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## Patient safety culture in Kosovo hospitals – multicenter study

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## Abstract

Background: An essential requirement to improve patient safety is to ensure there is a supportive culture of patient safety. Measuring the culture of patient safety in all health care institutions may be a first step to target improvements (Zwart et al. 2011). In order to formulate actions for improvement, it is important for hospitals to assess their baseline scores for the existing safety culture and to determine the areas of priority.

Aim: The aim of this study was first to measure the use, translation into Albanian and adaptation of Hospital Survey on Patient Safety Culture assessment as a tool for improving patient safety in Kosovo Hospitals. The second aim was to measure the level of patient safety culture in Kosovo, in seven hospitals and one University Clinical Center (hospitals with over 50 beds, including psychiatric hospitals).

Method: The Patient Safety Culture Hospital (AHRQ, 2004) questionnaire was translated into Albanian and distributed hospital-wide in seven general hospitals and one university clinical center in Kosovo. The Hospital Survey on Patient Safety Culture evaluates ten dimensions of patient safety culture and two outcomes (HSOPSC). In total, 315 health care providers participated in this study, the majority of participants were nurses (58.1% of participants) with 15.7 % of them being management staff.

Results: The results show that important aspects of patient safety culture in hospitals need improvement. The translated and back-translated questionnaire was assessed for internal consistency. In total, HSOPSC has 12 dimensions. Cronbach's  $\alpha$  showed that in Kosovar society, only 8 dimensions could be used. Post Hoc Tests showed that Gjakova and Ferizaj had the largest number of dimensions of patient safety, which differed significantly from one another.

Conclusion: This study confirms the need for a national long-term initiative to improve patient safety culture in hospitals and provide each hospital with a basic profile on patient safety culture and recommendations for a focused oriented intervention plan.

Key Words: Patient safety, HSOPSC, translation of instrument, cultural adaptation, quality improvement, health care services.

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*“To err is human,  
to cover up is unforgivable and  
to fail to learn is inexcusable”*

*Sir Liam Donaldson*

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## Abbreviations

Acronym	Original name
HSOPSC	Hospital Survey on Patient Safety Culture
AKSPS	Anketa për kulturën e sigurisë së pacientit në spitale ((Hospital Survey on Patient Safety Culture in Albanian)
AHRQ	Agency for Healthcare Research and Quality
UCCK	University Clinical Center of Kosovo
RHM	Regional Hospital Mitrovicë
RHV	Regional Hospital Vushtrri
RHPe	Regional Hospital Pejë
RHGJk	Regional Hospital Gjakovë
RHPz	Regional Hospital Prizren
RHGJI	Regional Hospital Gjilan
RHF	Regional Hospital Ferizaj
MoH	Ministry of Health
PRAK	Patient Rights Association of Kosovo
WHO	World Health Organization
ICPS	International Classification of Patient Safety
KSFP	Kosovar Society for Patient Safety
CIRS	Critical Incidents Report System

## **1 Introduction**

An essential requirement to improve patient safety is to ensure there is a supportive culture of patient safety. Measuring the culture of patient safety in health care institutions may be a first step to identifying such improvements (Zwart et al 2011). Clarifying the concept of “safety” is relatively simple; clarifying the concept of “culture” is somewhat more complex as it means different things to different people.

Literature defines “culture” as the “totality of socially transmitted behavior patterns, acts, beliefs, institutions, and all other products of human work and thought” (The American Heritage, 2007). With respect to the workplace, the definition of culture shifts to include “...the core clues, beliefs, and assumptions that are widely shared by members of an organization” (Dessler, 2006). Organizational culture embodies the beliefs of senior executives and communicates what the organization believes in, while providing employees with a sense of direction and expected behavior (Pizzi, 2001).

According to WHO reports (WHO official web page, 2014): Patient safety is a serious global public health issue and the role of all involved in providing health care. Estimates show that in developed countries as many as one in 10 patients are harmed while receiving hospital care. At any given time it is estimated that of every 100 hospitalized patients, 7 patients in developed and 10 patients in developing countries will acquire health care-associated infections (WHO official web page, 2014). Hundreds of millions of patients worldwide are affected in this way each year.

“Patient safety is the lack of prevention of damage to the patient during the process of health service. Patient safety discipline is a coordinated effort to prevent the damage caused by the health service process itself, which happens to patients. During the past ten years, patient safety were known everyday more as an issue of global importance, but there is much work still to be done“(Lauterberg, 2009).

A standardized classification of key concepts for patient safety is vital in order to share the learning across health care systems worldwide. International classification for patient safety attempts to provide such a definition and harmonize the group concepts of patients in an internationally accepted classification that is favourable to learning and improving patient safety at the same time (Henriksen, 2008).

WHO is working, in collaboration with the Department of Health Statistics and Informatics of WHO, on the development and maintenance of mechanisms of education necessary for international classification of patient safety.

The purpose of the International Classification for Patient Safety is to provide categorization of patient safety information using standardized sets of concepts with agreed definitions, preferred terms, and the relationships between them based on explicit domain ontology. It is designed to facilitate the description, comparison, measurement, monitoring, analysis and interpretation of information to improve patient care, and for epidemiological and health policy planning purposes worldwide.

The World Alliance for Patient Safety is committed to ensuring the International Classification for Patient Safety (ICPS) as a genuine convergence of international perceptions of the main issues related to patient safety. The ICPS intends to define and harmonize group patient safety concepts into an internationally agreed classification in a way that is conducive to learning and improving patient safety across time and borders. It is further intended that the ICPS will outcomes be consistent with existing international classifications.

According to WHO, health care delivery in essence contains a potential violation of patient safety (PS). Studies in developed countries have shown some alarming trends: in the United Kingdom, approximately 10% of hospital admissions are associated with unintended harm to patients; in Europe, every tenth hospital patient may suffer from preventable harm; in New Zealand and Canada the rates of adverse events are around 10% and in Australia, an adverse-event rate of 16.6% was found in hospital patients (The World Alliance for Patient Safety, 2005). Although firm reports from developing countries are somewhat lacking, it is widely thought that the situation in developing countries is worse. Patient damage not only requires remedy but also impacts on socio-economic status in developing countries and causes profound negative impact on human health and life (Leavitt, 2012). Current conceptual thinking puts the main responsibility, for patient damage, on to the health system design flaws, organization or institution, where the work takes place or to individual staff mistakes. Efforts to accept the size of the problem and of employees on Possible Solutions are perhaps hidden by a culture of blame and potentially punitive of the wrong reporting procedures (Wolf and Hughes, 2008).



According to the WHO, patient safety is one of the problems that should be given vital importance in the functioning of a health system and an important indicator to improve the quality of health services.

In the last 10 years, developed countries have been working hard to raise health communities' awareness, as well as awareness within the general population, of the need to promote patient safety. The results of research presented at an international conference in June 2010 on patient safety in Madrid, Spain leaves much room for improvement (A brief synopsis on patient safety, 2010). Patient safety is an important component of healthcare quality with several studies in various countries showing that 2.9% to 16.6% of patients in acute care hospitals experience one or more adverse events (Elder, 2004). Approximately 50% of these adverse events are judged preventable. It is believed that to improve quality and safety in healthcare, hospitals have to create a patient safety culture among staff, in addition to making structural interventions. The culture of an organization consists of the shared norms, values, behavior patterns, rituals and traditions of the employees of an organization (Thomas, 2001), safety culture is an important aspect of the organizational culture. A positive culture of safety guides the discretionary behaviors of healthcare professionals toward viewing patient safety as one of their highest priorities (Schioler, 2001). The Institute of Medicine states that if there is a culture of safety where adverse events can be reported without people being blamed, they have the opportunity to learn from their mistakes and it is possible to make improvements in order to prevent future human and system errors and thus promote patient safety (Vincent, 2002).

Increasingly, healthcare organizations are becoming aware of the importance of transforming organizational culture in order to improve patient safety. Growing interest in safety culture has been accompanied by the need for assessment tools which are focused on the cultural aspects of patient safety improvement (Nieva and Sorra, 2003).

### **1.1 Definition of Culture**

Davis (1984) defines culture as: "The pattern of shared beliefs and values that give members of an institution meaning, and provide them with the rules for behavior in their organization." While Andrew Brown (1998) gave the definition of organizational culture in his book *Organizational Culture* as follows:

“Organizational culture refers to the pattern of beliefs, values and learned ways of coping with experience that have developed during the course of an organization’s history, and which tend to be manifested in its material arrangements and in the behaviors of its members.” With respect to the workplace, the definition of culture includes “...the core clues, beliefs, and assumptions that are widely shared by members of an organization.”

Lee (1998) in his research gave a definition of safety culture from the Advisory Committee on the Safety of Nuclear Installations that is easily transferrable to medicine and health care in general:

The safety culture of an organization is the product of individual and group values, attitudes, perceptions, competencies, and patterns of behavior that determine the commitment, and the style and proficiency of, an organization's health and safety management. Organizations with a positive culture of safety are characterized by communications founded on mutual trust, by shared perceptions of the importance of safety and by confidence in the efficacy of preventive measures.

A culture of safety is considered a sub-facet of organizational culture, and is a relatively new concept having been introduced in a report by the International Nuclear Safety Advisory Group (INSAG) after the Chernobyl disaster. It is defined as being the “...product of individual and group values, attitudes, perceptions, competencies, and patterns of behavior that determine the commitment to, and the style and proficiency of, an organization’s health and safety management” (Guldenmund, 2000).

A study conducted in Cairo, Egypt highlighted the need to improve patient safety culture among health-care providers at Ain Shams University hospitals. The authors concluded that patient safety culture still has many areas for improvement and there needs to be continuous evaluation and monitoring to attain a safe environment both for patients and health-care providers (Aboul-Fotouh, 2012).

Vlayen (2012) in her research study stated that patient safety was receiving growing attention in Belgium. A 5-year program (2007 - 2012) was launched to implement quality and patient safety initiatives in acute, psychiatric and long-term care hospitals, with additional yearly financing. One of the main priorities in the federal program was to develop a culture of safety. Understanding safety culture was seen as a key component in improving patient safety in Belgian hospital settings.

## **1.2 Why culture is important**

Culture is important because it shapes:

- What the organization considers being “right decisions”,
- What employees consider being appropriate behaviours and how they interact with each other within the organization,
- How individuals, work groups and the organization as a whole deal with work assigned to them,
- The speed and efficiency with which things get done,
- The organization’s capacity for and receptiveness to change.
- The attitudes of outside stakeholders to the organization (Schein, 1999).

For under-developed countries, such as Kosovo, there are no accurate data on patients’ culture of safety. Since the problem is of global importance and for developing countries or countries such as Kosovo, who have just come out of the war, it is thought to be a more serious situation, which should be addressed by giving the highest priority to patient safety (Raka, 2012).

Health care organizations are increasingly becoming aware of the importance of transforming organizational culture in order to ensure patient safety.

## **1.3 Definition of Blame**

Creating a culture of safety requires eliminating the culture of blame.

“Using safety program elements in the wrong culture is like using a perfectly good electrical appliance under water. The electrical appliance is fine ... the environment is all wrong” (Petersen, 1997).

“Culture of blame”, as cited in the patient safety literature (Kohn and Corriagan and Donaldson, 2002; Baker, et al., 2004) describes the reluctance among healthcare professionals to report adverse client-centred events due to fear of reprisal or assignment of blame at the level of the individual worker.

## **1.4 Actual situation in Kosovo**

Interest in the growth of safety culture has been associated with the need for assessment tools focused on cultural aspects, in the effort to improve patient safety (Raka, 2012).

In summary, there are signs that patient safety issues in Kosovo are gaining more and more importance at all levels of the healthcare system. To date there have been single evidence-based studies only indicating a causal or close temporal relationship

between patient safety outcomes and the increasing efforts of hospitals, outpatient and long-term care facilities in Kosovo (Raka, 2012).

In 2013, at the University Clinical Centre of Kosovo, Dr. Rexhep Gjyliqi implemented a survey according to Patient Safety. The results of which confirmed that respondents failed due to irregular supply and insufficient medicines and other medical material, poor cooperation, an ineffective management and insufficient education or training of medical staff.

The study highlighted that in the health institutions in Kosovo, in a conscious or unconscious way, less importance was given to patient safety, little attention was paid to this aspect of patient care and there was a lack of courage to discuss professional mistakes or take steps to change the current situation (Gjyliqi, 2013).

Since 2013 Kosovo has had the Kosovar Society for Patient Safety (KSFP) an independent, Non Profit Organization. The role of KSFP is to lead and contribute to the improvement of, safe patient care by informing, supporting and influencing organizations and people working in the health sector. However there would appear to be only a web-page with the translated Patient Safety Facts which have been translated from WHO.

The 10 facts on Patient Safety translated in Albanian from WHO are used as promotion material for the KSFP. It is important to mention that the Ministry of Health supports these activities.

The Kosovar health system is focused on WHO priorities the 10 facts of Patients Safety, are as follow:

1. Patient safety is a serious global public health issue.

There is now a growing recognition that patient safety and quality is a critical dimension of universal health coverage. Since the launch of the WHO Patient Safety Program in 2004, over 140 countries have worked to address the challenges of unsafe care.

2. One in 10 patients may be harmed while in hospital.

Estimates show that in developed countries as many as 1 in 10 patients is harmed while receiving hospital care. The harm can be caused by a range of errors or adverse events.

3. Hospital infections affect 14 out of every 100 patients admitted.

Of every 100 hospitalized patients at any given time, 7 in developed and 10 in developing countries will acquire health care-associated infections (HAIs). Hundreds of millions of patients are affected worldwide each year. Simple and low-cost infection prevention and control measures, such as appropriate hand hygiene, can reduce the frequency of HAIs by more than 50%.

4. Most people lack access to appropriate medical devices.

There are an estimated 1.5 million different medical devices and over 10,000 types of devices available worldwide. The majority of the world's population is denied adequate access to safe and appropriate medical devices within their health systems. More than half of low- and lower middle-income countries do not have a national health technology policy which could ensure the effective use of resources through proper planning, assessment, acquisition and management of medical devices.

5. Unsafe injections decreased by 88% from 2000 to 2010.

Key injection safety indicators measured in 2010 show that important progress has been made in the reuse rate of injection devices (5.5% in 2010), while modest gains were made through the reduction of the number of injections per person per year (2.88 in 2010).

6. Delivery of safe surgery requires a teamwork approach.

An estimated 234 million surgical operations are performed globally every year. Surgical care is associated with a considerable risk of complications. Surgical care errors contribute to a significant burden of disease despite the fact that 50% of complications associated with surgical care are avoidable.

7. About 20%–40% of all health spending is wasted due to poor-quality care.

Safety studies show that additional hospitalization, litigation costs, infections acquired in hospitals, disability, lost productivity and medical expenses cost some countries as much as US\$ 19 billion annually. The economic benefits of improving patient safety are therefore compelling.

