



*PROSPERITAS VESTRA FINIS NOSTRA!*

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**CONTEMPORARY ASPECTS ON PROVIDING SAFE HOSPITAL  
ENVIRONMENT IN THE PRACTICE ON NURSES**

**ABSTRACT**

of a dissertation

for awarding an educational and scientific degree "**Doctor**"  
on professional field 7.4. Public Health  
specialty "Health Care Management"

**Research supervisor:**

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**VARNA , 2023**

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## **USED ABBREVIATIONS**

<b>SHE</b>	- Safe Hospital Environment
<b>BAHP</b>	- Bulgarian Association of Healthcare Professionals
<b>MMA</b>	- Military Medicine academy
<b>SG</b>	- State Gazette
<b>EAD</b>	- Sole Owner Joint-stock company
<b>EU</b>	- European Union
<b>HSWC</b>	- Healthy and safe working conditions
<b>MPHAT</b>	- Multi-purpose hospital for active treatment
<b>MU</b>	- Medical university
<b>HAI</b>	- Healthcare-associated infections
<b>NI</b>	- nosocomial infections
<b>SC</b>	- safety culture
<b>NHS</b>	- National Health Strategy
<b>HC</b>	- health care
<b>HCM</b>	- healthcare management
<b>EQD</b>	- educational qualification degree
<b>WHO</b>	- World Health Organization
<b>HCP</b>	- Healthcare Professionals
<b>ICN</b>	- International Council of Nursing
<b>ANA</b>	- American Nurses Association
<b>IHI</b>	- Institute for Healthcare Improvement
<b>RNAO</b>	- Registered Nurses' Association of Ontario
<b>IOM</b>	- Institute of Medicine (USA)

## **INTRODUCTION**

Healthcare field safety is a priority issue worldwide. Hospitals are characterized by a complex organizational structure: medicine is a team activity and tasks are distributed and carried out by several highly specialized professionals with a certain degree of autonomy, but who must coordinate their actions together in such a way as to provide the necessary health services with a high quality.

The nursing profession is based on satisfying the basic human needs, and with the development of medical science, it acquires a new dimension. This is expressed in the differentiation of the autonomous functions and responsibilities of nurses in the health care complex. The requirements for the professional qualification of nurses are constantly increasing in accordance with the successive passage through the stages of the emotional, technical and creative nature of the profession.

The study covers various medical facilities for inpatient and outpatient care and is directed in the following two aspects: scientific-research and applied-practical. Based on the obtained data, a model with methodical approaches was developed to optimize the process of providing a safe hospital environment in the practice of nurses.

Providing a safe hospital environment is an important aspect in nursing practice. The relevance of the problems related to determining the role and contribution of nurses in the process of providing a safe hospital environment, as a condition for quality and safe care, determines the interest in the formulated topic of the dissertation work.

## **STRUCTURE OF THE LITERATURE REVIEW**

**The first chapter** of the dissertation includes a literature review, presenting in a structured way different aspects of the safe hospital environment in the practice of nurses (Fig. 1).



*Fig. 1. Structure of the literature review*

## **PURPOSE, TASKS, METHODOLOGY AND ORGANIZATION OF THE SCIENTIFIC RESEARCH**

### **1. Purpose and tasks and hypotheses of the survey**

**Purpose:** To explore the modern aspects in providing the safe hospital environment involving nurses and on this basis, to develop optimal practical approaches guaranteeing safety.

To achieve the goal, the following **tasks** are set:

1. To analyze **the legal framework in the Republic of Bulgaria, regulating** the provision of a safe hospital environment.
2. To explore **the role and contribution of nurses in** optimizing the process of providing a safe working environment in their practice.
3. To develop optimal **practical approaches / models** guaranteeing the safety of the hospital environment with the participation **of** nurses .

4. To **study the opinion of different groups of respondents regarding the applicability of the developed practical approaches** to optimize the participation of nurses in the process of providing a safe working environment .
5. To explore **the need for additional training**, directed to optimization of the practice of nurses in the process the provision of a safe working environment.
6. To study international experience (good practices) on nurses' involvement in providing a safe hospital environment.

### **Working hypotheses**

1. Exploring the theoretical, normative and practical basis of nurses' involvement in providing a safe hospital environment will prove the absence on clear and systematic approach.
2. The study will prove the essential role a nurse can have in the process of providing a safe hospital environment.
3. Nurses due to lack of knowledge about safety management of the hospital environment have no significant contribution to the process.

## **2. Organization and methodology of the study**

### **Object and subject of the study**

**Object on the survey** is the process of providing a safe hospital environment in nursing practice.

**Subject on the survey** are the possibilities for optimization of the participation of nurses in the process of providing a safe hospital environment.

### **Scope of the study**

285 persons were covered in the study divided into four groups of respondents:

- **First group** - nurses - working in high-risk wards of MPHAT, within the scope of the MMA (n=145);
- **Second group** - lecturers from the Department of Health Care of the MU - Varna, including Affiliates, holding an academic position "professor", "associate professor" and "chief assistant" and "assistant" in the scientific direction "Public Health" (n=20);
- **Third group** - patients hospitalized in a clinic/department with a high risk of spreading infections, related to the medical care in MPHAT – Varna at the MMA, incl. intensive and surgical clinics and wards (n=100).
- **Fourth group** - experts, including:
  - ✓ head nurses of multi-purpose hospitals within the scope of the MMA, university hospitals and training bases of the Medical University – Varna (n=10).
  - ✓ healthcare professionals with acquired specialty "Hospital hygiene, infection prevention and control" (n=5).

- ✓ epidemiologists and public health inspectors working in university, multi-purpose and specialized hospitals (n=5).

### Logical units of study

- **First logical unit – each nurse**, practitioner in high-risk (emergency, operating, intensive, surgical) clinics/wards on Military Medical Academy – Sofia, MPHAT to MMA – city of Varna, MPHAT to MMA – city of Plovdiv, MPHAT at MMA – city of Sliven, MPHAT at MMA – city of Pleven;
- **Second logical unit – every teacher** from the Department and on Health Care of the MU – Varna, incl. and the Affiliates in the city of Shumen, city of Veliko Tarnovo and the city of Sliven, holding an academic position "professor", "associate professor" and "chief assistant" and "assistant", in the scientific direction "Public Health".
- **Third logical unit** - every patient hospitalized in a clinic/ward (intensive and surgical) with a high risk of spreading infections related to the medical care in the MPHAT – Varna at the MMA.
- **Fourth logical unit – each expert:**
  - ✓ **every head of health care** – head nurse, who participates in organizing, coordinating, controlling and evaluating safety activities in university, multi-purpose and specialized hospitals in the country, training bases of the MU - Varna and multi-purpose hospitals within the scope of Military Medical Academy;
  - ✓ **any** healthcare professional with acquired specialty in "Hospital hygiene, infection prevention and control".
  - ✓ **every epidemiologist and public health inspector** participating in an infection control team of university, multi-purpose and specialized hospitals;

### Locations of the survey:

- MPHAT - Varna at the MMA, city of Varna;
- MPHAT - Plovdiv at the MMA, city of Plovdiv;
- MPHAT – Pleven at the MMA, city of Pleven;
- MPHAT - Sliven at the MMA, city of Sliven
- MU-Varna incl.
  - Branch – city of Shumen
  - Branch – city of Veliko Tarnovo
  - Branch – city of Sliven
- MPHAT – Dobrich
- MPHAT – Shumen
- Elderly home – Shumen
- MPHAT - Silistra
- UMPHAT "Sveta Marina" – Varna
- MPHAT "St. Anna" - Varna
- SHODAT - Varna.

### Survey Toolkit

#### An empirical research



**1. Qualitative research among university lecturers (semi-structured interview) and experts (in-depth interview) in the field of providing a safe hospital environment regarding the possibilities of process optimization.**

The questionnaire for in-depth interview is intended for expert evaluation by head nurses, health care professionals with acquired specialty "Hospital Hygiene, Prevention and Control of Infections" and epidemiologists. It contains 12 open questions. Each interviewee was given the opportunity to suggest another specialist who could be helpful with an opinion on a problem under survey. The questions are grouped as follows (Table 1)

*Table 1. Distribution of survey questions in the in-depth interview*

<b>Criteria</b>	<b>Informational content</b>
<b>Assessment of the process of providing a safe hospital environment – professional benefits</b>	
Includes Questions from No 1 to No 5	Find a self-assessment of their introduced approaches in the area of providing a safe hospital environment in the practice of nurses, role and contribution of nurses in the process on providing a safe hospital environment.
<b>Assessment of the process of providing a safe hospital environment - need for optimization</b>	
Includes Questions No 6 and No 7	They provide an expert assessment of the need to optimize the process of providing a safe hospital environment in the practice of nurses through additional training and/or the introduction of new practical approaches/models.
<b>Evaluation of the effectiveness of the process of providing a safe hospital environment</b>	
Includes Question from No 8 to No 12	They give an expert opinion on the practical applicability of a model for optimizing the management system and providing a safe hospital environment.

Another qualitative method applied for the purposes of scientific research is a **semi-structured interview**. Applied among **university lecturers**, it sets the framework in which to conduct the survey, while providing enough freedom for respondents to touch on and explore additional topics that arise from the main topic.

For the purposes of **the semi- structured interview**, a specific research toolkit was developed (Questionnaire No. 1) containing 13 questions, 11 of which closed, 2 open (table 2):

*Table 2 . Distribution of survey questions in a semi- structured interview*

<b>Criteria</b>	<b>Informational content</b>
<b>Quality assessment - professional benefits</b>	
Includes Questions from No 1 to No 4	Determine the place and role of the nurse in the process of providing a safe hospital environment in the practice of nurses, give assessment of competencies and existing practices in the training of nurses in the field of safe hospital environment.

<b>Quality assessment - orientation in the need for optimization</b>	
Includes Questions No <b>5 to No 8</b>	They give an expert assessment of the need to optimize the process of providing a safe hospital environment in the practice of nurses through additional training, optimization of the learning process and/or introduction of new practical approaches/models.
<b>Evaluation based on performance</b>	
Includes Questions fomr No <b>9 to No 13</b>	They give expert opinion and predictions about the structure and the practical applicability of an approach / model to optimize the management system and provide a safe hospital environment.

## **2. Quantitative survey among medical professionals and patients about the process of providing a safe hospital environment and the possibilities for its optimization.**

Quantitative methods include conducting a **direct individual survey** among patients and nurses from multi-purpose hospitals in the Military Medical Academy system.

For achieving the marked scientific research aims an own developed **toolkit** was used:

- **Survey questionnaire No 1 – for surveying the opinion of nurses** by research-based signs. The survey questionnaire includes 24 questions (16 closed and 8 semi-closed questions) from the following areas (Table 3) :

*Table 3. Distribution of surveying questions in a survey questionnaire No 1 by information content*

<b>Criteria</b>	<b>Informational content</b>
<b>Level of knowledge</b> /Includes questions from <b>No. 1 to No. 4/</b>	Ascertains their knowledge on the subject of the research - essence and importance of the safe hospital environment in the practice of nurses.
<b>Professional skill level</b> /Includes Question No <b>5 to No 13 /</b>	Ascertains the level of prior knowledge and skills of nurses regarding the process of providing a safe working environment in their practice and more specifically regarding their training and practical experience on the subject of this study.
<b>Level of competence</b> /Includes Questions from No <b>14 to No. 21 /</b>	Provides information on the extent of nurses' prior educational understanding and theoretical knowledge on the side of nurses on their contribution to providing a safe hospital environment in their practice.
<b>Estimated effectiveness</b> /Includes Question No <b>16 and No 22, 23, 24/</b>	It diagnoses the preliminary attitudes of nurses regarding the process of providing a safe working environment in their practice, while creating certain attitudes and readiness for its optimization through additional training and improvement of existing practices.

- demographic characteristics – age, professional experience, educational degree.

- **Survey questionnaire No 2 – for studying the opinion of patients** on the researched signs. The survey questionnaire includes 8 questions, of which 7 closed and 1 open (Table 4 ).

*Table 4. Distribution of survey questions in survey card no 2 in terms of information content*

Criteria	Informational content
<b>Opinion on quality – providing a safe hospital environment</b>	
Includes Questions No <b>1, 2, 5, 6</b>	They state a self-assessment of their well-being during the hospital stay as a result of the implemented practices in the field of providing a safe hospital environment.
<b>Opinion on quality - orientation in the effectiveness of existing practices</b>	
Includes Questions from No 3, No 4	They provide insight into the degree of patient orientation on the role and contribution of nurses in the process of providing a safe hospital environment and the need to optimize it by introducing new practical approaches/models.
<b>Opinion based on the need for optimization</b>	
Includes Questions No <b>7 and No 8</b>	Diagnose patients' preconceptions of optimizing the management system and providing a safe hospital environment in nursing practices.

- demographic characteristics – gender, age, ethnic origin

For a more in-depth and detailed analysis, the various instruments of the study included questions concerning various aspects of the process of providing a safe hospital environment in the practice of nurses. Our goal is to obtain information from respondents related to the process from different positions.

### **Informed consent**

Informed consent for participation in the research was prepared, containing detailed data on the nature of the survey. Anonymity of the participants is guaranteed. The composition of the research team is presented, along with contacts, in case of additional questions or need for information.

### **Information about the researched persons**

Each research participant was provided with information about the subjects studied, describing the purpose of the study, benefits to the participant in the survey, confidentiality of information. Participation in the study is voluntary and the individual may withdraw at any time.

### Organization and stages of conducting the research

The research was conducted after obtaining approval from Research Ethics Committee of the Medical University – Varna (protocol no /24.09.2020).

The research goes through the following stages, including activities, tools and scope (table 5):

*Table 5. Stages of the research with specific activities, tools, venue and scope*

<i>Stage</i>	<i>Activity</i>	<i>Toolkit</i>	<i>Location</i>	<i>Scope/time</i>
<b>I stage - preparatory</b>	Research the relevance of the problem.	Literary sources, bibliographic references, articles, reports, publications, specialized literature, statistical data, regulatory documents, etc.	MU Varna	<b>02.2020</b> <b>02.2021</b>
	Formulation of a topic, determination of the goal, tasks, object and subject of the research, development of hypotheses.			
	Toolkit development.			
	Preparation of the literature review.			
<b>II stage – the very study</b>	Conducting an anonymous survey among nurses in risk wards	Survey questionnaire #1	Sofia city City of Varna City of Plovdiv City of Sliven City of Pleven	<b>(145)</b> <b>03.2022</b>
	Conducting an anonymous survey among patients at the MPHAT – Varna	Survey questionnaire # 2	City of Varna	<b>(100)</b> <b>08.2022 -</b> <b>09.2022</b>
	Conducting a semi-structured interview among university lecturers.	Questionnaire #1	City of Varna City of Shumen City of Veliko Tarnovo	<b>(20)</b> <b>08.2022</b>

	Conducting in-depth interviews among head nurses, professionals with acquired specialty in "Hospital hygiene, prevention and control " and epidemiologists for the purpose of expert evaluation	Questionnaire # 2	Sofia city City of Varna City of Plovdiv City of Sliven City of Pleven City of Shumen City of Dobrich City of Silistra	(20) 09.2022 - 10.2022
<b>III stage</b>	Statistical processing and analysis of the results  Summary of results formulation of conclusions, contributions, recommendations.	Software IBM SPSS product v. 19.0., Microsoft Office Excel		11.2022 - 01.2023

### Research methods

The purpose of the present research necessitated the use of a variety of **sociological methods** :

- **A documentary method** for clarifying the essence of the nurse's role and functions, regarding the activities in their practice, directly related to providing a safe hospital environment - normative documents regulating the process of providing a safe hospital environment; documentation related to the training and activity of nurses - curricula and programs, organization of practices in the training of nurses; literary/electronic sources, directly related to the researched problems.
- **A survey method** for collecting, summarizing and analyzing information about opinions and ratings through a direct, anonymous, individual survey provided to study:
  - ✓ the opinion of nurses about the possibilities for optimization of the participation of a nurse in providing a safe hospital environment in their practice.
  - ✓ of patients, regarding their judgment and attitudes about the process of providing a safe hospital environment.
- **Semi-structured interview** to study the opinion of university lecturers regarding the possibilities of applying the nursing competencies acquired during the basic training, as well as possibilities for optimizing the training process in the field of providing a safe hospital environment.
- **An in-depth interview** to reflect the opinion of proven experts in hospital hygiene and in the field of providing a safe hospital environment in nursing practice - head nurses, healthcare professionals with acquired specialty in "Hospital hygiene, prevention and control of infections" and epidemiologists.

