



MEDICAL UNIVERSITY - PLEVEN  
FACULTY OF HEALTHCARE  
DEPARTMENT OF "SURGICAL NURSING CARE"

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**SIGNIFICANT ASPECTS OF NURSING CARE IN ONCOLOGICAL  
PATIENTS**

**ABSTRACT**

of dissertation for award of  
educational and scientific degree "Doctor"

**Doctoral program:  
"Health Care Management"**

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**Pleven, 2024**

The dissertation contains 171 standard typewritten pages and is illustrated with 60 figures, 24 tables and 8 appendices.

The bibliographic list contains 216 titles, of which 67 are in Cyrillic and 149 are in Latin.

In connection with the dissertation work, 4 publications and scientific announcements were made at national and international forums.

The official defense of the dissertation work will take place on 26/04/2024 at 12:00 in the "Galen" hall, TELEC of the MU - Pleven.

The defense materials are available in the scientific department of the MU – Pleven and are published on the website of the MU – Pleven ([www.mu-pleven.bg](http://www.mu-pleven.bg)).

## Content

<b>Abbreviations used .....</b>	<b>3</b>
<b>Introduction .....</b>	<b>4</b>
<b>I. Aim, objective, tasks and methodology of the study .....</b>	<b>5</b>
Objective.....	5
Tasks .....	5
Subject of the study .....	6
Object of the study and units of observation .....	6
Working hypotheses .....	7
Setting of the study .....	8
Research methods .....	9
<b>II. Results and discussion .....</b>	<b>11</b>
1. The organization of work and competencies of nurses in oncology units.....	11
2. Expert opinion on the competences of oncology nurses .....	22
3. Needs and opinion of patients regarding oncology care.....	30
4. Student opinion and self-assessment of acquired competences .....	44
<b>Iii. Conclusions, recommendations and contributions .....</b>	<b>58</b>
Conclusions .....	58
Contributions .....	60
<b>Scientific publications and dissertation announcements .....</b>	<b>61</b>

## Abbreviations used

<b>ASC</b>	American Cancer Society
<b>COC</b>	Complex Oncology Centers
<b>CP</b>	Clinical pathway
<b>DB</b>	Database
<b>GHAT</b>	General hospital for active treatment
<b>HPV</b>	Human papilloma virus (Човешки папиломен вирус)
<b>ICN</b>	International council of nursing (Международен съвет на сестрите)
<b>IDC</b>	International disease classification
<b>MC</b>	Medical centre
<b>NCR</b>	National Cancer Registry
<b>NSI</b>	National Statistical Institute
<b>ONS</b>	Oncology Nursing Society
<b>RCR</b>	Regional Cancer Registries
<b>ROI</b>	Research Oncology Institute
<b>SHATOD</b>	Specialized hospital for active treatment of oncological diseases
<b>SOMS</b>	Scientific-organizational methodological section
<b>UMBAL</b>	University Hospital for Active Treatment
<b>USBALO</b>	University Specialized Hospital for Active Oncology Treatment
<b>WHO</b>	World Health Organization
<b>EC</b>	European Union
<b>MH</b>	Ministry of Health
<b>OMD</b>	Organizational and methodical departments
<b>GP</b>	General practitioners

## INTRODUCTION

The social significance of diseases is determined by a number of criteria. High morbidity and mortality and the unfavorable dynamics (increase) in the value of these indicators, especially among persons of working (active) age, is one of the leading criteria for the burden of a given disease on public health. Of great importance is the clinical and occupational prognosis of the disease and the likelihood of loss of work capacity or deterioration of optimal functioning in the performance of usual daily activities, which measures the capacity for independence in self-care, household maintenance and social integration. The need for hospital treatment with the use of expensive drugs and high-tech equipment, the psycho-emotional aspects and quality of life of the affected persons cannot be ignored. On the basis of the specified criteria, oncological diseases fall with full reason into the group of socially significant diseases, which determines the great scientific interest in issues related to their epidemiology, diagnosis, treatment and health care.

Caring for patients with oncological diseases is an integral part of the healing process, in which medical activities and nursing care are in close interaction. As part of an interdisciplinary team, the nurse requires special knowledge and skills in the recognition and control of a number of manifestations of the oncological disease (pain, malnutrition, intoxications, etc.). The specific characteristics and manifestations of oncological diseases give rise to the need for the profile of nursing care, regulated in the Ordinance №1 of the Ministry of Health of 2011. Practicing in different structural units - inpatients for oncological surgery, chemotherapy and radiotherapy, oncology consulting rooms, hospices, they must be able to cover the complexity of treatment and care, multiple treatment regimens, interdisciplinary team work requirements and the psychosocial needs of patients and their families.

Leading scientists and clinicians in the field of oncology emphasize that the unique role of the oncology nurse, based on the conceptual model of professional nursing and health care, is the central position that she occupies in relation to the patient, family and other health units. The functions of the nurse (continuous, multifaceted and complex) are related to: planning, management and implementation of quality general and specific care, education of the patient and relatives, providing psychological, emotional and social support, continuous improvement of qualifications and development of knowledge and the skills.

The development of this dissertation is in response to the needs of an analysis of the competencies of medical specialists for the treatment and health care of patients with oncological diseases in inpatient and outpatient settings, a study of the readiness of nurses to

meet the high demands of patients and their relatives, increasing their satisfaction and safety of the health care provided. An in-depth review and analysis of significant aspects of nursing care for oncology patients has been made, highlighting both good practices and unresolved issues in providing health care based on the holistic approach that patients need.

## **I. AIM, OBJECTIVE, TASKS AND METHODOLOGY OF THE STUDY**

### **1. OBJECTIVE**

The aim of the present scientific development is to study the organization of nursing care for patients with oncological diseases in inpatient and outpatient settings, the competencies of nurses for the implementation of specialized oncological care, the satisfaction of patients with the offered care, and to propose a model for the optimization of care .

### **2. TASKS**

To realize the goal, the following tasks are set:

1. To study the organization of nursing care in inpatient and outpatient settings and the process of keeping nursing records.
2. To study the competencies of nurses to provide specific care for patients with oncological diseases.
3. To study the opinion of experts: doctors - oncologists, head and senior nurses regarding the process of training and providing health care for oncological patients.
4. To study the satisfaction of patients and their relatives with the process of implementation of nursing care.
5. To study the needs of students and interns from the "Nursing" specialty to learn new knowledge and acquire specific skills for providing care to oncological patients, beyond those taught in the basic nursing program.
6. Based on the results of the previous tasks, to propose measures to optimize the process and the quality of health care in oncology.

### **3. SUBJECT OF THE STUDY**

The subject of the present study is the organization of activities in oncology units, the competencies of nurses to provide health care for oncological patients, and the satisfaction of patients and their relatives with the health care provided.

### **4. OBJECT OF THE STUDY AND UNITS OF OBSERVATION**

**Object** of the present study are the medical structures for inpatient and outpatient oncology care in Central and Northern Bulgaria, and higher education institutions for training in the specialty "Nursing" in Bulgaria.

#### **Technical monitoring units:**

Medical facilities for inpatient oncology care:

- Oncogynecology Clinic, UMBAL "Dr. G. Stranski" EAD - Pleven
- Radiation therapy department, UMBAL "Dr. G. Stranski" EAD - Pleven
- Radiation therapy department, UMBAL "Dr. G. Stranski" EAD - Pleven
- Obstetrics and Gynecology Clinic, St. Marina UMBAL - Pleven

#### **Treatment facilities for outpatient oncology care:**

- Department for dispensary monitoring of patients with oncological diseases, UMBAL "Dr. G. Stranski" EAD - Pleven
- Pain control office, UMBAL "Dr. G. Stranski" EAD - Pleven

#### **Other medical facilities**

- Complex Oncology Center - EOOD, Vratsa, Palliative Care Department

Higher schools for profiled studies, in which students from the "Nursing" specialty are trained

- MU - Pleven, Faculty of Health Care
- MU - Varna, Faculty of Public Health
- University of Rousse, Faculty of Public Health and Healthcare

#### **Logical units of monitoring:**

- Regular nurses working in hospital, outpatient oncology structures;
- Experts in the field of oncological treatment and care - head and senior nurses, doctors - oncologists and oncosurgeons;

- Patients with breast cancer, lung cancer, cancer of the female genital organs, cancer of the colon and rectum, cancer of the stomach, who underwent surgical treatment and/or undergoing radiation and chemotherapy, and expressed written informed consent to participate in the study;
- Students and graduates of the specialty "Nurse".

### **Signs of monitoring logical units**

- **To the nurses** – age, gender, educational and qualification level, work experience - general and by specialty, the therapeutic nurse-patient relationship, behavior when receiving and caring for patients, participation in obtaining informed consent of the patient and his relatives, compliance with ethical rules in care for oncological patients, communication skills in an interdisciplinary team, self-assessment of competencies and the need for postgraduate continuing education to maintain and improve them.
- **To the experts** – age, gender, educational and qualification level and specialization, work experience, opinion on the role and place of the nurse in the process of providing care for oncological patients, need for special competencies, assessment of the knowledge and skills of the students of the specialty "Nursing " when working with oncological patients in a clinical environment, assessment of attendance activity during educational practice and pre-graduate стаж.
- **To the patients** – age, gender, education, work experience, satisfaction with the nurses' skills in communicating with the patient and informing them about the diagnostic-treatment process upon admission, during the stay and upon discharge from the clinic; trust in medical professionals, need for advice and the most common difficulties they experience in the period after hospital discharge.
- **To the students and interns - nurses** – year of study, self-assessment of the acquired theoretical knowledge and the acquired practical skills for working in an oncology clinical environment, needs and preferred methods for learning new knowledge, behavior in the presence of the patient and his relatives, attitude to work in the institutions for hospital and outpatient oncology care and hospice.

## **5. WORKING HYPOTHESES**

- The wide range of responsibilities of the oncology nurse, regulated in the "Medical Oncology" standard in Bulgaria, implies a deficiency of some closely specialized activities in the health care of oncological patients.



- Nurses and students realize the need for continuous education related to optimizing the health care process for oncological patients.
- Patient satisfaction with the nursing care provided during the hospital stay and after discharge is high, but there is a deficiency in the implementation of some specific activities.

## **6. SETTING OF THE STUDY**

A complex medico-social survey was conducted in the period 2020-2022. The representativeness of the sample is guaranteed by the inclusion of medical facilities of different types and settlements, university and hospital structures, distributed as follows: two medical universities, one higher education institution , two university hospitals, radiation therapy department, chemotherapy department, dispensary monitoring department, offices for outpatient specialized care, one complex oncology center and one hospice.

### **I stage (study preparation) - January - December 2020**

- Preparation of a literature review by reviewing available literature on the subject and analysis of normative documents in the problem area.
- Preparation and testing of tools - questionnaires (questionnaire cards, interview questionnaire) were prepared for the different categories of persons included in the training. A pilot study was conducted involving 46 Nursing students and 25 practicing healthcare professionals in oncology units.
- The research project has been presented to KENID to obtain approval for its implementation.

### **II stage (collection of empirical sociological information) - January 2021 - December 2021.**

- Surveys were conducted among 153 students and graduates of the "Nursing" specialty, 52 nurses working in oncology units, 19 experts.
- Conducted a semi-structured interview with 67 patients with oncological diseases treated in the medical institutions covered in the study.

### **III stage (data processing and analysis) – January 2022 - December 2022.**

- Entering the empirical data into the relevant statistical program, displaying the aggregate information and organizing it in tables and graphs
- Analysis of the obtained data, summarization of the results and formulation of conclusions.

## **7. RESEARCH METHODS**

### **Sociological methods**

*Survey method* – questionnaires were developed for the different categories of persons included in the study

- Questionnaire card for students and graduates of the "Nursing" specialty, OCS "Bachelor"
- Questionnaire card for nurses working in oncology units
- Questionnaire for experts in the treatment and care of cancer patients

*Interview* – a questionnaire was developed for an interview with oncological patients, organized in three parts:

- Patients' awareness and health workers' attitude towards them during the hospital stay
- Assessment of patients' physical, mental, emotional, social condition and degree of dependence on care
- Health-demographic characteristics

*Documentary method* – they are made:

- Examination of the mandatory hospital documentation according to clinical pathways of the monitored diseases in the treatment and care of oncological patients
- Analysis of European normative documents regulating the training of nurses
- Comparative analysis of postgraduate study opportunities
- Comparative analysis of morbidity and mortality from oncological diseases in developed European countries and in our country

### **Statistical methods**

Statistical processing of primary data was performed with Microsoft Office Excel 2018 and IBM SPSS Statistics v.26.0 software packages. Classical data analysis methods were used:

- Descriptive statistical methods - the results are presented in frequency tables in number and percentage;
- Non-parametric test –  $\chi^2$  criteria for establishing a relationship between two variables;
- Correlation dependences were assessed by Pearson (r) and Spearman ( $\rho$ ) correlation coefficients;
- Graphical analysis

Statistical significance of differences was assessed using non-parametric and parametric tests (chi-square and Student-Fisher t-tests for one-tailed and two-tailed tests). Differences were considered significant at a level of  $P < 0.05$  in a two-tailed test and  $P < 0.025$  in a one-tailed test.

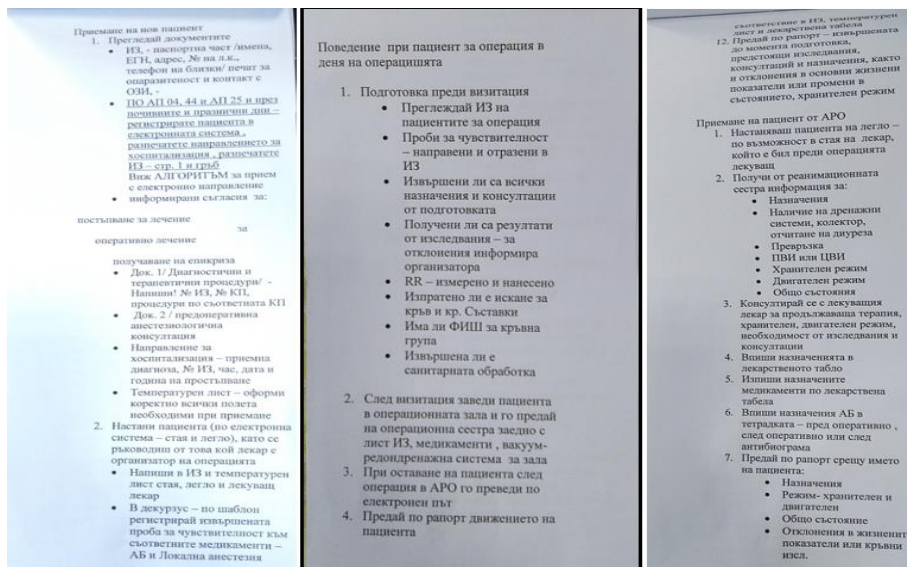
## II. RESULTS AND DISCUSSION

### 1. The organization of work and competencies of nurses in oncology units

According to the first task, according to a developed questionnaire for document analysis, the organization of nursing care in inpatient and outpatient settings and the process of keeping nursing documentation were studied.

From the review of the documentation and study of the work in the structures for hospital/outpatient care it was established:

1. Nursing care for oncological patients is carried out according to accepted protocols, technical sheets and activity algorithms (Fig. 1). A detailed action algorithm has been developed at the nurse's disposal:
  - reception, transfer and discharge of a patient, accommodation by electronic system
  - directing the patient to carry out the necessary tests,
  - prescription of medications according to the prescription label,
  - carrying out drug sensitivity tests,
  - preoperative preparation
  - conducting and conducting the visitation and other activities.
2. Health care is carried out in accordance with the requirements for nursing activities of the "Medical Oncology" standard and Ordinance №1 on the professional activities that nurses, midwives, associated medical specialists and health assistants can perform by appointment or independently (SN No. 15, 18.02.2011.). The relevant documents are available in the surveyed hospital and outpatient facilities.
3. In the clinical pathways, the activity of the nurse is described with the concept of "Health care" without specifying required levels of competence and specific requirements for serving patients with different localization of the oncological disease.
4. There are no developed models or algorithm of care for the safety of cancer patients after discharge from hospital.
5. Programs have not been developed to work with patients in the community across the disease continuum. The prevention of various levels of development of the pathological process is poorly advocated.



*Photo 1 Algorithm for the nurse's behavior in the Department of Oncological Surgery, UMBAL "Dr. G. Stranski"*

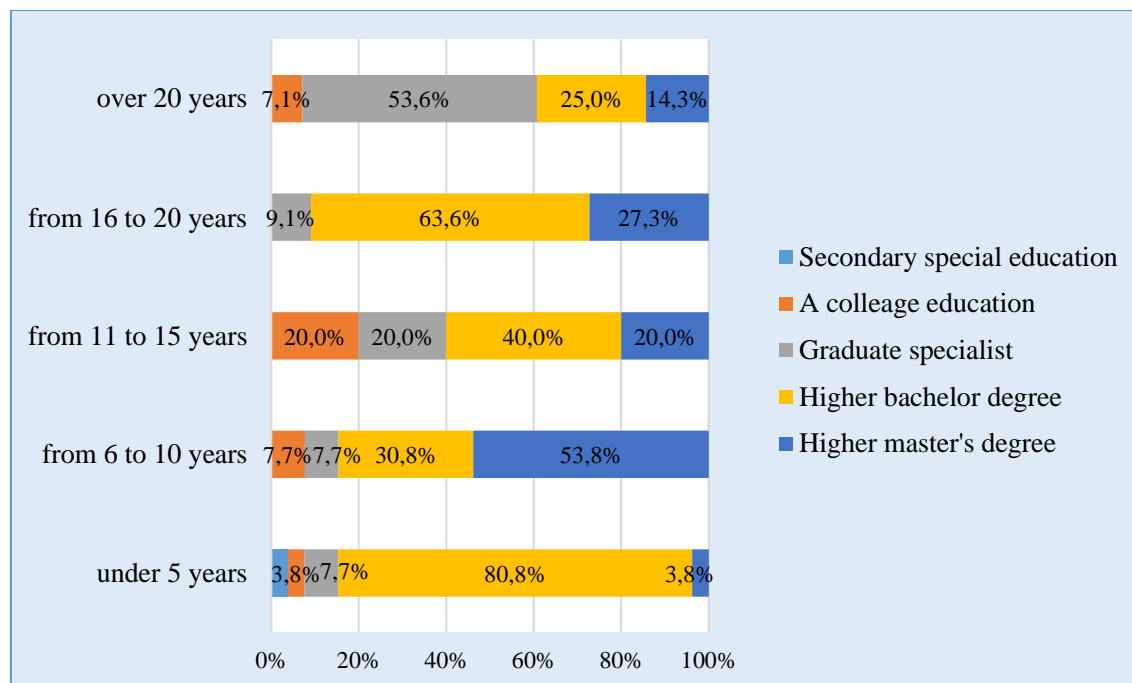
According to a **second task**, according to a questionnaire developed for the purpose, the competencies of nurses working in different oncological structures, which they can apply independently or on the appointment of a doctor, were studied. Emphasis was placed on the frequency of performing specific activities for cancer patients, the most important professional and social skills were examined, and the need for additional qualification of nurses.

The number of nurses included in the study is a total of 88. The distribution by age and total nursing experience shows an interesting pattern of dominance of persons in the two extreme age groups (Table 1). The share of sisters under the age of 30 is the highest. The "rejuvenation" of the nursing staff can be explained by the presence of the Medical University in the city of Plevan for the training of students from the specialty "Nurse" and their possibility of implementation in the wards/clinics with an oncology focus. This can be seen as a positive trend to fill the shortage of health care professionals. The high relative share of nurses over 60 years of age is probably related to an increase in the retirement age, as well as to the continuation of active professional activity in retirement age, due to a shortage of personnel.

