Satisfaction with nursing care provided to patients who have undergone surgery for neoplastic disease

Gorari A.[1], Theodosopoulou E.[2*]

1. Oxford University Hospital of England, England
2. Faculty of Nursing, National and Kapodistrian University of Athens Greece, Greece

ABSTRACT

Purpose: To investigate satisfaction of cancer patients, who have undergone cancer surgery, with nursing care and the association of patient satisfaction with demographic and clinical characteristics.

Materials and methods: The study population consisted of 181 patients with cancer who have undergone surgery and were hospitalized in clinics of University General Hospital of Greece. The instrument used in the study was the «Measurement of patient satisfaction scale» (MPSS). The model of multiple linear regression was used with the method of backward stepwise linear regression.

Results: The results of the study showed that patients were overall satisfied with nursing care. The areas they were less satisfied were «Resting time», «Information», «Education», «Personal preferences» and «opportunities for participation in care». The patient satisfaction had a statistically significant association with the following characteristics of the patients: (a) patient education, less educated patients showed higher levels of satisfaction ($p<0.001$) and (b) the hospitalization at the chemotherapy clinic, patients hospitalized at chemotherapy clinic showed higher levels of satisfaction than patients hospitalized in the other two clinics ($p=0.002$). Also, there was a statistically significant association between the patients education level and the item «I wish nurses have knowledge about alternative methods of dealing with some disease symptoms» ($r=-0.22$, $p=0.003$).

Conclusions: The training of the nursing staff that work in clinics where patients with cancer are hospitalized, is necessary not only at a scientific level but also at a communication level. The satisfaction of surgical patients with cancer should be continually evaluated in order to assess patients' needs, to improve poor or problematic aspects of care and to manage patients' personalized and expressed needs.

Key words: satisfaction, nursing care, cancer, alternative medicine.

***Corresponding author:**
Eleni Theodosopoulou
Faculty of Nursing, National and Kapodistrian University of Athens
Kosti palama 14, 132-31 Petroupoli, Athens, Greece
Tel.: 210 5059805
e-mail: etheodosopoulou@yahoo.gr

INTRODUCTION

Many studies show that patient satisfaction from the nursing care, has been reported as an important indicator of the quality of nursing care (Nursing Care Quality), [1] and by many other researchers, has been identified as the determinant of overall satisfaction of patients from hospital care [2-4]. The evaluation of patient satisfaction levels from the nursing care, have been identified by Risser [5] and Van Maanen [6] as the assessment of the quality of nursing services , as perceived by patients.

In early 1975, Risser first suggested a definition about patient satisfaction with nursing care [5]. According to her, the satisfaction with nursing care is the degree of convergence between the patients' expectation of ideal care and their perception of the care they actually receive. This definition was used in the next years by a lot of other researchers [7,8].

The basic theories regarding patient satisfaction, where published after 1980, with the most recent being restatements of those theories [9]. The basic theories are the following five: Discrepancy Theory by Fox and Storms [10] Expectancy-Value theory by Linder-Pelz [11] Multiple model Theory by Fitzpatrick and Hopkins [12] Determinants and components theory by Ware et al [13] Healthcare quality Theory by Donabedian [14].

The psychological distress, fear, anxiety about the results of diagnostic tests, postoperative complications, the body image of the patient after surgery, changes in their body and generally in their quality of life, are issues that affect the psychology of a patient with neoplastic disease after surgery. Therefore, we can say that the expression of satisfaction or dissatisfaction may be affected to some extent by patients' physical and psychosocial well-being. Westaway et al. [15] and Pascoe [16] have suggested that health status affects patients' satisfaction with the care while Ibbotson et al. [17] have suggested that 'patient satisfaction' with care is correlated with the levels of psychological distress and quality of life.

These findings have been found to apply to patients who participated in the study of Skarstein et al. [18]. According to their study, outcome of health status and anxiety are factors that affect cancer patients' satisfaction. The conducting of research to assess the satisfaction, also contributes to determinate the special needs amongst different patient groups in Hospital settings and district units of healthcare, like the patients with neoplasmatic disease [19].