**Statistical methods** are applied for analysis and interpretation of the received data, with a view to revealing the essence of observed phenomena and their interdependencies. The results were processed statistically with the IBM SPSS Statistics software, version 19, using the following analyses:

- Descriptive statistics: Mean, standard deviation, minimum, maximum, median, percentiles, confidence interval, proportion;
- Graphical analysis;
- Procedure for calculating scale reliability (Krombach Alpha);
- Parametric analyses: Student's t - test (two-tailed), correlation analysis (calculation of Pearson's correlation coefficient);
- Non-parametric analyses: Mann-Whitney U. Presence of statistical significance was assumed at the two-sided probability level  $p < 0.05$ .

**Conceptual apparatus contributing to the more complete clarification of concepts and the overall concept of scientific development**

- **Safety** - a process of established practice for professional support and training that enables professionals to develop the knowledge and competences to take responsibility for their own work and ensure the best protection for patients and the hospital environment in complex clinical situations.
- **Safe hospital environment** - an environment that best provides patients and hospital staff with comfort and safety conditions that effectively meet all their vital needs.
- **Nursing care (nursing practice)** involves the autonomous and collaborative care of people of all ages, families, groups and communities, ill or healthy, in all settings. Nursing care includes health promotion, disease prevention, and care for the sick, disabled, and dying. Advocacy, promotion of a safe environment, research, involvement in shaping health policy and in the management of patients and health systems, as well as education are also key roles of nurses.

**ANALYSIS, DISCUSSION OF RESULTS AND PRACTICAL ASPECTS OF SCIENTIFIC RESEARCH**

**Analysis of theories in nursing within the context of the process of providing a safe hospital environment in the practice of nurses**

From a historical perspective, the theory of nursing care developed in parallel with the development of society and medical science and practice. We studied and analyzed the characteristics of some of the main theories in nursing related to the influence of the environment in the practice of nurses (Table 6).

*Table 6. Nursing theories affecting the nursing practice environment and their characteristics*

THEORIST	CHARACTERISTICS
<b>FLORENCE NIGHTINGALE</b>  <b>1859</b>	<input type="checkbox"/> Develops the first theory of nursing.

	<ul style="list-style-type: none"> <li><input type="checkbox"/> Focuses on changing and manipulating the <i>environment</i> to place the patient in the best possible conditions for environmental action.</li> </ul>
<b>VIRGINIA HENDERSON 1955</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Creates the theory of needs</li> <li><input type="checkbox"/> Considers that basic nursing care includes providing an <i>environment</i> in which the patient can perform 14 activities without assistance</li> </ul>
<b>FAYE ABDELLAH 1960</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Defines nursing as a problem-solving approach, with the primary problems of nursing related to the health needs of individuals;</li> <li><input type="checkbox"/> develops a list of 21 problem areas of nursing, where she also includes the influence of <i>the environment</i> .</li> </ul>
<b>IDA JEAN ORLANDO 1961</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Develops three elements that define nursing practice—patient behavior, nurse response, and nurse action.</li> <li><input type="checkbox"/> She notes that the nurse creates <i>a supportive environment</i> in which she provides immediate assistance to patients to avoid or alleviate their helplessness.</li> </ul>
<b>LYDIA HALL 1963</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Introduces the notion that at the center of nursing there are three components: the person (heart), the disease (healing), and the body (care) in the context of the <i>environment</i> .</li> </ul>
<b>MYRA LEVINE 1969</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Describes the four principles for <i>environmental</i> protection in nursing practice: <ul style="list-style-type: none"> <li>- environmental protection</li> <li>- protecting the hospital environment</li> <li>- protection of the personal environment</li> <li>- protection of the social environment</li> </ul> </li> </ul>
<b>IMOGENE KING 1971</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> The nursing process is defined as a dynamic interpersonal process between the nurse, the patient, and <i>the hospital environment</i> .</li> </ul>
<b>DOROTHEA OREM 1971</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Emphasizes the client's needs for independent care; nursing care becomes necessary only when the patient is unable to satisfy his biological, psychological, developmental or social needs and cannot adapt them to the <i>environment</i> .</li> </ul>
<b>DOROTHY JOHNSON 1976</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Develops a systematic model of behavior. <ul style="list-style-type: none"> <li>- the patient's behavior is a system that is one whole with its interacting <i>environment</i> .</li> </ul> </li> <li><input type="checkbox"/> The goal of nurses is to help patients adapt to the disease and thus to be able to move more easily to recovery.</li> </ul>

<p><b>CALLISTA ROY</b> <b>1976</b></p>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Presents the adaptation model.</li> <li><input type="checkbox"/> She considers each person as a single biopsychosocial system that is in constant interaction with the changing <i>environment</i>.</li> <li><input type="checkbox"/> The goal of nursing is to help the person adapt to <i>the environment</i> - the changes in physiological needs, self-assessment, role functions and relationships during health and illness.</li> </ul>
<p><b>MADELEINE LENINGER</b> <b>1978</b></p>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Develops <i>Transcultural Nursing Model</i>.</li> <li><input type="checkbox"/> She advocates that nursing is a humanistic and scientific way of assisting the patient through specific care processes (cultural values, beliefs and practices) to improve or maintain a healthy <i>environment</i>.</li> </ul>
<p><b>JEAN WATSON</b> <b>1979</b></p>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Conceptualizes the human care model.</li> <li><input type="checkbox"/> She emphasizes that nursing is application of the art and science of the human through care in a healthy <i>environment</i> to help people achieve harmony between mind, body, and soul that engenders self-knowledge, self-control, self-care, and self-healing.</li> </ul>
<p><b>BETTY NEUMAN</b> <b>1980</b></p>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Reducing stress is a goal of the systems model of nursing practice.</li> <li><input type="checkbox"/> Nurses' activities are aimed at a level of prevention depending on the pressure of <i>the environment</i>.</li> </ul>
<p><b>ROSEMARIE PARSE</b> <b>1981</b></p>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Introduces the theory of human growth.</li> <li><input type="checkbox"/> She emphasizes the right to choose in relation to value priorities, the joint creation of behavior patterns, the influence of the <i>environment</i>.</li> </ul>
<p><b>HILDEGARD PEPLAU</b> <b>1997</b></p>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Introduces the interpersonal model.</li> <li><input type="checkbox"/> She defines nursing as a therapeutic, interpersonal process that seeks to develop the nurse-patient relationship in an <i>environment</i> in which the nurse serves as a consultant and advisor.</li> </ul>

*Source: Theoretical basis for Nursing, 4th edition, 2014*

The chronological sequence presents how nursing theorists have made the environment the focus of their theories and conceptual models. In these theories we find the views related to the environment that were current in the period when they were created. Regardless of the timing of the theories' formulation, a framework has been put in place for the relationship of care for the health and well-being of individuals and society to their environment and the processes that arise from this relationship.



## Analysis of the results of the scientific research. Discussion.

### Characteristics of the studied groups of respondents

#### ✓ Nurses

In the scientific research, the opinion of 145 nurses practicing in the surgical (n= 91) and intensive (n= 54) care wards of medical facilities in the structure of the Military Medical Academy in the cities of Varna, Plovdiv, Sliven and Pleven has been studied (Fig. 2).

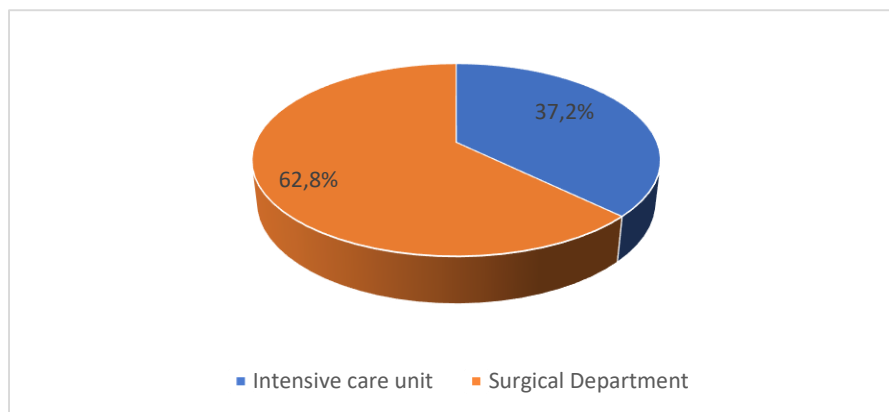


Fig. 2 . Distribution of nurses by ward profile

The nurses included in the present research represent 81.23 % of all nurses working in wards with intensive and surgical profile of medical facilities. This gives the sample representativeness (n = 173) and can be reported with a high degree of reliability in order to make general conclusions about the role and contribution of nurses in the process of providing a safe hospital environment (Table 7).

Table 7 . Distribution of nurses by professional experience, ward profile and education

Characteristic	n	%
<b>Professional experience</b>		
up to 10 years	10	6.9%
11 - 18 years	40	27.6%
19 - 27 years	44	30.3%
28 - 36 years	43	29.7%
37 - 45 years	6	4.1%
over 45	2	1.4%
<b>Ward profile</b>		
Intensive care unit	54	37.2%
Surgical ward	91	62.8%

<i>Education</i>		
Bachelor of Nursing	107	73.8%
Bachelor of Health Care Management	21	14.5%
Master of Health Care Management	17	11.7%

The researched nurses have an average **work experience** of  $23 \pm 0.8$  years. Most of them used to work for over 10 years. This shows that in the intensive and surgical structures of medical institutions there work nurses with extensive practical experience gained during their long working experience, which gives us reason to consider that the opinion expressed by this group of respondents is relevant to the conducted research.

A variance analysis revealed a relationship between the age range of specialists and their work experience ( $F= 44.543$ ;  $p<0.05$ ). The established relationship is strong ( $r= 0.762$ ;  $p<0.01$ ).

The consideration of the age characteristic and professional experience are significant in delineating the role and contribution of the nurse in the process of providing a safe hospital environment.

Biggest is the share on the nurses with higher education – bachelor's degree and equivalent according to the regulations (73.8%), followed by these with higher education - with an educational – qualification degree bachelor in "Health Care Management" (14.5%), with higher education - with an educational – qualification degree Master in "Management of health care" are 11.7%. The mentioned results witness for availability of high professional competence of nurses and assumes awareness and experience in a researched issue.

#### ✓ *Patients*

The survey researches the opinion of 100 patients, treated in MPHAT - Varna, distributed by clinics/wards with surgical and intensive profile. The requirement was that they were hospitalized for a minimum of 48 hours in the indicated medical facility. The inclusion criterion (minimum 48 h hospitalization) was determined based on the nursing literature review, which showed that brief interactions with patients limit the development of nurse-patient interactions based on nursing theorist Jane Watson's theory of care.

Covered are 62.2% of all ill persons treated in the above clinics/wards in the moment of the research. Comparatively even is the distribution of the patients by gender, with cure preponderance on the men (56%). The average age on the surveyed patients is 49.5 dy. ( $\pm 10$  y.). Predominant is the share of patients aged over 60 years (41%), followed by these in age group 40–49 years. The preponderance of the treated patients over 60 years of age is explainable due to the increase on the aging population in Bulgaria and the high percentage of chronic diseases at this age.

City residents predominate among the respondents - 72% ( $n= 79$ ). The survey includes a question for education, because the educational qualification directly corresponds to the awareness of patients regarding their assessment of risk factors in the hospital environment. The data point to that the largest share is that of patients with secondary education - 47% ( $n=47$ ), followed by the patients with higher education - 34% ( $n= 34$ ) (Tab. 8).

*Table 8 . Characteristics of the surveyed patients*

<i>Social – demographic characteristics</i>	<i>n</i>	<i>%</i>
<b><i>Gender</i></b>		
Male	56	44
Female	44	56
<b><i>Age</i></b>		
under 30	9	20
30 - 39 years	11	19
40 - 49 years	20	41
50 - 59 years	19	9
over 60 years	41	20
<b><i>Middle-aged</i></b>	49.5 ±10 years	
<b><i>Ethnic origin</i></b>		
n	86	86
Turkish	13	13
Roma	1	1
<b><i>Residence</i></b>		
	72	79
Village	28	21
<b><i>Level of education</i></b>		
her	34	34
Secondary	47	47
Primary	15	15
Other	4	4
<b><i>Employment</i></b>		
Employed	53	56
Unemployed	16	3
Retired	30	41
Other - student	1	1

The sequence of hospitalization is connected with the attempts for a patient regarding all aspects of care and the treatment in a hospital environment and predetermines their opinion on the researched issue. Biggest is the share of the patients admitted for the first time in a health facility - 51% (n=51), followed by patients hospitalized for second way 35% (n=35) and those for third and more times - 14% (n=14)

✓ *Lecturers*

For the purpose of the scientific research, the opinion of university lecturers was also studied on main disciplines of the specialty "Nurse" in the Departments of Health Care at the Medical University – Varna, including the branches in the city of Shumen, the city of Veliko Tarnovo and the city of Sliven (n= 2 0) (table 9).

*Table 9. Characteristics of the researched persons by degree of education, position held, professional experience*

<i>Characteristic</i>	<i>n</i>	<i>%</i>
<b><i>Level of education</i></b>		
Master degree	10	50
Doctor	8	40
Doctor of Science	2	10
<b><i>Position held</i></b>		
Assistant	6	15
Chief Assistant	8	55
Associate professor	4	20
Professor	2	10
<b><i>Experience</i></b>		
11 - 17 years	4	20
18 - 24 years	6	30
25 - 31 years	3	15
32 - 38 years	5	25
39 - 45 years	2	10
<b><i>Average number of years of work experience - 25.6 ± 2.7</i></b>		

The largest is the share of those who acquired the academic position of "Chief Assistant" (55.00%) followed by those who acquired the academic position "Associate Professor" (20.00 %).

Only academic lecturers with a basic medical specialty "Nurse" took part in the semi-structured interview held. In the survey, the group of lecturers with more than 32 years of

experience is the largest (25.00%), which suggests that they can give competent answers and constructive suggestions on the topic of the dissertation work.