*Table 1 Socio-demographic characteristics of nurses*

<b>Characteristic</b>	<b>Number</b>	<b>(%)</b>
<b>Age</b>		
< 30	28	31.8
31-39	14	15.9
40-49	19	21.6
50 -59	15	17.0
60 <	12	13.6
<b>Gender</b>		
woman	78	88.6
man	10	11.4
<b>Education</b>		
secondary special education	1	1.1
a college education	6	6.8
graduate specialist	21	23.9
higher-bachelor	43	48.9
master's degree	17	19.3
<b>Employment experience</b>		
до 5 години		
от 6 до 10 години	26	29.5
от 11 до 15 години	13	14.8
от 16 до 20 години	10	11.4
над 20 години	11	12.5
	28	31.8
<b>Work experience in an oncology facility</b>		
up to 5 years	40	45.5
from 6 to 10 years	21	23.9
from 11 to 15 years	10	11.4
from 16 to 20 years	10	11.4
over 20 years	7	8.0
<b>Total</b>	<b>88</b>	<b>100.0</b>

A survey of the respondents by general nursing experience and work experience in an oncology structure, however, shows a progressive decrease in the proportion of individuals from low to high values of the variable (Table 1). This may be related to a number of negative effects such as a lack of role modeling and mentoring for young nurses, as well as a result of burnout syndrome and staff turnover due to the intense and emotionally draining work in oncology units.

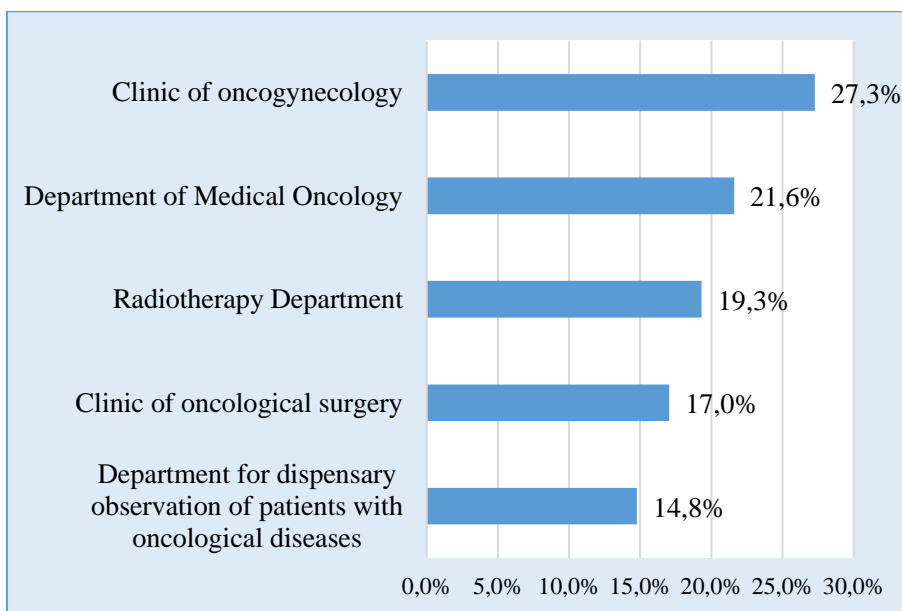


**Fig. 1** Distribution of respondents by total nursing experience and educational qualification

A statistically significant relationship was observed between total nursing experience and educational qualification ( $\chi^2=43.914$ ,  $df=16$ ,  $p=0.000$ , Cramer's  $V=0.353$ ).

The majority of respondents (80.8%) with a total work experience of up to 5 years have a Bachelor's degree in Healthcare, which means that students accept the challenge and prefer oncology structures to start their career. The positive trend is that there is a "rejuvenation" of the numerical composition in them. More than half of the respondents with work experience of 6 to 10 years have a Master's degree in Health Care Management, which is evidence of students' interest, desire to grow, develop and continue their education to a higher degree. According to a report from a program accreditation of the "Nurse" specialty at the Medical University - Pleven, graduates of the "Nurse" specialty, Educational-qualification degree "Bachelor" are given the opportunity to continue their education in the master's program in "Health Care Management", at Faculty of "Public Health" of MU-Pleven. A total of 35 students were accepted for the academic year 2023-2024, of which 25 students graduated from the "Nursing" specialty and are continuing their education in this program. From Fig. 1, it can be seen that there are still reservations and recommendations for raising the educational qualification in the age groups from 16 to 20 and over 20 years of work experience, where the majority of respondents have the EQD "bachelor" (63.6%) and "specialist" (53.6%).

The distribution of nurses by workplace includes a higher relative share of those working in inpatient oncology care in view of the prevailing methods of treatment of oncological diseases (Fig. 2). The most common care concerns patients with diseases of the female genital organs, in patients undergoing conventional treatment methods: chemotherapy and radiation therapy and surgical treatment for breast cancer, colon and rectal cancer.

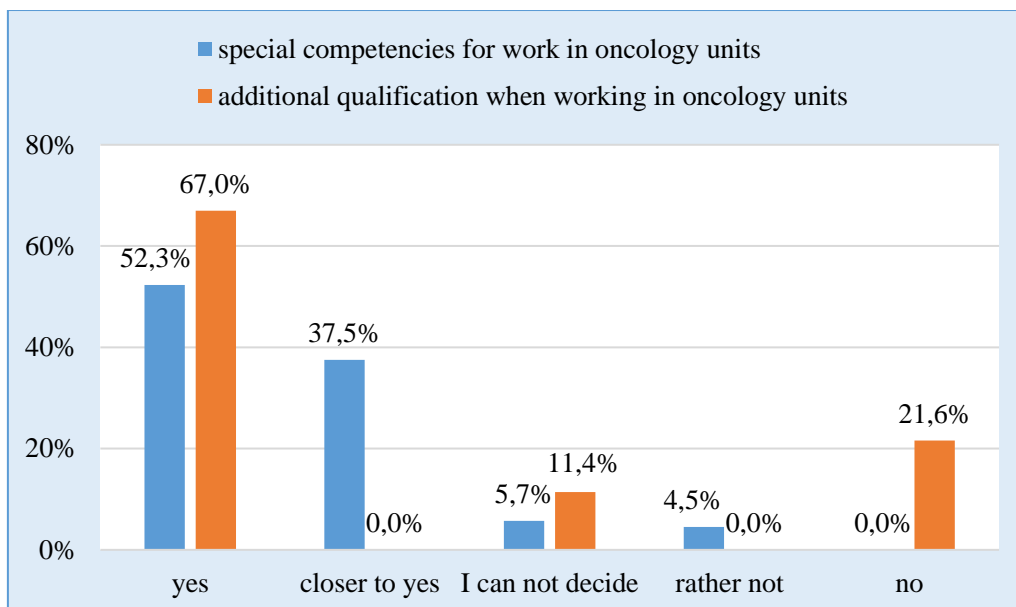


*Fig. 2 Distribution of respondents by oncological structures*

### **Education and further training**

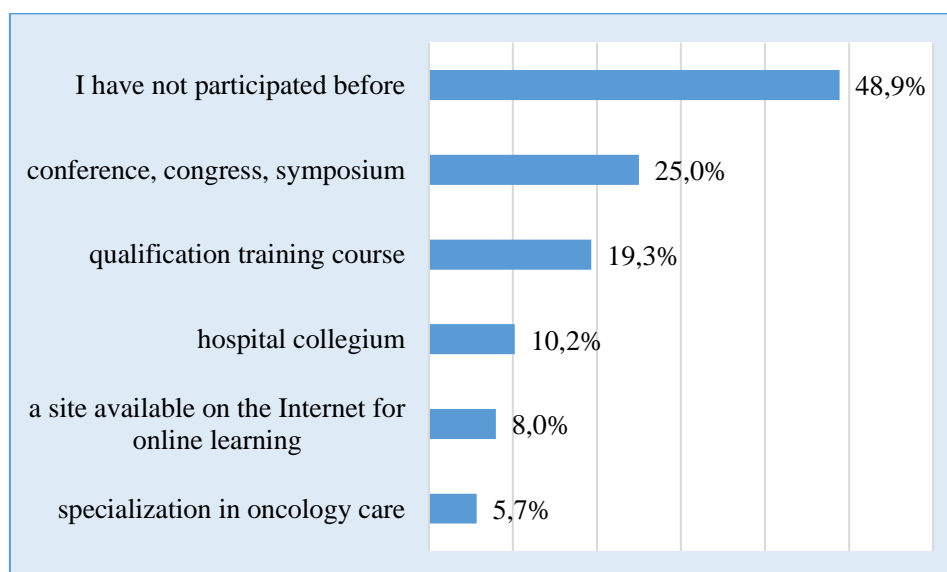
In Table. 1 shows the distribution of nurses by educational level. A total of 68.2% have a bachelor's degree in the specialty "Health care", 43 (48.9%) are bachelors in health care, of which 19.3% have continued their education at the Master's in Healthcare Management. There are 21 (23.9%) with OCS "Specialist". It is noteworthy that only 6.8% have a semi-high school education. These results indicate the desire for nurses to grow and develop professionally and reflect the views expressed about continuing qualification (Fig. 2).





**Fig. 3** Need for special competences for work in oncology units and additional qualification for work in oncology units

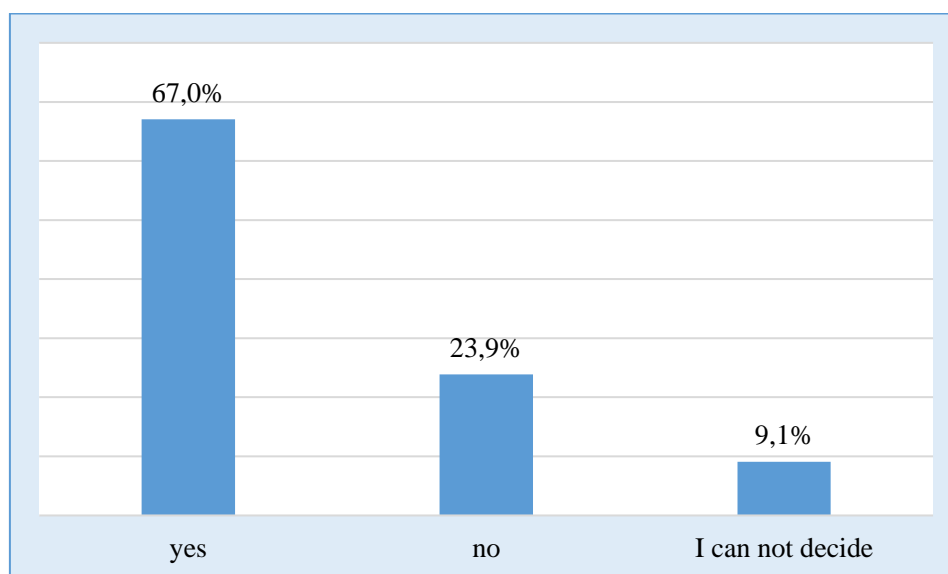
Most of the respondents believe that working with cancer patients is specific and requires additional training and high qualification (67.0%). The percentage of those who think that this is not necessary or cannot judge is high (33.0%). This also explains the high proportion of persons who have not participated in continuing education up to now 49 (48.9%). The share of persons specializing in oncology care is small 5 (5.7%).



**Fig. 4** Distribution of the examined persons by participation in continuing education

The majority of the respondents are of the opinion that the nurse should inform the patient and his relatives about matters within her competence (67.0%). Approximately a

quarter of them disagreed with this (23.9%) (Fig. 5). The ability of the nurse to conduct a conversation and communicate with the patient and his relatives is a skill that is learned and nurtured consciously in the process of learning and interacting with oncological patients. Nurses with longer working experience in an oncology unit should be able to communicate more easily on issues affecting the oncological patient and his relatives. Many studies prove that students are worried about meeting cancer patients due to fear of the inability to change and influence the condition of the cancer patient and the side effects of conventional therapy.



*Fig. 5 Opinion of nurses regarding the right to provide information to the patient according to their competence*

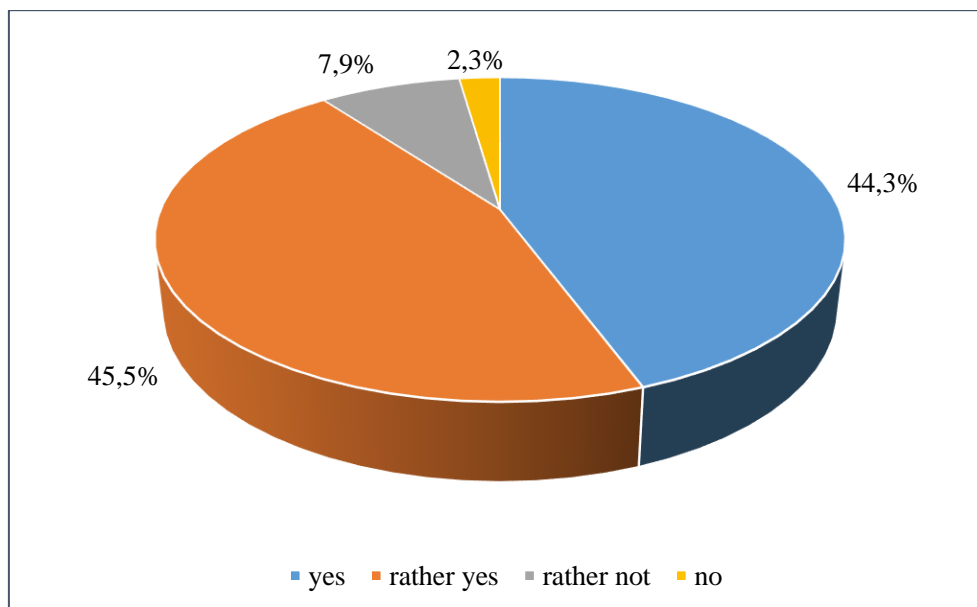
On Table 2 the activities that require the nurse to be able to conduct a conversation with the patient on issues related to inpatient treatment and care are illustrated. More than half of the nurses answer in the affirmative, the share of those who have doubts or refrain from communicating with the patient is not small.

*Table 2 Informing the patient by the nurse during hospitalization*

Claims	yes	closer to yes	I can not decide	rather not	no
I provide access to information about the patient's rights	<b>46 (52.3%)</b>	22 (25.0%)	7 (8.0%)	9 (10.2%)	4 (4.5%)
For the rules of internal order in the department	<b>51 (58.0%)</b>	19 (21.6%)	5 (5.7%)	4 (4.5%)	9 (10.2%)

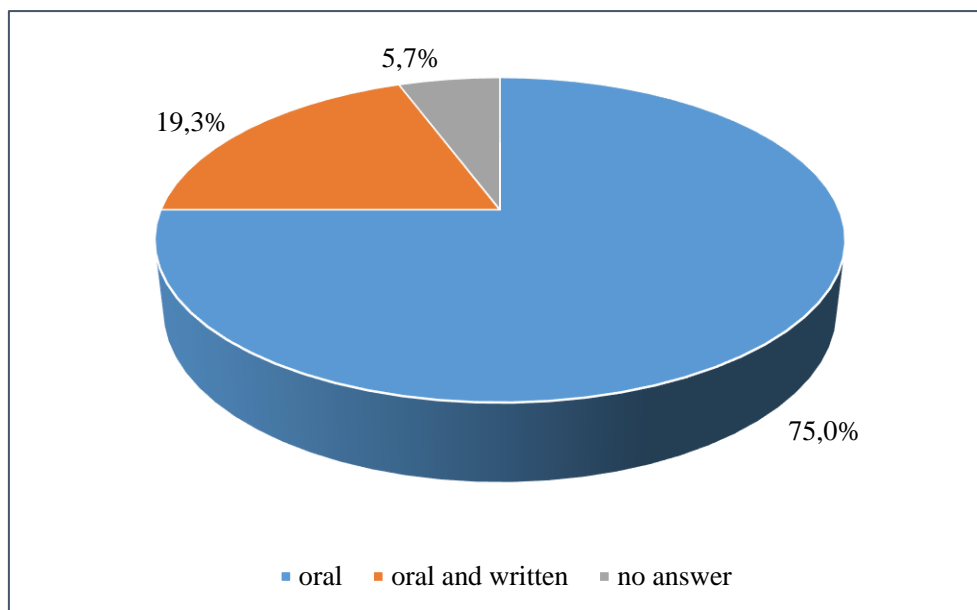
Claims	yes	closer to yes	I can not decide	rather not	no
For upcoming research - type, purpose, preparation and what the research consists of	<b>54 (61.4%)</b>	11 (12.5%)	4 (4.5%)	14 (15.9%)	5 (5.7%)
For RR, T, heart rate test results	<b>54 (61.4%)</b>	11 (12.5%)	4 (4.5%)	14 (15.9%)	5 (5.7%)
For upcoming manipulation-injection, infusion, bandage	<b>65 (73.9%)</b>	12 (13.6%)	3 (3.4%)	5 (5.7%)	3 (3.4%)
For taking medicines - type, dose, effects, according to the appointments	<b>48 (54.5%)</b>	12 (13.6%)	4 (4.5%)	12 (13.6%)	12 (13.6%)

Nurses indicated that they give information to the patient about how to take care of himself at home (44.3%), but most often the type of information provided is verbal (75.0%) (Fig. 6).



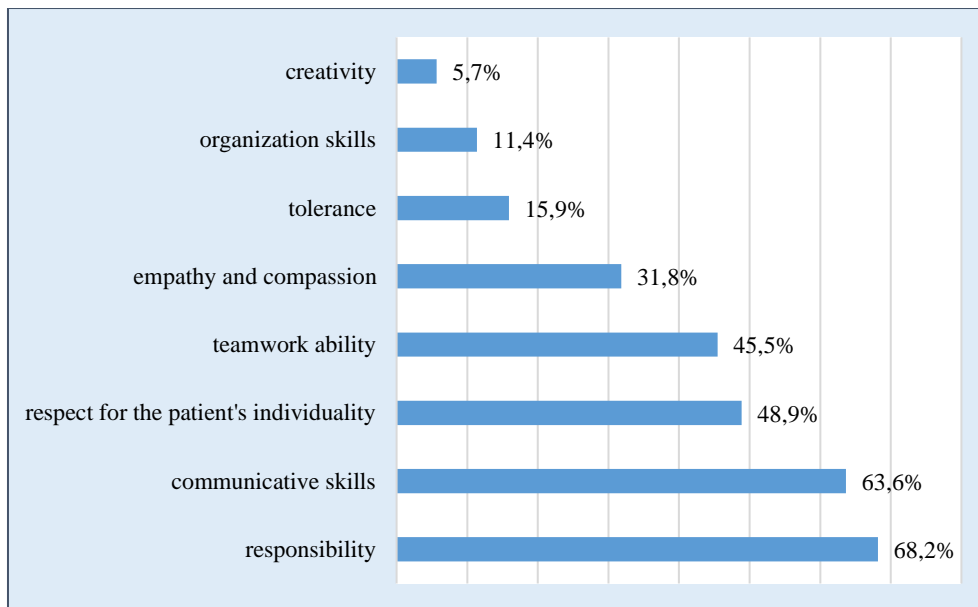
**Fig. 6** Providing information about home care for the patient after discharge

Verbal and written information was given by 19.3% of the respondents, and 5.7% did not answer this question. This is positive, because during discharge, a patient gets excited and would not be able to remember all the recommendations, especially if he is not a healthcare professional. Therefore, written information that the patient can read at ease when he gets home is preferable (Fig. 7).



