.	**.56**
5	İstersem, Standart Güvenlik Tedbirlerine her zaman bağlı kalabilirim.	
7	İşinizi yaparken Standart Güvenlik Tedbirlerine her zaman bağlı kalmak ne kadar sizin kontrolünüzdedir?	
Attitude Subscale		**.83**
11	Benim için işimi yaparken Standart Güvenlik Tedbirlerine her zaman bağlı kalmak .....Son Derece Yararlıdır/Son Derece Yararsızdır	
12	Benim için işimi yaparken Standart Güvenlik Tedbirlerine her zaman bağlı kalmak..... Son Derece Önemsizdir/Son Derece Önemlidir	
13	Benim için işimi yaparken Standart Güvenlik Tedbirlerine her zaman bağlı kalmak .....Son Derece Gereklidir/Son Derece Gereksizdir	
14	Benim için işimi yaparken Standart Güvenlik Tedbirlerine her zaman bağlı kalmak .....Son Derece Zordur/Son Derece Kolaydır	
15	Benim için işimi yaparken Standart Güvenlik Tedbirlerine her zaman bağlı kalmak .....Çok İyidir/Çok Kötüdür	
16	Benim için işimi yaparken Standart Güvenlik Tedbirlerine her zaman bağlı kalmak .....Hiç Pratik Değildir/Çok Pratiktir	

APPENDIX H: Item Loadings and Percent of Explained Variances of Safety Climate Questionnaire

Item #	Items	Factor Loadings F_1[a]	F_2
21	Yönetim, iş güvenliğini önemli bir konu olarak görür.	0.84	
14	İş sağlığı ve güvenliğine yönetim yüksek öncelik verir.	0.82	
16	Bu işyerinde, iş yeri sağlığı ve güvenliği konusunda açık bir iletişim vardır.	0.78	
17	Bu kurumdaki güvenlik prosedür ve uygulamaları yararlı ve etkilidir.	0.78	0.30
22	Çalışanlar iş yeri sağlığı ve güvenliği konularında kapsamlı eğitim alırlar.	0.78	0.31
7	Yönetim, iş yeri sağlığı ve güvenliğine büyük önem vermektedir.	0.78	0.31
24	Bu işyerinde, iş yeri sağlığı ve güvenliği konularından sıklıkla bahsedilir.	0.77	0.39
27	Çalışanlar iş yeri sağlığı ve güvenliği ile ilgili endişelerini yönetimle paylaşabilmektedir.	0.73	
20	İş yeri sağlığı ve güvenliği konularında çalışanların görüşlerine düzenli olarak başvurulur.	0.71	0.30
2	Eğitim programlarında iş yeri sağlığı ve güvenliği konusuna yüksek öncelik verilir.	0.71	
1	Yönetim çalışanların güvenliği ile ilgilidir.	0.70	
26	Güvenlikle ile ilgili prosedür ve uygulamalar olası vakaları önlemede yeterlidir.	0.65	0.42
15	İş yeri sağlığı ve güvenliği eğitimleri çalışanların işyerinde karşılaştıkları durumları içerir.	0.63	
9	Çalışanlar iş yeri sağlığı ve güvenliği eğitim programlarına yeterli erişime sahiptirler.	0.62	0.35
4	İş yeri sağlığı ve güvenliğindeki aksaklıkları engellemek için sistematik prosedürler vardır.	0.62	
5	Toplantılarda iş yeri sağlığı ve güvenliğiyle ilgili konuları tartışmak ve çözümlemek için yeterli fırsat olmaktadır.	0.59	

Note. [a] Factor labels. F_1 = General safety climate, F_2=Teamwork

APPENDIX H (continued)