✓ *Experts*

A survey was conducted of experts (n= 20) (head nurses working in university and multi-purpose hospitals (50%), HCPs specializing in "Hospital Hygiene" (25%), HCP member of infection control team(10 %) and epidemiologists (15%), regarding the need, conditions and prerequisites for introducing a model for optimizing the process of providing a safe hospital environment in the practice of nurses (table 10).

*Table 10. Characteristics of the researched persons by degree of education, professional experience, position held*

<i>Characteristic</i>	<i>n</i>	<i>%</i>
<b><i>Level of education</i></b>		
Bachelor	4	20
Master	14	70
Doctor	2	10
<b><i>Professional experience</i></b>		
11 - 17 years	3	15
18 - 24 years	6	30
25 - 31 years	6	30
32 - 38 years	2	10
over 45	3	15
<b><i>Average number of years of work experience - 25.6 ± 2.7</i></b>		
<b><i>Position</i></b>		
Specialist doctor (epidemiologist)	3	15
HCP specialized in Hospital Hygiene	5	25
HCP, member of infection control team	2	10
Chief nurse	10	50

This study comprises medical specialists working in structures with a significant commitment in the field of providing a safe hospital environment. We assume that these professionals, on the one hand, have an accurate judgment and could give a meaningful opinion about the nurse's participation in the process of providing a safe hospital environment.

A relation is revealed between the position and the age limit of health care professionals ( $F = 11,73; p < 0.05$ ), finding that the relationship is weak ( $r = 0.253; p < 0.01$ ).

The professional experience and competence of the experts, in our opinion, are significant in outlining the role and participation of the nurse in the process of providing a safe hospital environment.

### **Awareness and level of preparation regarding the process of providing a safe hospital environment in nursing practice**

Promoting the quality of nursing care and the safety of nursing practice is accomplished through training of nurses and the alignment of clinical practices with evidence-based practice. We studied the level of awareness of nurses regarding the process of providing a safe hospital environment through a direct individual anonymous survey.

The group of items was presented in the questionnaire as a Likert-type scale related to the nurses' perceptions of the safety of hospital environment. A Likert scale allowed respondents to rate each item by indicating their level of awareness (from "poor" to "excellent"). The awareness criterion was the presence of knowledge about issues affecting safe hospital environment and allowed nurses to self-assess their awareness of the issue (Table 11).

*Table 11 . Self-assessment of the degree of awareness of nurses regarding the process of providing SHE*

<i>Field of knowledge</i>	<i>Poor</i>	<i>Average</i>	<i>Good</i>	<i>Very good</i>	<i>Excellent</i>
1. Essence of the concept of a safe hospital environment		9	29	60	47
2. Elements of a safe hospital environment		6	44	54	41
3. Documents regulating the safe hospital environment in the practice of nurses	1	14	47	40	43
4. Control of risk factors in nursing practice	1	10	37	49	48
5. Prevention of the risk of blood-borne viral infections - Hepatitis B, C, AIDS		3	20	49	73
6. Safety when reflecting work processes		17	33	48	47
7. Physiological mode of work and rest	2	9	30	49	55
8. Measures to limit NCI		4	18	54	69
9. Microclimate and prevention of occupational stress	4	13	39	48	41
10. Safe Hospital Environment related practices	1	9	39	65	31

The nurses' self-assessment shows an even distribution of the relative shares with close values between "excellent", "very good" and "good" degree of awareness on the indicated topics. In the distribution presented, there are very few responses indicating 'poor' awareness of the respondents. A significantly lower proportion of nurses with poor awareness compared to excellent awareness was observed in almost all domains of knowledge.

In this connection it is important to make a research on the opinion of practitioner nurses

whether they have sufficient training of knowledge and skills for providing a safe hospital environment in their practice. The half of the respondents (52.4%) think they are sufficiently prepared, a quarter (25.5%) cannot estimate and approximately this much (22.1%) answer negatively (Tab. 12).

**Table 12 . Nurses' perception of their preparation for providing a safe hospital environment**

<b>Assessment</b>	<b>n</b>	<b>Relative share</b>
<b>Yes</b>	76	52.4%
<b>No</b>	32	22.1%
<b>I can not decide</b>	37	25.5%

Approximately half of the nurses (48.3%) determine their own skills as very good. It does make impression, however, that one third of them (31.0%) have good skills, 13.1% assess their skills as excellent, and only 7.6% rate them as satisfactory. The average assessment of the practical skills, connected the process of providing a safe hospital environment in nurses is 4.66 (Std. D  $\pm$ 0,71).

The result of the analysis did not confirm a statistically significant connection between self-assessment of nurses regarding the skills acquired during their basic training, for providing a safe hospital environment and their age and work experience ( $p > 0.05$ ). At the same time a straight poor correlational dependency between educational degree and self-assessment of nurses (Spearman's  $\rho = 0.164$ ,  $p < 0.05$ ). With the increase of educational degree there is growing the self-assessment of the nurses for their skills, connected with the safe hospital environment.

Interest represents the assessment of university lecturers for the practical skills of nurses in relation to the safe hospital environment which they built during their basic education. Approximately half of the lecturers (45%) define them as excellent, more than one third (40%) consider that they have very good skills and barely 15% rate their own skills as good. The share of the practitioner nurses (13.1%), who assess their skills as excellent, is almost three times smaller than the one of the lecturers (45%). The average evaluation of the practical skills, connected with obtaining a safe hospital environment in lecturers is 4.3 (Std. D  $\pm$ 0.2) (Table 13).

**Table 13. Assessment of the surveyed nurses and of lecturers regarding the practical skills of nurses to provide a safe hospital environment**

<b>Assessment</b>	<b>University lecturers</b>		<b>Nurses</b>	
	<b>n</b>	<b>Relative share</b>	<b>n</b>	<b>Relative share</b>
<b>Poor</b>	0	0	0	0
<b>Unsatisfactory</b>	0	0	11	7.6 %
<b>Good</b>	3	15.0 %	45	31.0 %
<b>Very good</b>	8	40.0 %	70	48.3 %
<b>Excellent</b>	9	45.0 %	19	13.1 %
<b>Total</b>	20	100.0	145	100.0
<b>Overall assessment</b>	<b>4.30</b>		<b>4.66</b>	

Almost half of the nurses (48.3%) and approximately this much lecturers (40%) determine them as Very good, and one third of the nurses (31%) and approximately one fifth of the lecturers as Good (15 %) (Fig. 4).

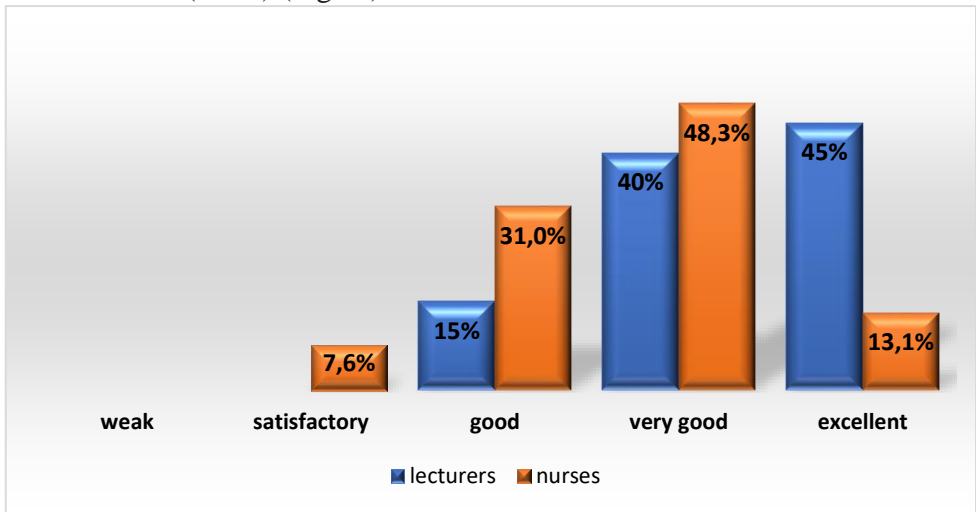


Fig . 4. Comparative assessment of the practical skills by nurses and by lecturers in relation to SHE

**Attitudes toward learning about safe hospital environment novelties in nursing practice**

Continuous assessment of nursing competence is an important learning strategy used in both the didactic and clinical components of nursing education courses . They have a major impact on defining critical thinking and clinical decision-making skills, as well as on developing communication skills by new graduates.

It is unrealistic to believe that graduates of nursing education programs have received all the training they need when they complete their academic education.

The results show a significant attendance of the modes of educational by 59% (n= 86) among nurses, mostly from Bachelor of Healthcare (n=38), Masters (n=25), Bachelor of Healthcare management (n=22), in age group 41-50 years (35.7%; n= 40), but high representation between 30-40 years (50.0%; n=15), with work experience 11-29 yr (53.3%; n=38) (Fig. 6).

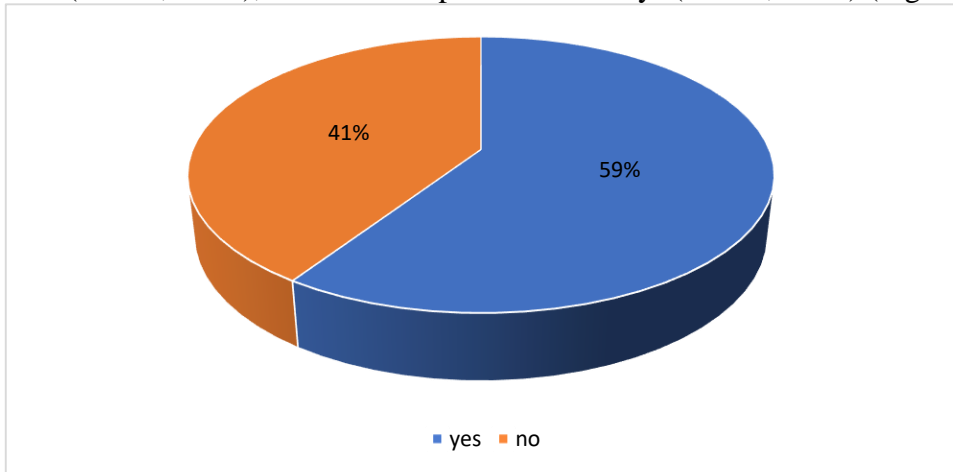


Fig. 6 . Attending specialized trainings, courses or seminars on safe hospital environment and innovations in the field among nurses



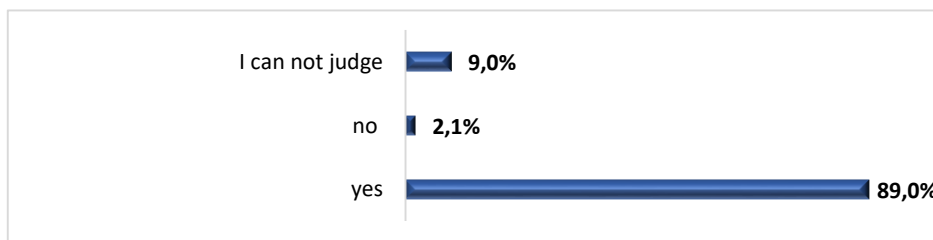
Investigating the barriers to participation in continuing education, we found that 42.4% (n=25) of nurses who did not attend specialized training was due to high professional engagement. According to a large part of them, the lack of motivation is also a leading reason (25.4% , n=15), and another 22% (n=13) share that they can not afford it financially. The very disturbing opinion said by a small part of the respondent nurses (22%, n=13), who indicate the lack of information as a reason must not remain unnoticed. This indirectly shows that the communication in nursing practice sometimes formalizes and is not always efficient, and also gives grounds to the necessity of continuous training of healthcare professionals on the researched issue (Fig. 7).



**Fig. 7. Reasons why nurses did not attend courses**

*\* The results exceed 100% since the respondents have had the opportunity to point out more than one answer*

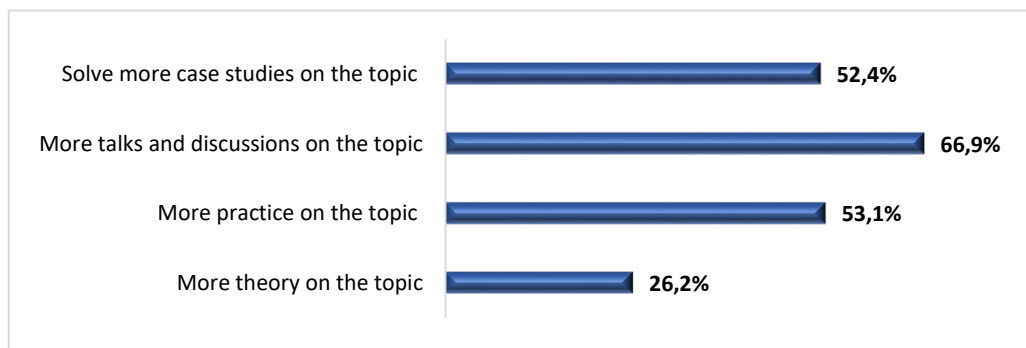
Against the background of these results in terms of professional improvement, almost all of the interviewed nurses expressed a desire to participate in trainings (89%). A statistically significant correlation between the duration of professional experience and the nurses' desire to study is not found ( $C=0.197$ ;  $p=0.155$ ), as well as regarding education ( $C=-0.076$ ;  $p=0.421$ ) (fig. 8).



**Fig. 8. Nurses' attitudes toward participation in continuing education**

We checked which methods of training would contribute to refinement of skills concerning SHE. A significant part of the respondents expressed preferences to the heuristics methods i.e. they prefer learning based on experience, practice and observation of the facts of an issue. More than the half of the respondent nurses (66.9%) preferred discourses and discussions, other practice on a topic (53.1%). The fact that 52.4% prefer research methods and indicated case

solving is encouraging (Fig. 9). These methods develop the intuition, activate thought and imagination, create opportunities for critical thinking and raise the ability for decision- making on various problems in medical practice.



*Fig. 9 . Learning methods preferred by nurses*

*\* The results exceed 100% since the respondents had the opportunity to point out more than one answer*

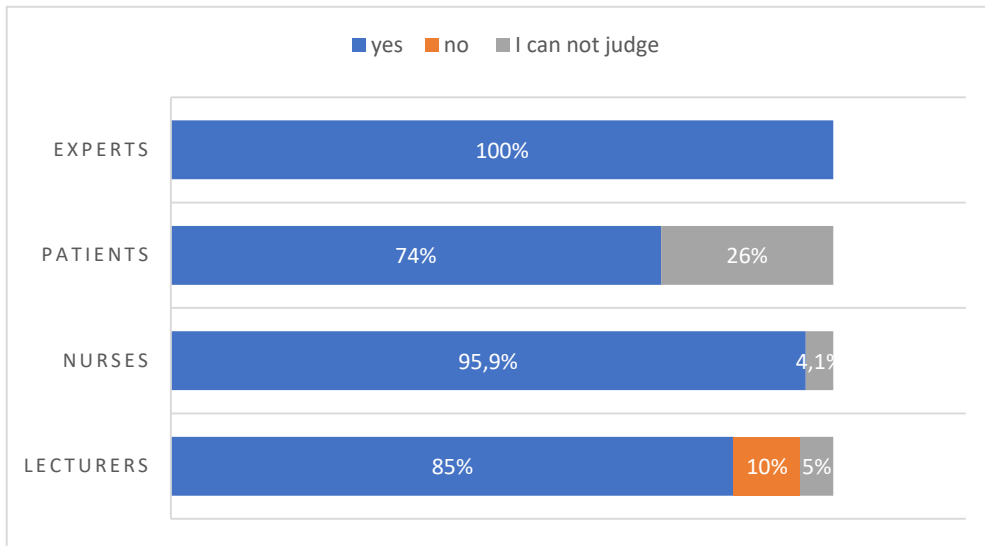
A moderate correlation dependence was found between the methods and modes of training preferred by nurses, and their educational degree (Contingency's C=0.411, p<0.001), the age (Contingency's C = 0.475, p<0.001), and also their internship (Contingency's C = 0.396, p < 0.001). At the ones preferring more theory on a problem (26.2%) prevail the nurses with secondary special and college education, in age groups 40–59 y. and with experience over 25 years. At the same time among the ones expressing need for more discourses and discussions and case studies prevail the nurses with ECD Bachelor, Bachelor's degree and Master's degree in HCM in the age groups 30–59 y. with internship up to 25 years.