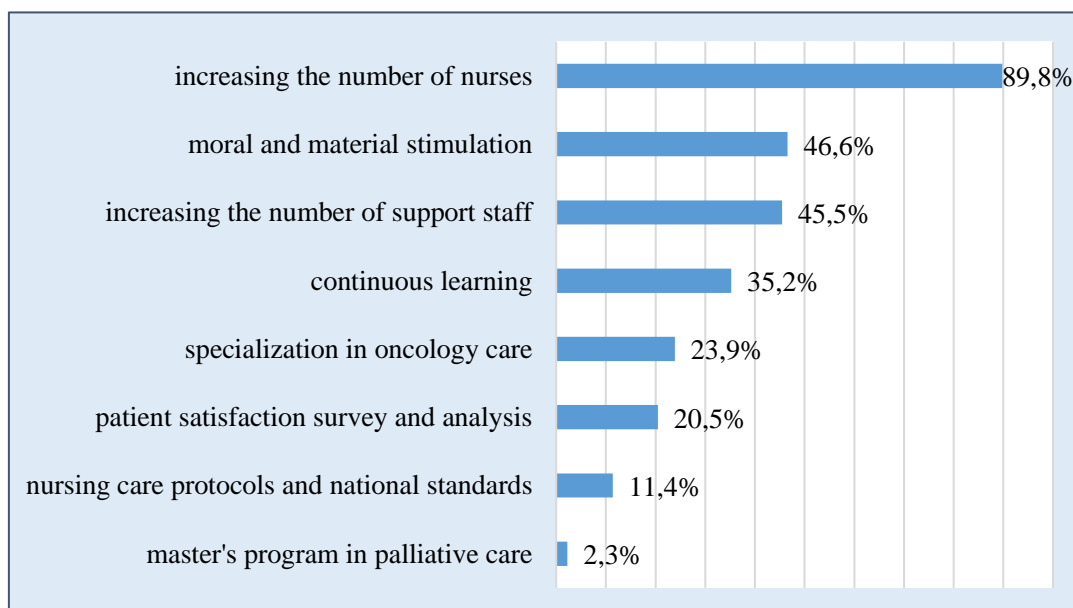
*Fig. 7 Distribution of respondents by type of information provided*

Working with cancer patients requires nurses to have social skills and competencies. As the most important, they indicate responsibility 60 (68.2%), ability to communicate effectively 56 (63.6%), and respect and individual approach 43 (48.9%). Responses exceed 100% because up to 3 responses were given a choice (Fig. 8).



**Fig. 8** Distribution of respondents according to the most important social skills and competences in the care of oncological patients indicated by them

As possible ways to optimize care for oncological patients, nurses indicate the need to increase the number of health care specialists 79 (89.8%), moral and material stimulation 41(46.6%) and increasing the number of support staff 40 (45.5%), in third place. Only 10 nurses (11.4%) noted as an opportunity to ensure the safety of the patient and the safety of



**Fig. 9** Opinion of the examined persons about the possible ways to improve the care of oncological patients

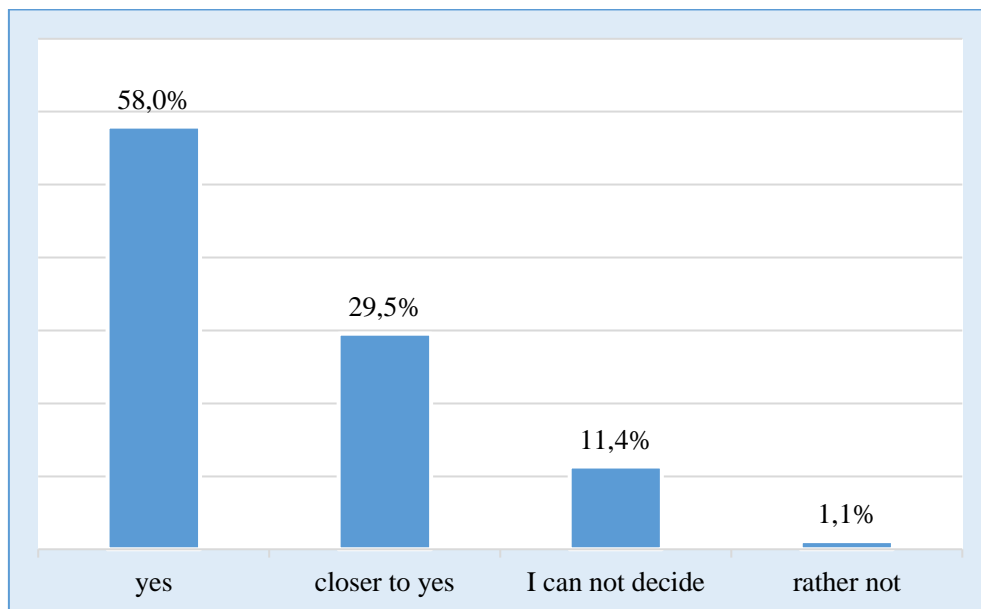
care, the introduction of national standards and protocols for nursing care (Fig. 9).

A very important aspect in the process of providing health care is the establishment of a "therapeutic relationship" between the nurse and the patient. "Therapeutic relationship" is a concept in the scientific literature that refers to the nurse-patient relationship and is based on the specific professional knowledge, skills and position of the nurse and the dependent, in some respects, position of the patient. Discusses five important components of the therapeutic relationship that are invariably present in it, regardless of the duration and conditions in which care is provided:

- Trust – to establish trust, the nurse must strictly adhere to whatever they have specified with the patient as the scope of care. If this does not happen, trust is lost and can be difficult to restore
- Respect - respect is related to preserving the dignity of the patient, regardless of his individual characteristics and health problem
- Professional intimacy – the creation of special closeness, intimacy in relationships is related to the activities that the nurse performs. These may be physical activities – toileting, mobility assistance, or include psychological, spiritual and social elements. The nurse's access to the patient's personal information also contributes to the creation of such closeness.
- Empathy – The term "empathy" was first introduced in 1909 by psychologist Edward B. Tichener as a translation of the German term *einfühlung* (meaning "feeling"). Empathy involves the ability to understand emotionally what another person is feeling. In essence, it is the ability to put yourself in someone else's shoes and feel what they are likely to feel. In nursing, empathy must be balanced with some distance to ensure objectivity and professionalism in caregiving, and to prevent burnout.
- Power - in the relationship between the patient and the nurse, the latter is in a privileged relationship coming from specific knowledge, position in the health system, access to information and data about the patient. In this position, she can be a defender of the patient's rights, manage the direction of development of the therapeutic relationship. It should be borne in mind, however, that the misdirected power of the health professional can lead to abuse.

Establishing a therapeutic relationship between the nurse and the patient would facilitate the adaptation of the patient to his health condition according to 85.0%. 12.5% cannot judge or answered with "rather not", which could also be taken as a not very good knowledge of the concept used. 89.8% of the respondents expressed a positive opinion regarding the possession of special competences by the oncology nurse. 4.0% believe that

special competencies or their timely updating are not needed when caring for oncological patients.



*Fig. 10 Respondents' opinion on the importance of the therapeutic relationship "nurse-patient" in adapting the patient to his health condition*

The nurse as part of an interdisciplinary team has an essential role in organizing, planning, implementing and evaluating the results of clinical care for patients. Good communication skills play a key role in establishing a therapeutic relationship between the nurse and cancer patients across the spectrum of health, illness, convalescence and the cancer continuum. The focus of this communication is the needs of the patient and the implementation of care for him and his relatives. To meet these needs, the nurse must consider many factors such as: the patient's physical and emotional state, needs, values, cultural preferences, willingness and time to communicate. In these relationships, the nurse must demonstrate respect, sincerity, empathy, empathy, create an atmosphere of trust and confidentiality. Care for patients with oncological diseases is specific, given the nature and stage of the disease, the prognosis, the possible side effects of chemotherapy and radiation therapy. Nurses who care for these patients must possess not only excellent professional skills, but also display purely human qualities such as compassion, patience, tact, empathic attitude and moral support.

## **2. Expert opinion on the competences of oncology nurses**

For the third task, we studied the opinion of experts on the role and place of the nurse/midwife in the care of oncological patients, on the need to have specific competencies

of those working in this field and opinion on the stage of creation and implementation of standards for good oncology health care.

The sample includes 19 examined persons, with (31.6%, n=6) being senior nurses, and (68.4%, n=13) occupying a managerial position and doctors with a specialty in the considered oncology structures.

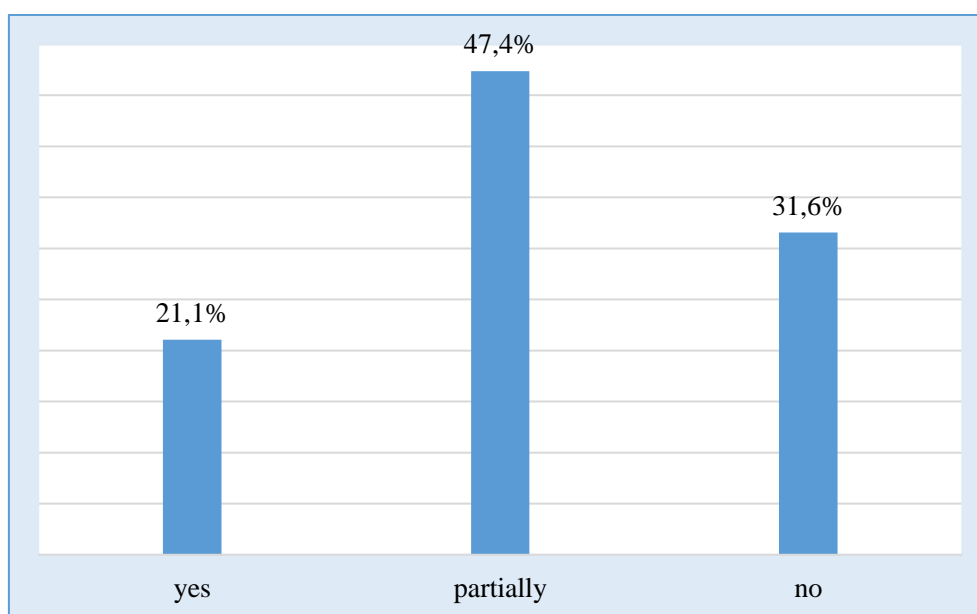
*Table 3 Socio-demographic characteristics of the experts*

Characteristic	Number	%
<b>Age</b>		
< 30	4	21.6
<b>31-39</b>	<b>6</b>	<b>31.6</b>
40-49	2	10.5
50-59	2	10.5
60-69	5	26.3
70 <	-	-
<b>Gender</b>		
<b>woman</b>	<b>11</b>	<b>57.9</b>
man	8	42.1
<b>Academic title/position</b>		
assistant	<b>8</b>	<b>42.1</b>
chief assistant	1	5.3
associate professor	1	5.3
professor	1	5.3
senior nurse/physician	8	42.1
<b>Education/Science degree</b>		
secondary special education	-	-
a college education	-	-
higher - specialist	2	10.5
higher - bachelor's degree	1	5.3
higher - master's degree	<b>16</b>	<b>84.2</b>
doctor	2	10.5
doctor of science	-	-
<b>Employment experience</b>		
up to 5 years	6	31.6
from 6 to 10 years	4	21.1
from 11 to 15 years	-	-
from 16 to 20 years	-	-
<b>over 20 years</b>	<b>9</b>	<b>47.4</b>
<b>Work experience in an oncology facility</b>	<b>7</b>	<b>36.8</b>
up to 5 years	4	21.1
	1	5.3



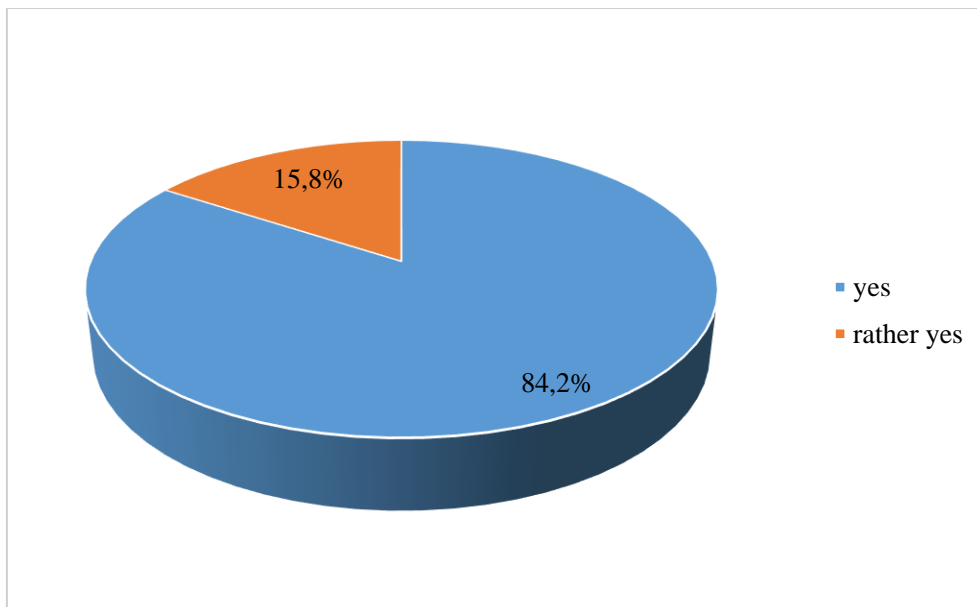
Characteristic	Number	%
from 6 to 10 years	2	10.5
from 11 to 15 years	5	26.3
from 16 to 20 years		
<b>over 20 years</b>		
<b>Total</b>	<b>19</b>	<b>100.0</b>

According to a significant part of the experts, in the structure managed by them there are no (n=6; 31.6%) or they are in the process of being developed and introduced (n=9; 47.4%) standardized competencies of the oncology nurse. Since in each unit there is a specificity of activities, as well as mixing of medical and nursing activities, it will be beneficial for nurses to have normatively regulated documentation describing the obligations of both parties. Thus, everyone will bear personal responsibility for the actions performed and control will be carried out (Fig. 11).



*Fig. 11 Availability of standardized competencies of the oncology nurse in the medical facility*

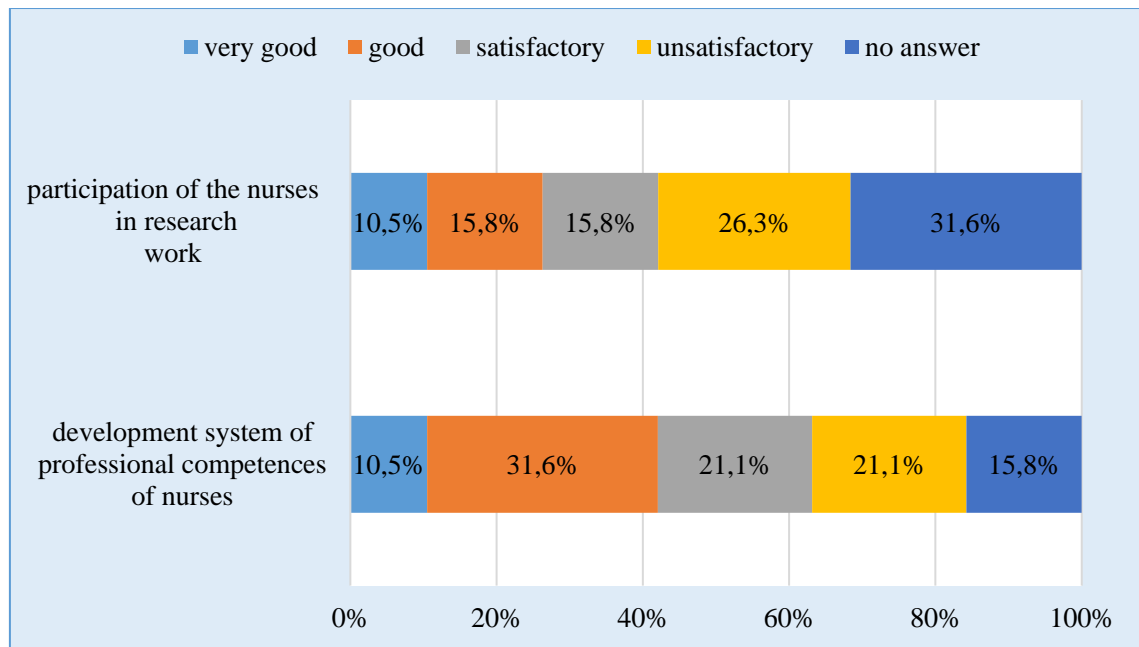
The experts are categorical in their assessment (n=16; 84.2%) and rather yes (n=3; 15.8%) that nurses should have special competencies and be prepared to work with oncological patients, given the nature of oncological diseases, their chronic course and the increased survival rate of patients who survived after oncological disease. Nurses' competencies must cover the different levels of health care throughout the continuum of chronic disease, but also update these competencies, according to the requirements and directives of the European Union (Fig. 12).



*Fig. 12 Expert opinion on the need for special competencies of the nurse caring for oncological patients*

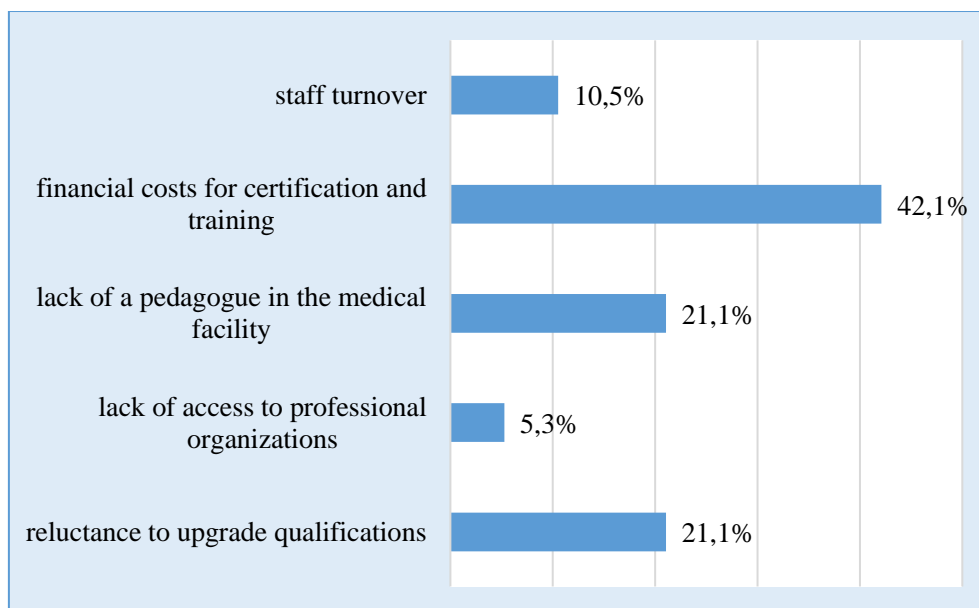
When evaluating the system for the development of the professional competencies of nurses in the medical facility, the answers of the experts predominated as "good" (n=6; 31.6%) and very good (n=2; 10.5%). An equal number of experts indicated satisfactory (n=4; 21.1%) and unsatisfactory (n=4; 21.1%), did not express an opinion (n=3; 15.8%) (Fig. 13).

In the assessment of the experts regarding the research development of the working nurses, a significant part (n=6; 31.6%) did not express their opinion on the issue, and 26.3% gave an unsatisfactory assessment of the nurses' participation in research activity . 3 (15.8%) define their participation as satisfactory, 3 (15.8%) as good, and only 2 (10.5%) consider it very good. The assessment of the experts is not encouraging and positive. The data are troubling amid evolving care around the world. Nurses should have a good reason for this, and the answer should be sought both in the complex influence of many factors and in themselves.