8. A poor safety record for health care.

Industries with a perceived higher risk such as the aviation and nuclear industries have a much better safety record than health care. There is a 1 in 1, 000,000 chance of a traveler being harmed while in an aircraft. In comparison, there is a 1 in 300 chance of a patient being harmed during health care.

9. Patient and community engagement and empowerment are key.

People's experience and perspectives are valuable resources for identifying needs, measuring progress and evaluating outcomes.

10. Hospital partnerships are able to play a critical role.

Hospital-to-hospital partnerships to improving patient safety and quality of care have been used for technical exchange between health workers for a number of decades. These partnerships provide a channel for bi-directional patient safety learning and the co-development of solutions in rapidly evolving global health systems.

In addition, in 2013 in Kosovo an association: "Patients' Rights Association in Kosovo" = "PRAK", was established which offers open telephone lines for patient complaints.

This current study reports on a national aggregation of data of HSOPSC within Kosovo's hospitals and aims to provide each hospital with a baseline score on 12 dimensions of safety in order to set priorities and follow-up on the evolution of the safety culture. In this way, the measurement of safety culture reflects a "snapshot" of the current state of safety culture within the hospitals.

## 2 The aims and hypotheses

1. The primary aim of this study was to translate and adopt a patient safety culture survey instrument, examining (clustering) the underlying dimensions of patient safety culture. This project discusses the use of safety culture assessment as a tool for improving patient safety in Kosovo Hospitals.
2. The second aim of the study was to measure patient safety culture in Kosovo, in seven hospitals and in one University Clinical Centre (hospitals with over 50 beds, including psychiatric hospitals) and to examine the homogeneous grouping of underlying safety culture dimensions. In order to formulate actions for improvement, it is important for hospitals to assess their baseline scores for the existing safety culture and determine areas of priority.
3. This study describes, for the first time, the survey results of the acute, psychiatric and long-term care hospitals that voluntarily submitted their data for comparison to other hospitals in Kosovo.

The research hypotheses related to the study aim were as follows:

1. Hypotheses I: The HSOPSC would be a suitable instrument to provide important indicators for the improvement of patient safety culture within Kosovo.
2. Hypotheses II: Patient safety culture is an important challenge to all interested health care providers who wish to improve patient safety within Kosovo.

### **3 Material and method**

#### ***3.1 Research method and research tool***

Research on health and health services ranges from descriptive investigations of the experience of illness and people's perceptions of health and ill health (known as research on health, or health research) to evaluations of health services in relation to their appropriateness, effectiveness and costs (health services research). However, these two areas overlap and should not be rigidly divided, as it is essential to include the perspective of the lay person in health service evaluation and decision-making. Other related fields of investigation include audit, quality assurance, and the assessment of needs for health services (usually defined in terms of the need for effective services), which comes within the umbrella of health research but also has a crucial link with health services research. Audit and quality assurance are not strictly research in the sense of contributing to a body of scientific knowledge and adherence to rigorous methods of conducting research (quantitative or qualitative). Instead they are concerned with monitoring in order to ensure that predefined standards of care are met.

In order to address the aims of the study and answer the research questions it was decided that a survey was the research method of choice in order to seek opinions from various individuals. Survey research is one of the most important areas of measurement in research. The broad area of survey research encompasses any measurement procedures that involve asking questions of respondents. A "survey" can be anything from a short paper-and-pencil feedback form to an intensive one-on-one in-depth interview. Surveys can be divided into two broad categories: the questionnaire and the interview. Questionnaires are usually paper-and-pencil instruments that the respondent completes. Interviews are completed by the interviewer based on the respondent says.

Survey research is often used to assess thoughts, opinions, and feelings (Shaughnessy J, Zechmeister E, Jeanne Z, 2011). Survey research can be specific and limited, or it can have more global, widespread goals. Today, survey research is used by a variety of different groups. Psychologists and sociologists often use survey research to analyze behavior, while it is also used to meet the more pragmatic needs of the media, such as, in evaluating political candidates, public health officials, professional organizations, and advertising and marketing directors. A survey consists



of a predetermined set of questions that is given to a sample. With a representative sample, that is, one that is representative of the larger population of interest, one can describe the attitudes of the population from which the sample was drawn. Further, one can compare the attitudes of different populations as well as look for changes in attitudes over time. A good sample selection is key as it allows one to generalize the findings from the sample to the population, which is the whole purpose of survey research.

Opinion based research methods generally involve designing an experiment and collecting quantitative data. For this type of research, the measurements are usually arbitrary, following the ordinal or interval type. Questionnaires are an effective way of quantifying data from a sample group, and testing emotions or preferences. This method is very cheap and easy, where budget is a problem, and gives an element of scale to opinion and emotion. These figures are arbitrary, but at least give a directional method of measuring intensity. Quantifying behavior is another way of performing this research, with researchers often applying a 'numerical scale' to the type, or intensity, of behavior. By definition, this experiment method must be used where emotions or behaviors are measured, as there is no other way of defining the variables.

Whilst not as robust as experimental research, the methods can be replicated and the results falsified.

### **3.2 Sample**

In total, 400 health professionals were contacted with 346 (response rate 86%) returning questionnaires between August 2014 and February 2015. Of the 346 respondents 315 (91%) completed the questionnaire. Thirty-one did not complete least 50% of the questionnaire and were excluded from further analyses.

The mean age of the participants was 42 years old. Among them, the majority were nurses, 58.1% of participants with 15.7 % of them were management staff the remainder comprised nursing assistants, physicians, physiotherapists, laboratory and radiology assistants, social workers, pharmacists and pharmacy assistants

The Patient Safety Culture Hospital questionnaires were distributed hospital-wide in seven general hospitals and one university clinical center (hospitals with over 50 beds, including psychiatric hospitals). This instrument evaluates ten patient safety culture

dimensions and two outcomes. The scores are expressed as the percentage of positive answers towards patient safety for each dimension.

The survey was conducted from August 2014 through February 2015. The survey was available for health providers from the seven regional hospitals (as Peja, Gjakova, Prizreni, Mitrovica, Vushtrri, Ferizaj, Gjilan) and from UCCK in Prishtina.

### **3.3 Selection criteria**

Subjects who met the following criteria were selected to participate in the study:

- (1) Willingness to participate,
- (2) Ability to speak and read Albanian, and
- (3) Nurses and nursing assistants, physicians, physiotherapists, laboratory and radiology assistants, social workers, pharmacists and pharmacy assistants working in the public health institutions.

Therefore, a set of indicators and clues were chosen to characterize the safety culture development on the micro-, meso- and macro-level of the healthcare system in four areas.

The subjects were approached by the researcher and were given detailed explanations of the purpose and aim of the study. Informed consent was obtained from those who agreed to participate, and questionnaires distributed.

### **3.4 Measurement tool**

If hospitals want to improve patient safety, it is important to know more about the culture regarding patient safety. Several instruments are available to measure the safety culture in hospitals (Michel P, et.al. 2004). One of these instruments is the Hospital Survey on Patient Safety Culture (HSOPSC) of the Agency for Healthcare Research and Quality (AHRQ) (Zegers, 2007).

According to the authors (Nieva and Sorra 2003): "The HSOPSC measures safety culture on 12 dimensions, including 10 safety dimensions and 2 outcomes dimensions and is designed to measure staff perceptions on patient safety issues, medical errors and event reporting". The Patient Safety Culture Hospital questionnaire (HSOPSC) was therefore chosen to obtain the data about patient safety culture in hospitals of Kosovo.

HSOPSC- Although this instrument is of US origin, it has been translated and used within European countries, including Norway, England, Netherlands, Belgium and Switzerland (Nieva and Sorra 2003).

The safety culture dimensions included in the survey are shown below

- Two outcome dimensions (multiple item scales):
  1. Overall perceptions of safety
  2. Frequency of event reporting
- Ten safety culture dimensions (multiple item scales):
  1. Supervisor/manager expectations and actions promoting patient safety
  2. Organizational learning—Continuous improvement
  3. Teamwork within units
  4. Communication openness
  5. Feedback and communication about error
  6. Non punitive response to error
  7. Staffing
  8. Hospital management support for patient safety
  9. Teamwork across hospital units
  10. Hospital handoffs and transitions

The HSOPSC questionnaire contains 42 items which in the main use the 5-point Likert response scale of agreement ("Strongly disagree" to "Strongly agree") or frequency ("Never" to "Always")

### ***3.5 Translation and pretesting of HSOPSC***

In Kosovo, there was no valid and reliable instrument to measure the patient safety culture. There are no official statistics or publications in Albanian or other languages for researchers in this field. In absence of official statistics and publications from the field, responsible persons and institutions in Kosovo were asked to report statistics and identify possible reports about patient safety culture instruments (Gjocaj and Beqiri, 2013).

Beqiri and Gjocaj confirmed that in Kosovo there was a significant need to develop such an assessment instrument for patient safety culture.

The questionnaire (HSOPSC) was translated into Albanian for use in the Kosovo. Forward-backward translation was used: the questions were translated into Albanian

by one translator and then translated back into English by an independent translator who was blinded to the original questionnaire.

The questionnaire was translated into the Albanian language by a bilingual healthcare professional and by an expert bilingual translator. The draft translation was then pre-tested by several hospital physicians and nurses as well as by non-clinical staff for comprehension.

The pre-test findings were appropriately incorporated into the final version of the questionnaire. Adaptations were made only in demographic items concerning departmental structure of the participating hospitals and difference in professional groups.

The HSOPSC questionnaire consists of 42 items addressing 7 unit-level, 8 hospital-level aspects of safety culture and 4 outcome variables of which 2 (overall patient safety grade and number of events reported in the last 12 months) were single-item measures.

*Table 1. Short description of Translation steps according to International Society for Pharmaco-economics and Outcome Research*

1	Preparation	✓
2	Pre- translation	✓
3	Comparison	✓
4	Reevaluation	✓
5	Review of evaluation	✓
6	Harmonization	✓
7	Cognitive debriefing	✓
8	Review of cognitive information	✓
9	Proof-reading	✓
10	Final Report	✓

1. Preparation: Original Version of Hospital Survey on Patient Safety Culture is available in web site of AHRQ and the researcher did not require special permission to use it. It is free for all researchers to use.
2. Pre-translation: The questionnaire was translated into the Albanian language by a bilingual healthcare professional and by an expert bilingual translator.
3. Comparison: The draft translation was then pre-tested by several hospital physicians and nurses as well as by non-clinical staff for comprehension and then one version identified.
4. Re-evaluation: The pre-test findings were appropriately incorporated into the final version of the questionnaire
5. Review of Re-evaluation: Different versions of the translations were reviewed by the experts group and were compared with the original version in German.
6. Harmonization: Translation in Albanian language depends on the original version, so before proceeding with any other recommended version, a final version was identified.
7. Cognitive debriefing: The final version was tested by six Nurses / in cooperation with Qeap Heimerer Nursing Students, Regional Hospital of Ferizaj and Regional Hospital of Gjilan. Due to limited time, the questionnaire version in Albanian language was tested with retrospective method. This method is known as a simple and effective method. Individuals were asked what questions were rated as the most difficult and inappropriate. However, the negative side of this pretest was detected within a short time, individuals could not remember all the questions especially if they are double questions or if indeed they know all the information.
8. Review of cognitive information: The intended results are based on the first final version.
9. Proof-reading: According to the recommendations of 6 persons, it was necessary to correct a few minor errors times.
10. Final Report: With the correction of the questionnaire it was agreed this would be the final version which was prepared for pretest.

Inconsistencies in the translations were resolved by discussions between the translators and healthcare and survey professionals comparing source and translated versions.

### **3.6 Ethical issues**

The study protocol was reviewed from The National Ethics Committee in the Ministry

of Health of Kosovo and then the request for permission for research within Kosovo hospitals was taken by the ethical committees of the respective hospitals. Health workers were informed about the purpose of research and given time to be able to decide whether to participate in the research study or not, they had access at any time to be part of the research, they were ensured that the data will remain anonymous and the data given would be taken with caution. A clarifying letter with additional information and with the scope of the study was attached to the questionnaire. The five recommendations APA's Science Directorate were considered, which gives researchers clear direction with regard to ethical quandaries:

1. Discuss intellectual property frankly
2. Be conscious of multiple roles
3. Follow informed-consent rules
4. Respect confidentiality and privacy
5. Tap into ethics resources, (American Psychological Association, 2002).

### ***3.7 Data analysis***

The data collection phase took place from August 2014 until February 2015. All items were encrypted and scaled and the entire questionnaire was included in the database for analysis. The SPSS 21 was used for data analysis.

## **4 Results**

In order to explore the findings of the study, the data analyses involved a combination of descriptive and analytic statistical methods, particularly ANOVA and Post-Hoc tests.

Also, the internal consistency of the patient safety culture dimension for the questionnaire were measured and reported, showing in the discussion section the comparison of implementing of HSOPSC in Kosovo and other countries in Europe and USA.

### ***4.1 Descriptive Statistics for Kosovo Regions***

#### **4.1.1 Frequencies for each questionnaire item and key demographical information of responders**

The total number of questionnaires distributed was 400 with 346 completed questionnaires returned a response rate of 86%.

Only 50 (15.9%) responders worked at the Chirurgical unit, 42 (13.3%) in emergency unit, 42 (13.3%) in pediatrics unit, and the remainder in other hospital units. Most of the responders 205 (65%) either completely agreed or simply agreed that in their unit, people supported each other, however, 83 (26.3%) of them were neutral regarding this issue.

Nearly half of responders 147 (46.7%) agreed that there was sufficient numbers of staff for the given workload, while 103 (33%) disagree with this. The majority, 267 (85.8%) of the medical staff interviewed agreed that when there was a lot of work to be done, they worked together as a team to finish the duties. Most of responders 219 (69.5%) agreed that people treated each other with respect in the given hospital unit. Only 73 (23.2%) of the responders agreed that the unit staff worked after hours to have better patient treatment. A majority 285 (90.5%) of the medical staff said that they were actively engaged in patient safety improvement. Only 123 (39%) of the responders reported using staff from agencies for better patient care. Only 102 (35.3%) of the staff felt that their mistakes were used against them. In addition, a significant number of the staff 214 (68%) agreed that mistakes had led to positive changes. Nearly half of the medical staff 150 (47.6%) agree that it was a matter of luck and chance that bigger and graver mistakes were not happening in the unit. A minority 83 (26.4%) of the responders agreed that when an event was reported, it felt like the individual was being reported, rather than the problem. In addition, a minority 42 (13.4%) of the medical staff agree that they worked in “crisis mode” trying to do too much, too quickly. However, 233 (74%) of the responders felt that patient safety was never sacrificed to get more work done. Fifty seven (18.1%) of the staff worried that mistakes they make were recorded in their personnel file. Nearly half (40%) of the staff agreed that there were patient safety problems in the unit. However, the majority 226 (71.8%) of the responders agreed that the procedures and systems were good at preventing errors from happening.