**The role of the nurse in the process of providing a safe hospital environment - a comparative characterization of the respondents' opinion**

The strengths of both quantitative and qualitative approaches were used to assess the role and contribution of the nurse in the process of providing a safe hospital environment. Quantitative and qualitative analyses were integrated to make more nuanced interpretations of the views of nurses, university lecturers and experts in the field of safe hospital environment.

Nurses have a unique position to assist in optimizing the process of providing a safe hospital environment in their practice. Evidence for this are the results from the studies which show the categorical opinion of the respondents about the essential role of nurses in the process of providing a safe hospital environment. This share in result on own you are observations almost all from the respondents sisters . The responses of all participants and in-depth interviews were also positive statements about the definite contribution of nurses in the process of providing a safe hospital environment.

The data from the opinion expressed by the majority and by the four groups of respondents, prove that nurses have an essential role in the process of providing a safe hospital environment (Fig. 10) .

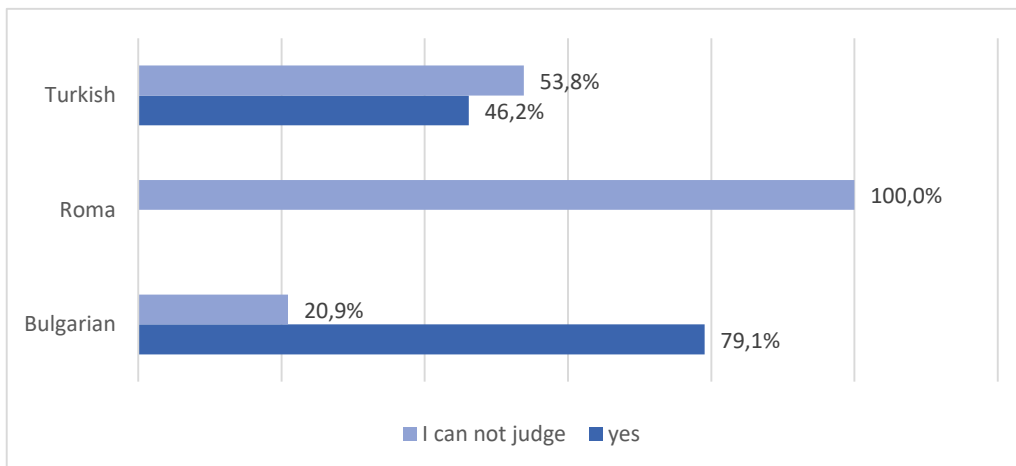


**Fig. 10 . Opinion about the role of the nurse in providing the process of a safe hospital environment according to the various groups of respondents**

Very high is the share of the positive answers to the questions related to contribution and role of nurses in ensuring in the process of providing a safe hospital environment. According to 74% of the patients, nurses have an essential role in providing a safe hospital environment. Some patients (n=26) found it difficult to answer the questions that they did not feel competent and indicated a possible answer "I cannot decide". No answer "No" was given, indicating that for patients, nurses play a critical role in providing patient safety.

Nurses' self-assessment regarding their role in the process of providing a safe hospital environment is positive. Almost all of the nurses surveyed believe that they contribute to providing a safe hospital environment to patients and staff (95.9%). There are no negative answers, and 4.1% cannot decide.

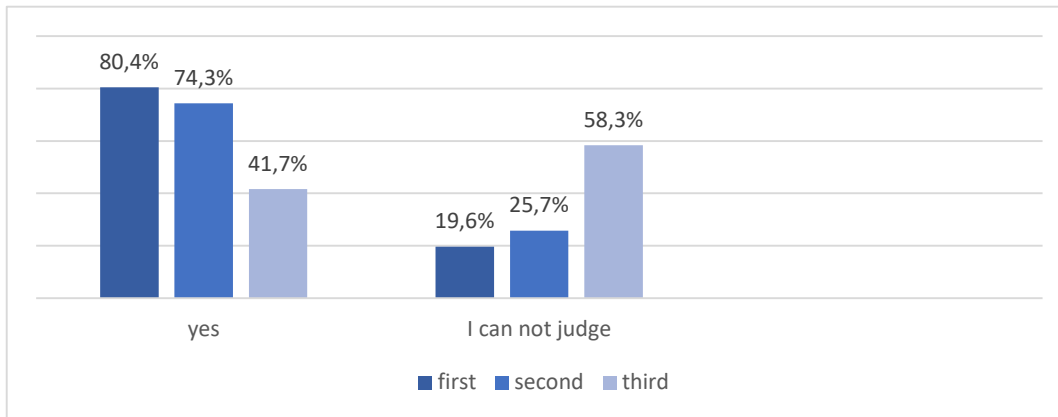
The view of the patients regarding the contribution and role of the nurse in the process of providing a safe hospital environment is influenced by their ethnicity (Fig. 11).



**Fig. 11 . Patients' opinion on the role of the nurse in providing the process of a safe hospital environment according to their ethnicity**

Available is statistically significant dependence between ethnicity and their opinion concerning the contribution of nurses ( $\chi^2 = 9.234$ ,  $p < 0.01$ ,  $r = 0.269$ ).

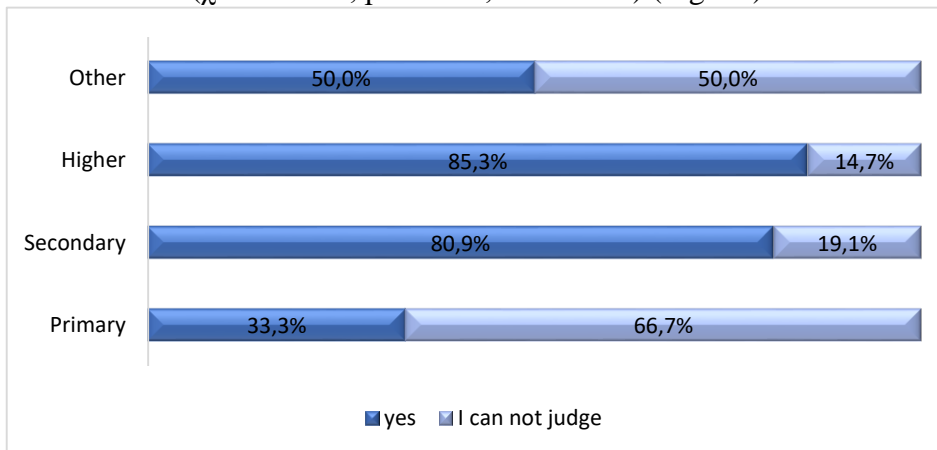
There was also strong correlational dependency found between the sequence of hospitalization of patients and the opinion on this matter ( $\chi^2 = 8.308$ ,  $p < 0.01$ ,  $r = 0.181$ ) (Fig. 12).



**Fig. 12 . Patient opinion on the role of the nurse in providing the process of a safe hospital environment according to the sequence of hospitalizations**

With the increase of the sequence of hospitalization there decreases the share of the sick according to whom a nurse could not contribute to providing the process of safe hospital environment. The results obtained could be explained by the fact that with every following stay in hospital the awareness and the experience of patients connected with their health issue grow, too.

It was proven that the opinion of patients on the matter is in correlational dependency with their education ( $\chi^2 = 17.492$ ,  $p < 0.001$ ,  $r = - 0.241$ ) (Fig. 13).

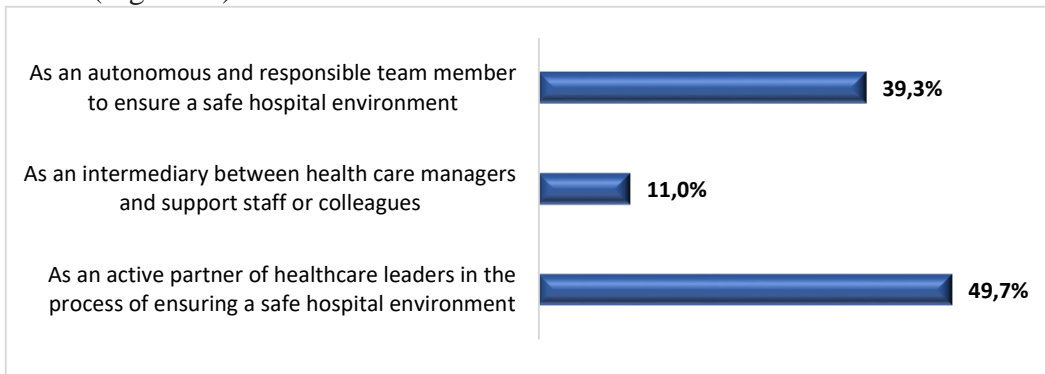


**Fig. 13 . Patient opinion on the role of the nurse in providing safe hospital environment process by education**

With the increase of educational degree there grows the confidence of patients in the possible contribution of nurses for providing the process of safe hospital environment.

The results obtained prove the positive opinion of the majority of the respondents regarding

the possibilities for improvement of the process of providing a safe hospital environment through the involvement of the nurse. In connection with everything exposed so far, interest represents the vision of surveyed nurses regarding their role in the process of providing a safe hospital environment. A very small part from them express opinion that a nurse must perceive the role of a mediator between health care managers and the supporting staff with purpose of additional clarification on different matters occurred concerning the process on safe care. One third of the nurses (39.3%) arrange the nurse the role of an independent and responsible team member to provide a safe hospital environment. Half of the respondents (49.7%) consider that nurses must be an active partner of healthcare managers in the process of providing a safe hospital environment (Figure 14).



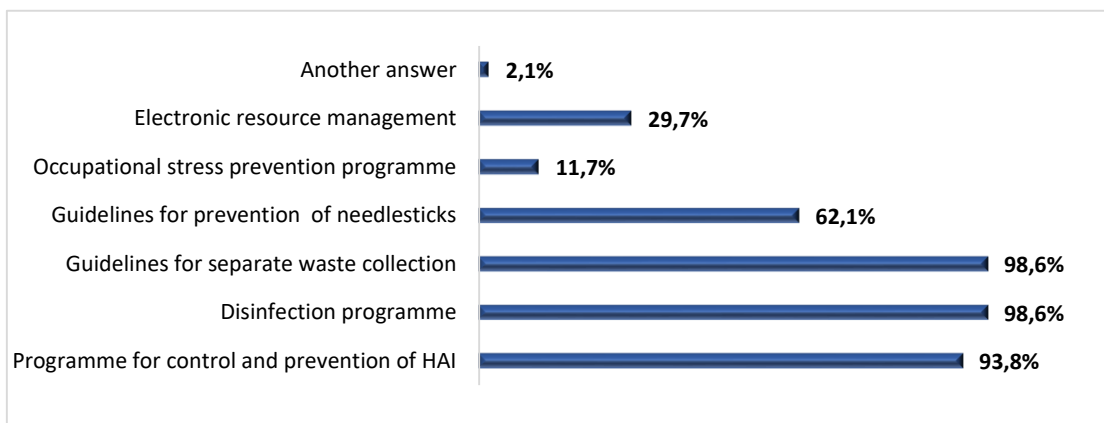
*Fig. 14. Opinion about the role of the nurse in providing the process of a safe hospital environment*

**The participation of the nurse as a full-fledged member of the infection control and environmental safety team, with own responsibilities and competencies is the new vision for the role of the nurse in the safe health care system as a whole.**

**As a result of the analysis on the opinion of the respondents regarding the role and the contribution of the nurse in the process of providing a safe hospital environment, it can be summarized, that significant part from the researched persons appreciate positively the contribution of nurses for optimization of the process on providing a safe hospital environment. More than half and from the four groups of respondents consider that a nurse must be an active team member in the process of providing a safe hospital environment, as with this they will contribute to its effective course.**

### **Need for optimization of the participation of the nurses**

The knowledge of the normative arrangement is an important condition for legitimate practice of the profession, for compliance with the rights of patients and more specifically - the law of the patients to safe health care in a safe hospital environment. when asked what rules connected with the safe hospital environment are implemented in their practice, one third of them indicated electronic management of resources (29.7%), two third (62.1%) - Guidelines for prevention and registration of injections, and almost all quoted the Disinfection program, Guidelines for separate collection of waste, Program for the control and prevention of NCI (respectively 98.6%, 98.6%, 93.8%). The fact that only 11.7% of them indicate an introduced Program for the prevention of occupational stress is alarming (Fig. 15).



*Fig. 15 . Nurses' opinion on introduced SHE rules*

\*The results exceed 100% since the respondents had the opportunity to point out more than one answer

Statistically confirmed was a credible dependency between the position of nurses on the matter, and their age ( $r = 0.296$ ,  $p < 0.001$ ) and experience ( $r = 0.234$ ,  $p < 0.05$ ). With the increase of the age the experience there grows the share of awareness. Obtained results are most likely due to the fact that nurses with longer professional experience had the opportunity to acquire more impressions connected with the safe hospital environment, which gives them grounds to express categorically their opinion on the matter. Another interpretation could be the average length of service of the respondents ( $23 \pm 0.8$  years), and the most common is 30 years.

The analysis of the data point that significant part from the nurses (72.4%), half of the patients and the majority of lecturers and experts (85% and 87% respectively) express an opinion about the need to optimize the process of providing safe hospital environment in nursing practice.

The results obtained reflected in Table 15, prove the positive opinion of the majority of the respondents regarding the need for improvement of the process of providing a safe hospital environment with the participation of nurse.