**Fig. 13** Expert evaluation of the competence development system and participation of nurses in the NID

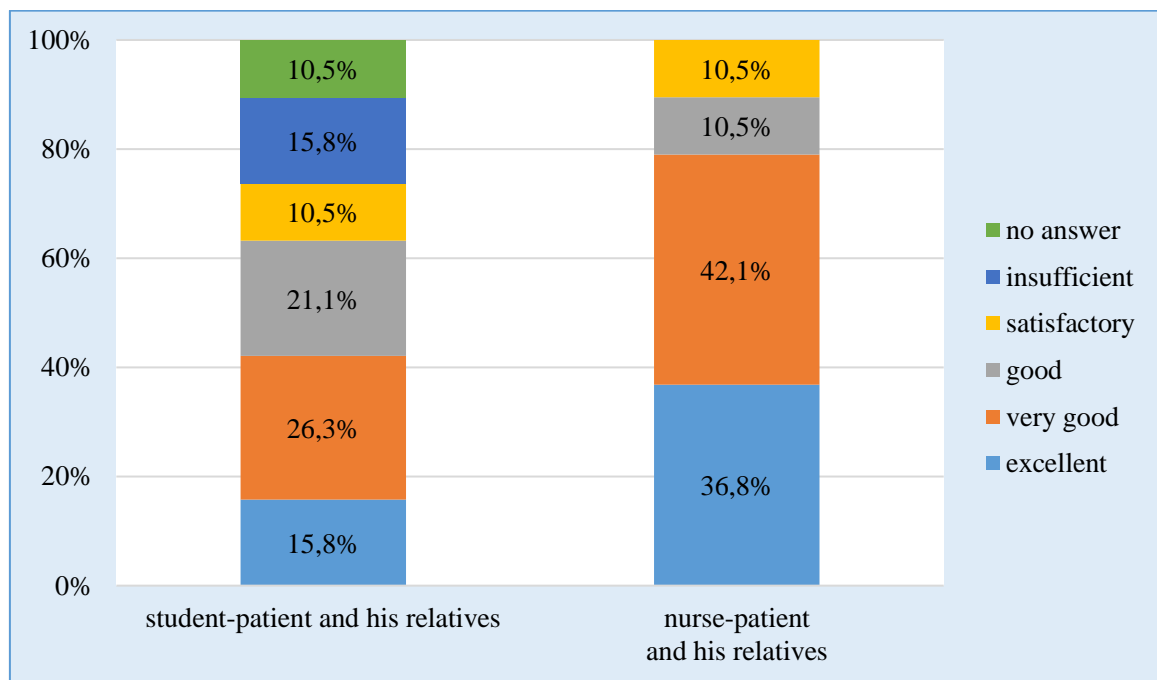
According to a large part of the experts, the reason can be found mainly in the financial costs of certification and training (n=8; 42.1%), reluctance to increase the qualification (n=4; 21.1%), the lack of a trained teacher, to conduct organized training at the workplace (n=4; 21.1%)



**Fig. 14** Expert opinion on the most significant factor influencing the competence of working nurses

The prevailing experts' assessments of professional ethics and relationships between nurse-patient and his relatives are excellent (n=7; 36.8%), very good (n=8; 42.1%) and good

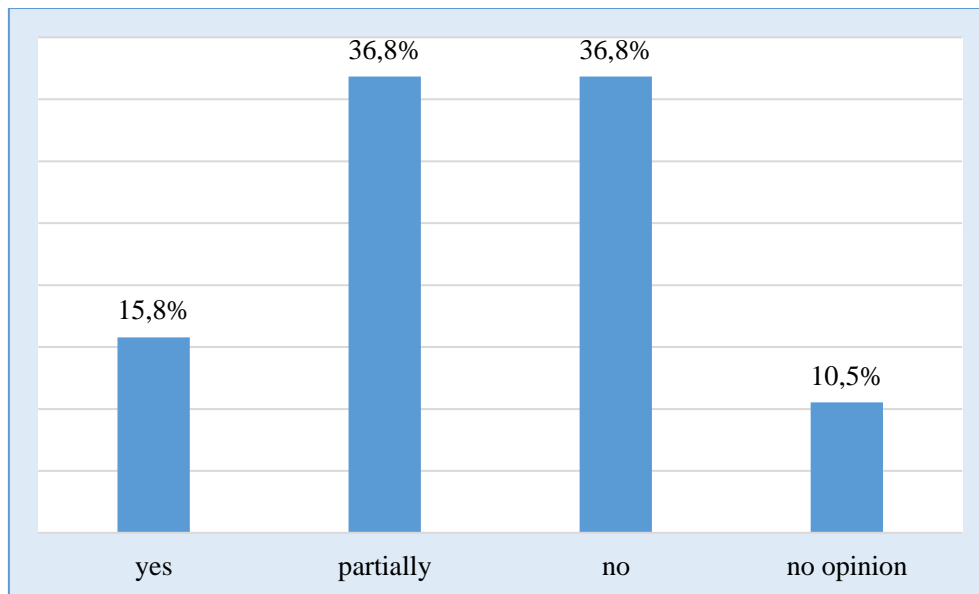
(n=2; 10.5%). The results of the students are similar to the experts' assessments of the professional ethics and relationships between the nurse, the patient and his relatives (n=157; 78.9%).



**Fig. 15** Assessment of professional ethics and relationships of patients and their relatives with students and nurses

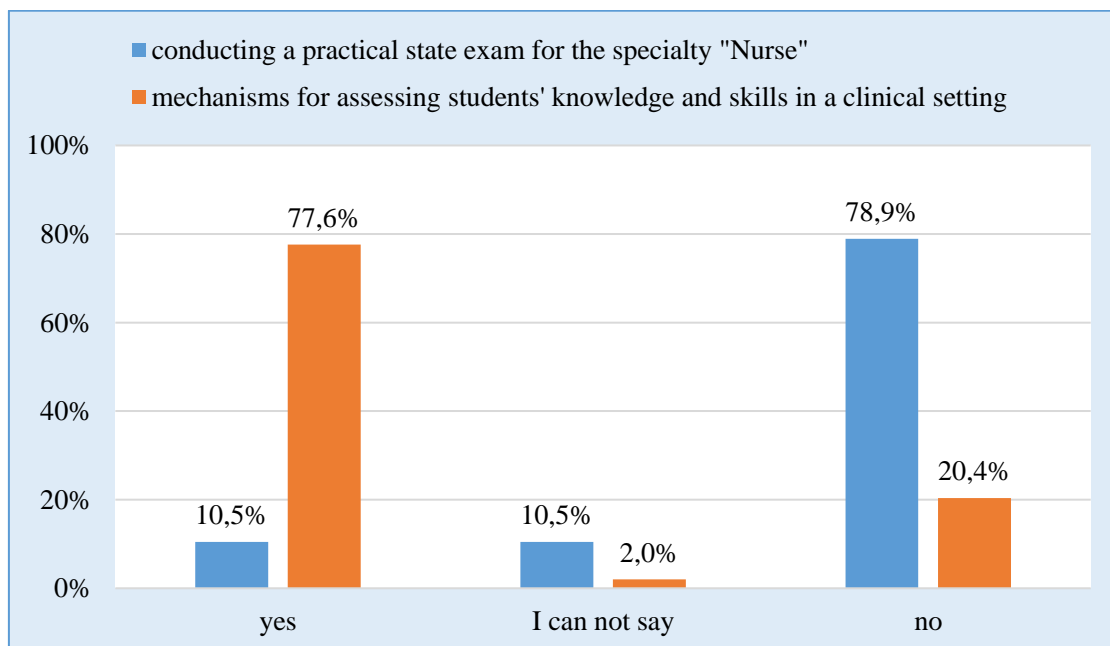
Students do not visit or visit the oncology unit less than 20% think almost half of the experts (n=9; 47.4%), "I have no observation" (n=2; 10.5%), more than 80% attendance indicated 4 (21.1%) of the respondents. These results can be explained by the Covid 19 pandemic, during which the educational practice in the hospital was limited and stopped, as well as by the uneven distribution of students and interns in the considered oncology units.

According to the experts, the educational content of oncology disciplines taught to the students agreed (n=3; 15.8%), partially agreed (n=7; 36.5%) or disagreed (n=7; 36.8%). A small percentage (n=2; 10.5%) could not express an opinion, perhaps because they had no direct observations (Fig. 16).



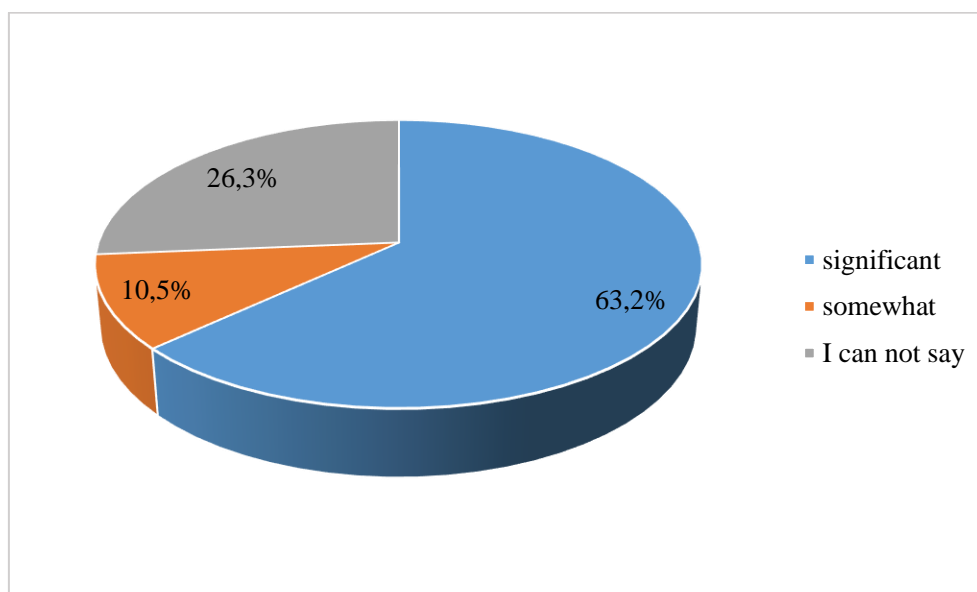
**Fig. 16** Coordination of the study content in oncology disciplines taught to the students

We found that at the present moment in Bulgaria, practical state exams are not held in a real clinical environment, but in a number of countries of the European Union it is practiced successfully and is part of the training system. The positive thing is that in the oncology structures there is readiness and developed mechanisms for evaluating the practical skills of the students and interns of the "Nursing" specialty ( $\chi^2=9.641$ ,  $df=4$ ,  $p=0.047$ , Cramer's  $V=0.504$ ).



**Fig. 17** Opinion of the experts regarding the conduct of a practical state exam and availability of mechanisms for assessing students' knowledge and skills in a clinical environment

The role of teaching practice teachers for the quality of the educational process is defined as "significant" by the respondents (n=12; 63.2%), "to a certain extent" (n=2; 10.5%) and "I have no opinion" (n=5; 26.3%) (Fig. 18).



**Fig. 18** Role of teaching practice teachers for the quality of the learning process

The participation of the experts in the education of the students of the "Nursing" specialty is as follows: they affirmatively indicated that they lead lectures 2 (10.5%), the highest number of conducting exercises is 4 (21.1%), in a teaching three experts (15.8%) and one in the SID (5.3%) are included in practice. They do not participate in training 13 (68.4%).

**Table 4** Participation of the experts in the education of the students of the specialty "Nurse"

<b>Training</b>	<b>Yes</b>	<b>Didn't indicated</b>	<b>total number</b>
Lectures	2 (10.5%)	17 (89.5%)	19 (100.0%)
Exercises	4 (21.1%)	15 (78.9%)	19 (100.0%)
Educational practice	3 (15.8%)	16 (84.2%)	19 (100.0%)
Free elective discipline	1 (5.3%)	18 (94.7%)	19 (100.0%)
I do not participate	13 (68.4%)	6 (31.6%)	19 (100.0%)

The growing number of oncological patients and the need for well-prepared specialists to care for them requires that all opportunities be used to enrich the knowledge and skills of students, as well as the experience of established specialists, and work in a real clinical environment.

### 3. Needs and opinion of patients regarding oncology care

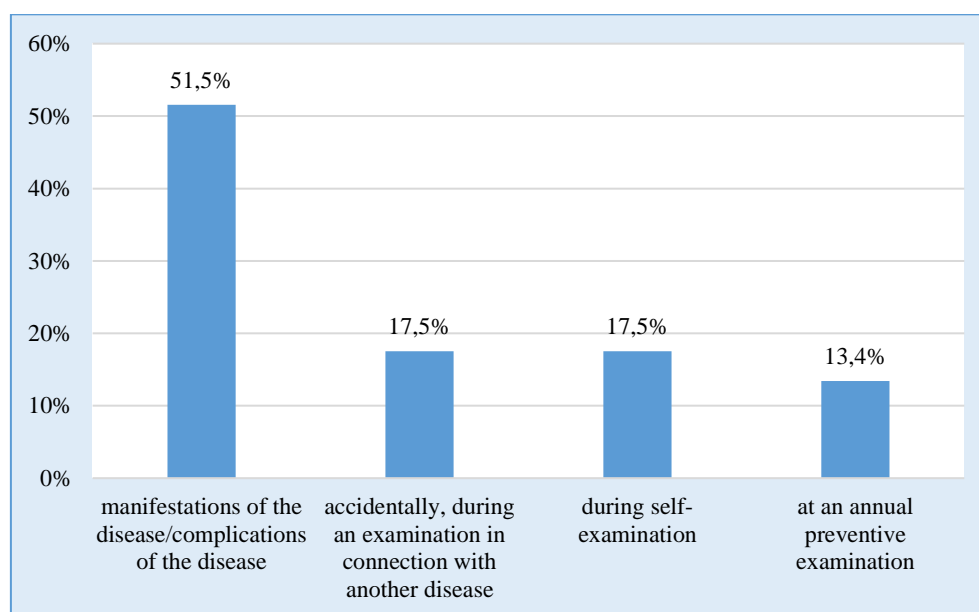
For the **fourth task**, we conducted a semi-structured interview with patients regarding their nursing care needs, satisfaction with communication with nurses in the process of providing health care, and their opinion of the nurse's role in the disease continuum. In cases where the patients were not competent to answer, the therapeutic regimen or their physical and emotional state did not allow an interview to be conducted, it was conducted with their relative listed as a contact person in the medical records. General information on the socio-demographic and health characteristics of the patients are presented in Table 5.

*Table 5 Socio-demographic and health characteristics of patients*

Characteristic	Number	(%)
<b>Age</b>		
up to 30 years	2	2.1
from 31 to 39 г.	4	4.1
from 40 to 49 г.	11	11.3
from 50 to 59 г.	21	21.6
<b>from 60 to 69 г.</b>	<b>36</b>	<b>37.1</b>
from 70 to 79 г.	18	18.6
above 80 years	5	5.2
<b>Gender</b>		
woman	<b>67</b>	<b>69.1</b>
man	30	30.9
<b>Education</b>		
elementary and below	-	-
basically	11	11.3
<b>average</b>	<b>55</b>	<b>56.7</b>
half up	7	7.2
high	24	24.7
<b>Residence</b>		
<b>city</b>	<b>69</b>	<b>71.1</b>
village	28	28.9
<b>Ethnic origin</b>		
<b>Bulgarian</b>	<b>93</b>	<b>95.9</b>
Roma	3	3.1
Turkish	-	-
Russian	1	1.0
<b>By organ localization</b>		
female genitalia	15	15.5
mammary gland	22	22.7
colon	20	20.6
lung and mediastinum	5	6.1
skin, pancreas, larynx	5	5.2
missing information	30	30.9
<b>Total number of respondents</b>	<b>97</b>	<b>100.0</b>

The total number of interviewed patients is 97, the largest relative share is the age group 60 to 69 years - 36 (37.1%) followed by 50 to 59 years - 21 (21.6%) and 70 to 79 years - 18 (18.6%). A larger part of the patients covered in the study (n=69; 71.1%) live in the cities, against 28 (28.9%) for the villages, which proportionally corresponds to the structure by place of residence in Bulgaria.

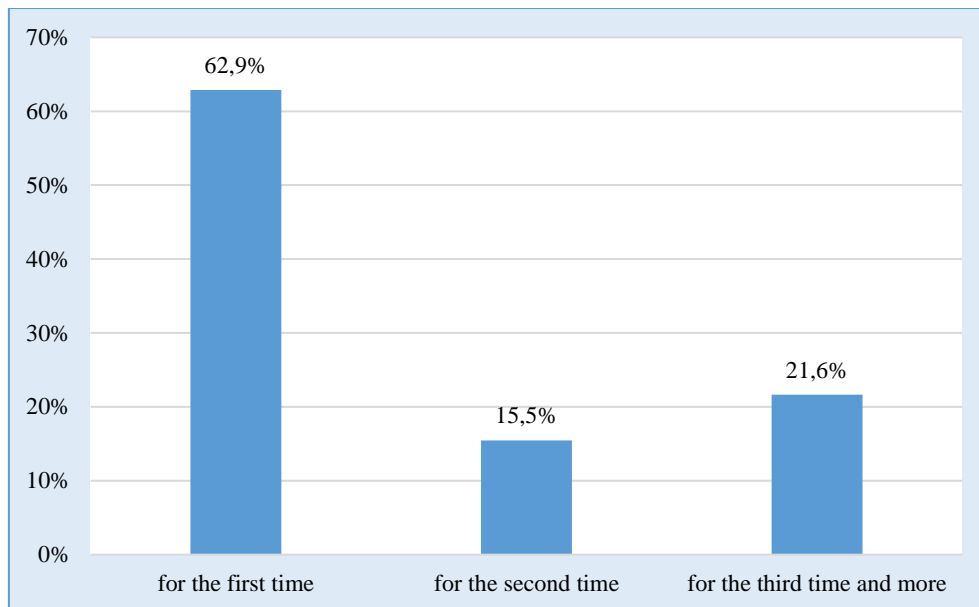
In more than half of the patients, the disease was discovered when typical symptoms appeared or even when complications occurred, as well as when medical help was sought for another disease. In one-fifth of cases (mainly breast cancer), the disease was detected during self-examination. Only one out of 10 cases was detected during a regular preventive examination, which shows the ineffectiveness of preventive activities and explains the high rate of diagnosis of cases in an advanced stage (Fig. 19).



**Fig. 19** Distribution of the examined persons according to the method of detection of the disease

On the other hand, the high proportion of those admitted for inpatient treatment for the second and consecutive time (Fig. 20) may be an indicator of gaps in the active monitoring and assessment in outpatient care of the condition of those who have been ill, survived the oncological disease, where the help of the nurse can be very valuable. In primary outpatient care, patients should be monitored for recurrences and metastases in distant organs, intervention programs aimed at changing the style and lifestyle of the affected persons should be developed, at each stage of the chronic disease, throughout the continuum of the disease. In this way, the activity of specialized units and specialists will be supported, as well as affect the duration and quality of life of patients.





**Fig. 20** Sequence of treatment in oncology units

Based on observation of the objective condition and conversation with the patients and their relatives, an assessment of the physical, mental and emotional condition was made and some aspects of the social/family background of the patient were determined (Table 6 - Table 10). Analysis of the data outlines the following trends:

- The majority of patients are functionally able to carry out daily activities. They most often report needing assistance with climbing stairs, getting around, bathing and dressing
- The most commonly reported symptom is lack of energy and easy fatigue, forcing almost half of patients to spend most of their time in bed
- Three-quarters of patients are unable to perform professional work, and more than half do not think they are achieving a good quality of life
- Although three-quarters of patients are generally satisfied with how they are coping with the disease, commonly reported emotions are feelings of sadness, fear and anxiety about worsening the condition, inability to realize life goals, loss of financial independence, etc. Often they themselves describe their diagnosis as "equivalent to a death sentence" and believe that even if they are fine now "it will come back at some point in their life".
- A leading cause of disruption of the mental and emotional comfort of patients is worry about the side effects of treatment. The most frequently reported ones are weight loss due to decreased appetite, nausea and vomiting (49.3%), problems with the skin, hair and mucous membranes (25.4%), disturbance of thermoregulation (16.4%), disorders in defecation (34.2%), sleep disorders such as insomnia, difficulty falling asleep and premature awakening, nightmares (68.2%), breathing problems (12%).

- Over 96% of patients report that they receive support from their family, can talk about their illness and rely on help for problems related to their health.