An overall grade on patients’ safety was given by the responding medical staff and 112 (35.6%) of them valued it as excellent, 278 (36.5%) of them valued it as very good, 68 (21.6%) of them valued it as acceptable, 12 (3.8%) of them valued it as poor, and 5 (1.6%) of them valued it as failing.

The staff reported that 108 (34.3%) of them have not reported any patient safety events, 66 (21%) have reported 1 to 2 patient safety events, 24 (7.6%) have reported

3 to 5 patient safety events, 38 (12.1%) have reported 6 to 10 patient safety events, 27 (8.6%) have reported 11 to 20 patient safety events, and 49 (15.6%) of them have reported more than 20 patient safety events.

#### **4.1.2 Dimension Reliabilities and Internal Consistency**

To determine the reliability and the internal consistency of the patient safety culture questionnaire dimensions, a Cronbach's alpha test was undertaken. The agency for Healthcare Research and Quality in its 2014 User Comparative Database Report of the *Hospital Survey on Patient Safety Culture* recommends a Cronbach's alpha above 0.6 to consider it acceptable. The dimension of Frequency of Events Reporting which has 3 items in it had a Cronbach's alpha value of 0.78. The dimension of Feedback and Communication, also with 3 items, had a Cronbach's alpha value of 0.53, which even though does not reach the recommended value of 0.6, it is above 0.5, and therefore it can be used, even though it has a poor consistency. The dimension of Teamwork across Hospital Units, which consists of 4 items, has a Cronbach's alpha value of 0.51, which also passes the reliability test. The dimension of Supervisor/manager expectations and actions promoting safety has 4 items, and reached the desired Cronbach's alpha value of 0.6. The dimension of Teamwork within Hospital Units had a Cronbach's alpha of 0.71, which is again acceptable. The dimension of Communication Openness, with 3 items in it, had a Cronbach's alpha value of 0.53, which means that this dimension could be used, due to a Cronbach's alpha value being higher than 0.5. The dimension of Hospital Handoffs and Transitions had a Cronbach's alpha of 0.62 which, with 4 items in it.

So most of the dimensions used for this study had a Cronbach's alpha value of above 0.6, which was recommended, while a few of the dimensions had acceptable levels above 0.5, which meant that all the dimensions passed the internal consistency test, and could be considered as reliable, to be used for further study.

In total, HSOPSC has 12 dimensions. Cronbach's  $\alpha$  showed that in the Kosovian society, only 8 dimensions of the Model can be used.

- \* A. Frequency of event =0.78
- \* B. Overall Perceptions of Safety =0.12
- \* C&D. Patient Safety Grade =0.63

#### **III. SAFETY CULTURE DIMENSIONS (Unit level)**



- A. Supervisor /manager expectations & actions promoting safety=0.60
- B. Organizational Learning-Continuous improvement=0.36
- C. Teamwork within hospital units = 0.71
- D. Communication Openness =0.53

### III. SAFETY CULTURE DIMENSIONS (Unit level)

- \* E. Feedback and communication about error =0.53
- \* F. Non punitive response to Error=0.53
- \* G. Staffing= 0.16
- \* H. Hospital Management Support for Patient Safety 0.44

### IV. SAFETY CULTURE DIMENSIONS (Unit level)

- A. Teamwork across Hospital Units =0.51
- B. Hospital Handoffs &Transitions=0.62

## 4.1. 3 Patients Safety Culture Dimensions

A descriptive analysis of the dimensions which contribute to patient safety culture was conducted and presented in this section, giving a general overview for each dimension and comparisons between the eight Kosovo regions in which the survey was conducted.

### 4.1.4 Frequency of Events Reported

The mean reporting of the patient safety events across all Kosovo regions was 3.16 which meant that events on average were reported. These events included mistakes which were made regardless of whether they were caught and corrected before affecting the patients, had no potential to harm the patient, or did not harm the patient but could have harmed him/her. The highest average reporting of the events was in the Gjakova region with a mean of 3.55<sup>1</sup> which meant that in Gjakova, events tended to be reported most of the time or sometimes.

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<sup>1</sup> Likert scale values in the questionnaire were: 1 = Never, 2 = Rarely, 3 = Sometimes, 4 = Most of the time, 5 = Always

The next highest average frequency of events reported were in Prizren ( $\mu=3.32$ ), Prishtina ( $\mu=3.23$ ), Peja ( $\mu=3.22$ ). Other regions had lower than average frequency of events reported starting with Vushtri with a mean of 3.12, Mitrovica ( $\mu=3.05$ ), Gjilan ( $\mu= 2.95$ ) and the lowest was Ferizaj with ( $\mu=2.73$ ). It can therefore be assumed that all the regions tended to lean towards sometimes reporting the events.

In addition to the means of frequency of events reported, it was also important to determine whether there were large variations from the mean, and whether different regions had different variations from their mean events reported. Vushtri had the highest variations of events reported ( $\sigma=1.11$ ) followed closely by Prishtina ( $\sigma=1.10$ ), then Gjakova ( $\sigma=1.052$ ). Other regions such as Prizren Mitrovica, Gjilan, Ferizaj, and Peja came next respectively, with a lower than average standard deviation ranging from  $\sigma=0.89$  to  $\sigma=1.03$ . From this it could be inferred that there were indications and room for further analysis, that Peja, and Ferizaj tended to have more standardized procedures or they tended to follow them more uniformly. This does not necessarily mean that they had better patient safety culture, but simply that they tended to have more uniformity in reporting the events, which meant that high variations from the average reporting were not to be expected in these regions.

The 95% confidence intervals shown in Table 1 ranging mostly between 2.5 and 3.5 suggested that there was a 95% confidence, that the mean reporting of the events which happen was focused around the “sometimes reported”. A few notable cases were Ferizaj, which had a 95% confidence interval lower band of 2.4, and suggested that in Ferizaj there was a reason to further investigate whether Ferizaj regions tended to report events “rarely”. A high upper band of the 95% confidence interval was found for Gjakova (3.89) which suggested that there were reasonable chances for Gjakova to report events “most of the time”.

#### **4.1.5 Feedback and Communication**

The same Likert scale was used for Feedback and Communication as in the case of the Frequency of Events Reported. This Feedback and Communication includes feedback about changes put into place based on event reports, being informed about errors which happened inside the unit, and discussion about ways to prevent errors from repeating.

The mean feedback and communication scale across the total of all regions was 3.85. Gjakova had the highest mean of feedback and communication ( $\mu =4.09$ ) which meant

that in the Gjakova hospital, staff were given feedback and communication happened 'most of the time'. Peja ( $\mu=3.98$ ), Mitrovica ( $\mu=3.88$ ), Prishtina ( $\mu=3.87$ ), Prizren ( $\mu=3.86$ ) had higher than the Kosovo mean of Feedback and Communication respectively, while Gjilan ( $\mu=3.81$ ), Vushtri ( $\mu=3.75$ ), Ferizaj ( $\mu=3.55$ ) had lower than the Kosovo wide mean of Feedback and Communication. This meant that Gjilan, Vushtri and especially Ferizaj also leaned towards discussing and giving feedback about events and errors only 'sometimes', compared to other regions which definitely gave feedback about events 'most of the time'.

Vushtri had the highest variation of Feedback and Communication ( $\sigma=0.95$ ) followed by Gjilan with a standard variation of 0.86. Prishtina and Ferizaj had higher than average standard deviations with  $\sigma=0.85$ , and  $\sigma=0.84$  respectively. The remaining regions had lower standard variations than the Kosovo wide standard variation of 0.79. As in the case of high mean of Feedback and Communication, Gjakova again seemed to be an exemplary case of low variation from the mean with a low standard variation of only 0.48. The next highest standard deviations were Mitrovica ( $\sigma=0.69$ ), Prizren ( $\sigma=0.74$ ), and Peja (0.78). It could be said that Gjakova was a special case to be studied further on how this much lower variance was achieved in their Feedback and Communication, whether they had better procedures to be followed, or whether the procedures were followed more thoroughly by the staff. Overall Feedback and Communication tended to have less variability compared to Frequency of Events Reporting. This was of course also confirmed by the smaller range between the 95% lower and higher confidence intervals, where Kosovo wide they range from the lower band of 3.76 up to the upper band of 3.94. This meant that there was 95% confident that Feedback and Communication was happening at slightly less than 'most of the time' but not too far from it.

#### **4.1.6 Teamwork Across Hospital Units and Teamwork Within Hospital Units**

Given that these two dimensions have similarities, a comparative statistical description of the findings regarding these two topics is outlined in this section.

Further multilevel modelling could be conducted to establish which dimension was more important and had a higher impact on the overall patient safety culture. A first look at the descriptive statistics suggested that teamwork across hospital units Kosovo wide was at a lower mean level ( $\mu=3.56$ ), than teamwork within hospital units ( $\mu=3.92$ ). This could be due to a real significant difference or due to the slightly different composition of these two dimension, given that Teamwork Across Hospital

Units included factors such as cooperation among hospital units, how much the hospitals work together to provide the best care for patients, and how unpleasant it was to work with staff from other hospital units; alternatively, the Teamwork Within Hospital Units dimension included factors such as the support of people to one another, people working as a team when a lot of work needed to be done quickly, people treating each other with respect, and people helping other areas of the unit which were busier.

Regarding the Teamwork across Hospital Units, Gjakova had reported the highest mean of teamwork ( $\mu=3.90$ ), followed by Peja ( $\mu=3.69$ ) and Prishtina ( $\mu=3.62$ ). The other regions reported a lower mean of Teamwork Across Hospital Units, being below the Kosovo wide average: Vushtri ( $\mu=3.52$ ), Gjilan ( $\mu=3.47$ ), Mitrovica ( $\mu=3.44$ ), Prizren( $\mu=3.41$ ), and Ferizaj ( $\mu=3.34$ ). This meant that the respondents on average either were neutral or mostly agree that there was good teamwork across hospital units. Again, Gjakova had the lowest variation from the mean ( $\sigma=0.53$ ) regarding this dimension, and this suggested that we could expect that the high teamwork levels in Gjakova come from some systematic difference and not some random variations.

Similarly, Gjakova led the country regarding Teamwork Within Hospital Units with a mean of 4.14 for this dimension. Prizren ( $\mu=3.96$ ), Gjilan ( $\mu=3.94$ ), Vushtri ( $\mu=3.91$ ) and Mitrovica ( $\mu=3.90$ ) had similar Teamwork means, not extremely lower than Gjakova. Even lower averages for Within Unit Teamwork were reported in Prishtina ( $\mu=3.89$ ), Peja ( $\mu=3.84$ ), and Ferizaj ( $\mu=3.79$ ). Overall, the mean of the teamwork within hospital units ranged from 4 to 3.8 which were values closest with the expression given in the survey "Agree". In other words, respondents tended to agree that there were good levels of teamwork within hospital units. As it can be seen in Table 1, standard deviations for the dimension of Teamwork Within Hospital Units range between about 0.5 and 0.85. Kosovo wide, there was less variation from the mean teamwork within hospital units ( $\sigma=0.66$ ) than the variation from the mean teamwork across hospital units ( $\sigma=0.71$ ).

#### **4.1.7 Supervisor Expectations and Actions Promoting Safety**

Since this dimension is also measured through the same Likert scale ranging from the value of 1=Strongly Disagree to 5=Strongly Agree, the interpretations need to be conducted in this respect. In general, all the regions tended to have a supervisor expectation mean around 4, which meant in general in all the regions of Kosovo there was 'agreement' of good levels of supervisor expectations and actions promoting

safety. These supervisor expectations included encouragement and praise for jobs carried out according to established patient safety instructions, considerations for suggestions coming from staff, and how little the supervisor overlooked patient safety problems that repeatedly happen.

Peja had the highest reported mean of supervisor expectation and actions promoting safety levels ( $\mu=4.31$ ), while Prishtina ( $\mu=3.84$ ) had the lowest mean levels for this patient safety dimension. Almost all the remaining regions reported a mean slightly higher than 4: Prizren ( $\mu=4.17$ ), Gjilan ( $\mu=4.09$ ), Gjakova ( $\mu=4.03$ ), Mitrovica ( $\mu=4.01$ ), Vushtri ( $\mu=4.00$ ), and Ferizaj ( $\mu=3.94$ ). The average Standard Deviation for these regions was around 0.77 which was not very different from other dimensions. The lower 95% confidence interval varied across regions from 3.62 in Prishtina up to 4.1 in Peja. The higher 95% confidence interval for the eight different regions also ranged from 4.0 in Prishtina up to 4.53 in Peja (See Table 1 for further details). This meant that there was 95% confidence that the mean supervisor expectation and actions promoting safety levels were between 3.62 and 4.0 in Prishtina, and between 4.1 and 4.53 in Peja. There was no overlap of 95% confidence interval between these two cities, which meant that there could be a significant difference in supervisor expectation levels, but this will be established through other more reliable statistical methods in other sections.

#### **4.1.8 Communication Openness**

The communication and openness dimension of patient safety culture includes factors such as much staff freely speak up when something is seen with potential negative patient care effects, and the freedom of staff to question decisions and actions of those with more authority.

Gjakova and Prizren had the highest Communication Openness means with  $\mu=4.03$  and  $\mu=4.01$  respectively. All other regions had reported Communication Openness levels with means less than 4, with Ferizaj and Vushtri had the lowest means of 3.37 and 3.47, respectively. It was worth noting that the standard deviations for the regions for this specific dimension were quite high. Many of the regions, such as Ferizaj, Peja, Gjilan, and Vushtri had standard deviations higher than 1. Being that Communication Openness was the dimension with almost the highest standard deviations from all the dimensions, and being that all dimensions were measured in the same Likert Scale, it could be safely concluded that Communication Openness was among the dimensions with the highest variability. This could suggest that people with more authority were

very open when communicating with certain staff members and very closed when communicating with other staff members. A more uniform communication openness for all staff members was lacking across all regions.

#### **4.1.9 Hospital Handoffs and Transition Problems**

All Kosovo regions had both lower means and lower standard deviations for hospital handoffs and transitions, among the lowest from all the dimensions. This suggests poor reported levels of hospital transitions and large agreement levels between staff regarding this low level of hospital handoff and transitions. All hospital transition questionnaire items which composed this dimension were reversely worded. This was the reason why the values in these items need to be interpreted in reverse, where higher values mean more problems in hospital handoffs and transitions, while lower values mean better reported hospital handoffs and transitions. Gjilan had the lowest mean of hospital transitions ( $\mu=2.97$ ) which meant that Gjilan staff had reported best hospital transitions. Vushtri had the second lowest mean ( $\mu=3.2$ ). The regional hospital with the most reported difficulties in hospital handoffs and transitions was Gjakova ( $\mu=3.68$ ), and the other municipalities such as Prishtina, Mitrovica, and Peja were close by regarding hospital transition problems. (See ?????)

#### **4.2 Analysis of Variance (One way anova) between regions**

Simply relying on simple statistical descriptions of the data as shown in the previous section was not sufficient to determine whether there were significant differences between regions regarding the patient safety culture in each regional hospital. Hence, an Analysis of Variance (ANOVA) was conducted in SPSS for all the relevant dimensions which contribute to patient safety. The following paragraphs interpret the results of the ANOVA analysis for each dimension sequentially.