The aim of this study was to measure the satisfaction with nursing care provided to patients who had undergone surgery for neoplastic disease. The aims of this study were as follows: 1. The assessment of the relationship between patient characteristics and their satisfaction with the nursing care. 2. The assessment of nursing care to patients who have undergone surgery for neoplastic disease. 3. The evaluation of the results and if necessary, the improvement of certain processes or parameters at the points highlighted by the patients in order to achieve a higher level of patient satisfaction. 4. In the future, the assessment of patient needs and the addressing of individual and expressed needs.

MATERIALS AND METHODS

A descriptive-correlation study was carried out, which includes the measurement, description of variables and further investigation of correlations.

In particular, the outcome or dependent variable is the level of satisfaction of patients who had undergone surgery for neoplastic disease. The determinants of outcome or independent variables, which were investigated were:
- demographic characteristics such as gender, age, marital status etc.
- socioeconomic characteristics such as education level, insurance coverage, etc.
- clinical characteristics such as the location of neoplasm, stage of the disease, comorbid conditions etc.

The study was conducted at University General Hospital of Greece. Data were collected from oncology, chemotherapy and radiotherapy clinics of University General Hospital of Larissa. These clinics are visited by a large number of patients, who come from cities and villages of Thessaly. The survey was conducted in the period from February to April 2013.

The sample and the inclusion criteria
Patients who met the following criteria were included in the study:

Having been diagnosed with neoplastic disease and have had surgery on the existing neoplastic disease. Aged over 18. Their physician confirmed that patients were able to participate in the study according to the patient notes and the ability of communication. Having been hospitalized for a period longer than one day. Informed consent was given by patients before participating in the study. As part of the consent process patients were given an information letter. Patients had to be able to read and speak Greek.

Ethics of research
Approval from the Scientific Committee of the University Hospital of Larissa was obtained after submitting the study protocol, prior to the study in accordance with legislation, with institutional ethical clearance number 3/14-2-2013. This study responded to the following fundamental ethical principles: All information provided by the patients would be strictly confidential and we

ensure the anonymity of participants. Patients could withdraw from the study at any time.

There were a couple of phases during sample selection, in order to increase the randomness to an extent. Firstly, meetings were held with the hospital education staff and it was decided that in the study can participate patients from the oncology, chemotherapy and radiotherapy wards, which had surgical patients diagnosed with neoplastic disease. In every ward, the matron was informed about the purpose of the study and the following procedure. Then, the matron was asked to give daily and weekly the total number of patients who fulfilled the inclusion criteria. Using the Excel, every patient was matched with a number without any correspondence with the name of the patient but that number was matched with the patient bed. The patients' beds was the minimum requirement to interview randomly the patients during the collection of the questionnaires. The selection of the interviewed patients was finally made using a number generator (in Excel, command [= RAND] by selecting randomly the patients according to their beds each day or each week of visiting the wards. The chemotherapy and radiotherapy wards provided day care treatment and the oncology ward provided long term treatment. During the time when selection of questionnaires took place, the selection of interviewed patients was made daily from the chemotherapy and radiotherapy wards and weekly from the oncology ward. According to the given time of the research completion and having a 99% confidence level the sample was collected through the number generator with a rate of 3 patients per day in total from the relevant wards. The randomly selected patients were approached to get informed about the purpose of the study as they were given an information letter.

Initially, the sample consisted of 216 patients, however, 14 patents from the chemotherapy clinic, 12 patients from the radiotherapy clinic and 9 people from the oncology clinic, refused to participate in the survey. The response rate was 83.8%. Eventually, the sample of the study consists of 181 patients, 57 (31.5%) from oncology clinic, 78 (43.1%) from the chemotherapy clinic and 46 (25.4%) from the radiotherapy clinic.

Data collection method and description of the research tool

A structured questionnaire was used for data collection process. Semi-structured, face-to-face interviews were conducted with surgical patients diagnosed with neoplastic disease. The average time required to conduct the interview was 12 minutes.