**Table 6** Assessment of the patient's basic needs according to V. Henderson

Activities	independently	with foreign aid	with an aid	with foreign aid and auxiliaries	I am not able to take care of myself	Total
Eating/drinking	<b>92 (94.8%)</b>	0 (0.0%)	1 (1.0%)	2 (2.1%)	2 (2.1%)	<b>97 (100.0%)</b>
Bathing	<b>80 (82.5%)</b>	0 (0.0%)	13 (13.4%)	2 (2.1%)	2 (2.1%)	<b>97 (100.0%)</b>
Getting dressed	<b>80 (82.5%)</b>	1 (1.0%)	12 (12.4%)	2 (2.1%)	2 (2.1%)	<b>97 (100.0%)</b>
Toilet	<b>87 (89.7%)</b>	0 (0.0%)	6 (6.2%)	2 (2.1%)	2 (2.1%)	<b>97 (100.0%)</b>
Bed mobility	<b>91 (93.8%)</b>	0 (0.0%)	2 (2.1%)	2 (2.1%)	2 (2.1%)	<b>97 (100.0%)</b>
Moving	<b>86 (88.7%)</b>	<b>1 (1.0%)</b>	6 (6.2%)	2 (2.1%)	2 (2.1%)	<b>97 (100.0%)</b>
Getting around	<b>77 (79.4%)</b>	<b>2 (2.1%)</b>	13 (13.4%)	3 (3.1%)	2 (2.1%)	<b>97 (100.0%)</b>
Climbing stairs	<b>74 (76.3%)</b>	<b>2 (2.1%)</b>	15 (15.5%)	4 (4.1%)	2 (2.1%)	<b>97 (100.0%)</b>

**Table 7** Assessment of the patient's physical condition

Activities	completely agree	rather agree	I can not decide	rather disagree	totally disagree	Total
I don't have enough energy	<b>46 (47.4%)</b>	24 (24.7%)	6 (6.2%)	11 (11.3%)	10 (10.3%)	<b>97 (100.0%)</b>
I have nausea and vomiting	13 (13.4%)	10 (10.3%)	5 (5.2%)	12 (12.4%)	<b>57 (58.8%)</b>	<b>97 (100.0%)</b>
I have pain	13 (13.4%)	22 (22.7%)	6 (6.2%)	11 (11.3%)	<b>45 (46.4%)</b>	<b>97 (100.0%)</b>
I am forced to spend my time in bed	23 (23.7%)	16 (16.5%)	4 (4.1%)	12 (12.4%)	<b>42 (43.3%)</b>	<b>97 (100.0%)</b>

**Table 8** Assessment of the patient's functional status

Activities	completely agree	rather agree	I can not decide	rather disagree	totally disagree	Total
I am able to perform professional work	16 (16.5%)	10 (10.3%)	7 (7.2%)	9 (9.3%)	<b>55 (56.7%)</b>	<b>97 (100.0%)</b>
I do my daily household chores	<b>35 (36.1%)</b>	28 (28.9%)	5 (5.2%)	20 (20.6%)	9 (9.3%)	<b>97 (100.0%)</b>
I sleep well	26 (26.8%)	20 (20.6%)	8 (8.2%)	<b>26 (26.8%)</b>	17 (17.5%)	<b>97 (100.0%)</b>
I am satisfied with the quality of my life	13 (13.4%)	28 (28.9%)	15 (15.5%)	<b>27 (27.8%)</b>	14 (14.4%)	<b>97 (100.0%)</b>

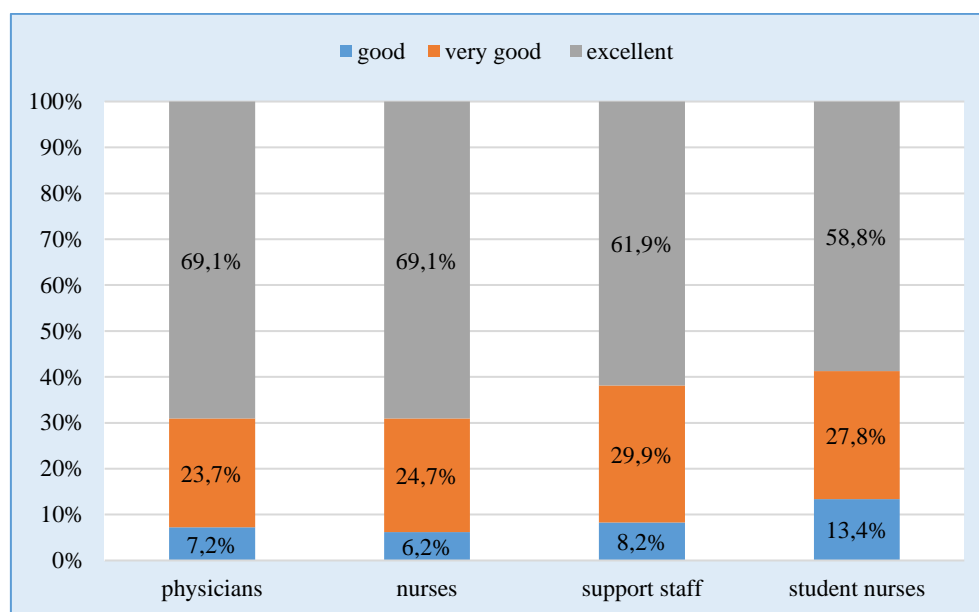
**Table 9** Assessment of the patient's emotional state

Activities	completely agree	rather agree	I can not decide	rather disagree	totally disagree	Total
I feel sad	22 (22.7%)	27 (27.8%)	9 (9.3%)	23 (23.7%)	16 (16.5%)	97 (100.0%)
I am happy with how I am handling my illness	34 (35.1%)	39 (40.2%)	13 (13.4%)	8 (8.2%)	3 (3.1%)	97 (100.0%)
I am losing hope in the fight against the disease	3 (3.1%)	4 (4.1%)	16 (16.5%)	39 (40.2%)	35 (36.1%)	97 (100.0%)
I feel nervous	10 (10.3%)	26 (26.8%)	18 (18.6%)	29 (29.9%)	14 (14.4%)	97 (100.0%)
I am afraid of the disease	33 (35.0%)	24 (24.7%)	10 (10.3%)	15 (15.5%)	15 (15.5%)	97 (100.0%)
I am worried that my condition will worsen	36 (37.1%)	23 (23.7%)	11 (11.3%)	15 (15.5%)	12 (12.4%)	97 (100.0%)
I am worried about the side effects of the treatment	32 (33.0%)	27 (27.8%)	17 (17.5%)	10 (10.3%)	11 (11.3%)	97 (100.0%)

**Table 10** Assessment of social/family status

Activities	completely agree	rather agree	I can not decide	rather disagree	totally disagree	no answer
I feel close to my friends	38 (39.2%)	33 (34.0%)	9 (9.3%)	13 (13.4%)	4 (4.1%)	97 (100.0%)
I get emotional support from my family	84 (86.6%)	10 (10.3%)	2 (2.1%)	1 (1.0%)	0 (0.0%)	97 (100.0%)
My family accepted my illness	85 (87.6%)	9 (9.3%)	2 (2.1%)	1 (1.0%)	0 (0.0%)	97 (100.0%)
We talk about my illness and overcome obstacles together	75 (77.3%)	18 (18.6%)	3 (3.1%)	1 (1.0%)	0 (0.0%)	97 (100.0%)
I feel close to my partner	51 (52.6%)	17 (17.5%)	4 (4.1%)	7 (7.2%)	18 (18.6%)	97 (100.0%)
I am happy with my sex life	14 (14.4%)	6 (6.2%)	14 (14.4%)	16 (16.5%)	47 (48.5%)	97 (100.0%)

The object of research interest in the study is patient satisfaction with the health care provided and the therapeutic nurse-patient relationship. The complex evaluation of patients regarding the attitude of health workers, and in particular the nurse, towards them and their relatives is high (Fig. 21).



**Fig. 21** Patients' assessment of the attitude of health workers towards them and their relatives

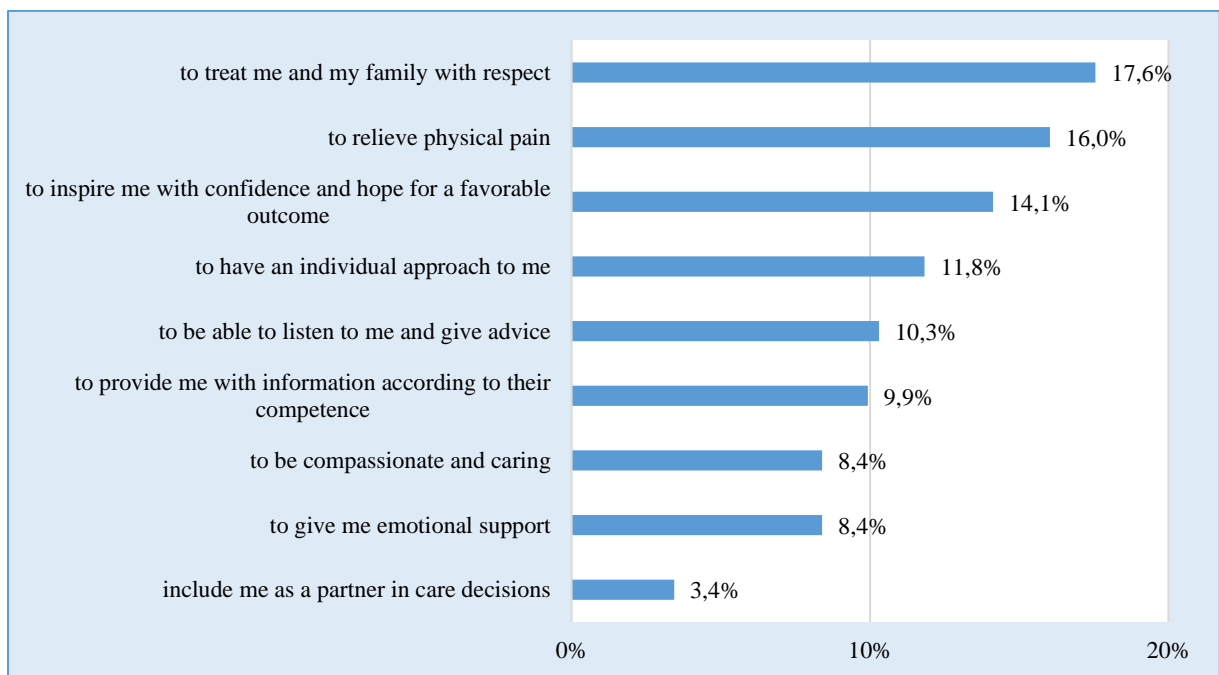
The study was also narrowed down to specific nursing activities, which also found a positive assessment. In more than 90%, the assessment of activities such as timely response to a call, pain control, providing information, showing sympathy and empathy moves in the positive spectrum of the scale (answers "yes" and "rather yes") (Table 11).

**Table 11** Assessment of patients to specific activities of the work of medical specialists

A question	Yes	Closer to yes	I can not decide	rather not	no	Total
Does the nurse regularly monitor you when you are in pain?	<b>71 (73.2%)</b>	21 (21.6%)	3 (3.1%)	2 (2.1%)	1 (0.0%)	<b>97 (100.0%)</b>
Do the nurses respond immediately to your complaints and concerns?	<b>68 (70.1%)</b>	23 (23.7%)	2 (2.1%)	3 (3.1%)	1 (1.0%)	<b>97 (100.0%)</b>
Are the medical professionals sympathetic and understanding towards you??	<b>75 (77.3%)</b>	20 (20.6%)	2 (2.1%)	0 (0.0%)	0 (0.0%)	<b>97 (100.0%)</b>
Do you trust nurses?	<b>81 (83.5%)</b>	16 (16.5%)	1 (0.0%)	0 (0.0%)	0 (0.0%)	<b>97 (100.0%)</b>

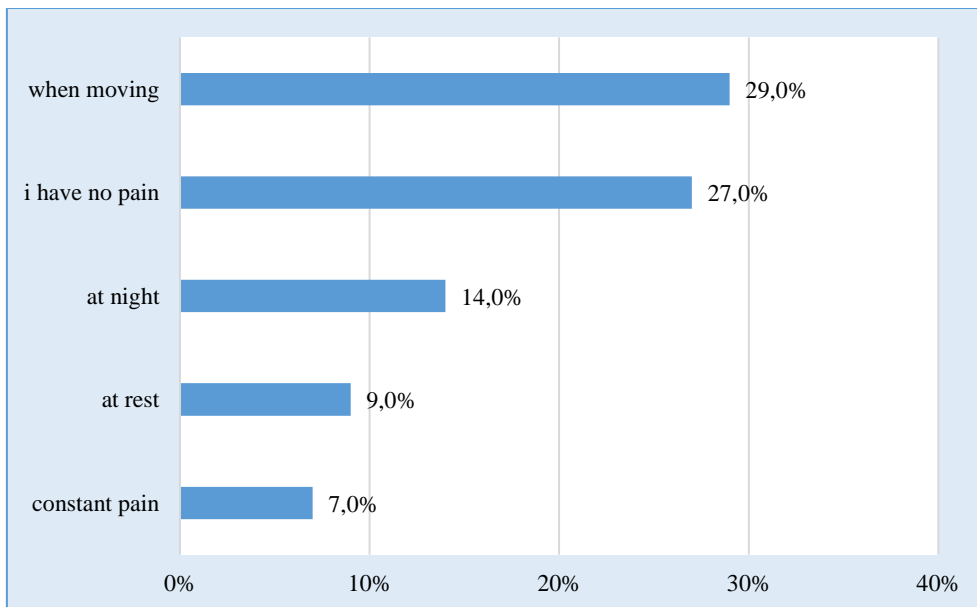
A question	Yes	Closer to yes	I can not decide	rather not	no	Total
Do you understand the information that the health workers tell you?	75 (77.3%)	19 (19.6%)	3 (3.1%)	0 (0.0%)	0 (0.0%)	97 (100.0%)
Do the nurses spend enough time talking to you? (support, discuss, listen and understand your problems)	68 (70.1%)	23 (23.7%)	2 (2.1%)	3 (3.1%)	1 (1.0%)	97 (100.0%)

These are also the most common expectations of nurses from patients during treatment (Fig. 22).



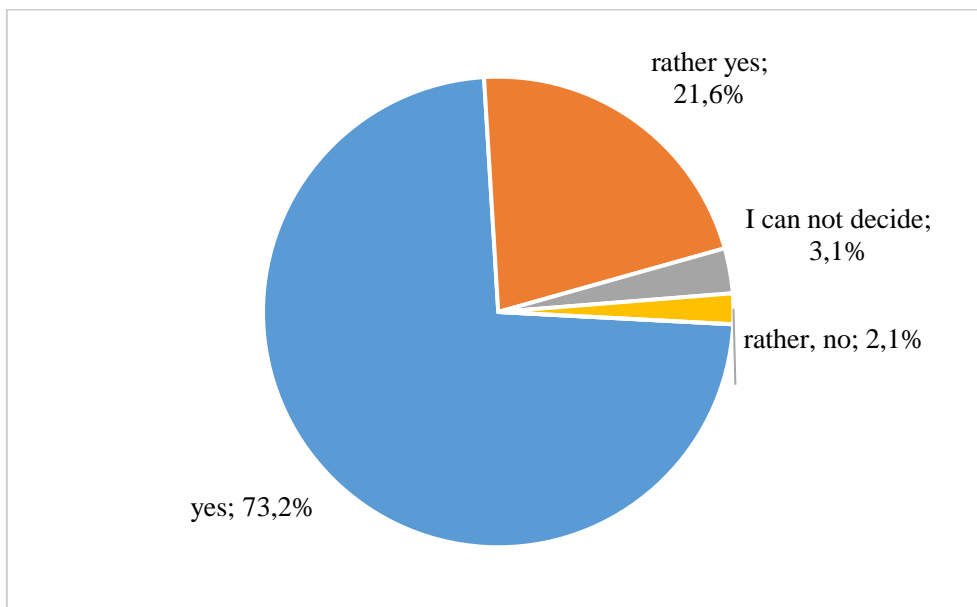
**Fig. 22** Expectations of oncological patients towards nurses

One of the most common symptoms is oncological pain, which can have various characteristics and which is complained of by about two-thirds of patients (Fig. 23).



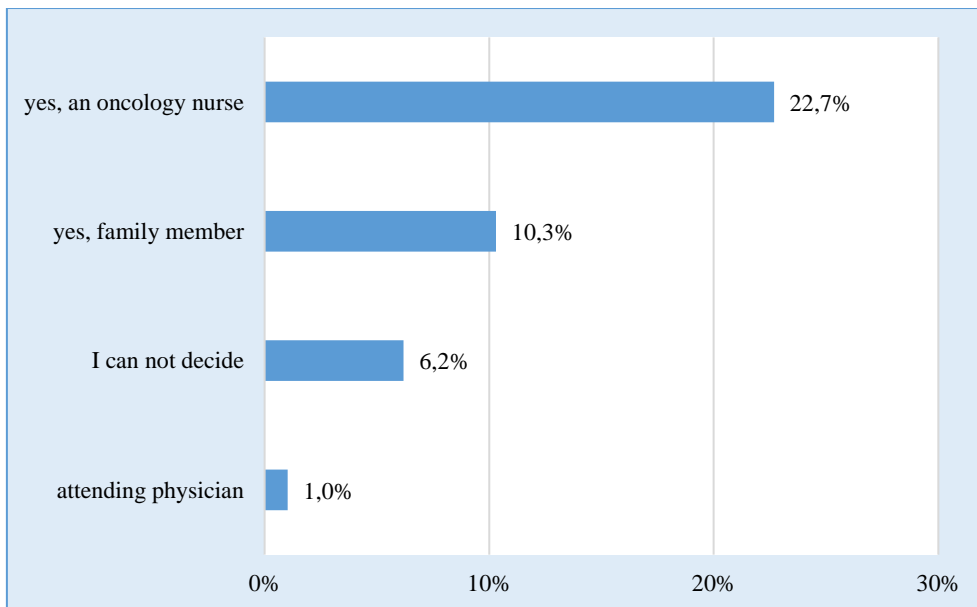
**Fig. 23** Assessment of the nature of the pain and the time of onset

In this regard, most of the patients hope for an effective intervention of the nurse precisely in alleviating this symptom, and most of them express satisfaction in performing this activity (Fig. 24).



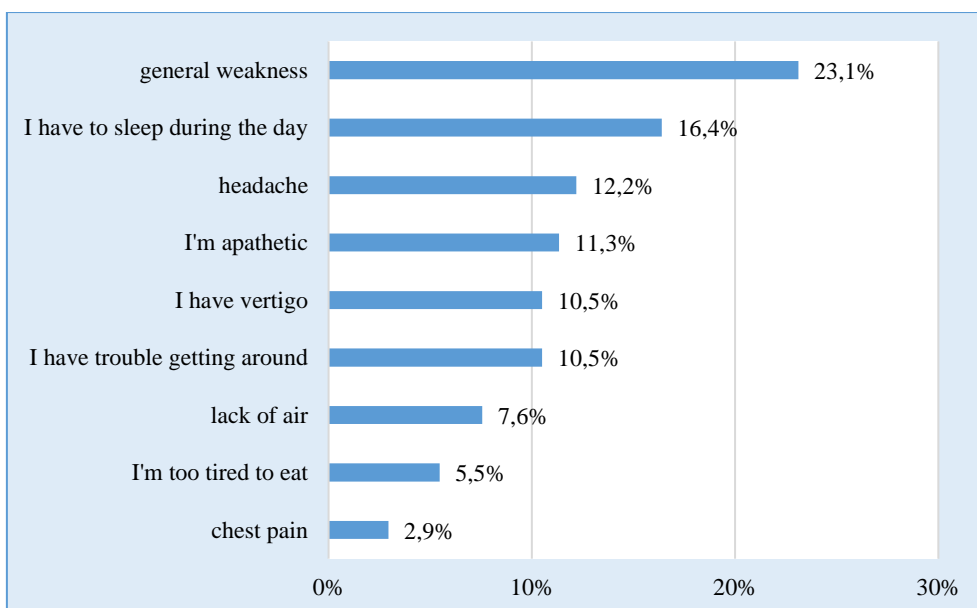
**Fig. 24** Patient satisfaction with nurses' monitoring and response to pain

This largely determines the preference of patients who cannot cope independently in a hospital setting, where assistance is provided by a nurse over the constant presence of a family member. These are patients of the first and second hospital regime, in the perioperative period, who carry out complex treatment regimes and are fully or partially dependent on the care of the nurse (Fig. 25).