*Table 1 5. Opportunity to optimize the process of providing a safe hospital environment with the participation of nurse*

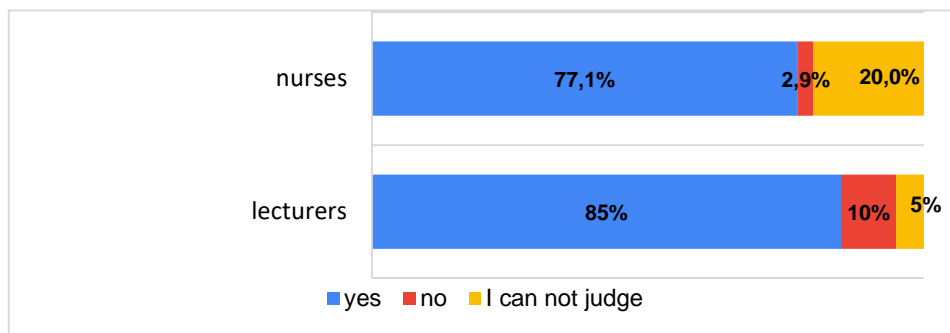
An opportunity for optimization of the process of providing a safe hospital environment	Patients		Nurses		Teachers		Experts	
	no.	%	no.	%	no.	%	no.	%
<b>Yes</b>	48	48,0	105	72,4	19	85,0	13	<b>87,0</b>
<b>I can not decide</b>	49	49,0	35	24,1	1	15,0	2	<b>13,6</b>
<b>No</b>	3	3,0	5	3,4	0	0	0	<b>0</b>
<b>Total</b>	<b>100</b>	<b>100</b>	<b>145</b>	<b>100</b>	<b>20</b>	<b>10 0</b>	<b>15</b>	<b>100</b>

A poor reverse correlational dependence was proved between the experience of nurses and their opinion on the matter ( $\rho = -0.129$ ,  $p < 0.05$ ). With the increase of the experience, there decreases the confidence on the sisters that would they could Yes cooperate for optimization on the process on providing a safe hospital environment.

A poor correlational dependence was found between the sequence of hospitalization of

patients and the opinion on the matter ( $\rho = 0.233$ ,  $p < 0.001$ ). With the increase of the sequence of hospitalization there increases the share of the sick patients according to whom a nurse could contribute to optimization of the process of providing a safe hospital environment. The results obtained could be explained by the fact that with every next stay in hospital there grow the awareness and the experience of patients connected with their safety. It was proved that the opinion of patients on the matter is in poor straight correlational dependency with their education ( $\rho = 0.211$ ,  $p < 0.001$ ). With the increase of the educational degree there grows the confidence of patients in the possible contribution of nurses for optimization of the process of providing a safe hospital environment.

To investigate whether nurses apply optimal models to provide a safe hospital environment we surveyed the views of nurses and university lecturers (Fig. 16).

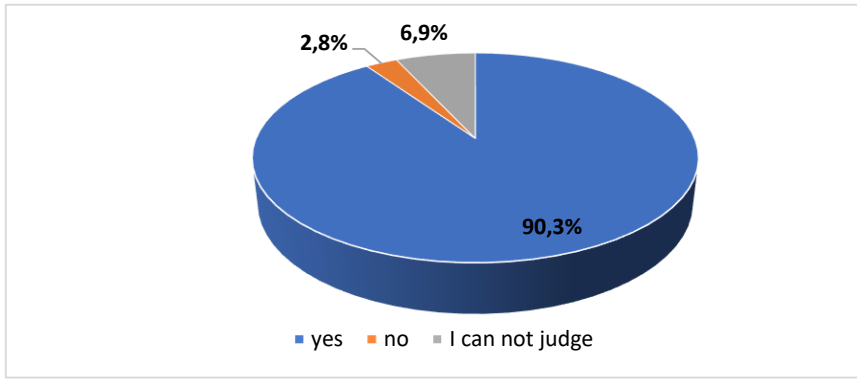


*Fig. 16 . Opinion on the implementation of optimal models by nurses in the process of providing a safe hospital environment*

Obtained results reveal consensus on the considered matter by both groups of respondents. The results of the analysis prove lack of statistically significant connection between the age and the experience of the nurses and their opinion on the matter ( $p > 0.05$ ). No statistically significant correlation was established in the opinion of the lecturers. They as a whole confirm the position of the most respondents for perception of the role of nurses in implementing optimal models to provide a safe hospital environment in their practice.

**Opinion on implementing new models in nursing practice**

Surveyed opinion on readiness to implement improved models for providing a safe hospital environment in nursing practice, is relevant to the introduction of rules and approaches in nursing, as well as to the establishment of standards in the profession. We therefore explored nurses' views on implementing new approaches to their practice in the field of safe hospital environment (Fig. 17).

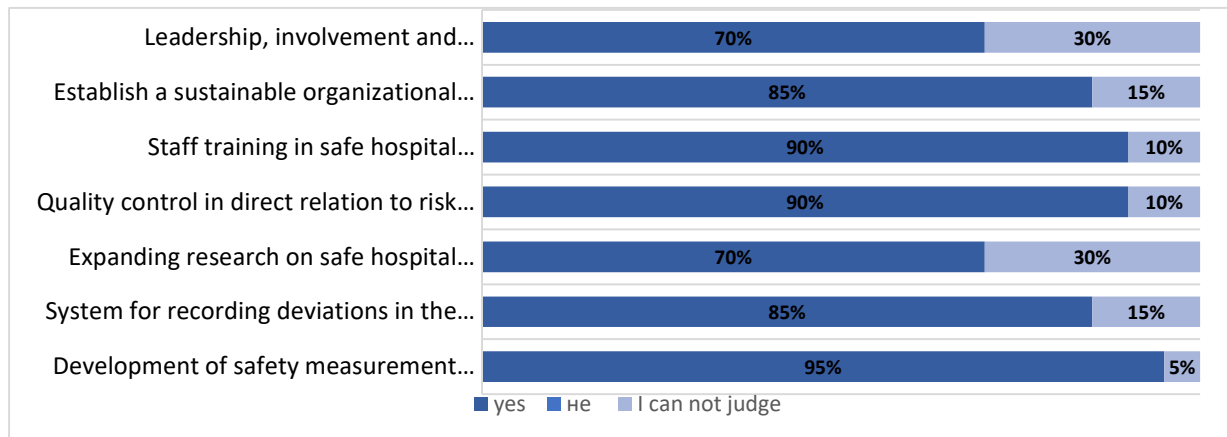


**Fig . 17 . Readiness to implement a new SHE Process Optimization Model**

A large part of nurses (90.3%) expressed readiness to implement new models in their practice ( $p > 0.05$ ).

There was a poor correlation dependence between the degree of education of nurses and their position, connected to improving approaches to providing a safe hospital environment ( $\rho = 0.249$ ;  $p < 0.001$ ). The share of the nurses who give a positive opinion, is reduced with increase of their age and experience. The indicated results justify the need for improving existing practices, giving opportunity for nurses to update and complement their competencies concerning the safety of hospital environment.

University lecturers were given the opportunity to comment on the elements that could be included in a conceptual model for the introduction of nursing practice (Fig. 18).



**Fig. 18 . University lecturers' opinion on conceptual model content**

\* The results exceed 100% since the respondents had the opportunity to point out more than one answer

Leadership in the attitude of personal and professional realization, training and readiness to apply a scientifically based approach to the process of providing a safe hospital environment are valid arguments given by the experts for introducing a conceptual model.

We further researched the opinion of the lecturers on the areas for improvement in relation to successful implementation of new approaches/models in the process of optimizing safe hospital environment in the practices of nurses (Table 16).

**Table 16 . Opinion of university professors regarding conditions for improvement in relation to BBS**



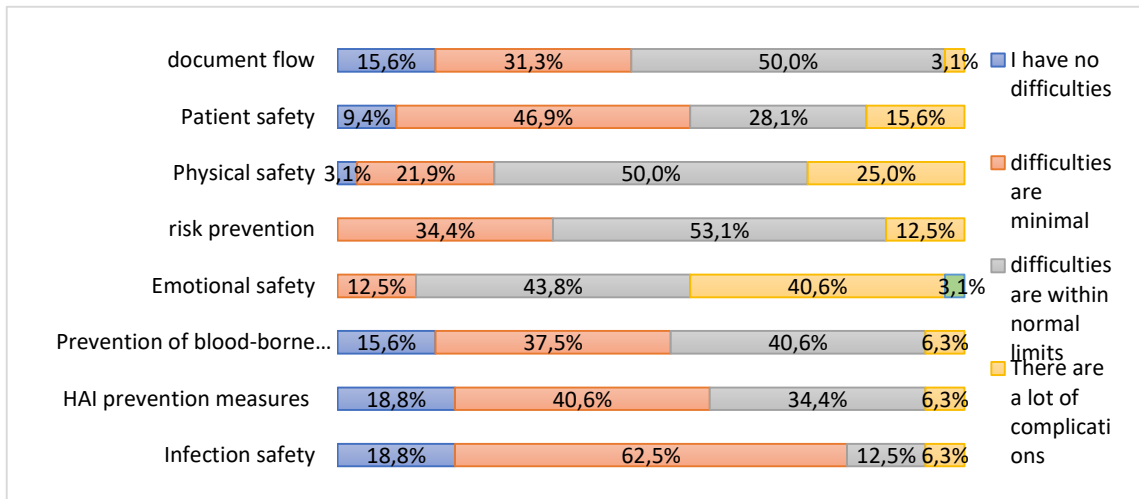
<i>Conditions for improvement in connection with SHE</i>	Yes	No	I can not decide
<b>Culture</b> – organizational culture, safety culture, risk management culture.	18		2
<b>Leadership</b> – hospital management (at all hierarchical levels) must support the process of providing a safe hospital environment in nursing practices and provide the resources necessary to make it happen.	19	1	
<b>Staff</b> – availability of specialists in hospitals who will work together to optimize the process of providing a safe hospital environment in nursing practices.	17		3
<b>Systematicity</b> – presence of practices or attitudes that provide the necessary environment for the realization of the process of providing a safe hospital environment in the practices of nurses.	17		3
<b>Vision and strategy</b> – nurses need to know the evolving role they have in the process of providing a safe hospital environment and also how they can improve it.	17	1	2
<b>Resources</b> – human, time, financial and technological.	19		1

According to obtained data the major part of lecturers consider that all six elements are important. It was found that with the increase of the educational degree of lecturers there increases the share of the ones reporting the importance on all elements of a model for improving safe hospital environment ( $C = 0.317$ ,  $p < 0.05$ ).

No statistically significant connection was established between the opinion of university lecturers on the matter question and the researched characteristics in terms of their education ( $\chi^2 = 7.340$ ,  $v = 0.428$ ) and position ( $\chi^2 = 9.216$ ,  $v = 0.480$ ).

The results unambiguously prove, that the introduction of a new model is considered by most respondents as an uninterrupted process of dialogue and support between nurses, their supervisors and university lecturers.

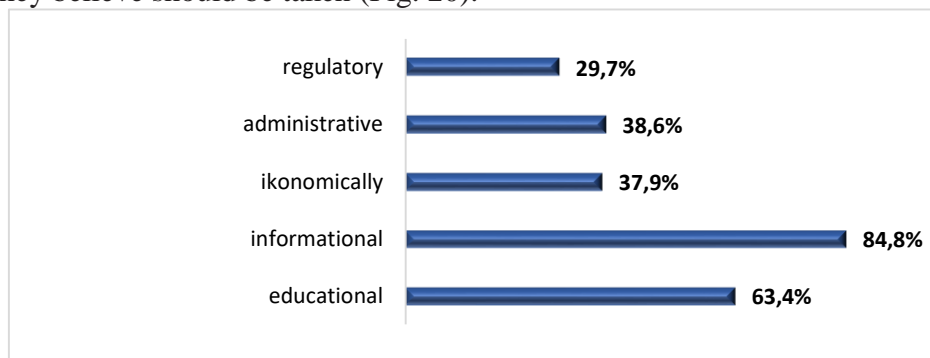
In connection with everything stated so far, interest represents the vision on researched nurses about difficulties they encounter in the process of providing a safe hospital environment (Fig. 19).



*Fig. 19 . Degree of difficulty according to the elements of the process of providing a safe hospital environment in the opinion of nurses*

The difficulties that nurses face in the individual elements of providing a safe hospital environment in the practice of nurses, a 5- point Likert scale was used, measuring the degree of difficulty (from 1 = I do not encounter any difficulties to 5 = I encounter extremely many difficulties). The results of the analysis prove lack of a statistically significant connection between the age, experience, profile of ward and their opinion on the matter ( $p > 0.05$ ). At the same time, a statistically significant poor correlation established between the opinion of nurses regarding the need for prevention of professional stress and their work experience ( $r = 0.177$ ,  $p < 0.05$ ).

In connection with positive attitudes expressed by the respondents to optimize the process of providing a safe hospital environment of essential meaning is the survey on the matter of what measures they believe should be taken (Fig. 20).



*Fig. 20 . Nurses' opinion about the measures that should be taken to optimize the process of providing a safe hospital environment*

\* The results exceed 100% since the respondents had the opportunity to point out more than one answer

A big share of nurses (84.8%) believe that information security should also be improved - documentation, reporting, confidentiality of information. The smallest part of respondents pointed out the normative measures, most likely considering that there are enough normative rules and only their observance is necessary. The majority of the nurses (84.8%) have indicated educational measures, which coincides with their positive attitude about the need for continuous training in the field of safe hospital environment.

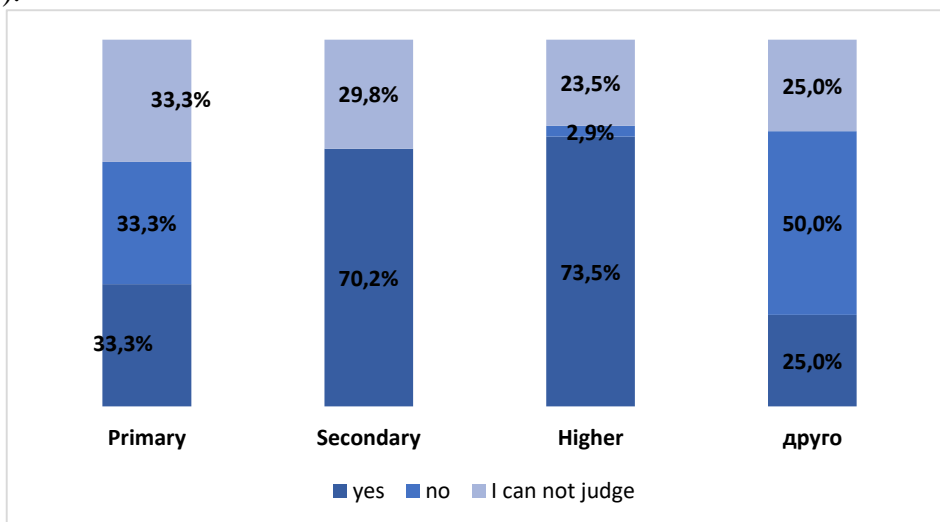
In conclusion it can be summarized, that nurses realize the necessity from continuous training, directed to effective application of the process of providing a safe hospital environment in their practice, with view of encouragement of behavior as active participants in the process of providing safe care.

***Patient safety as part of the process of providing a safe hospital environment***

Patients have the potential to provide valuable quality and safety data and data for their improvement at the micro level.

In connection with the presented results interest represents the question whether patients feel in a safe hospital environment upon application of nurse manipulations and care. Positive answer is given by approximately two third of the patients (64%), one third (38%) of the patients can't decide, and 8% answer negatively.

It was proven that the difference in the answers is statistically significant in terms of education ( $\chi^2 = 13.6$ ;  $p < 0.005$ ) (fig. 21) and the sequence of hospitalizations ( $\chi^2 = 15.1$ ;  $p < 0.004$ ).