Frequency of Event was one of the dimensions which had significant ( $p=0.037$ ) variation between regions at the 0.05 level.

No significant difference was found between regions regarding Feedback and Communication. ( $p=0.18$ ). So Feedback and Communication variation was suggested by this analysis to be caused by randomness, rather than caused by differences between regions.

The results also showed a significant ( $p=0.014$ ) variation of Teamwork Across Hospital Units explained by the differences between regions. On the other hand, teamwork within hospital units was not found to have significant ( $p=0.47$ ) differences

in variation between regions. It appeared that regional differences between hospitals affected the different teamwork across hospital units, but they did not affect the relationship between individuals.

Supervisor Expectations and Actions Promoting Safety was one of the Patient Safety Culture dimensions which again was not significant at the 5% level. This meant that variations for this dimension were random and were not caused by between regional effects.

Communication Openness was significant ( $p=0.37$ ) at the 5% significance level in the ANOVA analysis. This meant that there was a high probability that the variation in Communication and Openness was caused by regional differences, rather than being random. It was interesting to note in the Post-Hoc Analysis in the following section those regions which were different, and consider the reasons for the differences in these regions regarding Communication and Openness.

The most significant dimension of patient safety culture was Hospital Transitions. A p-value of  $p<0.001$  means that there was a large significant difference in the variations between different regions. In other words, the regional differences seem to affect hospital transitions significantly more than any other patient safety culture dimension.

To sum up, patient safety culture dimensions which have a significant difference between groups were:

- Frequency of Events Reported
- Teamwork Across Hospital Units
- Communication Openness
- Hospital Transitions

While, patient safety culture dimensions which do not have a significant difference between groups were:

- Feedback and Communication
- Supervisor Expectations
- Teamwork Within Hospital Units

See Table 2 for further details of the ANOVA results.

#### **4.3 Post Hoc Tests**

A simple analysis of Variance Test shows whether the variation in the patients' safety dimensions is caused by regional differences, but it did not show whether those

regional differences were caused by a specific region, or by many regions at the same time, and which regions differed more with other regions. For this reason, Post Hoc Tests were conducted for the details of the variance differences for each region.

Given the relatively low number of regions (8 regions), no huge differences in the number of subjects in each region, and other statistical factors, the suitability of each of the three Post Hoc Tests were similar for this case. Therefore, three types of Post Hoc Tests were initially performed (Tukey HSD, Bonferroni, and LSD – least significant difference). However, Tukey HSD was more suitable for use in this study because it was suitable when there are more than 4 regions included, and this study had 8 regions included in the comparison. So only the interpretation of the Tukey HSD test is given in the following paragraphs.

Table 4 shows a matrix of Patient Safety Culture Dimensions which had significantly different variations between regions. As it can be seen in Table 4, Gjakova had more patient safety culture dimensions significantly different from other regions, with seven dimensions in total. Next comes Ferizaj, with five significantly different variations in dimensions, and then Gjilan with four, Prizren with three, Prishtina with two, and Mitrovica, Peja, and Vushtri with only one.

Given the nature of this study, the next paragraphs outline the explanation of patient safety culture dimensions with regard to regional variations. Only dimensions with significant differences in variability are explained.

Regarding Frequency of Events Reported, only Gjakova and Ferizaj had significant ( $p$ -value=0.013) differences in variation between each other, and the rest of municipalities seemed to have similar variation in the Frequency of Events Reported.

Regarding the dimension of Feedback and Communication, again only Gjakova and Ferizaj had significant ( $p$ -value=0.069) differences in variation between each other, while other municipalities were not different from each other and in relation to Gjakova and Ferizaj.



Teamwork across hospital units again was a patient safety culture dimension which was significant with a different variation only when it came to Gjakova. There was a significant difference in variation (according to the Tukey HSD test) between Gjakova and Ferizaj with a p-value of 0.013. Also, Gjakova hospital had significantly (p-value=0.044) different teamwork across hospital units from Prizren hospital. On the other hand, there were no regional hospitals in Kosovo which had significantly different variations in Teamwork within Hospital Units.

Peja was the only region which was significantly different (p-value=0.092), at the 10% significance level, variation in Supervisor Expectations from Prishtina. The rest of the regions had similarities in Supervisor Expectations and Actions Promoting Safety.

Communication Openness was a dimension which was significantly different at the 10% significance level only when it came to comparing Ferizaj with Prizren, and Ferizaj with Gjakova. Any other combination of regional hospitals did not have significance.

Table 2. Matrix of Patient Safety Culture Dimensions with Significant Between Region Variations based on Tukey HSD Post Hoc Test.

	Prishtinë	Ferizaj	Mitrovica	Gjakovë	Peja	Gjilan	Prizren	Vushtri
Prishtinë					Supervisor Expectation (0.092)	Hospital Transitions (0.016)		
Ferizaj				Frequency (0.013) Feedback (0.069) Teamwork AHU (0.013) Communication (0.065)			Communication (0.092)	
Mitrovica						Hospital Transitions (0.026)		
Gjakovë		<b>Frequency (0.013)</b> <b>Feedback (0.069)</b> <b>Teamwork AHU (0.013)</b> <b>Communication (0.065)</b>				<b>Hospital Transitions (0.001)</b>	<b>Teamwork AHU (0.044)</b>	<b>Hospital Transitions (0.081)</b>
Peja	Supervisor Expectations (0.092)							
Gjilan	Hospital Transitions (0.016)		Hospital Transitions (0.026)	Hospital Transitions (0.001)			Hospital Transitions (0.007)	
Prizren		Communication (0.092)		Teamwork AHU (0.044)		Hospital Transitions (0.007)		
Vushtri				Hospital Transitions (0.081)				

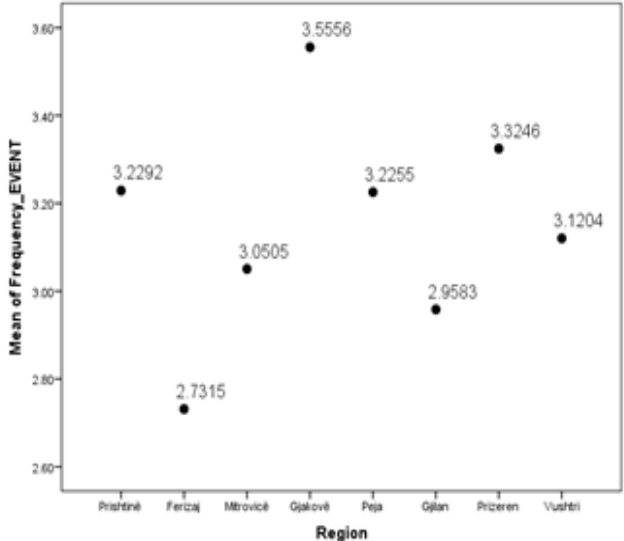
Hospital Transitions, as expected from the previous ANOVA analysis, was a patient safety culture dimension which showed up as a significance when comparing variations between

many regional hospitals, especially Gjilan. Regarding this dimension, there were differences in variation between Gjilan and Prishtina (p-value=0.016), Gjilan and Mitrovica (p-value=0.026), Gjilan and Gjakova (p-value=0.026), Gjilan and Prizren (p-value=0.007), and also Vushtrri and Gjakova (p-value=0.081). This was an indication that there was probably something systematically different in Gjilan in the way they handled hospital transitions.

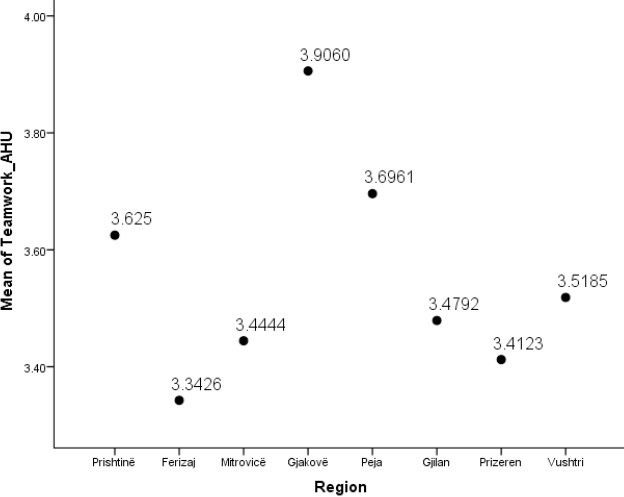
The Post Hoc Analysis with a Tukey HSD test which was interpreted above was also confirmed by the Homogeneous Subsets' in Tables 5, 6, 7, 8, 9, 10 and 11. Since this was a repetitive analysis, to avoid repetition only Table 11 was interpreted. Table 11 shows that there were two subsets for alpha = 0.05, and Gjilan seemed to have significantly different Hospital Transition dimension when compared to Peja, Prishtina, Mitrovica, Prizren, and Gjakova, since Gjilan was only in the first subset, Peja, Prishtina, Mitrovica, Prizren, and Gjakova were only in the second subset. The exception in this case from the other Tables is Table 6 which shows only subset, which meant that the variation in Feedback and Communication across regional hospitals was not significantly different, or in other words the variation in this dimension was random and not dependent on the regional hospital.

#### ***4.4 Graphical representation of patient safety culture dimensions' means***

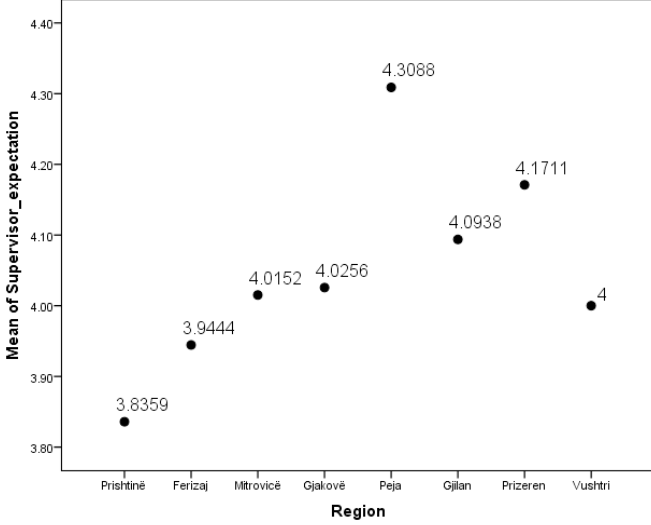
ANOVA was conducted in order to identify differences between 8 health institutions (health providers' perception on safety). The results are presented in a graphical format, to introduce the differences between hospitals. Only the results of 7 dimensions have been interpreted and show good results on the internal consistency test.

Graph	Description																		
 <table border="1" data-bbox="209 315 836 853"> <thead> <tr> <th>Region</th> <th>Mean of Frequency_EVENT</th> </tr> </thead> <tbody> <tr> <td>Prishtinë</td> <td>3.2292</td> </tr> <tr> <td>Ferizaj</td> <td>2.7315</td> </tr> <tr> <td>Mitrovicë</td> <td>3.0505</td> </tr> <tr> <td>Gjakovë</td> <td>3.5556</td> </tr> <tr> <td>Peja</td> <td>3.2255</td> </tr> <tr> <td>Gjiçan</td> <td>2.9583</td> </tr> <tr> <td>Prizren</td> <td>3.3246</td> </tr> <tr> <td>Vushtri</td> <td>3.1204</td> </tr> </tbody> </table>	Region	Mean of Frequency_EVENT	Prishtinë	3.2292	Ferizaj	2.7315	Mitrovicë	3.0505	Gjakovë	3.5556	Peja	3.2255	Gjiçan	2.9583	Prizren	3.3246	Vushtri	3.1204	<p>The Frequency of Events Reported, a Likert Scale from 1 to 5, was the highest in Gjakova hospital with a mean of around 3.5, and the next highest one is Prizren hospital with a mean of around 3.3, followed by Prishtina and Peja with a mean slightly above 3.2. The lowest average frequency of events reported were in Vushtri, Mitrovica, Gjiçan, and Ferizaj, in that order.</p>
Region	Mean of Frequency_EVENT																		
Prishtinë	3.2292																		
Ferizaj	2.7315																		
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Prizren	3.3246																		
Vushtri	3.1204																		

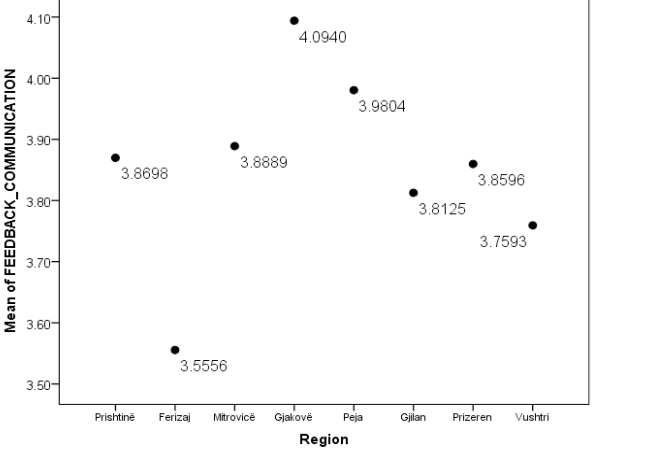
Graph 1. Mean of Frequency events reported

Graph	Description																		
 <table border="1" data-bbox="209 1099 836 1594"> <thead> <tr> <th>Region</th> <th>Mean of Teamwork_AHU</th> </tr> </thead> <tbody> <tr> <td>Prishtinë</td> <td>3.625</td> </tr> <tr> <td>Ferizaj</td> <td>3.3426</td> </tr> <tr> <td>Mitrovicë</td> <td>3.4444</td> </tr> <tr> <td>Gjakovë</td> <td>3.9060</td> </tr> <tr> <td>Peja</td> <td>3.6961</td> </tr> <tr> <td>Gjiçan</td> <td>3.4792</td> </tr> <tr> <td>Prizren</td> <td>3.4123</td> </tr> <tr> <td>Vushtri</td> <td>3.5185</td> </tr> </tbody> </table>	Region	Mean of Teamwork_AHU	Prishtinë	3.625	Ferizaj	3.3426	Mitrovicë	3.4444	Gjakovë	3.9060	Peja	3.6961	Gjiçan	3.4792	Prizren	3.4123	Vushtri	3.5185	<p>Teamwork Across Hospital Units is again a dimension with a high reported mean value in Gjakova. Peja and Prishtina come next with means of around 3.7, while the rest of the regional hospitals like Vushtri, Gjiçan, Mitrovica, Prizren and Ferizaj had much lower mean values for Teamwork Across Hospital Units, all roaming around 3.4 and 3.5.</p>
Region	Mean of Teamwork_AHU																		
Prishtinë	3.625																		
Ferizaj	3.3426																		
Mitrovicë	3.4444																		
Gjakovë	3.9060																		
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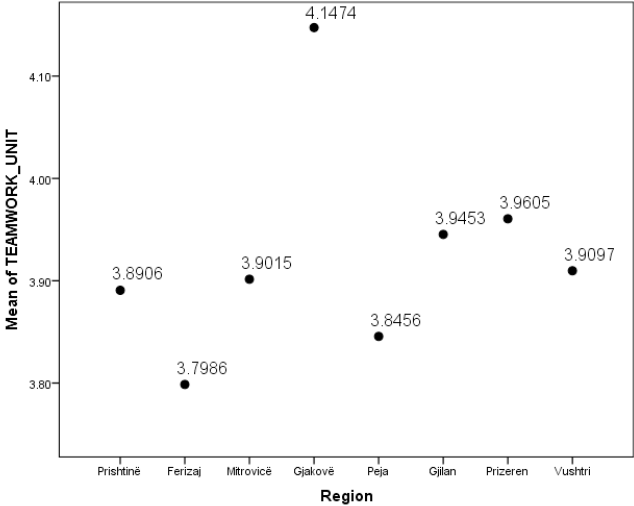
Graph 2. Mean of Teamwork Across Hospital Units