The main part of the final questionnaire, which was used for data collection, was the initial 29-items MPSS questionnaire (Measurement of patient satisfaction scale). The MPSS questionnaire was chosen after reviewing the literature and has

been positively evaluated for its psychometric properties in the Greek population. It has been used in a survey, to assess the satisfaction of medical and surgical patients in public hospitals of Cyprus [20]. According to Merkouris et al. [21] the construction of the questionnaire was based on the definition of Risser [5] and on theory of expectations of Oberst [22]. The final questionnaire resulted from the initial 29-items MPSS questionnaire after additional new items were added in order to investigate further aspects of patient satisfaction. All the necessary approvals for the use of the MPSS questionnaire was obtained prior to the study from Mr. A. Merkouri.

The MPSS questions cover the following areas of nursing care:
- technical aspects of care
- pain relief
- provision of information
- nurses' response-speed
- continuity of nursing care
- environment and resting time
- interpersonal relationships and time availability
- participation in care and personal preferences
- professionalism and the effectiveness of the nursing staff
- patient education.

Each question consists of two parts, a brief description of nursing intervention (stem), which serves as a headline or title and a more detailed explanation. A 5-point Likert scale ranging from poor to excellent is used for each item of the MPSS. At the end of the questionnaire, there were general questions relating to the patients' views about the seriousness of their health condition, knowledge about their neoplastic disease and questions regarding demographic characteristics as well. Additionally, there were two more questions concerning re-hospitalization intention and staff recommendation to others.

In the final questionnaire, which was used for this study, there were added additional questions regarding demographic and clinical characteristics of patients.

Overall, demographic and clinical questions concerned:
- demographic and socioeconomic characteristics (age, sex, marital status, educational level, working status, place of residence, nationality, insurance coverage)
- clinical characteristics (location of neoplasma, stage of disease, comorbid conditions , the aim of surgical procedure, current therapy, previous surgery for neoplastic disease, time after diagnosis , emergency admission).

Furthermore, in the final questionnaire, were added 4 more questions concerning:
- the need for care from a private nurse or a familiar person

- the need for information from the nursing staff in a scientific level about the treatment protocol
- the sufficiency of nurses' knowledge in order to meet the needs and resolve any problems during their hospitalization
- patients' wish nurses have knowledge about complementary and alternative methods of dealing with some disease symptoms.

All questions use a 5-point Likert scale except for questions relating to age, sex, marital status, educational level, place of residence, working status, insurance coverage, self-reported health status, knowledge about the disease and the questions concerning clinical characteristics.

Data analysis

The analysis of the data which was performed using the SPSS 19.0 statistical package (Statistical Package for Social Sciences).

A part of the final questionnaire for the satisfaction of surgical patients with neoplastic disease, consists of 22 items which use the 5-point Likert scale and take values 1-5. The higher values indicate greater satisfaction. Summing the responses to the 22 items showed the patient satisfaction index, which takes values from 22 to 110.

As far as descriptive statistics are concerned, categorical variables such as gender, educational level or marital status, are presented as absolute (n) and relative (%) frequencies, while interval-ratio variables such as age or days of hospitalization are presented as mean (standard deviation).

As far as statistical inferences are concerned, Kolmogorov-Smirnov normality tests and plots, Student's t-test, Chi- square, Pearson's correlation coefficient, Spearman's correlation were used.

Pilot study

A pilot study was carried out with 15 parents who were not part of the final sample, in order to assess the feasibility of the study. During the pilot study, patients were asked if they had any questions and if they found questions comprehensive. Patients were randomly selected and the questionnaires were previously coded in order to promote patients anonymity.

The pilot study showed that none of the 15 people who participated reported any problems regarding the comprehensiveness of the questions. Only some elderly patients, found it necessary to hear twice a few questions, which was resolved by repeating the questions again. The stability of the final questionnaire was measured through test-retest reliability. Specifically, 15 subjects who constituted the sample for the pilot study were re-interviewed approximately after two hours after the first interview. We tried the second interview takes place in as much as possible the same conditions for the process of reassessment (retest).

The final questionnaire has been evaluated for its psychometric properties, reliability and validity. In particular, the questionnaire was tested for reliability through coefficient of internal consistency Cronbach's alpha, which was estimated by using the statistical software SPSS 17. The coefficient of internal consistency Cronbach's alpha of the final questionnaire was 0.96, fulfilling the criteria > 0.70, which indicates excellent internal consistency for the items of the questionnaire and that the questionnaire reflects small differences and different levels of the concept of satisfaction.