**Fig. 25** Patients' need for the constant presence of a person during the hospital stay

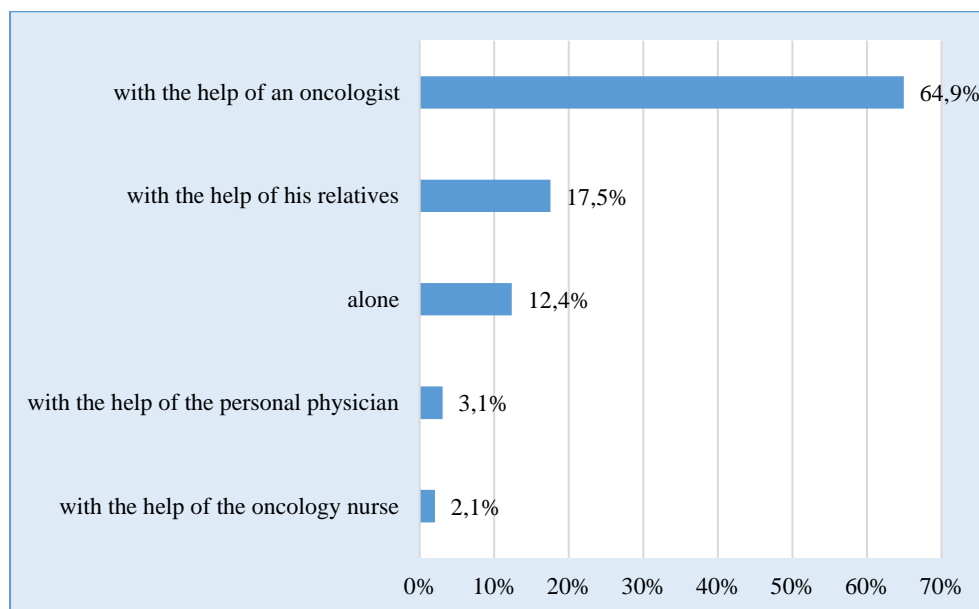
Complaints of patients, as they themselves define them, cover a wide spectrum, are very often individually specific, require accurate assessment and application of an individual approach in their management, due to individual reactions to treatment and changed life situation (Fig. 26). The presence of a variety of additional complaints requires a precise and timely assessment of the patient's condition and support for adaptation to the disease. This once again confirms the need for a wide range of competencies of the oncology nurse.



**Fig. 26** Additional patient complaints

Despite expressed satisfaction with the attitude and competencies of nurses, patients rarely turn to them when they need a competent opinion or advice for making decisions

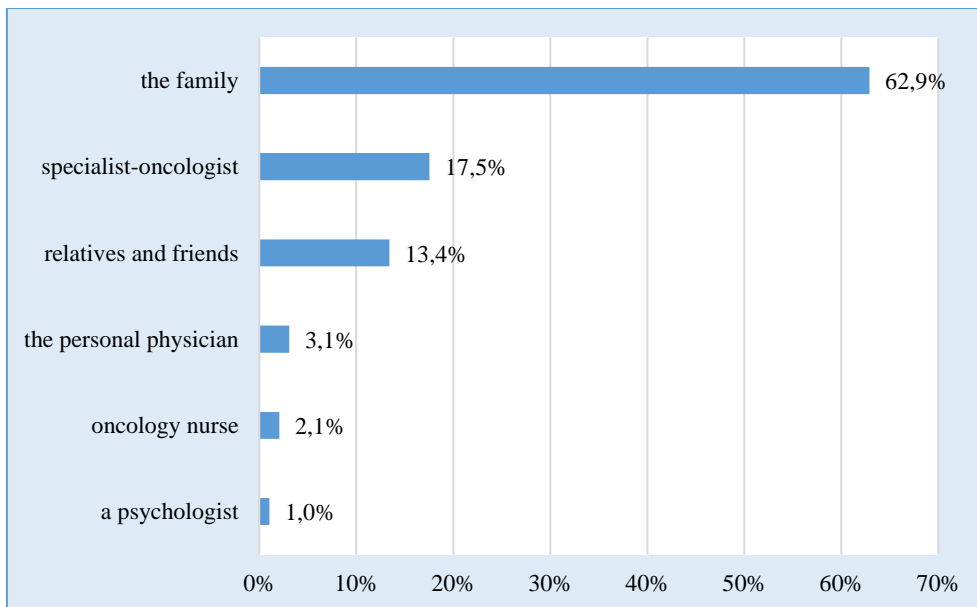
related to the disease. Most often, patients prefer to make decisions regarding the main disease and accompanying care with the help of an oncologist (n=62; 64.2%) and with the help of their relatives (n=20; 20.9%). None of the patients indicated the oncology nurse as an advisor in matters of care and other issues related to the chronic oncological disease. This shows that the nurse is perceived mostly in her subordinate position and not as an independent level in the process of treatment and care (Fig. 27).



**Fig. 27** Patient decision-making about illness and care

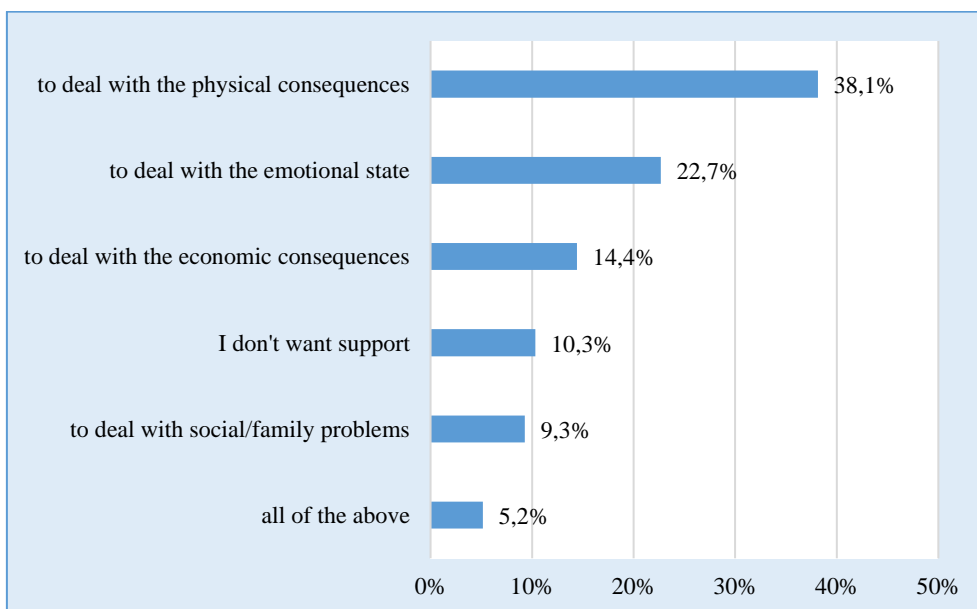
Patients rely on family support (n=61; 62.9%) to cope with the consequences of the disease. In case of need and professional advice, they trust an oncologist or relatives and friends. The obtained results are in contrast to the world practices in the implementation of home care for the sick in the period after an oncological illness. The role of the nurse was underestimated, as only two patients after discharge would seek help and advice from the nurse to manage their condition (n=2; 2.1%).





**Fig. 28** Assistance in dealing with the consequences of the disease

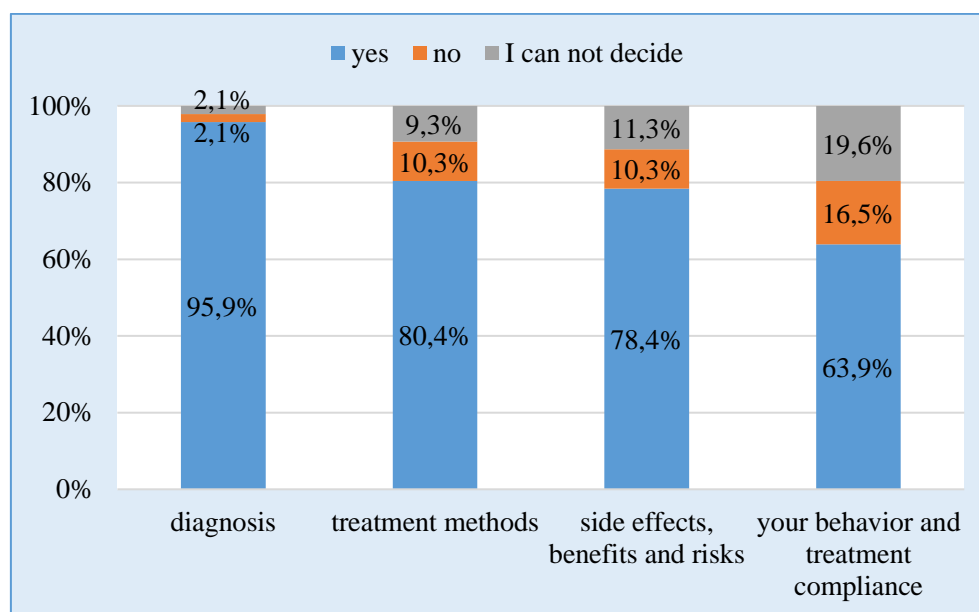
38.1% of patients needed help to deal with physical consequences, followed by problems with patients' psychoemotional state (n=22; 22.7%), followed by some other aspects. One in ten patients is of the opinion that they do not want support and think they can manage on their own.



**Fig. 29** Preferred patient support as needed

One of the important aspects of the health professional's work is the provision of information regarding risk factors, characteristics of the disease, treatment options and potential risks of carrying out such features of diet, regimen and others. With a series of questions, we focused on patient awareness, ways of providing information, need to optimize

the information process and other variables. In Fig. 30 and Table 12 we see a high degree of patient awareness by the doctor/nurse regarding the activities accompanying the diagnosis, treatment options and patient care.



**Fig. 30** Awareness of the patient by the doctor/nurse

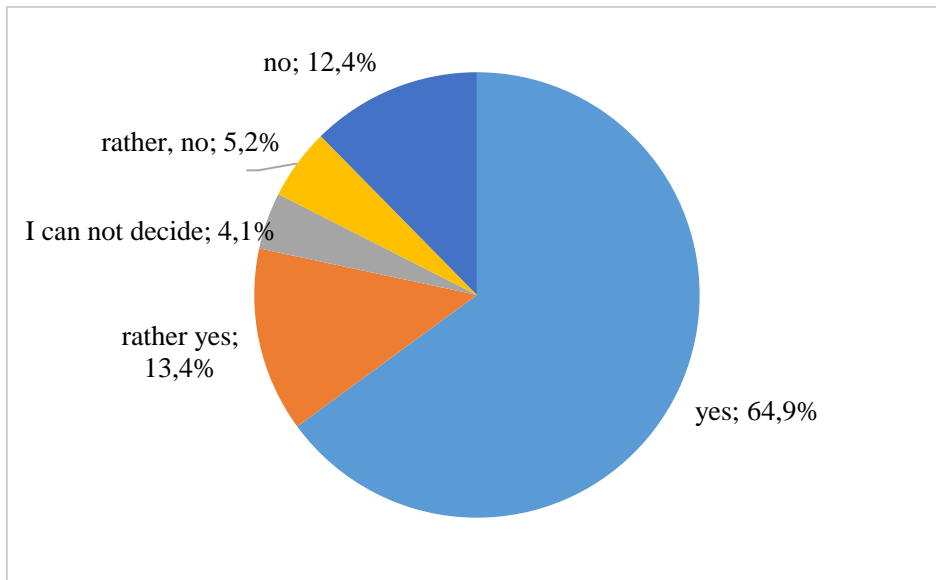
A certain lack of awareness can be commented on regarding compliance with the lifestyle in the various stages of the course of the disease, which, however, is essential for controlling negative symptoms, preventing relapses and maintaining a good quality of life. The result, although indirectly, leads us to conclude that communication is mainly clinically oriented and underestimates the importance and potential of preventive activities.

**Table 12** Evaluation of patients' awareness during the hospital stay

Claims	Yes	Closer to yes	I can not decide	rather not	no	Total
Your rights as a patient	64 (66.0%)	20 (20.6%)	4 (4.1%)	4 (4.1%)	5 (5.2%)	<b>97 (100.0%)</b>
Rules for internal order in the department	61 (62.9%)	23 (23.7%)	7 (7.2%)	3 (3.1%)	3 (3.1%)	<b>97 (100.0%)</b>
Upcoming research - type, purpose, preparation and what the research consists of	68 (70.1%)	22 (22.7%)	2 (2.1%)	3 (3.1%)	2 (2.1%)	<b>97 (100.0%)</b>
The results of a blood test налягане, температура, пулс	62 (63.9%)	26 (26.8%)	4 (4.1%)	2 (2.1%)	3 (3.1%)	<b>97 (100.0%)</b>
Upcoming manipulation- injection, dressing	63 (64.9%)	24 (24.7%)	5 (5.2%)	3 (3.1%)	2 (2.1%)	<b>97 (100.0%)</b>
Taking medicines as prescribed - type, dose, side effects	53 (54.6%)	25 (25.8%)	9 (9.3%)	6 (6.2%)	4 (4.1%)	<b>97 (100.0%)</b>

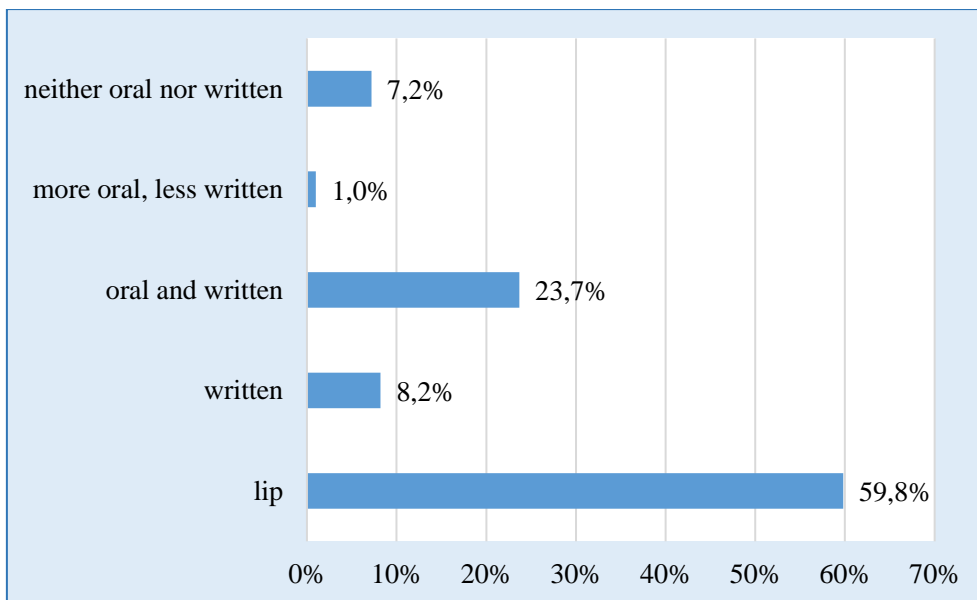
Claims	Yes	Closer to yes	I can not decide	rather not	no	Total
Whether you need to move and how often you need to be moving	51 (52.6%)	20 (20.6%)	14 (14.4%)	9 (9.3%)	3 (3.1%)	97 (100.0%)

The need for information after hospital discharge regarding disease behavior and related factors is undisputed (Fig. 31).



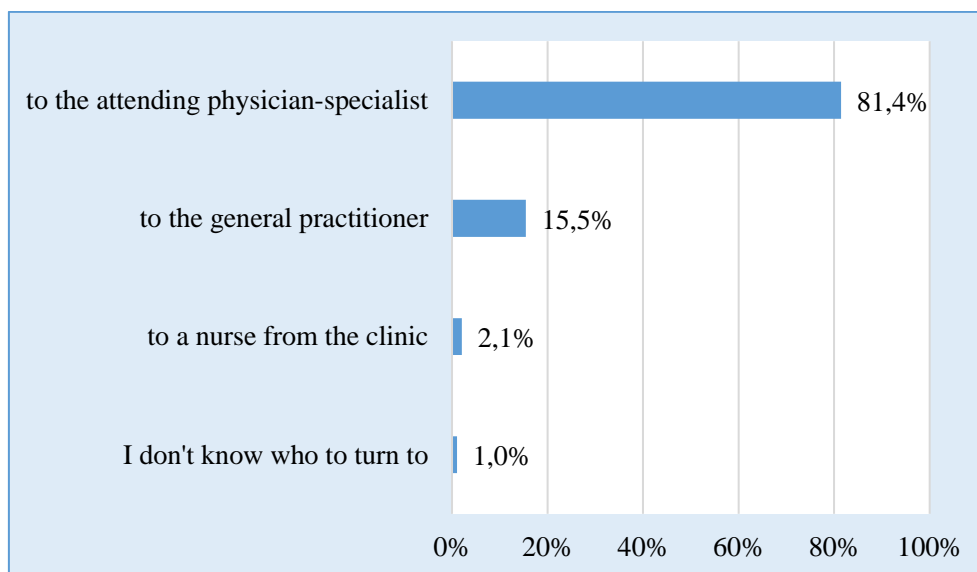
**Fig. 31** Need for information after discharge

It is most often given orally at the time of discharge and although this has been found to be the preferred route by patients (Fig. 32) it is not particularly effective.



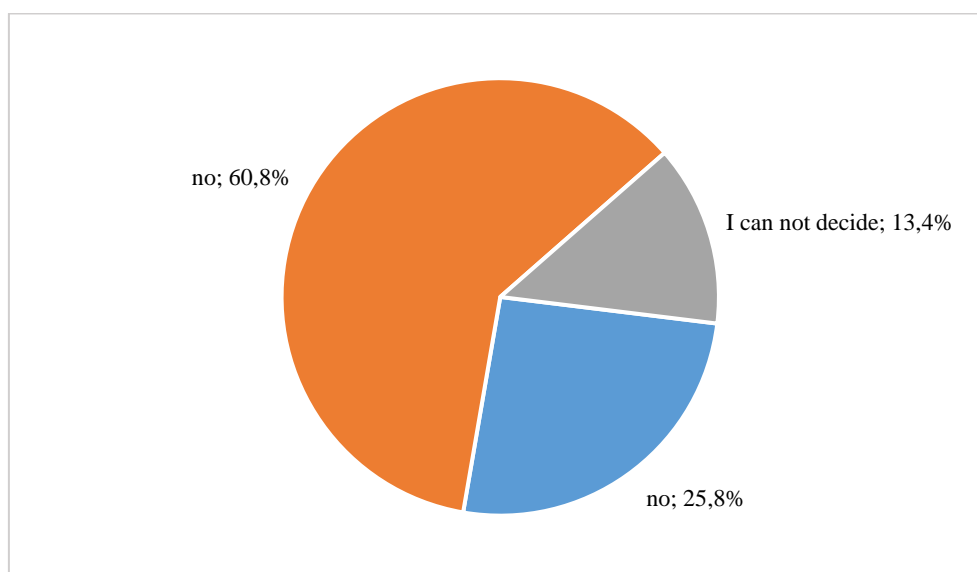
**Fig. 32** Patients' preferred type of information received

This creates a need for additional information during home treatment and care. The attitude of patients, in case of a problem or question related to the disease, is to turn for advice to the treating doctor - oncologist or to the general practitioner and almost completely ignore the nurse as an option (Fig. 33).