Graph	Description																		
 <table border="1" data-bbox="204 297 858 819"> <caption>Data for Graph 3: Mean of Supervisor Expectations</caption> <thead> <tr> <th>Region</th> <th>Mean of Supervisor Expectation</th> </tr> </thead> <tbody> <tr> <td>Prishtinë</td> <td>3.8359</td> </tr> <tr> <td>Ferizaj</td> <td>3.9444</td> </tr> <tr> <td>Mitrovicë</td> <td>4.0152</td> </tr> <tr> <td>Gjakovë</td> <td>4.0256</td> </tr> <tr> <td>Peja</td> <td>4.3088</td> </tr> <tr> <td>Gjiilan</td> <td>4.0938</td> </tr> <tr> <td>Prizren</td> <td>4.1711</td> </tr> <tr> <td>Vushtri</td> <td>4.0000</td> </tr> </tbody> </table>	Region	Mean of Supervisor Expectation	Prishtinë	3.8359	Ferizaj	3.9444	Mitrovicë	4.0152	Gjakovë	4.0256	Peja	4.3088	Gjiilan	4.0938	Prizren	4.1711	Vushtri	4.0000	<p>The dimension of Supervisor Expectations followed a different pattern from other dimensions, since in this dimension, Peja had the highest mean value, much higher than other regions, at around 4.3. Prizren, Gjiilan, Vushtri, Gjakova, and Mitrovica come next at slightly above 4. Ferizaj and Prishtina came last with a mean which was below 4, in a Likert Scale from 1 to 5.</p>
Region	Mean of Supervisor Expectation																		
Prishtinë	3.8359																		
Ferizaj	3.9444																		
Mitrovicë	4.0152																		
Gjakovë	4.0256																		
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Gjiilan	4.0938																		
Prizren	4.1711																		
Vushtri	4.0000																		

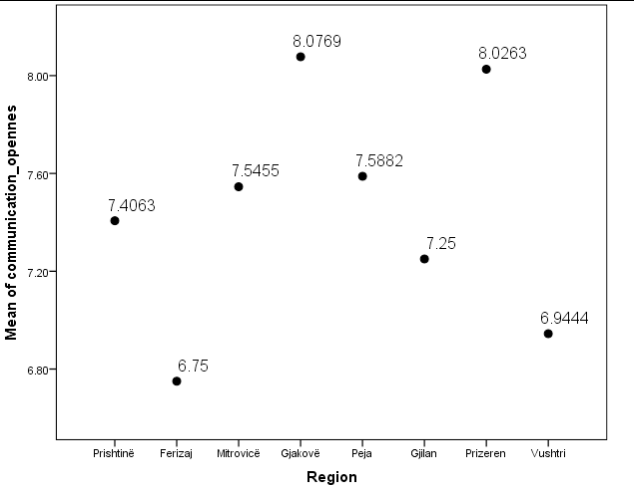
*Graph 3. Mean of Supervisor Expectations*

Graph	Description																		
 <table border="1" data-bbox="204 1140 858 1606"> <caption>Data for Graph 4: Mean of Feedback and Communication</caption> <thead> <tr> <th>Region</th> <th>Mean of Feedback Communication</th> </tr> </thead> <tbody> <tr> <td>Prishtinë</td> <td>3.8698</td> </tr> <tr> <td>Ferizaj</td> <td>3.5556</td> </tr> <tr> <td>Mitrovicë</td> <td>3.8889</td> </tr> <tr> <td>Gjakovë</td> <td>4.0940</td> </tr> <tr> <td>Peja</td> <td>3.9804</td> </tr> <tr> <td>Gjiilan</td> <td>3.8125</td> </tr> <tr> <td>Prizren</td> <td>3.8596</td> </tr> <tr> <td>Vushtri</td> <td>3.7593</td> </tr> </tbody> </table>	Region	Mean of Feedback Communication	Prishtinë	3.8698	Ferizaj	3.5556	Mitrovicë	3.8889	Gjakovë	4.0940	Peja	3.9804	Gjiilan	3.8125	Prizren	3.8596	Vushtri	3.7593	<p>Once again, Gjakova had the highest mean value even when it came to Feedback and Communication, with a value of around 4.1. Peja, Mitrovica and Prishtina came next with a mean value around 3.9. Gjiilan, Prizren, and Vushtri had a mean around 3.8. Ferizaj was very low when it came to the Feedback and Communication dimension, with a mean of slightly above 3.5.</p>
Region	Mean of Feedback Communication																		
Prishtinë	3.8698																		
Ferizaj	3.5556																		
Mitrovicë	3.8889																		
Gjakovë	4.0940																		
Peja	3.9804																		
Gjiilan	3.8125																		
Prizren	3.8596																		
Vushtri	3.7593																		

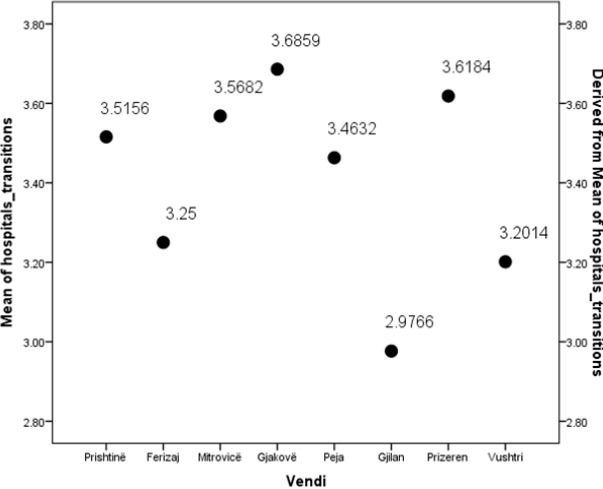
*Graph 4. Mean of Feedback and Communication*

Graph	Description																		
 <table border="1" data-bbox="204 297 841 801"> <caption>Data for Graph 5: Mean of Teamwork Within Hospital Units</caption> <thead> <tr> <th>Region</th> <th>Mean of Teamwork Unit</th> </tr> </thead> <tbody> <tr> <td>Prishtinë</td> <td>3.8906</td> </tr> <tr> <td>Ferizaj</td> <td>3.7986</td> </tr> <tr> <td>Mitrovicë</td> <td>3.9015</td> </tr> <tr> <td>Gjakovë</td> <td>4.1474</td> </tr> <tr> <td>Peja</td> <td>3.8456</td> </tr> <tr> <td>Gjilan</td> <td>3.9453</td> </tr> <tr> <td>Prizren</td> <td>3.9605</td> </tr> <tr> <td>Vushtri</td> <td>3.9097</td> </tr> </tbody> </table>	Region	Mean of Teamwork Unit	Prishtinë	3.8906	Ferizaj	3.7986	Mitrovicë	3.9015	Gjakovë	4.1474	Peja	3.8456	Gjilan	3.9453	Prizren	3.9605	Vushtri	3.9097	<p>Teamwork Within Hospital Units, also like all dimensions being a Likert Scaler from 1 to 5, was the highest in Gjakova hospital with a mean of around 4.2, and the next highest one was Prizren hospital with a mean of around 3.95, followed by Gjilan and Vushtri with a mean slightly above 3.9. The lowest average frequency of events reported were in Mitrovica, Prishtina, Peja, and Ferizaj, in that order.</p>
Region	Mean of Teamwork Unit																		
Prishtinë	3.8906																		
Ferizaj	3.7986																		
Mitrovicë	3.9015																		
Gjakovë	4.1474																		
Peja	3.8456																		
Gjilan	3.9453																		
Prizren	3.9605																		
Vushtri	3.9097																		

Graph 5. Mean of Teamwork Within Hospital Units

Graph	Description																		
 <table border="1" data-bbox="204 1088 841 1570"> <caption>Data for Graph 6: Mean of Communication Openness</caption> <thead> <tr> <th>Region</th> <th>Mean of communication_opennes</th> </tr> </thead> <tbody> <tr> <td>Prishtinë</td> <td>7.4063</td> </tr> <tr> <td>Ferizaj</td> <td>6.75</td> </tr> <tr> <td>Mitrovicë</td> <td>7.5455</td> </tr> <tr> <td>Gjakovë</td> <td>8.0769</td> </tr> <tr> <td>Peja</td> <td>7.5882</td> </tr> <tr> <td>Gjilan</td> <td>7.25</td> </tr> <tr> <td>Prizren</td> <td>8.0263</td> </tr> <tr> <td>Vushtri</td> <td>6.9444</td> </tr> </tbody> </table>	Region	Mean of communication_opennes	Prishtinë	7.4063	Ferizaj	6.75	Mitrovicë	7.5455	Gjakovë	8.0769	Peja	7.5882	Gjilan	7.25	Prizren	8.0263	Vushtri	6.9444	<p>Communication openness means range between around 3.4 and 4 in all regions. Gjakova and Prizren had the highest values, around 4, followed next by Peja and Mitrovica, at around 3.8, followed by Prishtina and Gjilan at around 3.7, lastly followed by Vushtri and Ferizaj at around 3.5 and 3.4 respectively.</p>
Region	Mean of communication_opennes																		
Prishtinë	7.4063																		
Ferizaj	6.75																		
Mitrovicë	7.5455																		
Gjakovë	8.0769																		
Peja	7.5882																		
Gjilan	7.25																		
Prizren	8.0263																		
Vushtri	6.9444																		

Graph 6. Mean of Communication openness

Graph	Description																		
 <table border="1" data-bbox="220 315 826 801"> <caption>Data for Graph 7: Mean of Hospital Transitions</caption> <thead> <tr> <th>Vendi</th> <th>Mean of hospitals_transitions</th> </tr> </thead> <tbody> <tr> <td>Prishtinë</td> <td>3.5156</td> </tr> <tr> <td>Ferizaj</td> <td>3.25</td> </tr> <tr> <td>Mitrovicë</td> <td>3.5682</td> </tr> <tr> <td>Gjakovë</td> <td>3.6859</td> </tr> <tr> <td>Peja</td> <td>3.4632</td> </tr> <tr> <td>Gjiann</td> <td>2.9766</td> </tr> <tr> <td>Prizren</td> <td>3.6184</td> </tr> <tr> <td>Vushtrri</td> <td>3.2014</td> </tr> </tbody> </table>	Vendi	Mean of hospitals_transitions	Prishtinë	3.5156	Ferizaj	3.25	Mitrovicë	3.5682	Gjakovë	3.6859	Peja	3.4632	Gjiann	2.9766	Prizren	3.6184	Vushtrri	3.2014	<p>Hospital Transitions was one of the dimensions with the lowest means across all hospital regions. Like most of the other patient safety culture dimensions, Gjakova had compares best in this dimension as well. Prishtina, Mitrovica, Peja, and Prizren come slightly below it, while Ferizaj, Vushtrri and Gjiann were much lower, when it came to the mean of the reported factors which contributed towards the hospital transition dimension.</p>
Vendi	Mean of hospitals_transitions																		
Prishtinë	3.5156																		
Ferizaj	3.25																		
Mitrovicë	3.5682																		
Gjakovë	3.6859																		
Peja	3.4632																		
Gjiann	2.9766																		
Prizren	3.6184																		
Vushtrri	3.2014																		

Graph 7. Mean of Hospital Transitions

#### 4.5 Descriptive Statistics for Different Professions

Different medical professions such as nurses, pharmacists, technicians etc. can have different attitudes towards patient safety. Given that the survey used for this study had a limited sample size (n=312), only a few professions were surveyed in sufficient number to give a better view of means, standard deviations, and confidence intervals for those professions, and these statistical parameters are only made for a sufficiently large sample. Therefore, only the results for registered nurses (183 interviewed), assistant doctor/nurses (47 interviewed), and shift doctors (13 interviewed), will be interpreted while the other professions such as LVN/LPN, management/administration, resident doctor, pharmacist do not have sufficiently large samples to be reliably interpreted.

Frequency of events tended to be more reported by assistant physicians, with a mean of 3.17, than by nurses who had a mean of 3.06. On the other hand, the dimension of feedback and communication was almost the same among registered nurses and assistant physicians (mean=3.85). Registered nurses had reported a mean of 3.58 for the dimension of Teamwork across Hospital Units, which was higher compared to assistant physicians with a

mean of 3.5. Teamwork within Hospital Units seemed to be almost the same with assistant physicians (3.87) and nurses (3.91). Assistant physicians had reported slightly better supervisor expectations on average (4.18) compared to nurses (4.01). There seemed to be a difference between nurses and assistant physicians regarding their agreement levels for communication and openness levels across Kosovo regional hospitals; nurses had a mean value of 3.71 out of 5, while assistant physicians had a mean value of 3.59 out of 5. Hospital transitions seemed to be better reported by assistant physicians, compared to nurses.<sup>2</sup> See Annex 2 for further details.

#### **4.6 Analysis of Variance between Professions**

An analysis of variance ANOVA was conducted in SPSS to determine whether the differences in variation of the patient safety culture dimensions used for this study stem from professional differences of medical staff and no significant between group differences were found for any dimension. Frequency of Events Reported had a p-value of 0.381, Feedback and Communication – 0.055, Teamwork Across Hospital Units – 0.903, Supervisor Expectations – 0.314, Teamwork within Hospital Units – 0.904, Communication Openness – 0.673, and Hospital Transitions – 0.442. There could be two reasons why no significant differences were found between professions in relation to their patient safety culture. The first reason was that there might really be no significant difference in this aspect between the professions, while the second reason could be that there was insufficient data to establish this, due to a large number of professions in the survey, with only a few or a couple of responses.

## **5 Discussion**

The current research has explored the factors that affect the patient safety culture of Health Care Providers who work in the public hospitals. The strength of the study was its representativeness because 100% of all secondary care of the public sector in Kosovo was surveyed. This would appear to be, the first nationwide research in this field in Kosovo. The

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<sup>2</sup> The questions for this dimension were negative questions, hence a smaller mean for this dimension means better hospital transition, and vice versa.



high response rate helps ensure that these results reflect views of persons working in the Hospitals of Kosovo.