RESULTS

Demographic characteristics

A total of 181 patients participated in the study. There were 87(48.1%) males and 94(51.9%) females at a mean age of 65 years (SD 12.6 years). The youngest patients were 21 years old and the oldest one was 89 years old. The majority of the patients were married (86.2%), had Greek nationality (98.3%), used to live with other people at home (93.9%), were pensioners (62.4%) and had insurance coverage (99.5%). The educational level of the patients was relatively low as 98 (54.1%) patients had primary school education, 44 (24.3%) had secondary school education, 27(14.9%) had high school education and 12(6.6%) had undergraduate or postgraduate education. Out of 181 participants, 111(61.3%) patients lived in urban areas, while 70 (38.7%) patients lived in rural areas of Thessaly.

Clinical characteristics

The most common location of neoplasm was breast in 39 (21.5%) patients, gastrointestinal system in 37 (20.4%) patients, respiratory system in 29 (16.0%) patients, genitourinary system in 28 (15.5%) patients while in 14 (7.7%) female patients, the neoplasma was detected in gynaecological system. In 9 (5.0%) patients the location was the brain, in 5 (2.8%) patients the location was the head and neck while in 20 (11.0%) patients the neoplasma was classified in the category 'other location'. Out of 181 patients, 57 (31.5%) were from the oncologic clinic, 78 (43.1%) were from chemotherapy clinic and 46 (25.4%) were from radiotherapy clinic. Length of hospital stay ranged from 2 to 30 days and the average length of stay was 3.1 days (SD 4.4).

The average time since patients were informed about the diagnosis of the neoplastic disease, was19.7 months (SD 20.9 months), with a maximum period 132 months (11 years) and minimum 1 month. Regarding the stage of disease, in the majority of patients was local 63.0% (n = 114) and 37.0% (n=67) of patients had metastasis.

Furthermore, nearly half of the patients (50.8%), suffered from co morbid conditions, while 89 (49.2%) patients, did not. The majority of patients (79. 0%) had a therapeutic surgery while 38 (21.0%) patients had a palliative surgery. The majority of parents 43.6% (n=79) reported that they had combination of chemotherapy or/and radiotherapy or/and hormonal therapy, while 37.0% (n = 67) were receiving chemotherapy, 14.4% (n=26) were receiving radiotherapy and 1.1% (n=2) were receiving hormonal therapy as part of their treatment. There was a small percentage of patients 3.9% (n=7), who had not yet received any treatment. Of the total sample, 30.4% (n = 55) of the patients reported that they had undergone previous surgery for other neoplastic disease while 69.6% (n = 126) of patients reported that they had not.

Regarding the admission process, 24 (13.3%) patients reported that they had emergency admission and for 157(86.7%) patients the admission was presented in Table 1.

The majority of patients 70.7% (n = 128) described their health condition as either serious or very serious, while 93.4% (n=169) reported that they were aware of quite a lot or many things about their health condition.

The majority of patients, (60.8%), reported that they "agree" that they " *would choose the same nursing staff in the future* " figure1, while 62.4% (n =113) of the patients "agree" that they " *would recommend the same staff to a friend or relative* ".

**Table 1.** Patients clinic characteristics

Characteristics	N (%)
Clinic	
Oncologic	57 (31.5)
Chemotherapy	78 (43.1)
Radiotherapy	46 (25.4)
Length of stay (days)	3.1 (4.4) [a]
Time since patients were informed about the diagnosis of the neoplastic disease (months)	19.7 (20.9)[a]
Location of neoplasma	
Respiratory system	29 (16.0)
Genitourinary system	28 (15.5)
Gastrointestinal system	37 (20.4)
Gynecological system	14 (7.7)
Head and neck	5 (2.8)
Breast	39 (21.5)
Brain	9 (5.0)
Other location	20 (11.0)
Stage of disease	
Local	114 (63.0)
Metastatic	67 (37.0)
Comorbid conditions	
Yes	92 (50.8)
No	89 (49.2)
Surgery	
Therapeutic	143 (79.0)
Palliative	38 (21.0)
Current or scheduled therapy	
Chemotherapy	67 (37.0)
Radiotherapy	26 (14.4)
Hormonal	2 (1.1)
Combination	79 (43.6)
None	7 (3.9)
Previous surgery for other neoplastic disease	
Yes	55 (30.4)
No	126 (69.6)
Emengency admission	
Yes	24 (13.3)
No	157 (86.7)

Regarding the "*need for care from a private nurse or a familiar person during their hospitalization*". The majority of patients 63.0% (n = 96) reported that they 'agree'.