**Fig. 21 . Opinion of patients stratified by education about the safety of hospital environment during hospitalization**

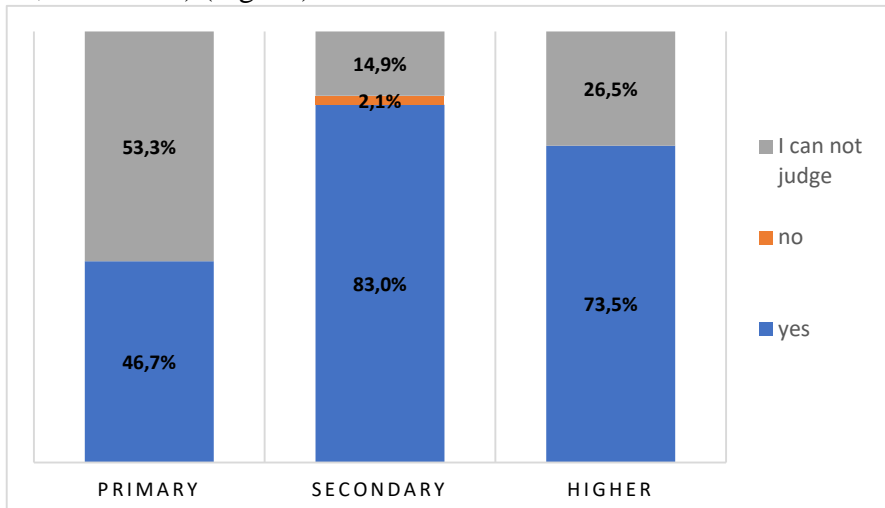
No correlational dependency was proven between the age and ethnicity of patients ( $p > 0.05$ ).

Asked whether they are familiar with the rules for providing a safe hospital environment during their stay in MPHAT - Varna patients give the following answers – big part of them confirm that they were familiar with the rules before hospitalization (64%), and only 8 % deny (Tab. 17).

**Table 17. Patient assessment of the provision of a safe hospital environment**

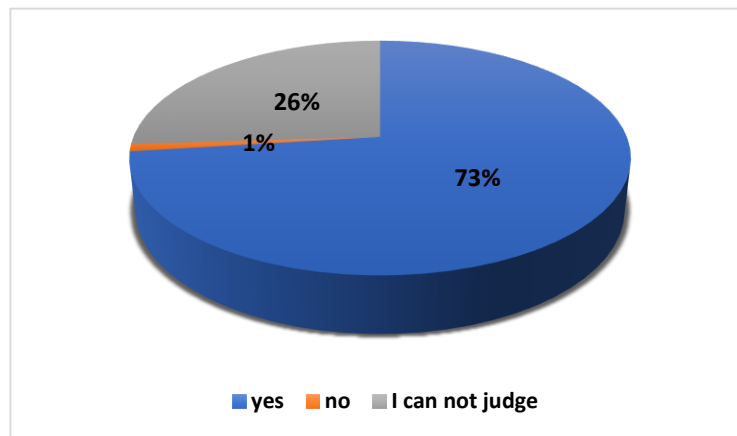
Assessment	n	Relative share
<b>Yes</b>	64	64 %
<b>No</b>	8	8 %
<b>I can not decide</b>	28	28 %

According to the results from the analysis there is again a statistically significant difference in the sequence of hospitalizations ( $\chi^2 = 27.2$ ;  $p < 0.01$ ) and education ( $\chi^2 = 16.231$ ,  $p < 0.001$ ,  $r = -0.189$ ) (Fig. 22)



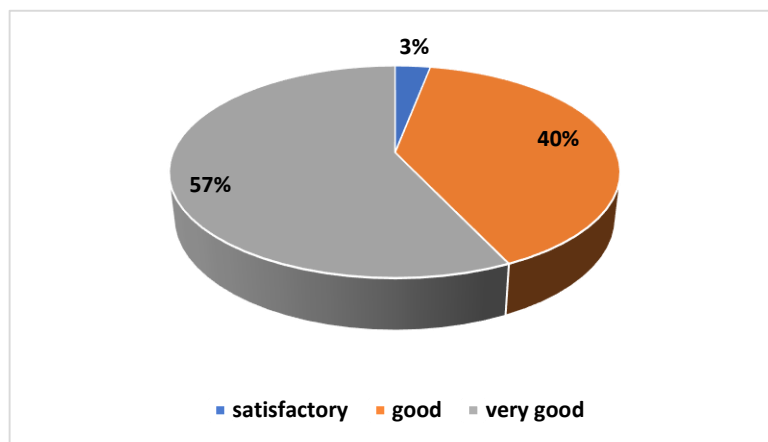
**Fig. 22 . Opinion of patients stratified by education regarding knowledge of safety rules during hospitalization**

The majority (73%) of respondents strongly agreed that nurses provide safe care, a third (26%) gave a neutral opinion and only 1% responded negatively. The majority of respondents (79.3%) in this study indicated that nurses spend time with them when treating or caring for them (Fig. 23).



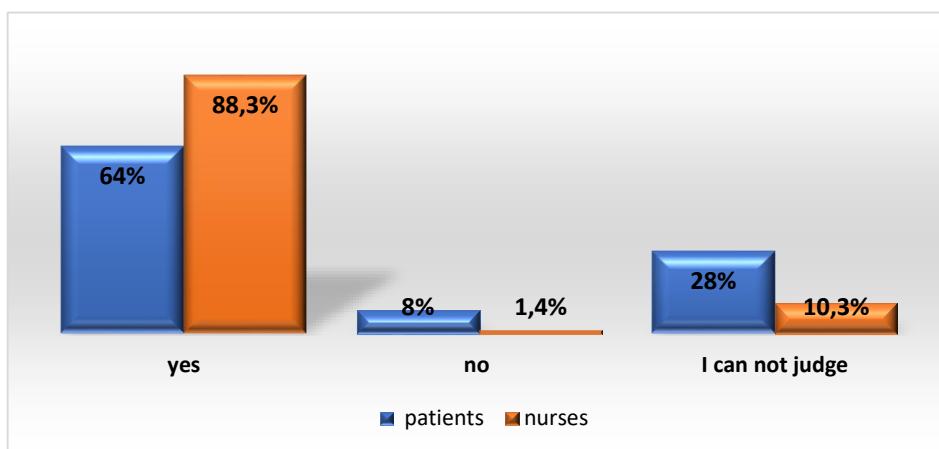
**Fig. 23 . Patient opinion on safety of care during hospitalization**

The patients' overall assessment of the safety of hospital environment was summarized as good and very good. Half of the patients rate the safety conditions of patients during their hospital stay as "very good " (57%), the rest 40% - as good and only 3% - as satisfactory (fig. 24).



**Fig. 24 . General assessment of the safety of hospital environment during hospitalization**

Attention deserves the established significant correlational connection between education of patients and their views regarding safety conditions ( $r = 0.306$ ,  $p < 0.05$ ). It makes impression, that the share of the patients with higher (60%) and secondary education (60%), indicating safe hospital environment as a prerequisite for quality, is two times bigger than that of patients with primary and other education (30%). Asked whether patients are in a safe environment during their stay, two-thirds of the patients (64%) and the majority of the nurses (88.3%) respond positively (fig. 25).



**Fig. 25 .Opinion of nurses and patients regarding the safety of environment**

It was proven that the differences in the answers of the respondents presented in fig. 34, are statistically significant ( $\chi^2 = 87.4$ ;  $p < 0.001$ ). Statistically credible dependency was confirmed between the position of patients on the matter and their age ( $r = 0.307$ ,  $p < 0.001$ ) and experience ( $r = 0.199$ ,  $p < 0.05$ ). With the increase of the age and the sequence of hospitalizations there is also increase in the share of the ones thatg expressed a neutral opinion. Obtained results most likely are due to the fact that the patients with more hospitalizations had the opportunity to acquire more impressions connected with safety, which gives them reason not to express categorically their opinion on the matter.

Poor correlation between was proved between the gender of patients and their opinion on the matter ( $r = 0.271$ ,  $p < 0.001$ ). The share of the women considering that they are in a safe

environment (18.5%), is repeatedly bigger than the one of men (4.6%).

**As a result on the analysis on the opinion of patients regarding the meaning and efficiency of the process on providing a safe hospital environment in nurse practices it can be summarized, that according to the majority of the researched persons it is an important process and the role of nurses in it is significant. At the same time the bigger one part from the respondents consider that the process provision of a safe hospital environment in nursing practices can be improved.**

*The need to optimize the process of providing a safe hospital environment - analysis of the results of an in-depth interview with experts*

For content analysis for each section of the qualitative research, we used a traditional (conventional) approach, with in-depth interview responses were considered as the unit of analysis. We took the phrases and words that are related to each other in relation to the researched matter as meaningful statements and classified them depending on their content.

**The first thematic category** – role and contribution of nurses united the experts in a common opinion. The statements around which the experts have united in their opinions are the following: (a) the role of nurses in the process of providing a safe hospital environment is key and recognized, and (b) nurses have a role in the process of providing a safe hospital environment.

The answers of almost all the participants have positive statements about the categorical contribution of nurses in the process of providing a safe hospital environment (Table 18).

*Table 18 . Topic Category - Nurses support the process of providing a safe hospital environment.*

Subtopics	Number of respondents	Relative share (%)
Role and Contribution	20	100.0
Their role is recognized	17	85.0
Need for role affirmation	18	90.0
Responsibility and teamwork	14	70.0

*Note: The table presents the positive statements of experts.*

The role and contribution of nurses in the process of providing a safe hospital environment tended to be significant for respondents. All participants stated that nurses are an important segment of the process of providing a safe hospital environment.

**The second thematic category** shows additional positive characteristics presented by all respondents regarding the continuing training of nurses.

The prevailing opinion of the respondents is that nurses regardless of the results in their basic training, they must continuously improve their safety knowledge and skills. In all cases, at least a short introductory training is required in terms of the rules to be worked with and which are specific to each specific workplace.

The expert assessment was important not only in relation to the adequacy of the theoretical training in relation to the process of providing a safe hospital environment in practice, but also in relation to the specific requirements for theoretical knowledge for practicing the profession (Table 19).

*So bl. 19. Thematic category - Preparation and training of nurses to provide a safe hospital environment.*

Subtopics	Number of respondents	Relative share (%)
Basic training	17	18,0
Preparation	14	70,0
Need for continuous training	18	90,0
Adequacy of educational programs	19	95,0

*Note: The table presents the statements of the experts who expressed a positive opinion on the matter.*

When analyzing the answers of the respondents, we looked for differences depending on the job position of the experts. No statistically significant differences were found in the responses regarding education, work experience and position held.

**The third topic for discussion** in the in-depth interview was related *to in* the possibility of optimizing the process of providing a safe hospital environment in nursing practice through continuous improvement of existing practices/models.

Respondents' answers touch on two aspects of optimizing the process a on providing a safe hospital environment in the practice of nurses: 1) training for the introduction of new practices and models and 2) introduction of new models for providing SHE, and training to be present in the model;

All respondents are unanimous that in the training of nurses, new practices and approaches should be a priority.

The most significant and extremely relevant opinions that emerge from the summarization of the subtopics show that experts have a favorable forecast for the optimization opportunities (Table 20).

*Table .20 . Topic category - Need for process optimization to provide a safe hospital environment.*

Subtopics	Number of respondents	Relative share (%)
Need to optimize	20	100.0
Need for new models	18	90.0
Need for training	19	95.0

*Note: The table presents the positive statements of experts.*

The experts made *five suggestions* that can be used to improve the process of providing a safe hospital environment in nursing practice:

- Staff availability;
- Micromanagement of adverse events in the hospital environment;
- Effective communication;
- Creating a culture of safety and trust;
- Continuous improvement through training .

**In summary, we can point out that the opinions of almost all experts are focused on a positive forecast. In the examined sub-topics, there are significant and highly relevant statements of experts, which prove that nurses have a key role and that it can be optimized through training and the introduction of new models and practices.**

## **PRACTICAL APPROACHES FOR PROCESS OPTIMIZATION FOR PROVIDING A SAFE HOSPITAL ENVIRONMENT WITH THE PARTICIPATION OF NURSES**

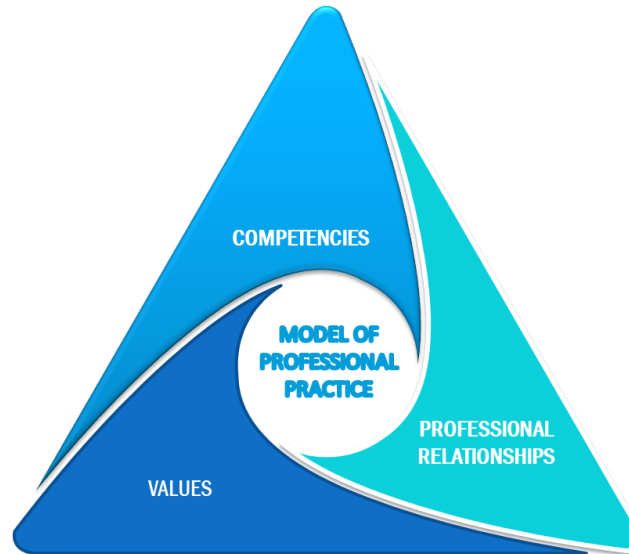
### **A model for optimizing the process of providing a safe hospital environment with the participation of nurses**

Based on researched good practices and on our professional experience, we developed a **Model for optimizing the process of providing a safe hospital environment with the participation of nurses.**

#### *Theoretical justification*

The model is based on studied data and a unified system (structure, processes and outcomes) adopted from most professional practice models by which nurses control the quality of nursing care and provide a safe hospital environment.

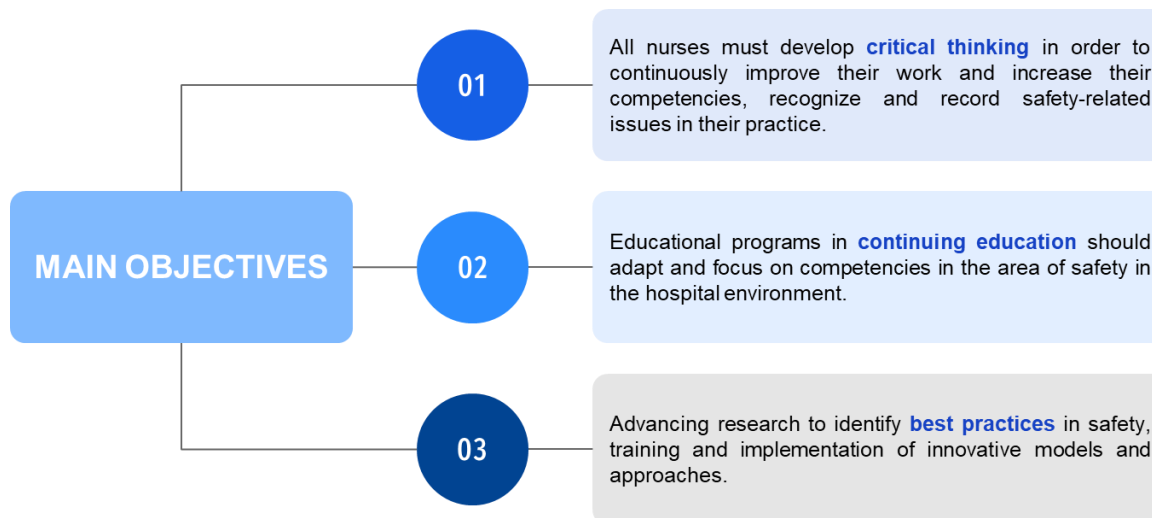
At the same time in the foundation of the Model are three components of good professional models: competencies, professional relationships and values established and confirmed in the course of the research (fig. 27).