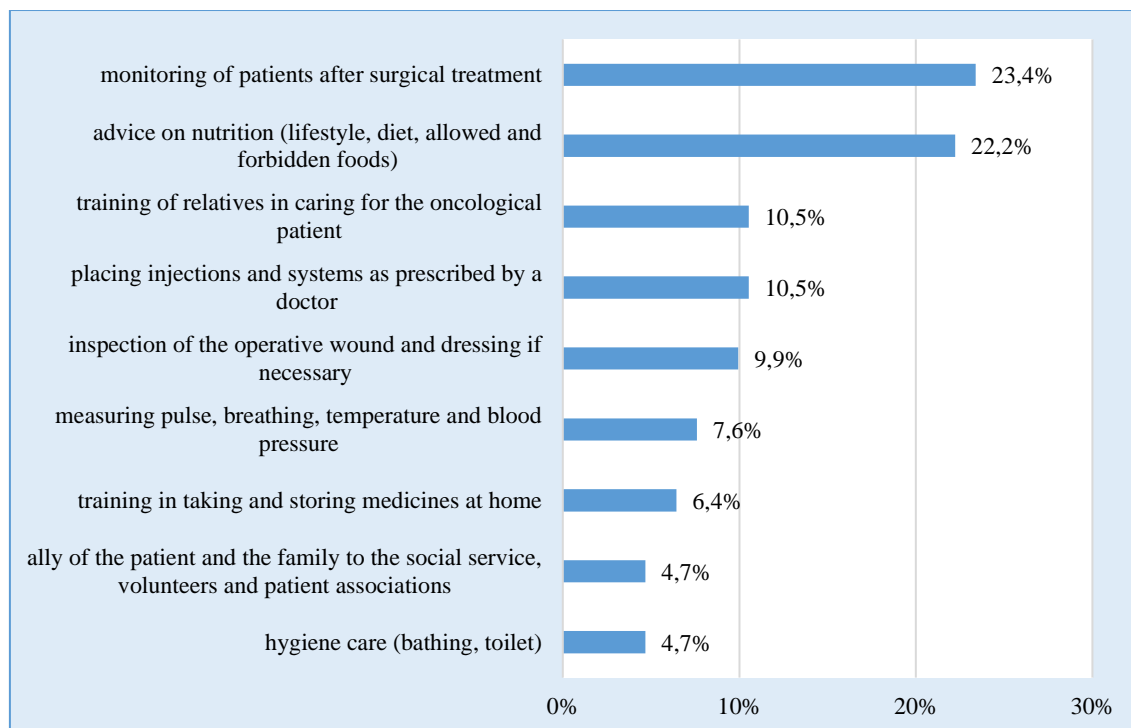


**Fig. 33** Turnover of patients after discharge in need of advice

Not particularly popular is the possibility of home visits by a nurse in the post-hospitalization and recovery period. Less than a third of the patients allowed such a possibility (n=25; 25.8%).



**Fig. 34** Turnover of patients after discharge in need of advice



*Fig. 35 Post-hospital nursing care*

The nurse can be helpful and provide nursing care in the patient's home in various directions. The aim of this care is to help the patient recover his independence more quickly. Patients see the nurse's role in the home as monitoring and supporting (n=23; 23.4%), giving advice on nutrition (n=21; 22.2%), training relatives in the care of the cancer patient (n=10; 10.5%), performing manipulations as prescribed by a doctor (n=10; 10.5%) etc.

#### **4. Student opinion and self-assessment of acquired competences**

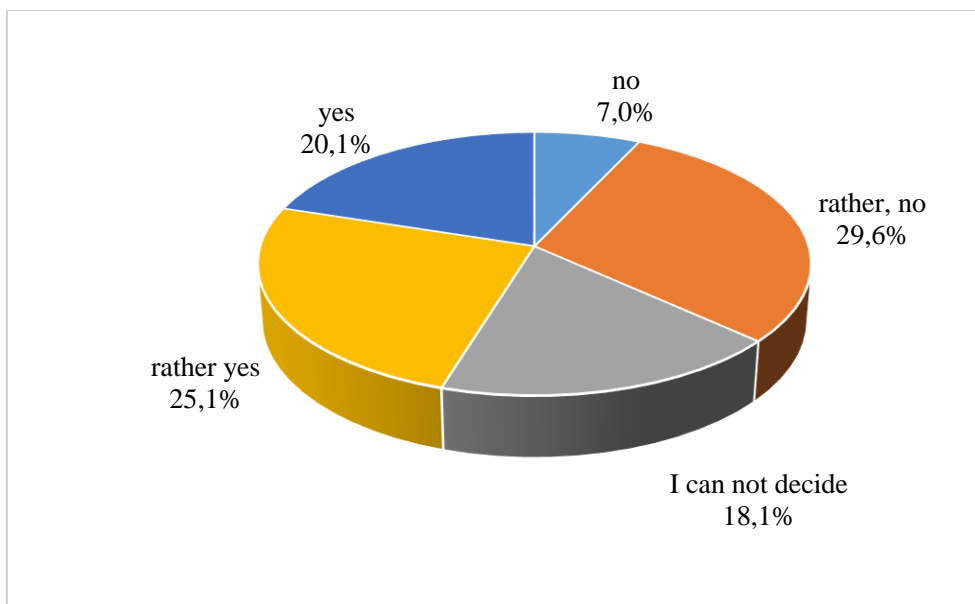
For the **fifth task**, we conducted a survey with students and trainees from the "Nursing" specialty regarding their self-assessment of the competences acquired during the basic training, their attitude to work in oncology units, their desire and needs for additional qualification in this direction and other variables.

**Table 13** Socio-demographic characteristics of students and interns - nurses

Characteristic		Number	%
<b>Age</b>	up to 20 years	24	12
	from 21 to 25 years	<b>138</b>	<b>69.3</b>
	from 26 to 30 years.	37	18.6
<b>gender</b>	<b>woman</b>	<b>187</b>	<b>94.0</b>
	man	12	6.0
<b>City</b>	Ruse	28	14.1
	Pleven	128	64.3
	Varna	43	21.6
<b>School year</b>	2019/2020	126	63.3
	2020/2021	73	36.7
<b>Course</b>	second	90	45.2
	third	57	28.6
	interns	52	26.1
<b>Total</b>		<b>199</b>	<b>100.0</b>

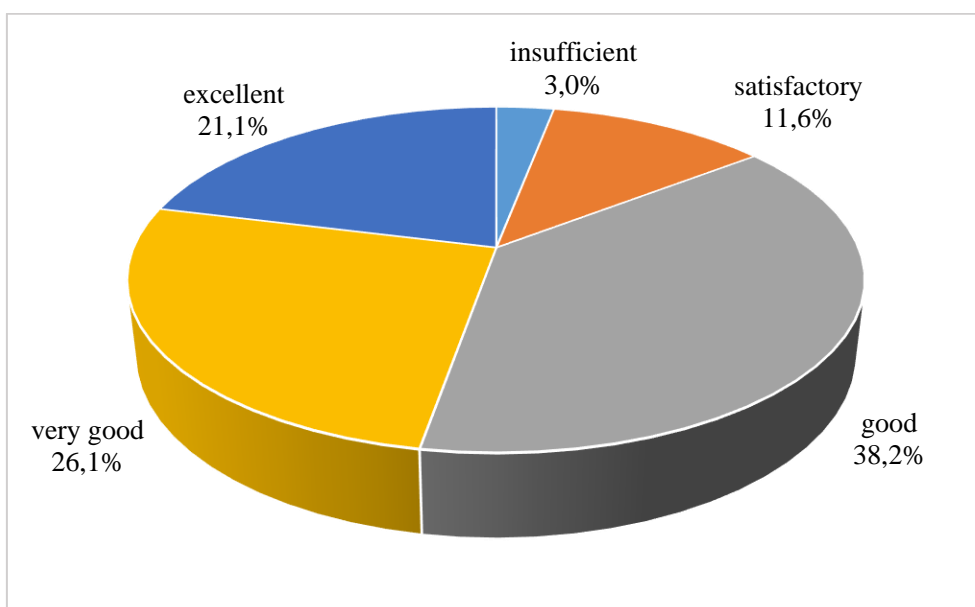
The specificity of oncology care and its rapid development against the background of innovative organizational approaches (nursing process, nursing diagnosis, health care planning, clinical observation, critical thinking), practice in different structural units (inpatients for oncological surgery, chemotherapy and radiotherapy, oncological consulting offices, hospices), requires the development of broad competencies, the foundations of which must be laid already at the student stage of health care education. This gave the reason for the target group in the study to be students studying in the specialty "Nursing" in various educational institutions in the country. The students were invited to give answers to the questions based on the knowledge and skills acquired so far, their impressions of working in oncology structures, their intentions for future professional realization in the direction of oncology nursing, etc.

The general impression of the students is that there is a certain deficit in terms of the care and attention that patients in oncology structures receive (Fig. 36).



**Fig. 36** Distribution of students according to opinion about the sufficiency of the care and attention that the sick receive

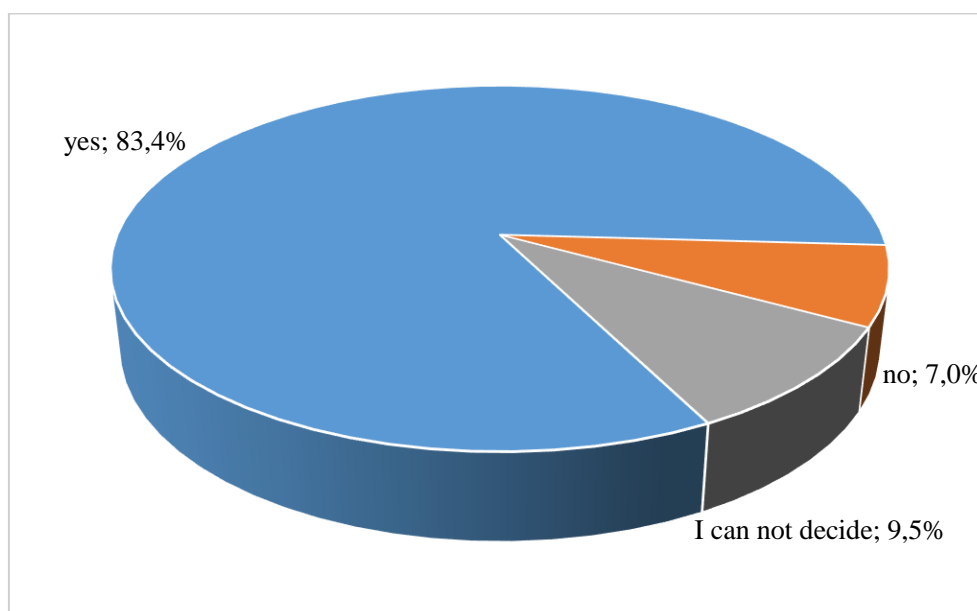
In this, as well as in the other groups, the opinion about the need for specific competences and profile of nursing care in oncology dominates (n=193, 97.0%).



**Fig. 37** Students' self-assessment of the specific knowledge acquired during the training for providing care to oncological patients

Students are critical of the specific knowledge acquired so far in this area (Fig. 37) and confirm the need to expand and deepen it (Fig. 39). The majority, 83.4% of students, including those with a good self-assessment of their competences, emphasized the need for

continuing education in this direction after graduation, in case they start working in oncology clinics and wards.



**Fig. 38** Opinion of the examined persons regarding the need for additional training for working with oncological patients

The results of the more detailed study of the specific competencies of the students, according to the "Medical Oncology" standard, are presented in Table 14.

**Table 14** Self-assessment of students regarding acquired competences during training

Competencies	excellent	very good	good ones	satisfactory	insufficient
Prevention of oncological diseases	23 (11.6%)	49 (24.6%)	<b>66 (33.2%)</b>	50 (25.1%)	11 (5.5%)
Dispensary and dispensary monitoring of patients	27 (13.6%)	58 (29.1%)	<b>60 (30.2%)</b>	45 (22.6%)	9 (4.5%)
Principles of cancer pain management	41 (20.6%)	55 (27.6%)	<b>59 (29.6%)</b>	38 (19.1%)	6 (3.0%)
Administration of parenteral and enteral nutrition and monitoring for complications	45 (22.6%)	60 (30.2%)	<b>56 (28.1%)</b>	33 (16.6%)	5(2.5%)
Care of an oncological patient in the perioperative period	47 (23.6%)	56 (28.1%)	<b>57 (28.6%)</b>	35 (17.6%)	4(2.0%)
Carrying out emergency actions in case of extravasation of cytostatics	25 (12.6%)	37 (18.6%)	<b>55 (27.6%)</b>	50 (25.1%)	32(16.1%)
Application of established algorithms in hypersensitivity behavior	27 (13.6%)	47 (23.6%)	<b>52 (26.1%)</b>	54 (27.1%)	19(9.5%)
Application of a nutritional regimen to	43 (21.6%)	60 (30.2%)	<b>50 (25.1%)</b>	29 (14.6%)	17 (8.5%)



Competencies	excellent	very good	good ones	satisfactory	insufficient
patients undergoing cytotoxic therapy					
Special nursing care during chemotherapy	38 (19.1%)	55 (27.6%)	<b>67 (33.7%)</b>	30 (15.1%)	9 (4.5%)
Observance of professional ethics	<b>61 (39.4%)</b>	36 (23.2%)	33 (21.3%)	19 (12.3%)	6 (3.9%)

We searched for three activities for which students show the highest and lowest self-esteem, as a result of which the following regularities were discovered:

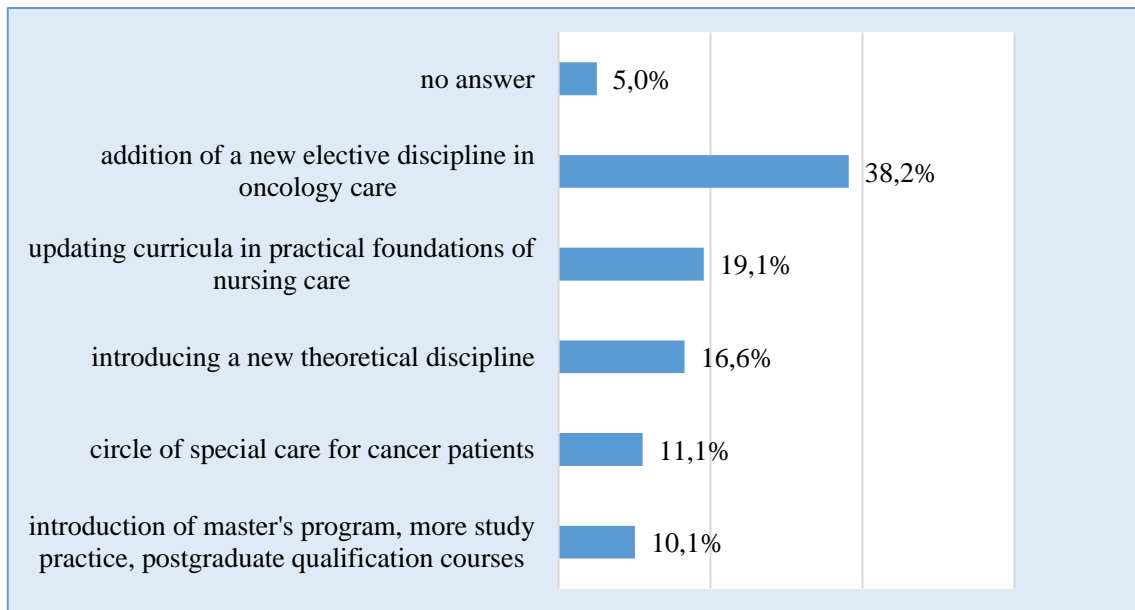
**Activities with the highest self-rating based on answers "excellent" and "very good" are:**

- Compliance with professional ethics (62.6%)
- Carrying out parenteral and enteral nutrition and monitoring for complications (52.8%)
- Application of a nutritional regimen to patients undergoing cytotoxic therapy (51.8%)

**Activities with the lowest self-rating based on "satisfactory" and "inadequate" responses are:**

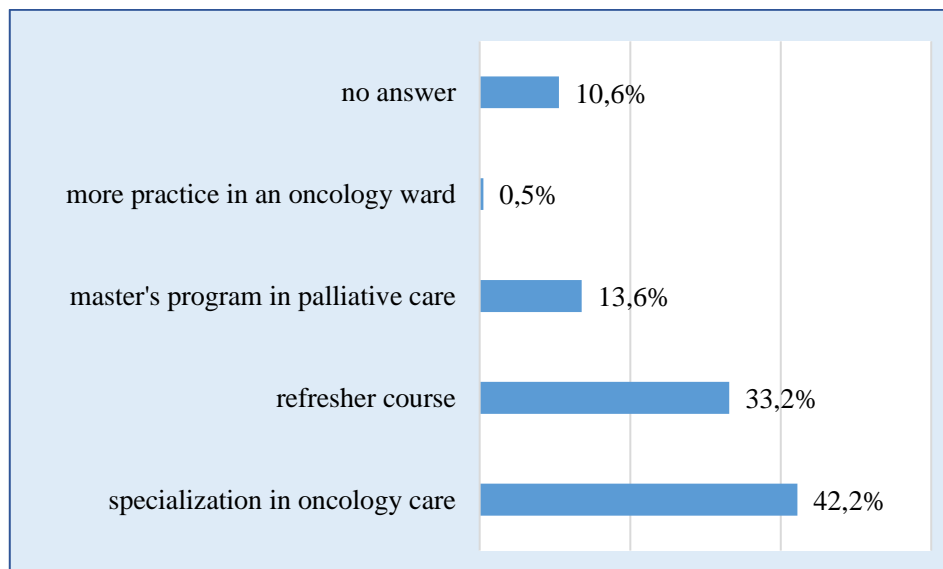
- Performing emergency actions in case of extravasation of cytostatics (41.2%)
- Application of established algorithms for hypersensitivity behavior (36.6%)
- Prevention of oncological diseases and their complications (30.6%)

In view of the obtained results and the expressed opinion about the need to optimize the training, the students were asked what they thought were the ways for this to happen within the basic and postgraduate training. In terms of theoretical training, their proposals for adding new, more narrowly profiled freely elective subjects dominate (Fig. 39).



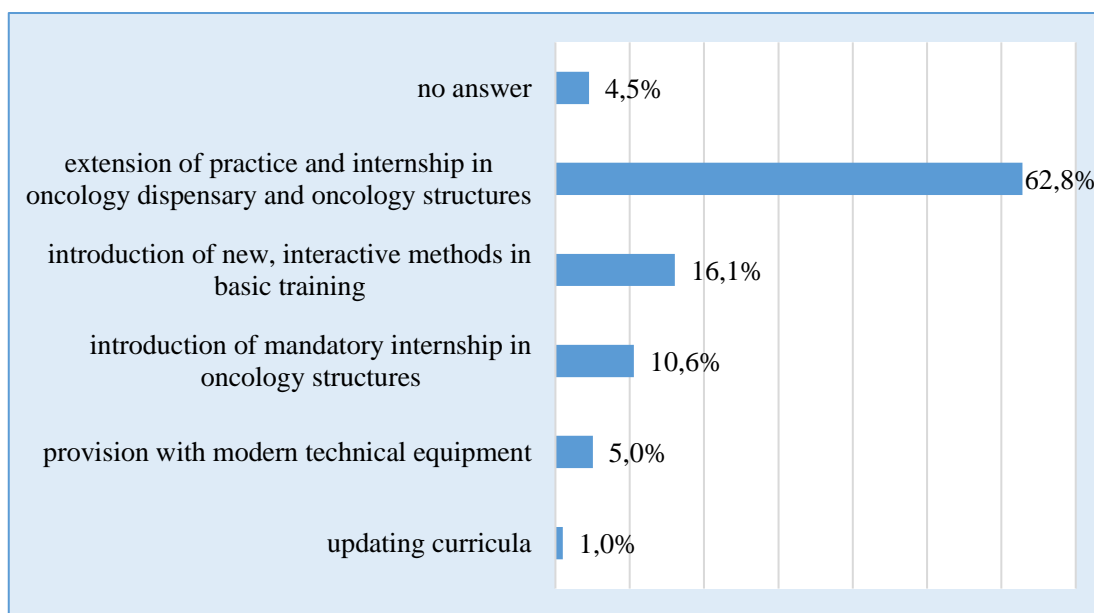
**Fig. 39** Distribution of students by recommendations for improving oncology care education

The most effective form of postgraduate qualification according to 84 (42.2%) of the respondents would be a specialization in oncology care (Fig. 40).