Item #	Items	Factor Loadings F_1[a]	F_2
32	Bu iş yerinde, Standart Güvenlik Tedbirlerine uygun olmayan bir davranış herhangi bir olumsuz sonuca neden olmasa bile rapor edilir.	0.56	
25	Birimimde, klinik iş güvenliği hakkındaki bilgiye nasıl erişeceğimi biliyorum.	0.52	
11	İş yerimde, kişisel koruyu malzemelerin/ekipmanların kullanılmaması durumunda yaptırımlar uygulanır.	0.45	
13	Bu iş yerinde, çalışanların karşılaştıkları iş kazalarına ait raporlar tutulmaktadır.	0.33	
	Reliability	**.95**	0.90
23	Çalıştığım birimde, hemşireler birbirleriyle işbirliği içerisindedirler.		0.89
30	Çalıştığım birimde, hemşireler birbirlerini desteklerler.		0.87
18	Çalıştığım birimde, hemşirelerden biri çok yoğun olduğunda diğerleri ona yardım ederler.		0.86
6	Çalıştığım birimde, hemşireler uyum içinde çalışırlar.		0.78
10	Çalıştığım birimde, hemşireler bir takımın üyesi gibi davranırlar.	0.33	0.77
	Reliability		**.94**
	Percent of explained variance	**37.15**	**21.80**

Note. [a] Factor labels. F_1 = General safety climate, F_2=Teamwork

APPENDIX I: Item Loadings and Percent of Explained Variances of Standard Safety Precautions Scale

Item #	Items	Factor Loadings			
		F_1[a]	F_2	F_3	F_4
9	Yüze kan ya da diğer vücut sıvıları sıçrama ihtimali olduğu zamanlar, koruyucu gözlük kullanır	0.87			
8	Göze bir şey sıçrama veya bulaşma ihtimali olduğu zamanlar, koruyucu gözlük kullanır	0.86			
10	Yüze kan ya da diğer vücut sıvıları sıçrama ihtimali olduğu zamanlar, maske kullanır	0.82			
11	Sac ve saclı deriye kan ya da diğer vücut sıvıları sıçrama ihtimali olduğu zamanlar, bone kullanır	0.82			
6	Kan ve vücut sıvılarının sıçrama ve bulaşma ihtimali olduğu durumlarda koruyucu bir giysi giyer	0.78			
7	Kan ve diğer vücut sıvılarına maruz kalma ihtimali olduğunda tek kullanımlık eldiven giyer	0.58*		0.41	
	Reliability	**.92**			
15	Kan veya vücut sıvılarıyla kontamine olma ihtimali olan bir alanda çalışırken bir şey yemez veya içmez		0.90		
18	Hastalardan kan almak için kullanılmış olan iğneleri enjektörden elle çıkarmaz		0.87		
17	Kanla kontamine olmuş iğnelerin kılıflarını tekrar yerine takmaz		0.87		
21	Çalışmaya başlamadan önce kendi vücudundaki açık yaraları kapalı hale getirir		0.77		
4	Tek kullanımlık eldiven giymeden önce ellerini yıkar		0.73*		0.33
19	Hastadan kan alırken eldiven kullanır		0.64*	0.32	
	Reliability		**.91**		
13	Kanla kontamine olmuş her şeyi önceden belirlenmiş uygun atık kovalarının içine atar			0.84	
12	Olası kontamine olmuş tüm tıbbi sarf malzemelerini tıbbi/enfekte atık kovasına atar			0.83	
1	Delici ve kesici cisimleri uygun atık kutusuna atar			0.72	
14	Dökülen tüm kan ve diğer vücut sıvılarının derhal prosedüre uygun olarak temizlenmesini sağlar	0.47		0.67*	
	Reliability			**.82**	
23	Her işlem sonrasında uygun tekniğe göre elleri su ve sabunla yıkar				0.84
5	Tek kullanımlık eldivenleri çıkardıktan sonra ellerini yıkar		0.32		0.81
22	Her işlem öncesinde uygun tekniğe göre elleri su ve sabunla yıkar	0.53		0.46	0.55*
	Reliability				**.73**
	Percent of Explained Variance	**24.34**	**22.35**	**16.28**	**10.37**