Regarding the need for "*information from the nursing staff in a scientific level about the treatment protocol*", 72.9 % (n = 132) of patients reported as either 'agree' or "strongly agree". (Figure 2)
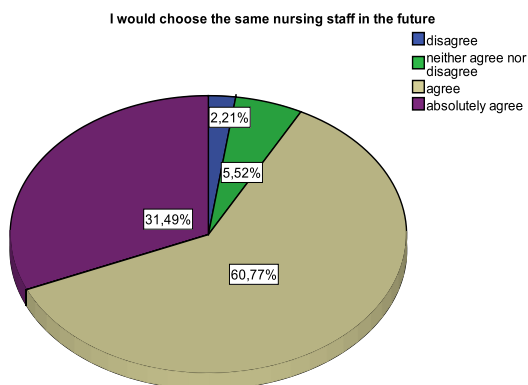
Fig. 1. Relative frequency of patients in relation to item " I would choose the same nursing stuff in the future"
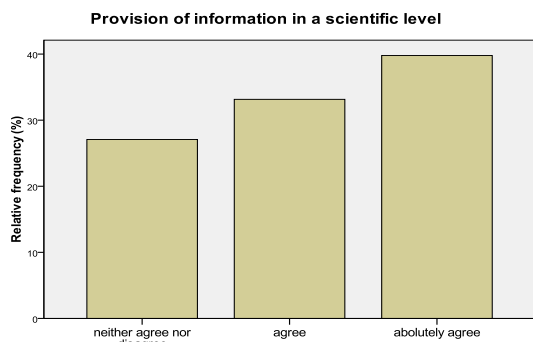
Fig. 2. Relative frequency of patients in relation to item "information from the nursing staff in a scientific level about the treatment protocol"

Regarding the "*sufficiency of nurses' knowledge in order to meet patients' needs and resolve any problems during their hospitalization*'' most patients 74.0% (n=134) seem to "agree" , while almost similar percentage 13.3% (n = 24) and 12.7% (n = 23) of patients either "strongly agree" or "neither agree nor disagree" respectively .

In the last general question regarding the item "*I wish nurses have knowledge about complementary and alternative methods of dealing with some disease symptoms*", 76.8% (139) of patients either "agree" or "strongly agree". (Figure 3).

The table 2, depicts the mean values and standard deviations of the 22 items of the questionnaire of patient satisfaction.

Table 2. Means and standard deviations of the 22 of the questionnaire of satisfaction

Item	Mean	Standard deviation
Nurses' politeness	4.28	0.76
Respect	4.26	0.83
Continuity of nursing care	4.23	0.66
Nursing procedures. Efficiency	4.04	0.66
Assistance with daily needs	4.02	0.93
Professionalism	3.99	0.78
Nurses' response - speed	3.92	0.79
Effectiveness	3.92	0.78
Nurses' response – satisfaction of patients needs	3.91	0.83
Participation in care – nurses ask for patient consent before nursing procedures	3.90	0.87
Interest – Communication	3.88	0.82
Resting time – measures against noise	3.84	0.78
Nursing procedures. Consistency	3.82	0.82
Pain relief	3.80	0.81
Time availability	3.76	0.82
Education - Nurses spend time in patient education. both while patients are hospitalized and after discharge	3.66	4.00
Information – Provision of information about the orientation process	3.64	0.88
Participation in care - opportunities given to patients for participation	3.60	0.93
Information - Provision of information to patients about diagnostic and therapeutic procedures	3.59	0.91
Personal preferences	3.58	0.94
Information - Provision of information to relatives	3.55	0.90
Resting time –time for waking up	3.19	0.59

The average patient satisfaction index was 84.4 and the standard deviation was 13.39. Aspects of care where patients were less satisfied were «Resting time» (Mean=3.19, SD=0,59), «Infor-

mation» (provision of information to relatives: Mean=3.55, SD=0.90, provision of information to patients about diagnostic and therapeutic procedures: Mean=3.59,SD=0.91,information about the orientation process: Mean=3.64, SD=0.88), «Education» (Mean=3.66, SD=4.00), «Personal preferences» (Mean=3.58, SD=0.94) and «Opportunities for participation in care» (Mean=3.60, SD=0.93).