*Fig. 27. Components of professional models in nursing practice*

The model for optimizing the process of providing a safe hospital environment with the participation of nurses reflects our concept of expanding and optimizing the professional role of nurses in the process of providing a safe hospital environment. In our opinion, three main **goals** guide nurses in that direction (Fig. 28):





*Fig. 28. Process goals to optimize the process of providing a safe hospital environment with the participation of nurses*

**Strategic rationale**

The results of the study directed our attention to the development of a **Model for optimizing the process of providing a safe hospital environment in the practice of nurses**, with which we believe we will achieve strategic goals, and the expected and final results will follow the course of its implementation (table. 21):

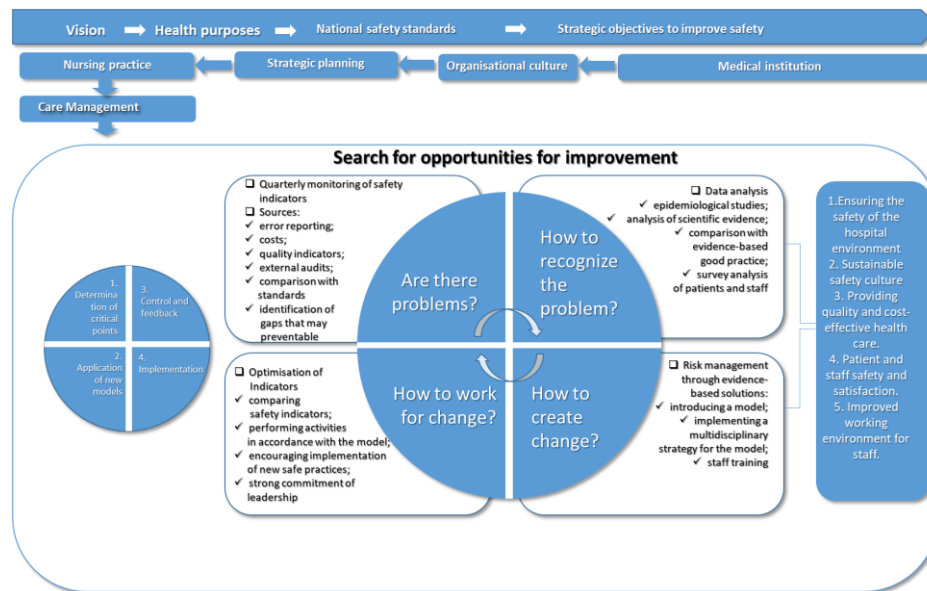
*Table 21. Objectives and results in implementing a Model for optimizing the process of providing a safe hospital environment in nursing practice*

STRATEGIC GOALS	EXPECTED RESULTS	FINAL RESULTS
1. To provide quality and safe HC 1.1 To constantly provide SHE tailored to the individual needs of patients and staff. 1.2 To provide opportunities, develop and support nurses to promote leadership in the process of providing SHE. 1.3 To provide a sustainable safety culture.	<ul style="list-style-type: none"> <li>✓ Ensuring that the SHE is sustainable over the lifetime of this model</li> <li>✓ Ensuring that basic nursing care is provided in the SHE setting.</li> <li>✓ Providing safe care that complies with the requirements of global and national standards and policies.</li> <li>✓ Provide patient and staff oriented SHE.</li> <li>✓ Creating a framework for personal development and training for all staff in</li> </ul>	<ul style="list-style-type: none"> <li>✓ Achieving our quality and safety goals</li> <li>✓ Positive patient safety metrics</li> <li>✓ Improved patient survey results</li> <li>✓ A culture of continuous improvement</li> <li>✓ Implementation of the organization's development strategy</li> <li>✓ Improved staff recruitment and its retention</li> <li>✓ Improved staff survey results</li> <li>✓ Improved resource utilization</li> </ul>

	the focus of SHE provision	<ul style="list-style-type: none"> <li>✓ Achieving health facility efficiency goals</li> <li>✓ Achieving profitability</li> <li>✓ Improved clinical and financial outcomes</li> </ul>
<p>1. Collaborating to deliver safe care</p> <p>2.1 Development of approaches to promote the SHE provision process</p> <p>2.2 Cooperation with MU for training and development of a sustainable workforce.</p> <p>2.3 Search for innovative solutions for SHE.</p>	<ul style="list-style-type: none"> <li>✓ Health, better care, a better SHE provision framework, which includes</li> <li>✓ Sustainability and transformation</li> <li>✓ Development and expansion of clinical partnership agreements</li> <li>✓ Better health, better care, better practices</li> <li>✓ Fostering new partnerships in education and research</li> <li>✓ Partnering with educational institutions to improve employment, recruitment and retention</li> <li>✓ Partnering with primary care to address common challenges.</li> </ul>	<ul style="list-style-type: none"> <li>✓ Improved SHE that provides the right care, at the right place and at the right time, as outlined in institutional policies</li> <li>✓ Patient satisfaction, reducing hospital stay</li> <li>✓ Reducing staff turnover</li> <li>✓ Staff motivation for training and development</li> <li>✓ Established lines of partnership and leadership.</li> </ul>
<p>3. Improving health and well-being by creating a SHE Model.</p> <p>3.1 Creation of a SHE Model that meets the requirements of health care quality standards</p> <p>3.2 Development of a sustainable culture of SHE.</p> <p>3.3 Maximum use of the potential of nurses to improve SHE.</p>	<ul style="list-style-type: none"> <li>✓ Maximum increase of the benefits of SHE provision</li> <li>✓ Affirmation of the model as key in achieving good practices</li> <li>✓ Development of algorithms</li> <li>✓ Preparation of programs and instructions</li> <li>✓ Maximum use of support opportunities</li> <li>✓ Provision of fit-for-purpose facilities that ensure patient and staff safety.</li> </ul>	<ul style="list-style-type: none"> <li>✓ An agreed sustainability development plan that includes a safety culture and ongoing training.</li> <li>✓ Good results achieved.</li> <li>✓ Modern facilities, fit for intended use</li> <li>✓ A management team that supports continuing education.</li> <li>✓ Agreed policies with MU-Varna.</li> </ul>

The model is an expression of our belief that nurses can initiate change at all levels. Creating a safe hospital environment in nursing practice that is most conducive to patient and staff safety will require multi-pronged changes in organizational safety culture. These changes require leadership capable of changing not only the hospital environment but also the beliefs and practices of nurses.

To prepare the Model, we developed Organizational framework for process improvement to provide a safe hospital environment (Fig. 29).



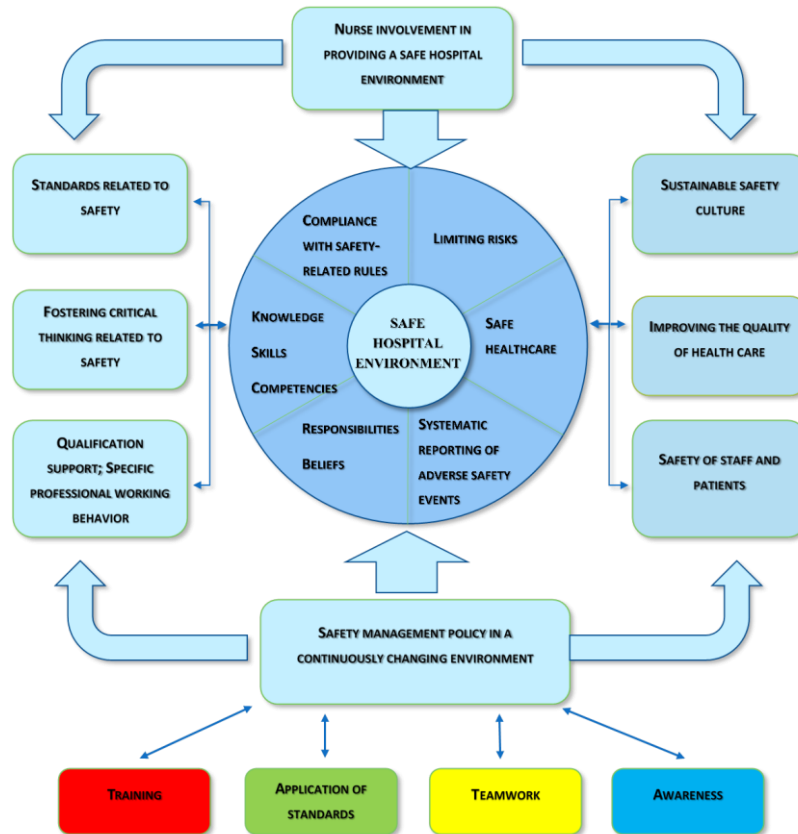
*Fig. 29. Organizational framework for creating a Model for optimizing the process of providing a safe hospital environment*

An organizational framework for providing a safe hospital environment improvement process gives clarity and direction to healthcare facilities on the key strategic, clinical and operational components related to achieving a safe and reliable hospital environment.

All parts are interconnected and interdependent and help to rethink existing safety related models by highlighting their strengths. At the same time, gaps are analyzed and improvement measures are taken.

We structured a **Model to optimize the process of providing a SAFE HOSPITAL ENVIRONMENT in the practice of nurses**, which is presented schematically in fig. 30.

**MODEL TO OPTIMIZE THE PROCESS OF PROVIDING A SAFE HOSPITAL ENVIRONMENT IN THE PRACTICE OF NURSES**



*Fig. 30. Process optimization model for providing a safe hospital environment in nursing practice (author's development)*

**The Model** proposed by us for **optimizing the process of providing a safe hospital environment in the practice of nurses** is a set of tools and activities performed in a certain sequence in order to optimize the process of management, control and evaluation of the safe hospital environment.

When developing the Model, the good practices described in the scientific literature were studied and applied and include initiatives at national and health facility level to build a safety system for the hospital environment.

**A model for optimizing the process of providing a safe hospital environment in nursing practice** presents the essential role of nurses in providing a safe hospital environment through values, training and communication. The model provides a blueprint for optimizing the process of providing a safe hospital environment in nursing practice and illustrates the alignment of nursing practice with the elements essential to achieving successful outcomes.

The uniqueness of our model is in the integration, balance (every area is equally important) and interaction of the elements. Our model describes how nurses can optimize the process of

providing a safe hospital environment. The model is dynamic and highly flexible, allowing applicability to different roles and areas of practice. Within the model, nurses can grow in their beliefs and values in providing a safe hospital environment.

### Main components of the Model for optimizing the process of providing a safe hospital environment in nursing practice

#### A sustainable culture of safety and trust

Safety culture is a component of the model that is concerned with creating an environment of resilience and trust, ensuring that nurses feel their views are valued and that any negative safety related behavior is addressed quickly.

The first step to improving safety culture in hospitals is to clearly define and conceptualize the concept. A continuous process of measuring, improving and evaluating the safety culture should then be undertaken. Improving safety culture involves a continuous process of identifying strengths and weaknesses, implementing measures and evaluating the process of providing a safe hospital environment (Fig. 31).

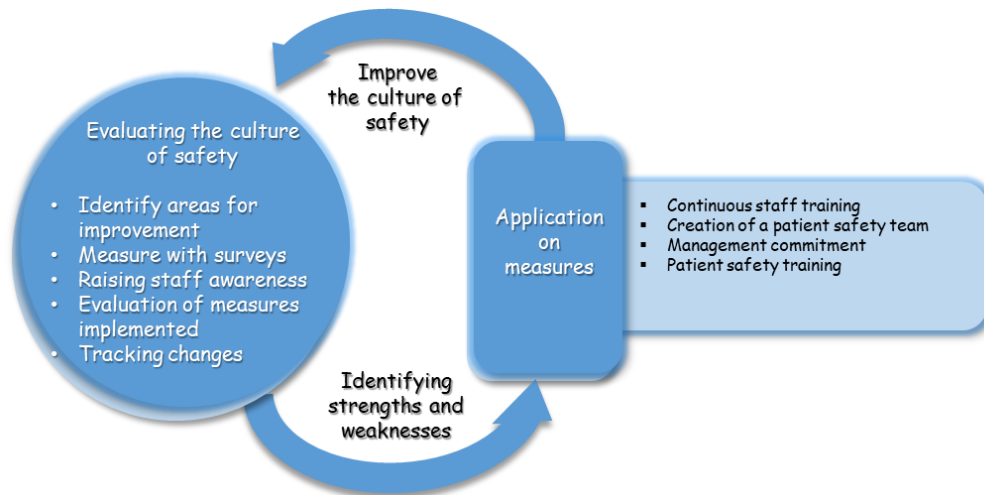


Fig. 31 . Measures to improve the safety culture, adapted by the author

Source: "Safety Culture in Healthcare: A review of Concept, Dimension, Measures and Progress"

Safety culture is directly related to a stable organizational culture with the commitment of all medical professionals and leaders to sustain the process of providing a safe hospital environment

#### Leadership and teamwork

The nurse as a leader challenges existing practices, leads and sustains change, has a vision for change and a commitment to innovations. The leader thinks creatively and is a role model in process improvement initiatives in their practice. Shared power and authority have a

strong influence on the activities of nurses in the process of providing a safe hospital environment. Nurses as leaders in the process of providing a safe hospital environment must support and uphold their values, behaviors and beliefs.

We have established the main areas of application of leadership of nurses in the process of providing a safe hospital environment (Fig. 33).



*Fig. 33. Areas for developing and maintaining leadership in the process of providing a safe hospital environment in nursing practice*

Two predisposing factors - organizational support and personal qualities influence the ability of each person, and of nurses in particular, to fulfill their leadership positions in their practice.

### Encouraging critical thinking

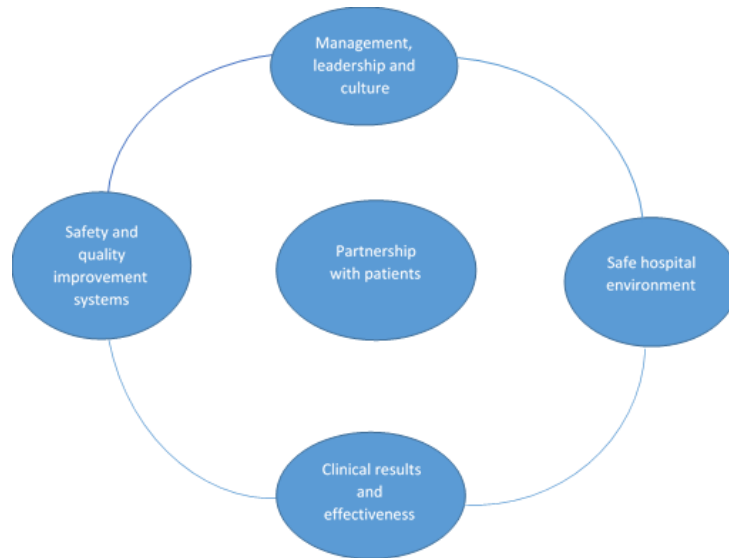
*Critical thinking* is an essential component of professional responsibility models and an indispensable part of safety providing practices. Critically thinking nurses exhibit qualities such as confidence, creativity, open-mindedness, persistence, and clinical thinking. They analyze, apply standards, seek information, reason, predict and transform their knowledge continuously, which is extremely important in the process of providing a safe hospital environment in nursing practice.