In general, the HSOPSC is a psychometrically sound instrument for assessing 12 safety-related culture domains. The Cronbach's  $\alpha$  was .78 and was considered good. In the relevant literature, the overall Cronbach's  $\alpha$  ranged from .81 to .90, whereas the Cronbach's  $\alpha$ 's for eight domains was deemed to be acceptable (Perri et al. 2009, Huang et al. 2010, Sexton et al. 2000, Raftopoulos 2011 and Dekas 2008).

In the eight-factor model, the internal consistency of the factors and the construct validity of the HSOPSC questionnaire were mostly satisfactory. The construct validity was sufficient for all subscales, except for the 4 other subscale regarding intention to report incidents which correlated poorly with other subscales. The hypothesis that the patient safety culture topic was an important challenge to all interested health care providers who wish to improve patient safety, was confirmed. The hypothesis that HSOPSC would be a suitable instrument to provide important indicators for the improvement of patient safety culture was tested and it was confirmed, that HSOPSC could be used as 8 dimension model.

This study has shown the findings for the patient safety culture in many different forms, including simple descriptive statistics, ANOVA, and Post-Hoc tests.

Also, the internal consistency of the patient safety culture dimensions for the questionnaire has been measured and reported, showing that most of the dimensions are sufficiently consistent and can be used for the study.

The ANOVA analysis showed that only some of the dimensions were significantly different between regions; these dimensions are:

- Frequency of Events Reported
- Teamwork Across Hospital Units
- Communication Openness
- Hospital Transitions

Post Hoc Tests were also conducted to show which regions exactly contributed in the differences of the aforementioned patient safety culture dimensions. These tests showed

that Gjakova and Ferizaj had the largest number of dimensions of patient safety which differed significantly from one another.

One of the factors which could contribute to the differences or higher values in patient safety culture in Gjakova could be that Gjakova has sustainable leadership structures in the institution while Ferizaj has frequent changes in the higher hierarchical levels. One other factor could be (but this is highly speculative) that the general population in Gjakova tends to have a slightly different culture and a tendency to display a better image about themselves than in reality.

One aspect which this study also took into consideration was whether there were significant differences in patients' safety culture between different professions. The main findings regarding this were:

1. Assistant physicians tended to report events more frequently. This could be due to the fact that assistant physicians had a higher level of support from the general physicians, while other staff probably do not have such support, and they might not have as much punishment for the incident reported.
2. Assistant physicians had better supervision expectations compared to nurses.
3. Assistant physicians reported better hospital transition levels compared to nurses.

The rest of the patient safety culture dimensions were not statistically different between professions. Nevertheless, there might have been other differences which were not captured by this study for other professions, but since the number of respondents for some of the other professions was very low (less than 20), reliable conclusions regarding those professions could not be reached.

The current research explored the factors that affected the patient safety culture of Kosovo health care workers who work in the public hospitals. The strength of the study was its representativeness because 15% of all health care workers who work in the public sector in Kosovo were surveyed. This would appear to be the first nationwide research in the field in Kosovo. The high response rate helps ensure that these results reflect views of persons working in the hospitals of Kosovo.

In general, the HSOPSC is a psychometrically sound instrument for assessing 12 safety-related culture domains. The Cronbach's  $\alpha$  was .78 and was considered good in Kosovo.

Translated and back translated questionnaire was assessed for internal consistency. In total, HSOPSC has 12 dimensions. Cronbach's  $\alpha$  showed that in Kosovo society, only 8 dimensions Model could be used.

In different European countries exploratory factor analysis and confirmatory factor analysis (CFA) showed that some modifications were necessary. The Dutch translated version of HSOPSC showed an 11-factor model (Smits et al.2008), the German version disclosed an 8-factor model (Pfeiffer and Manser, 2010), the UK sample showed a 9-factor model (Waterson et al., 2010) and the Scottish sample revealed a 10-factor model (Sarac et al. 2011).

In the present study three models were explored: the original AHRQ 12-factor, 42-item model; the 9-factor, 39-item model and nested 9-factor, 42-item model to identify how they fit the Albanian data. Principal component analysis (PCA) findings indicated an alternative 8-factor model which only slightly differed from the original 12-factor model.

Comparing the factor structures of the various applications of the HSPSC in Europe to the original pilot tested US version, most of the 12 dimensions showed similar patterns in the Cronbach's alpha. for example, dimensions with a high Cronbach's alpha, such as 'frequency of event reporting' received relatively high Cronbach's alpha in the European studies as well and dimensions with a low Cronbach's alpha, such as 'Staffing', also received a relatively low Cronbach's alpha. Surprisingly, the three dimensions 'Organisational learning', 'teamwork across hospital units' and 'overall perceptions of safety' resulted in distinctly lower Cronbach's alpha in the european HSPSC version, compared to the results of Sorra and Nieva (Sorra and Nieva 2004).

The available evidence from studies (Hammer et al. 2013) conducted in Europe suggested that the HSPSC instruments developed on the basis of the original US version have to be adapted carefully to other national and/or healthcare contexts regarding terminology but also for more systems related issues. For example, in some European countries (e.g. Switzerland) the use of agency staff in nursing was relatively uncommon. Also, whether teams are comprised of flexible or stable members of staff may affect the safety issues encountered. Moreover, the role of hospital management and the way it was organized differs slightly between hospital types but also as a consequence of national or regional

regulations. All of these issues need to be considered carefully when adapting, conducting and interpreting the results of a patient safety climate survey. It is also believed that these decisions should be supported by careful analyses of the psychometric characteristics of the respective safety climate instruments.

### ***5.1 Adaptations of the HSPSC to Various Languages and National Healthcare Systems***

Of the 14 published papers on psychometric properties only a few provided information on the translation and adaptation processes. Among those who did, most described a forward-backward-translation process of the HSPSC from the original American English version into their native language (Bodur and Filiz 2010, Olsen 2007, 2008; Pfeiffer and Manser 2010). It also seemed that the majority of changes or revisions in items were due to different interpretations of terminology (e.g. Bodur and Filiz 2010; Pfeiffer and Manser 2010), the addition of further items or measures of new dimensions (Hedsköld et al. 2013; Ocelli et al. 2013; Pfeiffer and Manser 2010; Sarac et al. 2011), or the removal of items from the measure (e.g. Hammer et al. 2011; Waterson et al. 2010).

As part of its international use, the HSPSC has also been administered in countries such as England and Scotland where English is the native language. Even in those countries adaptations were not only necessary with regard to American versus British English but also with regard to differences in the healthcare systems and the uses of terminology. For example, in England the terms 'area' and 'unit' had to be changed to 'ward' and 'department' respectively. On the other hand, in Scotland the term 'event' was changed to 'incident' (Sarac et al. 2011; Waterson et al. 2010).

### ***5.2 Limitations***

There are some limitations that need to be considered while interpreting these results.

1. The first limitation is the methodology used. Self-reported questionnaires are well known for the bias that they reflect in the study, mainly due to the social desirability. Although the last research from Hammer et al. shows that from a measurement perspective, "... safety climate can be conceived of as a 'snapshot', or manifestation of culture" (Cox and Flin 1998; Naevestad 2009) that can be assessed using quantitative measures, while safety culture might rather be assessed qualitatively. "Nevertheless, a huge number of studies on safety

culture actually measure safety climate using questionnaires“(Cooper 2000).

2. Knowing the sensitivity of topic, where the health care providers declare that there was a very present the culture of blame. The sensitivity of the topic and the fact that blaming culture was prevalent may mean that the results were affected and did not fully represent the reality in the field.

3. There might be a slight selection bias in the sample of 346 sample, 315 completed the questionnaire. There could be a tendency among those who have not completed the questionnaires to have done so because they tried to avoid reporting lower values for the patient safety culture. This means that the findings as reported in this study may be slightly more optimistic than in reality. The 31 respondents who did not complete the questionnaires were perhaps more likely to have had a 'lower' opinion about the patient safety culture in their institution. This could be due to many reasons, including fear from punishment if they declare the incidents.

4. Comparison between hospitals at national level and the desirable response may mean that the results were affected and do not fully represent the reality in the field.

5. Another limitation of the study was that the survey was conducted taking into account only the public sector; however, the numbers of health care workers in the private sector were very few.

6. There was also a lack of qualitative data. According to Cooper 2000; Gershon et al. 2004, 2007; Guldenmund 2000 safety climate serves as a quantifiable surrogate parameter of safety culture, this study has been the first step of measurement on patient safety culture in Kosovo.

7. Another limitation was the reluctance of most medical doctors to participate in the study. Although most nurses were health care professionals working in secondary health care environments, the opinion of medical doctors would reflect a more comprehensive view concerning safety culture. The very low participation rate of medical doctors in the research studies conducted in Kosovo is common. A possible explanation could be that there was no

program on patient safety culture in Kosovo that empowers them to participate in studies and to understand their importance.

8. The HSOPSC is a psychometrically sound instrument in the Albanian language. Cronbach's  $\alpha$ 's for the subscales were acceptable. It is noteworthy that a high coefficient  $\alpha$  does not always mean a high degree of internal consistency. This is because  $\alpha$  is also affected by the length of the test. If the test length is too short, the value of  $\alpha$  is reduced (Nunnally 1994 and Streiner 2003). It should be noted that  $\alpha$  is a property of the scores on a test from a specific sample of testes. As a result, a further use of the scale in another sample was recommended to test the Cronbach's  $\alpha$  of these domains.

Again, the HSOPSC as a tool by itself, lacks a measurement for implementation of actions needed to correct safety culture and does not completely cover the policies and procedures that need to be improved; however, these findings could be used for further research and could be a point of origin to acquire a patient safety measurement tool for Kosovo.

## **6 Conclusions**

The aim of the study was to clarify the research questions as follow:

Has the instrument appropriate reliability and validity to assess the Patients Safety Culture within in Kosovo?

The results show the measuring instrument HSOPSC is adequate for measuring patient safety culture in hospitals in Kosovo.

The results show clearly that important aspects of patient safety culture in hospitals are in need of improvement.

Evaluation of the culture for patient safety confirms the need for a national long-term initiative to improve patient safety culture and provide each hospital with a basic profile on patient safety culture and a recommendation for an oriented plan in intervention.

By analyzing the results identified areas and dimensions of the safety culture that require different approaches and the need for litigation for the implementation and planning and for interventions to improve the safety culture.

The overall satisfaction with the patient safety culture would appear to be high, however, 49% of participants report that the actions of hospital management would appear not to show that patient safety is a top priority for them.

In addition, the results shows that 34.6% of participants in the past 12 months did not report any case of errors at work and 21.2% declared to have at least one incident. Thirty-five point one percent of respondents claimed that they 'never' or 'rarely' report when a mistake was made that could harm the patient but patient did not know. On the other hand, the results showed one of many reasons for this would appear to be that 27% of health providers were afraid to ask questions when something did not seems right. There was obviously much education, training and research needed within this area in order that staff gain confidence in the health systems and management of these systems.

There also needs to be education within the general population with Kosovo that users of the health system feel confident with the service and that they could raise concerns with staff knowing that staff would report such incidents.

#### Future Research

This study had identified areas for future research to add to the body of knowledge:

1. Compare new graduate staff with older staff to identify if patient safety is inherent in nurse training and therefore achieving patient safety in the health units
2. Compare patient safety in different units such as mental health, learning disabilities, physical or care of older people.
3. Identify medical staff (all healthcare providers) knowledge and perceived responsibility for patient safety.

## 7 References

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## 8 Theses

1. All hospitals must measure continuously patient safety culture using the HSOPSC in Albanian.
2. Provide feedback to the leadership and staff and develop a culture of openness and trusting with regard to patient safety. Establishing safety committee with health care providers and patients.
3. Hospitals must undertake interventions that will reduce patient safety risk, such as training staff, establishing protocols, policies to increase culture of patient safety in all hospitals.
4. The results showed that important aspects of patient safety culture in hospitals are in need of improvement, such as reporting critical incidents, involving patients more in decision-making for their treatment. CIRS – is a model that could be very helpful for the health system overall, including training for health care providers and promotion of CIRS.
5. Evaluation of national culture for patient safety confirm the need for a national long-term initiative to improve patient safety culture and provide each hospital a basic profile on patient safety culture and make recommendation for an oriented plan in intervention.
6. A program of risk management on Hospitals should be present and available for all health providers.
7. Development and inclusion of Modules: Patient Safety and Culture of Patient Safety in Study Programs of Health Profiles in Bachelor and Master Sciences.

## 9 Curriculum Vitea

MScNH NAIME BRAJSHORI      Year of Birth: 29.03.1985, Prishtinë

### Education and Graduation

Since 2011	Doctoral Studies at Martin Luther University, Halle-Wittenberg
2008- 2011	Master of Sciences in Health and Nursing Sciences at Medical Faculty, Institute of Health Sciences and Nursing, Martin Luther University, Halle-Wittenberg, The Effects of Transitions, That Affect the Safety and Health Promotion at Workplace to Nursing Personnel (An Example from South Eastern Europe).
2007-2008	Studienkolleg, DSH Course, Martin Luther University , Preparation for Master Studies
2004-2007	Bachelor of Nursing, Department of Nursing and Midwifery, Faculty of Medicine, University of Prishtina, Kosovo & Caledonian University, Glasgow, Scotland
1999-2003	Diploma of Nursing, Secondary school: Professional Medical School: Dr. Ali Sokoli, Prishtinë, Kosovo
2009-2010	DAAD Scholarchip

### Professional Carrier

Since 2010	Lecturer at FHS Qeap Heimerer, Prishtine, Kosovo for Bachelor and Master Programs Studies in Health Sciences
2009 -2015	Lecturer at University of Prishtina, Medical Faculty, Department of Nursing and Midwifery
Since 2013	Deptyu Director at FHS Qeap Heimerer
2012-2016	Scientific Expert at Tempus Project- Insteap: Interdeisciplinary structure reformation and innovative higher education for new professions.

Halle an der Saale im Februar 2016

## Publications in regional and international conferences

Brajshori N, Beqiri P, Jahn P, (2011). The Effects of Transitions, that Affect the Safety and Health Promotion at Workplace to Nursing Personnel (An Example from South Eastern Europe). "Instituti Alb-Shkenca, Transcripts no. 6, Prishtinë, 1-4 September 2011. ISBN 978-9951-518-10-9. page 508.

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**Brajshori N**, Behrens J, (2014). Culture of Patient Safety in Kosovo Hospital, a multicenter study. Annual International Conference of Public Health Faculty, Maribor, Slovenia.

## **10 Independence declaration**

With this I want to ensure you that the work presented here is realized by me, without any illegitimate help by third persons and without using other sources, apart of the ones that has been cited.

Thoughts, data and concepts taken in direct or indirect form has been declared under the source of the author's reference.