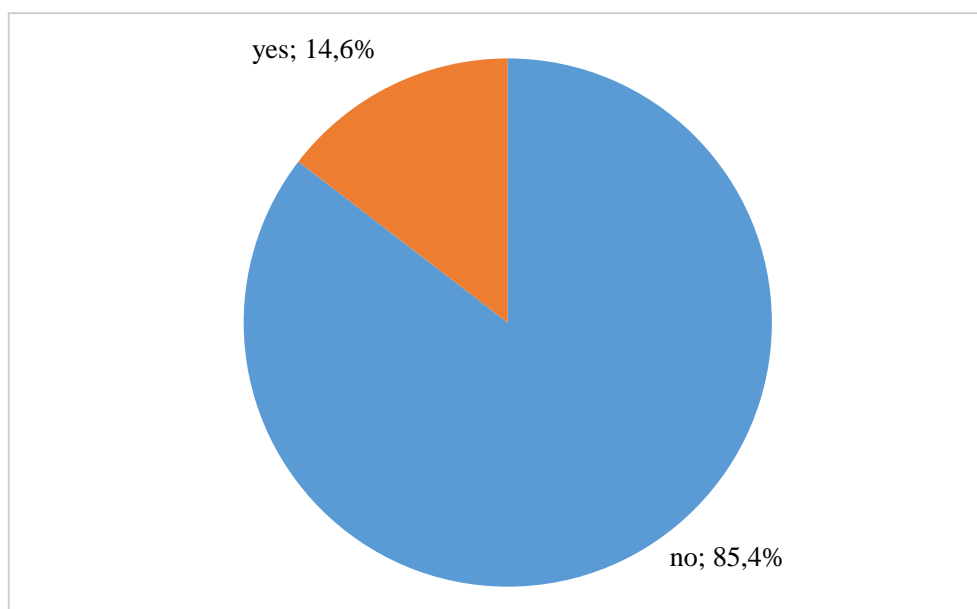
**Fig. 40** Student opinion on continuing education opportunities

For the improvement of practical skills, working in a clinical environment by expanding the educational practice and pre-graduate internship in oncology structures (n=125; 62.8%) and using simulation and interactive methods (n=32; 16.1%) will be of greatest benefit (Fig. 41).



**Fig. 41** Distribution of students by opinion on improving their practical skills

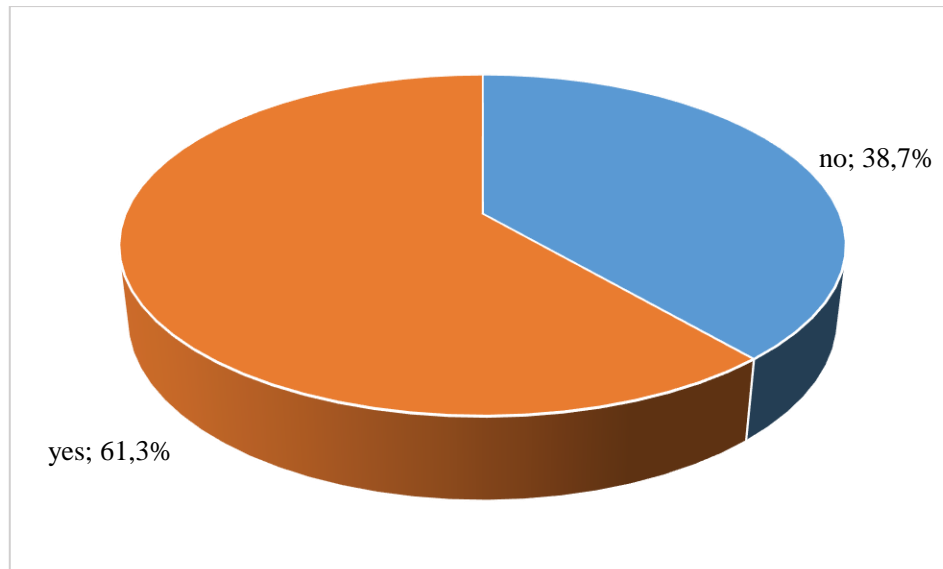
The fact is, however, that the actual implementation of such activities at the time of the study is too limited. Only one out of 10 respondents conducted a student practice in an oncology structure (n=23; 11.6%), and participation in research projects with such a focus was reported by 29 (14.6%).



**Fig. 42** Participation of respondents in the development of projects on oncology-oriented topics

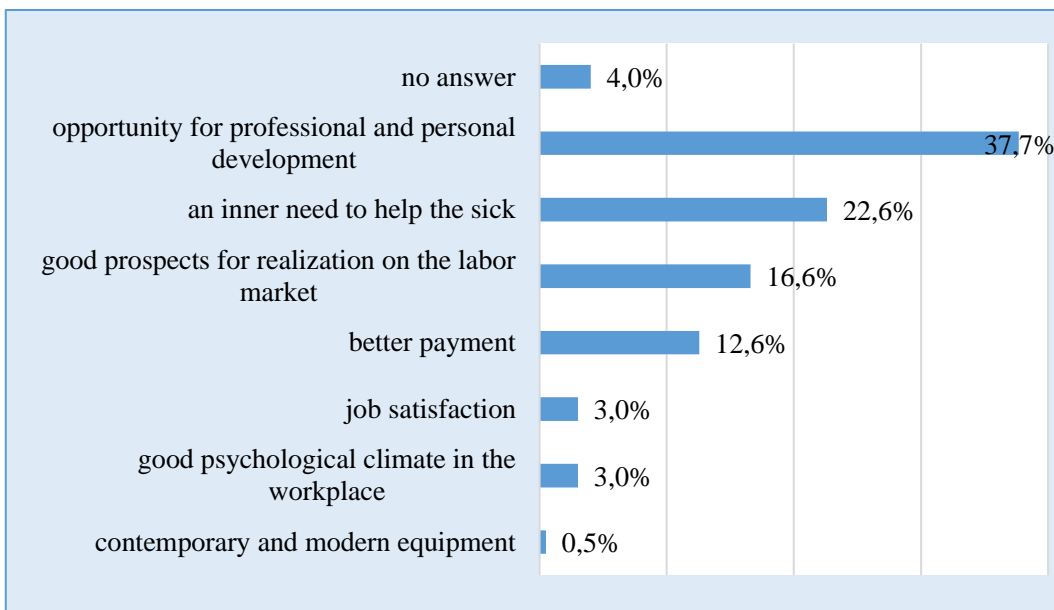
One of the serious problems of the health care system in Bulgaria is the shortage of nurses, both for inpatient and outpatient care. Due to this fact, we considered it necessary to direct the study to the future plans of the students for professional realization. Specific

questions were also asked about their attitude to work in oncology units, where an additional difficulty is created by the turnover of the nursing staff caused by the intensive and emotionally demanding work. It was found that almost two-thirds of the students accept as an option for professional development work in an oncology structure (n=122; 61.3%) with an emerging preference for an oncology surgery clinic (Fig. 43).



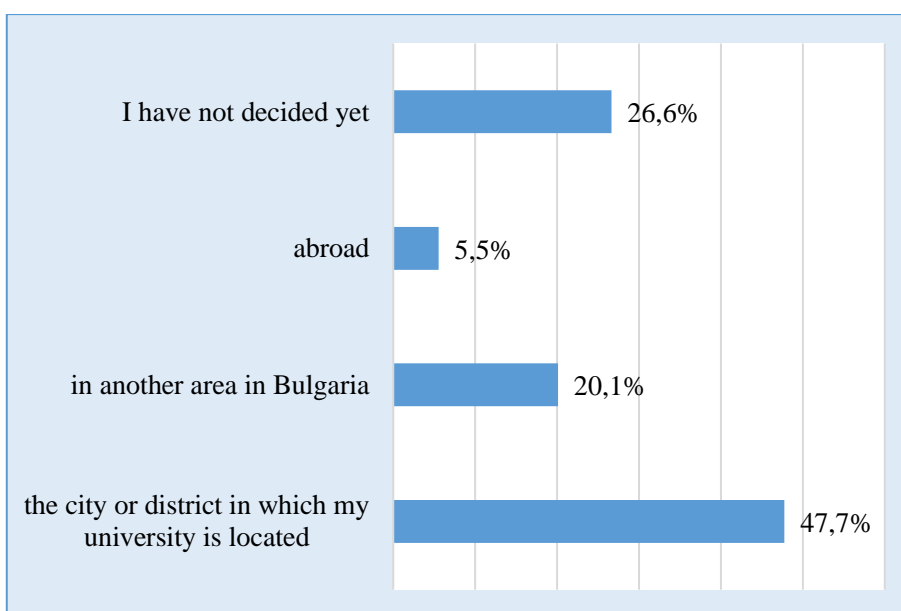
**Fig. 43** Distribution of students according to whether they would work in inpatient/outpatient oncology settings

As a determining motive for working in oncology structures, students indicate an opportunity for professional growth (n=75; 37.7%), an internal need to be useful to patients (n=45; 22.6%), a good prospect for realization (n=33; 16.6%), as the work provides an opportunity to practice the acquired knowledge and skills, high professionalism, possession of purely human qualities and an opportunity for postgraduate training, growth and development. Good remuneration for work is also important, but not decisive when working with cancer patients (n=25; 12.6%).



**Fig. 44** Motivation of students to work in oncology structures for inpatient/outpatient care

The high interest of students in working in medical facilities for inpatient/outpatient oncology care can be explained by the fact that they have been the base of training for students during their four years of study, modern equipment is available, implementation of the latest technologies in work and proven professionals, some of whom were involved in teaching the students.



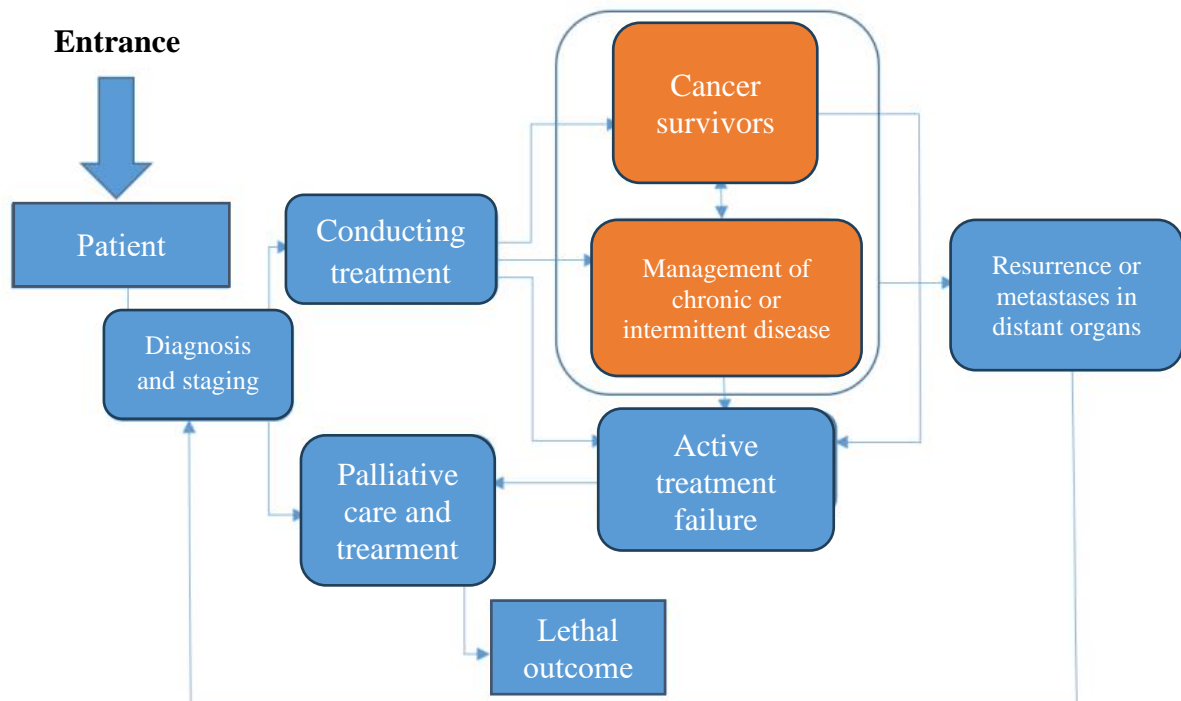
**Fig. 45** Distribution of the surveyed persons according to where they would prefer to practice the profession

It is not surprising that half of the students prefer to realize themselves in the city of Pleven, where the Higher School of which they are graduates is located (Fig. 45).

According to data from the academic records for the academic year 2022-2023 (graduation 2019-2023), there were 56 graduates from the "Nursing" specialty. Almost all 51 (91.1%) were employed in medical institutions in the country after graduation, and of the remaining 5 (8.9%), 4 (7.14%) were on maternity leave and 1 (1.96%) enrolled in Master's degree in Health Care Management at another university, out of all the graduates, only 1 (1.96%) was realized outside the country - in a country of the European Union, it is not specified where.

According to the **sixth task** In connection with established needs for optimization of care have been developed:

1. Card for assessment of the patient before discharge and information needs (Application № 6);
2. Program for the freely-choosable discipline "Prevention of Oncological Diseases", which, if interested, could be transformed into a program for a course on postgraduate studies (Application № 7).
3. A model of the patient's path was developed with an outline of the units where the role of the nurse is most significant and needs optimization (Fig. 46).



**Fig. 46** Aspects of oncology care - role of the oncology nurse

In Fig. 46 describes the path of the oncological patient from the moment of diagnosis to his outcome as a result of the treatment. The area where the role of the nurse should be particularly prominent and needs optimization is outlined. At the first level of the healthcare system, active prevention, prevention of oncological diseases, determination of risk groups of persons, risk reduction by developing preventive programs for work with healthy/sick persons and their relatives should be carried out. Early diagnosis through active measures on the part of GPs or specialists from primary outpatient medical care is very important. After establishing an oncological disease, the patient is referred for conservative or operative treatment in a hospital for active treatment and care. The therapeutic approach and gold standard in oncology is conventional treatment, which includes: surgical treatment, chemotherapy, radiotherapy, target therapy, hormone therapy. In the last decade, immunotherapy has been developing at a very fast pace as a new direction in the fight against oncological diseases and other biological methods, as an alternative therapy that reduces the side effects of traditional methods and positively affects the final results. A team of professionals provides timely treatment and care for cancer patients. As a result of active treatment, the patient can recover and survive the oncological disease; it turns into a chronic, intermittent disease or has an unfavorable development with worsening of the patient's condition. Depending on his condition, the patient is referred for dispensary observation; with an opinion on complications from the applied therapy and risk of relapses or for palliative care, in a hospice, palliative care unit or in the patient's home. Cancer survivors need active rehabilitation, resocialization, readaptation, supportive care, and palliatively ill patients need terminal care. The chronic course of the oncological disease requires active monitoring for complications such as recurrences and/or metastases in distant organs. The role of the nurse is to actively participate in the process of treatment and care, to provide support to the patient and his relatives and to develop programs for health education and training of the patient for lifestyle changes, diet, physical activity, correction of modifiable risk factors etc. According to the Sheffield model, in the case of the death of the patient, the care of his relatives continues for 1 year after the death of their loved one, the so-called "bereavement care".

### **III. CONCLUSIONS, RECOMMENDATIONS AND CONTRIBUTIONS**

#### **CONCLUSIONS**

1. In oncology structures, nurses have a key role in organizing, coordinating and implementing patient care.  
The daily work of health care specialists is guided by rules for working with medical documentation according to the requirements of clinical pathways, rules for admission, discharge and long-term monitoring of patients.
2. The established positive attitude of nurses regarding increasing their qualifications in the specifics of oncology care is in disproportion with the low relative share of those who actually completed post-graduate training and specialization. This indicates a need to optimize incentives and motivation, as well as the system for continuing and postgraduate education in this direction.
3. The panel of experts agreed that the timely updating, documentation and evaluation of nurses' competencies is a very important element of the activity of health care professionals and would make a significant contribution to the effectiveness of treatment, humanity and safety of oncology nursing care.
4. Over 90% of patients are satisfied with the nurse's attitude and communication with them and their relatives during the hospital stay.
5. Most students would work after graduation in an oncology-focused facility, but need additional training in some specific aspects of care.
6. The addition of new freely chosen and narrowly profiled disciplines, with the expansion of educational practice in oncology-oriented institutions and the implementation of training in a real working environment in partnership with the patient and his relatives, is the effective way, according to the students, to increase their specific competencies in oncology care, and hence their attitude to work in such structures.
7. The new training model should emphasize health promotion and preventive activities, a deficit of which we found in the survey. This corresponds to the fact that the disease is often discovered when symptoms or complications appear, or when help is sought for another disease. Only one in 10 cases was diagnosed during a targeted preventive examination, which is an indicator of missing and ineffective preventive activity.



## **RECOMMENDATIONS**

### **To the Ministry of Health**

1. To optimize measures for the prevention of malignant diseases through programs to control the prevalence of leading risk factors and community-based health activities.
2. To analyze the effectiveness of screening programs for early detection of diseases and to take measures for its improvement.

### **To the heads of oncological treatment facilities**

1. To develop specific algorithms for the implementation of health care in view of the localization and stage of the pathological process.
2. To optimize the number of nursing staff and to maintain the 2:1 doctor:nurse ratio required by the "Medical Oncology" standard.
3. To optimize the process of continuing and postgraduate training of nurses with a view to profiling health care and increasing their quality.

### **To the Universities**

1. To optimize the training of the students of "Nurse" and "Midwife" specialties in oncology care, with an emphasis on practical work in simulated (construction of simulation training centers) and real clinical environment.
2. To increase the number of freely elective subjects offered and to stimulate students' interest in them in view of the growing needs of profiled oncology nurses.

## **CONTRIBUTIONS**

### **Contributions of a theoretical-cognitive and methodical nature**

- An in-depth analysis of the social significance of oncological diseases and their risk factors on a global scale and in Bulgaria using the indicators of morbidity, mortality and DALYs (years of life lost due to premature death and disability)).
- A complex medico-social study focused on the specifics of health care for cancer patients was conducted. The coverage is a large-scale cohort representing participants in the process of providing and receiving care.
- Original questionnaires have been developed, tailored to the role, opportunities and needs of different target groups, which helps to highlight significant aspects in the field under consideration.

### **Contributions with a practical focus**

- The results of the study can become the basis for developing a model for optimizing the health care process in inpatient and outpatient oncology structures.
- A form was developed to provide information to patients on coping with the disease after discharge
- A curriculum has been developed for an optional subject aimed at prevention of oncological diseases, their early diagnosis, prevention of their negative effects and improvement of the quality of life of the affected persons.

## **SCIENTIFIC PUBLICATIONS AND DISSERTATION ANNOUNCEMENTS**

1. Antonov E., Gergova P., Petrova K., Simeonova A. Nursing care for patients with breast cancer. 5th National Student Session with International Participation, Proceedings - summaries and reports, in electronic format, 2017. ISBN 978-954-756-202-8, p.198-204.
2. Aliosmanova, E., Ivanova M., Gergova P. Nursing care of a patient with a brain tumor - description of a clinical case. 6th National Student Session with International Participation, "Health Care in the 21st Century - Challenges and Prospects", 2018, In: Electronic Collection of Abstracts and Reports: ISBN 978-954-756-214-1, pp. 102- 108.
3. S. Nikolaeva, P. Gergova. Nursing care of patients with colorectal carcinoma. Life with a colostomy. Seventh national student scientific session with international participation "Trends in health care in the 21st century" - Pleven, 26 - 27.03.2020, pp. 48-54 ISBN 978-954-756-250-9.
4. S. Stoeva, A. Simeonova, P. Gergova. Nursing care of a patient with cervical carcinoma - a clinical case report. Seventh national student scientific session with international participation "Trends in health care in the 21st century" - Pleven, 26 - 27.03.2020, pp. 42-48 ISBN 978-954-756-250-9.