### Responsibilities

For the proper functioning of the process of providing a safe hospital environment, medical professionals, patients and managers are included and involved in collecting data, analyzing trends and results in determining the priorities of the hospital environment safety.

### Patient safety

In recent years, health care safety policies have focused on patients – they are at the center of the health care system (fig. 34).



*Fig. 34 . Patients - at the center of the health care system*

Thus, as such, patients, through their opinions and actions, can influence and assist in optimizing the process of providing a safe hospital environment. Patients have the potential to provide valuable quality and safety data and their micro-level improvement data.

### **Improving the quality of nursing care**

Safety, as one of the main dimensions of quality of care, is a priority goal of quality management in healthcare systems. Monitoring of nursing care quality indicators should be a planned and systematic activity to identify opportunities for improvement of existing practices. It is a key to the dynamics of improvement processes and an inevitable component of optimization models in nursing (237).

### **Application of standards and rules**

The standards define the actions that must be undertaken, to develop and establish systems for good clinical management.

The application of standards in the process of providing a safe hospital environment serves to prevent organizational and random, objective factors that increase risks. Safety related regulations reflect the science-based balance between the rapidly increasing demands for safe health care and the existing limited financial and human resources.

### **Approaches to Applying the Process Optimization Model for providing a Safe Hospital Environment in Nursing Practice**

In our country, the safety of patients and the hospital environment is still not a priority in the way international institutions and bodies (WHO, CE, etc.) appeal to. There are initiatives in this area, but they are few and "piecemeal". For such a policy to be successful, we believe it is

necessary to use a **systemic approach** – i.e. initiatives and changes to cover the entire health care system, involving all partners (ministry, executive agencies, doctors' NGOs, health care professionals and patients, scientific institutions). To supplement the systemic approach, in our opinion, **the pragmatic approach is also suitable**, i.e. after exploring traditional theories and good practice and in nursing to support the creation of new models for improvement with an ever - changing environment.

**The model for optimizing the process of providing a safe hospital environment in nursing practice** poses a challenge for joint efforts at different levels to develop indicators aimed at evaluating safety management in the context of providing a safe hospital environment.

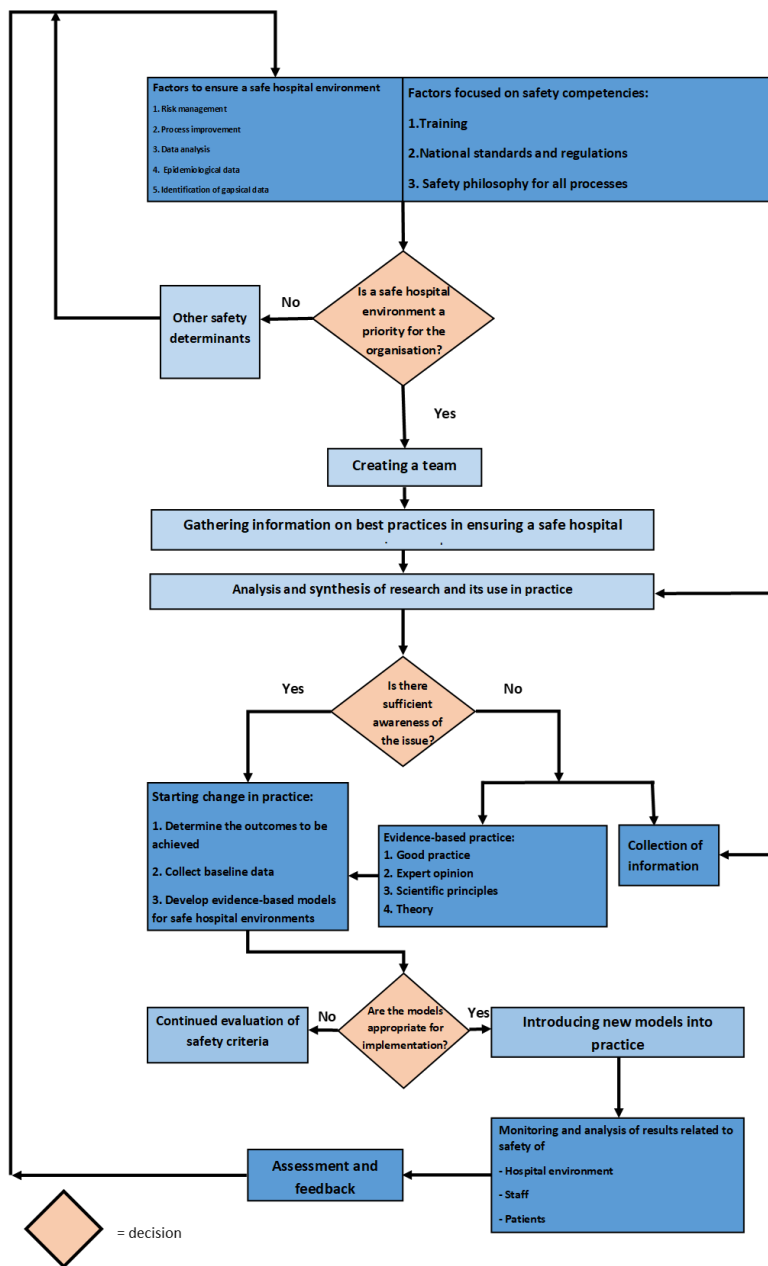
In our view, **the Safe Hospital Environment Process Optimization Model can** shift nurses' mindsets toward **evidence-based practice** —an approach to continuous improvement of care focused on hospital safety.

The study of good practices leads to innovative approaches, application of evidence-based safety standards and various methods to improve the process of providing a safe hospital environment.

According to Toncheva (2015), stereotypes in thinking and the fear of upsetting the status quo are often a barrier to the development and implementation of innovationsa. A modern nurse must perceive alternatives and look for innovative approaches to solve the problems arising in a healthy and a sick person.

In response to the need to apply innovative approaches and models in nursing practice, we suggest an Algorithm in the application of new models to improve the process of providing a safe hospital environment (fig. 35).





**Fig. 35. Algorithm for applying new models and approaches to optimize the process of providing a safe hospital environment, adapted by the author**

**Source: Johns Hopkins Nursing EBP (JHNEBP)**

At the heart of this algorithm is our contention that nurses need to build competencies through which they consciously recognize safety related gaps or errors and offer opportunities for process improvement.

Innovative models in the process of providing a safe hospital environment in nursing practice, in our view, aim to share, integrate and use evidence-based and proven reliable good practices.

They help to form a maximally secure and safe hospital environment in which there interact professional competencies, innovative organizational solutions and effective communication between nurses and patients.

### **Expert assessment on the proposed practical approaches for optimization of the participation of nurses in the process on providing a safe hospital environment**

The so developed **Process optimization model for providing a safe hospital environment in nursing practice** was proposed for expert assessment with the purpose to introduce them in the practice of nurses after adequate application and acceptance by the relevant institutions.

After being familiarized with the content of the presented **Model for optimizing the process of providing a safe hospital environment in the practice of nurses**, all experts pointed out that they approve it and have no critical remarks and suggestions (100%).

The bigger part of the experts consider that the model would not cause difficulty to any nurse (84%). The rest 16% of the experts indicate separate steps of its which would represent barriers for healthcare professionals. Such according to them are: the extent to which nurses realize their key role (20.0%); critical thinking (40.0%); development of standards (10.0%); and accountability (50.0%).

**The personally developed Process optimization model for a safe hospital environment in the practice of nurses has a structure and content, reflecting all needed requisites to improve that process. Its novelty is determined by the scientifically proven and reasoned necessity for its introduction, which ensures providing the safety of hospital environment in the framework of the professional competence of nurses.**

## **CONCLUSIONS, SUGGESTIONS AND RECOMMENDATIONS**

### **Conclusions**

Based on the own data from the scientific research, the following **conclusions can be** drawn:

1. Nursing practice has historically involved knowing the factors of hospital environment that can affect the health of patients and staff. Evidence-based practice, according to the theoretical analysis, creates conditions for actions aimed at realizing the key role of nurses in the process of providing a safe hospital environment.
2. On the grounds of the analysis made of the legislation of the Republic Bulgaria, it was found that it misses a unified approach in the regulation of participation of nurses in the process of providing a safe hospital environment with the participation of nurses, unlike the legislations of others countries, in which it is clear and systematically arranged.
3. The majority of the participants in the survey positively assess the contribution of nurses for optimization the process of providing a safe hospital environment in the practice of nurses (resp. lecturers – 85 %), nurses – 95.9 %, experts - 100 % and patients – 74 %).
4. Patients put high trust in nurses in the process of providing a safe hospital environment, valuing highly nurses' contribution and their significant role in this process (74 %) , as well as their implementation of safe health care (73%).

5. Two-thirds from the nurses (72.4%), half of the patients (48%) and over two-thirds of the lecturers and experts (85% and 87% respectively) express an opinion on the need for improvement of the process of providing a safe hospital environment with the participation of nurses.
6. Nurses sister must be active partners of healthcare managers in the process of providing a safe hospital environment, as with this they will contribute to its optimization, as indicated by half of the respondent nurses (49.7%).
7. The majority of the respondent nurses (87.6%), all lecturers and experts (100%) evaluate positively the necessity of additional training of nurses in order to strengthen their role in the process of providing a safe hospital environment.
8. The conducted study proves the attitude of interviewed nurses, lecturers and experts for introducing a Model for optimizing the process of providing a safe hospital environment in nursing practice.
9. The proposed Model for optimizing the process of providing a safe hospital environment in nursing practice can be a good basis for applying a scientific approach in the process of providing a safe hospital environment.

## **Recommendations and suggestions**

### **At a national level**

#### **● Recommendations to the Ministry of Health**

- ✓ To further development and specify the current legal arrangement in the Republic Bulgaria, concerning the participation of nurses in the process of providing a safe hospital environment.
- ✓ The safety of hospital environment should be a priority in the national health policy in the field of nursing practice, with the necessary actions being covered in a Conceptual model for the management of safe hospital environment (at a national level).
- ✓ To create working conditions for the implementation of CE recommendations, as well as the EU directive in the field of hospital environment safety.
- ✓ To assist and stimulate the construction and use of a System for reporting medical errors in medical facilities, related to deviations in the safe hospital environment.

#### **● Suggestions to the Medical Universities regarding increasing the competencies of nurses in the process of providing a safe hospital environment:**

- ✓ Planning open lectures, seminars, workshops and courses to develop new competencies and specific professional behavior of nurses in the process of providing a safe hospital environment.
- ✓ To develop and offer courses and individual training to increase the knowledge and skills of nurses for teamwork in infection control.

- ✓ To establish a culture of safety early on in training, such as a system to report almost all trainee errors and omissions during training to evaluate the process and raise awareness on the safety of hospital environment.

- **Suggestions to the Bulgarian association of the health care professionals**

- ✓ The national council of quality to develop a standard for providing a safe hospital environment in the practices of nurses and initiate trainings for process improvement.
- ✓ To stimulate post-graduate professional training on topics, connected with the process of providing a safe hospital environment in nursing practice.

### **At the level of a medical facility**

- **To hospital management**

- ✓ To develop and implement rules for good nursing practice in the process of providing a safe hospital environment in the practice of nurses;
- ✓ To develop and introduce specific nursing documentation for registering deviations in the process of providing a safe hospital environment in the practice of nurses;
- ✓ To create an environment of trust and to stimulate the improvement of communication between medical professionals, especially in cases of making mistakes affecting safety.
- ✓ To conduct an annual safety culture survey to identify areas for improvement of the hospital environment and set priorities for improving the safe hospital environment.
- ✓ To create conditions for informing and involving patients in the diagnostic and treatment process in order to prevent errors and incidents related to the safe hospital environment.
- ✓ To support the continuing training of nurses in the field of safe hospital environment, by providing an opportunity for training and a professional career.

### **Contributions**

#### **Of theoretical-cognitive nature:**

1. The first unique complex, purposeful and thorough study on the possibilities for optimization of the participation of nurses in the process of providing a safe hospital environment in nursing practice has been completed.
2. Researched is the opinion of nurses, university lecturers, patients and experts on the role and contribution of nurses in the process of providing a safe hospital environment in nursing practice.
3. The possibilities of the basic and continuing education of nurses in relation to their competencies in the process of providing a safe hospital environment have been assessed.
4. Strong attitudes and willingness were found among nurses to be included in various forms of continuing education in the field of safe hospital environment.

5. For the first time, the opinion of experts on the roles and functions of nurses as part of a multidisciplinary team in the process of providing a safe hospital environment was studied.
6. In a theoretical aspect an author's Model has been developed for optimizing the process of providing a safe hospital environment in nursing practice.

### **Of practical-applied nature**

1. In accordance with the implementation of the Model for optimizing the process of providing a safe hospital environment in the practice of nurses, an Organizational Framework for the implementation of the Model has been developed.
2. A Cycle has been developed for the development and maintenance of leadership in the process of providing a safe hospital environment in the practice of nurses.
3. Measures have been proposed to improve safety culture as part of optimizing the process of providing a safe hospital environment in nursing practice.
4. The roles and responsibilities of the various entities in the process of providing a safe hospital environment in nursing practice have been outlined.
5. A mechanism is proposed for implementing new models for optimizing the process of providing a safe hospital environment in nursing practices.

### **CONCLUSION**

Nurses are leaders in providing a safe hospital environment and affirming our key role requires shared responsibility for the changes needed to achieve this goal. With specialized skills, education and healthcare quality, healthcare organizations can use shared management models to achieve health and safety success. If nurses accept a share of responsibility for providing the hospital environment safety process, then they will also assume responsibility for professional integrity in nursing practice.

### **LIST OF PUBLICATIONS AND PARTICIPATIONS RELATED TO THE DISSERTATION PAPER**

1. **Stoyanova Zh.** "The process of providing a hospital environment in the practice of nurses (opinion of patients in the MPHAT-Varna to the Military Medical Academy)" – "Health care" journal, issue N. 3, year 2022
2. Kolarova M., A. Toneva, T. Dimitrova, **Zh. Stoyanova**, K. Dimitrova, Ts. Paunov Epidemiological structure of healthcare-associated infections in Multiprofile hospital for active treatment - Varna – Military medical academy for the period 2010 – 2020, , Journal of IMAB - Annual Proceeding (Scientific Papers) , December 2021, p.50-53.
3. **Stoyanova Zh.**, " Leadership in the process of providing a safe hospital environment in the practice of nurses during the COVID -19 pandemic " - approved for printing - journal "Nursing affairs", issue No. 2, year 2023;
4. **Stoyanova Zh.**, Petrova N. "Safe hospital environment in the practice of nurses and the

changes caused by the COVID-19 pandemic: nurses' opinion" - report "Health professionals - key to better public health" At the international conference in Shumen - 21.10.22

5. **Stoyanova, Zh.** " The safety of the personnel in medical facilities in the focus of resource management in an electronic environment " - Third conference with international participation, Health care - contribution to the quality of life, June 07-08, 2021, Varna.