I confirm that for the preparation of the content presented in this project I haven't received any paid service or help.

Halle an der Saale, February 2016

Naime Brajshori

## **11 Declaration on previous attempts for Promotion**

Moreover, I ensure you that the doctoral thesis presented here was not presented in any other faculty within or outside the country.

With this I require to start the procedure of the doctoral exam for the first time in the Medical Faculty of the University Martin Luther Halle-Wittenberg. There is no other previous attempt made by me for the doctoral exam.

Halle an der Saale, January 2016

## **12 Acknowledgement**

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## **13 Annex**

13.1 Hospital Survey on Patient Safety Culture (English)

13.2 Permission from Ethic Research Committee of SHSKUK, Kosovo

13.3 *Descriptive Statistics for Patient Safety Culture Dimensions for each Kosova region and Kosovo wide*

13.4 Descriptive Statistic for Different Professions

# Hospital Survey on Patient Safety

## Instructions

This survey asks for your opinions about patient safety issues, medical error, and event reporting in your hospital and will take about 10 to 15 minutes to complete.

If you do not wish to answer a question, or if a question does not apply to you, you may leave your answer blank.

- An **“event”** is defined as any type of error, mistake, incident, accident, or deviation, regardless of whether or not it results in patient harm.
- **“Patient safety”** is defined as the avoidance and prevention of patient injuries or adverse events resulting from the processes of health care delivery.

### SECTION A: Your Work Area/Unit

In this survey, think of your “unit” as the work area, department, or clinical area of the hospital where you spend most of your work time or provide most of your clinical services.

What is your primary work area or unit in this hospital? Select ONE answer.

- |  |  |  |
|--|--|--|
| <input type="checkbox"/> a. Many different hospital units/No specific unit | <input type="checkbox"/> h. Psychiatry/mental health | <input type="checkbox"/> n. Other, please specify:       |
| <input type="checkbox"/> b. Medicine (non-surgical)                        | <input type="checkbox"/> i. Rehabilitation           | <input style="width: 150px; height: 15px;" type="text"/> |
| <input type="checkbox"/> c. Surgery  | <input type="checkbox"/> j. Pharmacy                 |  |
| <input type="checkbox"/> d. Obstetrics                                     | <input type="checkbox"/> k. Laboratory               |  |
| <input type="checkbox"/> e. Pediatrics                                     | <input type="checkbox"/> l. Radiology                |  |
| <input type="checkbox"/> f. Emergency department                           | <input type="checkbox"/> m. Anesthesiology           |  |
| <input type="checkbox"/> g. Intensive care unit (any type)                 |  |  |

Please indicate your agreement or disagreement with the following statements about your work area/unit.

Think about your hospital work area/unit...	Strongly Disagree ▼	Disagree ▼	Neither ▼	Agree ▼	Strongly Agree ▼
1. People support one another in this unit .....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
2. We have enough staff to handle the workload.....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
3. When a lot of work needs to be done quickly, we work together as a team to get the work done .....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
4. In this unit, people treat each other with respect .....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
5. Staff in this unit work longer hours than is best for patient care .....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5



**SECTION A: Your Work Area/Unit (continued)**

	Strongly Disagree ▼	Disagree ▼	Neither ▼	Agree ▼	Strongly Agree ▼
Think about your hospital work area/unit...					
6. We are actively doing things to improve patient safety .....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
7. We use more agency/temporary staff than is best for patient care .....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
8. Staff feel like their mistakes are held against them .....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
9. Mistakes have led to positive changes here .....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
10. It is just by chance that more serious mistakes don't happen around here .....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
11. When one area in this unit gets really busy, others help out .....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
12. When an event is reported, it feels like the person is being written up, not the problem .....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
13. After we make changes to improve patient safety, we evaluate their effectiveness .....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
14. We work in "crisis mode" trying to do too much, too quickly .....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
15. Patient safety is never sacrificed to get more work done .....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
16. Staff worry that mistakes they make are kept in their personnel file .....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
17. We have patient safety problems in this unit .....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
18. Our procedures and systems are good at preventing errors from happening .....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

**SECTION B: Your Supervisor/Manager**

Please indicate your agreement or disagreement with the following statements about your immediate supervisor/manager or person to whom you directly report.

	Strongly Disagree ▼	Disagree ▼	Neither ▼	Agree ▼	Strongly Agree ▼
1. My supervisor/manager says a good word when he/she sees a job done according to established patient safety procedures .....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
2. My supervisor/manager seriously considers staff suggestions for improving patient safety .....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
3. Whenever pressure builds up, my supervisor/manager wants us to work faster, even if it means taking shortcuts .....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
4. My supervisor/manager overlooks patient safety problems that happen over and over .....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

**SECTION C: Communications**

How often do the following things happen in your work area/unit?

Think about your hospital work area/unit...	Never ▼	Rarely ▼	Some- times ▼	Most of the time ▼	Always ▼
1. We are given feedback about changes put into place based on event reports.....	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
2. Staff will freely speak up if they see something that may negatively affect patient care .....	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
3. We are informed about errors that happen in this unit .....	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
4. Staff feel free to question the decisions or actions of those with more authority .....	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
5. In this unit, we discuss ways to prevent errors from happening again .....	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
6. Staff are afraid to ask questions when something does not seem right ....	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>

**SECTION D: Frequency of Events Reported**

In your hospital work area/unit, when the following mistakes happen, how often are they reported?

	Never ▼	Rarely ▼	Some- times ▼	Most of the time ▼	Always ▼
1. When a mistake is made, but is <i>caught and corrected before affecting the patient</i> , how often is this reported?.....	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
2. When a mistake is made, but has <i>no potential to harm the patient</i> , how often is this reported? .....	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
3. When a mistake is made that <i>could harm the patient</i> , but does not, how often is this reported?.....	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>

**SECTION E: Patient Safety Grade**

Please give your work area/unit in this hospital an overall grade on patient safety.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>
Excellent	Very Good	Acceptable	Poor	Failing

**SECTION F: Your Hospital**

Please indicate your agreement or disagreement with the following statements about your hospital.

Think about your hospital...	Strongly Disagree ▼	Disagree ▼	Neither ▼	Agree ▼	Strongly Agree ▼
1. Hospital management provides a work climate that promotes patient safety.....	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
2. Hospital units do not coordinate well with each other.....	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
3. Things "fall between the cracks" when transferring patients from one unit to another .....	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
4. There is good cooperation among hospital units that need to work together.....	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>

**SECTION F: Your Hospital (continued)**

<b>Think about your hospital...</b>	<b>Strongly Disagree</b> ▼	<b>Disagree</b> ▼	<b>Neither</b> ▼	<b>Agree</b> ▼	<b>Strongly Agree</b> ▼
5. Important patient care information is often lost during shift changes .....	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
6. It is often unpleasant to work with staff from other hospital units .....	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
7. Problems often occur in the exchange of information across hospital units.....	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
8. The actions of hospital management show that patient safety is a top priority .....	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
9. Hospital management seems interested in patient safety only after an adverse event happens.....	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
10. Hospital units work well together to provide the best care for patients .....	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
11. Shift changes are problematic for patients in this hospital.....	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>

**SECTION G: Number of Events Reported**

**In the past 12 months, how many event reports have you filled out and submitted?**

- |  |  |
|--|--|
| <input type="checkbox"/> a. No event reports     | <input type="checkbox"/> d. 6 to 10 event reports    |
| <input type="checkbox"/> b. 1 to 2 event reports | <input type="checkbox"/> e. 11 to 20 event reports   |
| <input type="checkbox"/> c. 3 to 5 event reports | <input type="checkbox"/> f. 21 event reports or more |

**SECTION H: Background Information**

**This information will help in the analysis of the survey results.**

**1. How long have you worked in this hospital?**

- |  |  |
|--|--|
| <input type="checkbox"/> a. Less than 1 year | <input type="checkbox"/> d. 11 to 15 years   |
| <input type="checkbox"/> b. 1 to 5 years     | <input type="checkbox"/> e. 16 to 20 years   |
| <input type="checkbox"/> c. 6 to 10 years    | <input type="checkbox"/> f. 21 years or more |

**2. How long have you worked in your current hospital work area/unit?**

- |  |  |
|--|--|
| <input type="checkbox"/> a. Less than 1 year | <input type="checkbox"/> d. 11 to 15 years   |
| <input type="checkbox"/> b. 1 to 5 years     | <input type="checkbox"/> e. 16 to 20 years   |
| <input type="checkbox"/> c. 6 to 10 years    | <input type="checkbox"/> f. 21 years or more |

**3. Typically, how many hours per week do you work in this hospital?**

- |   |  |
|---|--|
| <input type="checkbox"/> a. Less than 20 hours per week | <input type="checkbox"/> d. 60 to 79 hours per week    |
| <input type="checkbox"/> b. 20 to 39 hours per week     | <input type="checkbox"/> e. 80 to 99 hours per week    |
| <input type="checkbox"/> c. 40 to 59 hours per week     | <input type="checkbox"/> f. 100 hours per week or more |

**SECTION H: Background Information (continued)**

**4. What is your staff position in this hospital? Select ONE answer that best describes your staff position.**

- |  |   |
|--|---|
| <input type="checkbox"/> a. Registered Nurse                             | <input type="checkbox"/> j. Respiratory Therapist                       |
| <input type="checkbox"/> b. Physician Assistant/Nurse Practitioner       | <input type="checkbox"/> k. Physical, Occupational, or Speech Therapist |
| <input type="checkbox"/> c. LVN/LPN                                      | <input type="checkbox"/> l. Technician (e.g., EKG, Lab, Radiology)      |
| <input type="checkbox"/> d. Patient Care Asst/Hospital Aide/Care Partner | <input type="checkbox"/> m. Administration/Management                   |
| <input type="checkbox"/> e. Attending/Staff Physician                    | <input type="checkbox"/> n. Other, please specify:                      |
| <input type="checkbox"/> f. Resident Physician/Physician in Training     | <input type="text"/>  |
| <input type="checkbox"/> g. Pharmacist                                   |   |
| <input type="checkbox"/> h. Dietician                                    |   |
| <input type="checkbox"/> i. Unit Assistant/Clerk/Secretary               |   |

**5. In your staff position, do you typically have direct interaction or contact with patients?**

- a. YES, I typically have direct interaction or contact with patients.
- b. NO, I typically do NOT have direct interaction or contact with patients.

**6. How long have you worked in your current specialty or profession?**

- |  |  |
|--|--|
| <input type="checkbox"/> a. Less than 1 year | <input type="checkbox"/> d. 11 to 15 years   |
| <input type="checkbox"/> b. 1 to 5 years     | <input type="checkbox"/> e. 16 to 20 years   |
| <input type="checkbox"/> c. 6 to 10 years    | <input type="checkbox"/> f. 21 years or more |

**SECTION I: Your Comments**

**Please feel free to write any comments about patient safety, error, or event reporting in your hospital.**

**THANK YOU FOR COMPLETING THIS SURVEY.**

### 13.2 Permission from Ethic Research Committee of SHSKUK

Prof. dr. HUKMI DAVI	
Kërkesë për realizim të punës kërkimore shkencore në kuadër të studimeve të Doktoratës	
Për:	Keshillin Etik per Hulumtime Shkencore (SHSKUK) dhe Bordin e SHSKUK-se, Drejtorin per eshtje arsimore dhe shendetesore te SHSKUK-se <i>1. Pejzhet hulumtimin shkollosor per temen e doktoratës në SHSKUK</i>
CC:	Znj. Lirije Beqiri - drejtoresha e Infermierise se SHSKUK-se
Nga:	Naime Brajshori -PhD Cand. <span style="float: right;">Parashtrues i lendes</span>

01.02.2014, Prishtine

I nderuar z. Dr. Curr Gjocaj – Drejtor i Sherbimit Spitalor Klinik Universitar te Kosoves (SHSKUK)

E nderuar znj. Lirije Beqiri –Drejtoresha e Sherbimit Spitalor Klinik Universitar te Kosoves (SHSKUK)

Te nderuar anetar te bordit dhe keshillit etik per hulumtime shkencore,

Me kete shkrese deshiroj te shtroje kerkese per keshillin etik per hulumtime shkencore qe ne kuadër të studimeve të doktoratës në Shkenca Shëndetësore dhe Infermierore në Universitetin Martin Luther në Gjermani, pjesë e punës sime kërkimore shkencore është që të realizoj edhe një hulumtim në institucionet e kujdesit sekondar dhe terciar në të gjithë Kosovën.

Tema e doktoratës sime është: Kultura e sigurisë së pacientit në spitalet e Kosovës- një studim multicentrik. Ky hulumtim do të realizohet për herë të parë në Kosovë dhe si i tille ka te sqaruar me poshte qelimin procedurat dhe metoden e hulumtimit. Me kete shkrese deshiroj te ju njoftoj qe ky hulumtim do te jete anonim per pjesemarrësit dhe ka nje metode kuantitative te hulumtimit.

Qëllimi i hulumtimit: Në mënyrë që të formulohen veprime për përmirësim, është e rëndësishme për spitalet që të vlerësojnë rezultatet e tyre themelore për kulturën

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Tel. : 00377 45 820 820

ekzistuese të sigurisë dhe të përcaktojnë fushat me prioritet. Ky studim do të përshkruaj për herë të parë rezultatet e një sondazhi që do të realizohet në spitalet e trajtimit akut, psikiatrik dhe në stacionet e kujdesit afatgjatë, të cilat do të japin vullnetarisht të dhënat e tyre për krahasim me spitalet e tjera në Kosovë. Përveç kësaj, ky studim ka për qëllim shqyrtimin e dimensioneve themelore të kulturës së sigurisë së pacientit. Ky dokument do të diskutojë përdorimin e instrumentit për vlerësimin e kulturës së sigurisë së pacientit si një mjet për përmirësimin e sigurisë së pacientit në spitalet e Kosovës.

Metoda: Pyetësi për matjen e Kulturës së Sigurisë së Pacientit në spital do të shpërndahet në të gjitha spitalet siç janë: shtatë spitalet e përgjithshme dhe një qendër e shërbimit spitalor- klinik universitar në Kosovë. Ky pyetësor do të vlerësoj 10 dimensione të kulturës së sigurisë së pacientit dhe dy rezultate të përgjithshme. HSOPSC- është ky instrument me origjinë nga SHBA, i cili është përdorur edhe në vendet e Evropës, duke përfshirë Norvegjinë, Anglinë, Holandën, Belgjikën dhe Zvicrën (Nieva VF, Sorra J. 2003). Administrimi i pyetësit zgjat 10 minuta.

Së këndejmi, kërkoj nga ana juaj që të aprovoni kërkesën time dhe të më mundësoni lejen për çasje në të gjitha institucionet shëndetësore të lartëcekura. Duke ju garantuar çasje të plotë në të dhënat e fituara me anë të këtij hulumtimi, konsideroj, se një hulumtim i tillë do të shërbejë edhe për politikbërjen tuaj institucionale.

Të bashkangjitur gjeni ju lutem pyetësin të cilin do ta administroj dhe i cili mendohet të realizohet me 5-7 % të bashkëpunëtorëve shëndetësor nga të gjitha profilet shëndetësore. Si aneks gjeni ju lutem kontratën e doktoratës nga Universiteti MLU, Halle Gjermani.

Ju falënderoj paraprakisht për shqyrtimin e kësaj kërkesë dhe shpresoj se do gjej mirëkuptimin tuaj!

Me respekt , MSc Naime Brajshori – PhD Cand.  
Institut für Gesundheits-und Pflegewissenschaft  
Medizinische Fakultät  
Martin Luther Universität-Halle-Wittenberg-Deutschland

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13.3 Descriptive Statistics for Patient Safety Culture Dimensions for each Kosovo region and Kosovo wide.

Dimensions	Hospitals	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
						Lower Bound	Upper Bound
Frequency_EVENT (Frequency of Event Reported)	Prishtinë	64	3.229	1.101	0.138	2.954	3.504
	Ferizaj	36	2.731	0.939	0.156	2.414	3.049
	Mitrovicë	33	3.051	1.021	0.178	2.688	3.413
	Gjakovë	39	3.556	1.052	0.168	3.214	3.897
	Peja	34	3.225	0.898	0.154	2.912	3.539
	Gjilan	32	2.958	0.942	0.166	2.619	3.298
	Prizeren	38	3.325	1.035	0.168	2.984	3.665
	Vushtri	36	3.120	1.110	0.185	2.745	3.496
	Total	312	3.165	1.039	0.059	3.049	3.280

Table 1 Frequency of event reported for each Kosovo region and Kosovo wide.

Dimensions	Hospitals	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
						Lower Bound	Upper Bound
FEEDBACK_COMMUNICATION	Prishtinë	64	3.870	0.852	0.106	3.657	4.083
	Ferizaj	36	3.556	0.847	0.141	3.269	3.842
	Mitrovicë	33	3.889	0.696	0.121	3.642	4.136
	Gjakovë	39	4.094	0.483	0.077	3.937	4.251
	Peja	34	3.980	0.783	0.134	3.707	4.253
	Gjilan	32	3.813	0.867	0.153	3.500	4.125
	Prizeren	38	3.860	0.746	0.121	3.614	4.105
	Vushtri	36	3.759	0.958	0.160	3.435	4.083
	Total	312	3.856	0.798	0.045	3.767	3.945

Table 2 Feedback and communication reported for each Kosovo region and Kosovo wide.

Dimensions	Hospitals	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
						Lower Bound	Upper Bound
Teamwork_Accross Hospital Units	Prishtinë	64	3.625	0.789	0.099	3.428	3.822
	Ferizaj	36	3.343	0.688	0.115	3.110	3.575
	Mitrovicë	33	3.444	0.616	0.107	3.226	3.663
	Gjakovë	39	3.906	0.535	0.086	3.733	4.079
	Peja	34	3.696	0.693	0.119	3.454	3.938
	Gjilan	32	3.479	0.693	0.122	3.229	3.729
	Prizeren	38	3.412	0.749	0.122	3.166	3.659
	Vushtri	36	3.519	0.732	0.122	3.271	3.766
Total	312	3.563	0.712	0.040	3.484	3.642	

Table 3 Teamwork Accross Hospital Units reported for each Kosovo region and Kosovo wide

Dimensions	Hospitals	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
						Lower Bound	Upper Bound
Supervisor_expectation (and actions promoting safety)	Prishtinë	64	3.836	0.841	0.105	3.626	4.046
	Ferizaj	36	3.944	0.924	0.154	3.632	4.257
	Mitrovicë	33	4.015	0.566	0.098	3.815	4.216
	Gjakovë	39	4.026	0.939	0.150	3.721	4.330
	Peja	34	4.309	0.628	0.108	4.090	4.528
	Gjilan	32	4.094	0.745	0.132	3.825	4.362
	Prizeren	38	4.171	0.681	0.110	3.947	4.395
	Vushtri	36	4.000	0.819	0.137	3.723	4.277
Total	312	4.029	0.792	0.045	3.941	4.117	

Table 4 Supervisor expectation and actions promoting safety reported for each Kosovo region and Kosovo wide



Dimensions	Hospitals	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
						Lower Bound	Upper Bound
TEAMWORK_UNIT (Teamwork within hospital units)	Prishtinë	64	3.891	0.724	0.090	3.710	4.071
	Ferizaj	36	3.799	0.550	0.092	3.612	3.985
	Mitrovicë	33	3.902	0.534	0.093	3.712	4.091
	Gjakovë	39	4.147	0.573	0.092	3.962	4.333
	Peja	34	3.846	0.866	0.149	3.543	4.148
	Gjilan	32	3.945	0.680	0.120	3.700	4.191
	Prizeren	38	3.961	0.611	0.099	3.760	4.161
	Vushtri	36	3.910	0.633	0.105	3.696	4.124
	Total	312	3.925	0.659	0.037	3.851	3.998

Table 5 Teamwork within hospital units reported for each Kosovo region and Kosovo wide

Dimensions	Hospitals	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
						Lower Bound	Upper Bound
communication_opennes	Prishtinë	64	3.703	0.929	0.116	3.471	3.935
	Ferizaj	36	3.375	1.117	0.186	2.997	3.753
	Mitrovicë	33	3.773	0.911	0.159	3.450	4.096
	Gjakovë	39	4.038	0.756	0.121	3.794	4.283
	Peja	34	3.794	1.115	0.191	3.405	4.183
	Gjilan	32	3.625	1.100	0.194	3.228	4.022
	Prizeren	38	4.013	0.809	0.131	3.747	4.279
	Vushtri	36	3.472	1.028	0.171	3.124	3.820
	Total	312	3.728	0.983	0.056	3.618	3.837

Table 6 Communication openness reported for each Kosovo region and Kosovo wide

Dimensions	Hospitals	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
						Lower Bound	Upper Bound
hospitals_transitions Handoffs & Transitions	Prishtinë	64	3.516	0.726	0.091	3.334	3.697
	Ferizaj	36	3.250	0.635	0.106	3.035	3.465
	Mitrovicë	33	3.568	0.626	0.109	3.346	3.790
	Gjakovë	39	3.686	0.697	0.112	3.460	3.912
	Peja	34	3.463	0.826	0.142	3.175	3.751
	Gjilan	32	2.977	0.697	0.123	2.725	3.228
	Prizeren	38	3.618	0.569	0.092	3.431	3.805
	Vushtri	36	3.201	0.982	0.164	2.869	3.534
	Total	312	3.427	0.753	0.043	3.343	3.511

Table 7 Handoffs and transitions reported for each Kosovo region and Kosovo wide

### 13.4 Descriptive Statistic for Different Professions

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
Registered Nurse	183	3.06	1.04	0.08	2.91	3.22
Physician Assistant/Nurse Practitioner	47	3.17	0.88	0.13	2.91	3.43
LVN/LPN	1	3.67				
Patient care asst /Hospital Aide/Care Partner	1	3.00				
Attending/Staff Physician	13	3.82	1.01	0.28	3.21	4.43
Physician/PhysicianinTraining	8	3.04	0.98	0.35	2.22	3.86
Pharmacist	2	3.00	2.83	2.00	-22.41	28.41
Physiotherapist, occupational therapist, speech therapist	2	3.33	1.41	1.00	-9.37	16.04
Technician (e.g., EKG, Lab, Radiology)	6	3.22	1.17	0.48	2.00	4.45
UnitAssistant/Clerk/Secretary	3	2.67	0.58	0.33	1.23	4.10
Other, please specify:	46	3.41	1.09	0.16	3.09	3.74
<b>Total</b>	<b>312</b>	<b>3.16</b>	<b>1.04</b>	<b>0.06</b>	<b>3.05</b>	<b>3.28</b>

Table 8 Frequency of event reported for different professions

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
Registered Nurse	183	3.85	0.82	0.06	3.73	3.97
Physician Assistant/Nurse Practitioner	47	3.86	0.87	0.13	3.60	4.11
LVN/LPN	1	4.67				
Patient care asst /Hospital Aide/Care Partner	1	3.00				
Attending/Staff Physician	13	4.10	0.61	0.17	3.73	4.47
Physician/PhysicianinTraining	8	3.75	0.89	0.31	3.01	4.49
Pharmacist	2	5.00	0.00	0.00	5.00	5.00
Physiotherapist, occupational therapist, speech therapist	2	3.67	0.47	0.33	-0.57	7.90
Technician (e.g., EKG, Lab, Radiology)	6	3.89	1.00	0.41	2.84	4.94
UnitAssistant/Clerk/Secretary	3	3.44	0.38	0.22	2.49	4.40
Other, please specify:	46	3.80	0.65	0.10	3.61	3.99
<b>Total</b>	<b>312</b>	<b>3.86</b>	<b>0.80</b>	<b>0.05</b>	<b>3.77</b>	<b>3.94</b>

Table 9 Feedback and communication reported for different professions

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
Registered Nurse	183	3.58	0.74	0.05	3.47	3.69
Physician Assistant/Nurse Practitioner	47	3.50	0.68	0.10	3.30	3.70
LVN/LPN	1	2.67				
Patient care asst /Hospital Aide/Care Partner	1	3.67				
Attending/Staff Physician	13	3.36	0.55	0.15	3.03	3.69
Physician/PhysicianinTraining	8	3.75	0.58	0.21	3.26	4.24
Pharmacist	2	4.00	1.41	1.00	-8.71	16.71
Physiotherapist, occupational therapist, speech therapist	2	3.67	1.41	1.00	-9.04	16.37
Technician (e.g., EKG, Lab, Radiology)	6	3.50	0.46	0.19	3.02	3.98
UnitAssistant/Clerk/Secretary	3	3.78	0.38	0.22	2.82	4.73
Other, please specify:	46	3.59	0.70	0.10	3.38	3.79
<b>Total</b>						<b>3.64</b>
<b>Teamwork_AHU</b>	<b>312</b>	<b>3.56</b>	<b>0.71</b>	<b>0.04</b>	<b>3.48</b>	

Table 10 Teamwork across hospital units reported for different professions

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
Registered Nurse	183	4.01	0.78	0.06	3.89	4.12
Physician Assistant/Nurse Practitioner	47	4.18	0.65	0.10	3.99	4.37
LVN/LPN	1	5.00				
Patient care asst /Hospital Aide/Care Partner	1	2.50				
Attending/Staff Physician	13	3.88	0.68	0.19	3.47	4.30
Physician/PhysicianinTraining	8	3.63	1.16	0.41	2.66	4.59
Pharmacist	2	4.75	0.35	0.25	1.57	7.93
Physiotherapist, occupational therapist, speech therapist	2	4.25	1.06	0.75	-5.28	13.78
Technician (e.g., EKG, Lab, Radiology)	6	4.17	0.52	0.21	3.62	4.71
UnitAssistant/Clerk/Secretary	3	4.00	0.87	0.50	1.85	6.15
Other, please specify:	46	4.02	0.94	0.14	3.74	4.30
<b>Total</b>	<b>312</b>	<b>4.03</b>	<b>0.79</b>	<b>0.04</b>	<b>3.94</b>	<b>4.12</b>
<b>Supervisor_expectation</b>						

Table 11 Supervisor expectation reported for different professions

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		
					Lower Bound	Upper Bound	
TEAMWORK_UNIT	Registered Nurse	183	3.91	0.69	0.05	3.81	4.01
	Physician Assistant/Nurse Practitioner	47	3.87	0.68	0.10	3.67	4.07
	LVN/LPN	1	4.00				
	Patient care asst /Hospital Aide/Care Partner	1	3.25				
	Attending/Staff Physician	13	3.92	0.34	0.10	3.71	4.13
	Physician/PhysicianinTraining	8	4.00	0.64	0.23	3.46	4.54
	Pharmacist	2	4.38	0.53	0.38	-0.39	9.14
	Physiotherapist, occupational therapist, speech therapist	2	3.75	0.71	0.50	-2.60	10.10
	Technician (e.g., EKG, Lab, Radiology)	6	3.83	0.58	0.24	3.22	4.45
	UnitAssistant/Clerk/Secretary	3	4.33	0.29	0.17	3.62	5.05
	Other, please specify:	46	4.02	0.63	0.09	3.83	4.20
	<b>Total</b>	<b>312</b>	<b>3.92</b>	<b>0.66</b>	<b>0.04</b>	<b>3.85</b>	<b>4.00</b>

Table 12 Teamwork within hospital units reported for different professions

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		
					Lower Bound	Upper Bound	
communication_opennes	Registered Nurse	183	3.71	0.97	0.07	3.57	3.85
	Physician Assistant/Nurse Practitioner	47	3.59	1.13	0.16	3.25	3.92
	LVN/LPN	1	5.00				
	Patient care asst /Hospital Aide/Care Partner	1	4.50				
	Attending/Staff Physician	13	3.96	0.75	0.21	3.51	4.41
	Physician/PhysicianinTraining	8	3.69	0.80	0.28	3.02	4.36
	Pharmacist	2	5.00	0.00	0.00	5.00	5.00
	Fizikoterapeut, ergo-terapeutoselogoped	2	3.75	0.35	0.25	0.57	6.93
	Teknik (e.g., EKG, Lab, Radiologji)	6	3.83	0.98	0.40	2.80	4.87
	Administratê/Manaxhment	3	3.83	0.29	0.17	3.12	4.55
	Tjetër, julutemitëspecifikoni:	46	3.76	1.01	0.15	3.46	4.06
	<b>Total</b>	<b>312</b>	<b>3.73</b>	<b>0.98</b>	<b>0.06</b>	<b>3.62</b>	<b>3.84</b>

Table 13 Communication openness reported for different professions

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
						Lower Bound	Upper Bound
hospitals_transitions	Registered Nurse	183	3.47	0.77	0.06	3.36	3.58
	Physician Assistant/Nurse Practitioner	47	3.29	0.77	0.11	3.06	3.51
	LVN/LPN	1	3.00				
	Patient care asst /Hospital Aide/Care Partner	1	2.75				
	Attending/Staff Physician	13	3.75	0.56	0.16	3.41	4.09
	Physician/PhysicianinTraining	8	3.59	0.50	0.18	3.18	4.01
	Pharmacist	2	2.88	0.18	0.13	1.29	4.46
	Physiotherapist, occupational therapist, speech therapist	2	3.00	0.00	0.00	3.00	3.00
	Technician (e.g., EKG, Lab, Radiology)	6	3.00	0.96	0.39	1.99	4.01
	UnitAssistant/Clerk/Secretary	3	3.25	0.25	0.14	2.63	3.87
	Other, please specify:	46	3.41	0.74	0.11	3.19	3.63
	<b>Total</b>	<b>312</b>	<b>3.43</b>	<b>0.75</b>	<b>0.04</b>	<b>3.34</b>	<b>3.51</b>

Table 14 Hospital handoffs and transition reported for different professions