In contrast, patients expressed greater satisfaction in aspects of care relating to «nurses' respect» (Mean=4.26, SD=0.83) and «politeness» (Mean=4.28, SD=0.76), «continuity of nursing care» (Mean=4.23, SD=0.66) and «technical aspect of care» (Nursing procedures-efficiency: Mean= 4.04, SD=0.66, Assistance with daily needs: Mean= 4.02,. SD=0.93).

Bιvariate analysis

Initially, a bivariate analysis was performed to investigate the relationship between each independent variable with the dependent variable, which is the patient satisfaction index.
The bivariate analysis identified the following demographic and clinical variables: age (p = 0.001), educational level (p<0.001), marital status (p= 0.05), place of residence (p= 0.12) living alone or not (p=0.13), clinic of hospitalization (p=0.01), location of neoplasma (p=0.01) and current therapy (p=0.013), to be associated significantly at significance level 0.2 (p<0.2) with the patient satisfaction index.

Furthermore, it was investigated the association between the item "*I wish nurses have knowledge about complementary and alternative methods of dealing with some disease symptoms*" with the variables gender, age, educational level and stage of disease.

The variables associated significantly with the item "*I wish nurses have knowledge about complementary and alternative methods of dealing with some disease symptoms* ", were age (r = -0.31, p <0.001) and educational level (r= -0.22, p = 0.003). Increasing age and educational level were associated with less agreement on the particular item. However, there was no statistically significant correletion between the variable gender (p= 0.22) and stage of disease (p= 0.47) and the item " *I wish nurses have knowledge about complementary and alternative methods of dealing with some disease symptoms* ".

Multivariate analysis

Due to the fact that at the bivariate analysis > 2 demographic and clinical variables were associated with the patient satisfaction index at significance level 0.2 (p <0.2). It was performed multiple linear regression with the method of backward stepwise linear regression at 0.05 significance level.

Moreover, due to the fact that at the bivariate analysis > 2 demographic variables were associated with the item "*I wish nurses have knowledge about complementary and alternative methods of dealing with some disease symptoms*" It was performed multiple linear regression with dependent variable the item " *I wish nurses have knowledge about complementary and alternative methods of dealing with some disease symptoms* " at 0.05 significance level.

Tables 3 and 4 display the results of the multiple linear regression, coefficients' beta, 95% confidence intervals and p values. The two-tailed significance level was 0.05.

Table 3. Multiple linear regression with dependent variable the patient satisfaction index

Characteristics	Coefficient beta	95% confidence intervals	p value
Educational level	-4.7	-6.6 to 2.8	<0.001
Clinic "chemotherapy" in relation to other clinics	5.9	2.2 to 9.6	0.002

Table 4. Multple linear regression with dependent variable the item "I wish nurses have knowledge about complementary and alternative methods of dealing with some disease symptoms"

Characteristics	Coefficient beta	95% confidence intervals	p value
Educational level	-0.017	-0.026 to -0.007	0.001

According to the multiple linear regression, we found a statistically significant relationship between education level, "chemotherapy" clinic and patient satisfaction index. Increase in education level lead to decrease in patient satisfaction index and also patients in the "chemotherapy" clinic had higher patient satisfaction index compared with the patients in other clinics.

The variables « education level» and «clinic of hospitalization» in the model of multiple linear regression, explain 15% of the dependent variable variability.

Moreover, we found a statistically significant relationship between education level and the item "*I wish nurses have knowledge about complementary and alternative methods of dealing with some disease symptoms* ".

Higher educational level was associated with a decrease in the item "*I wish nurses have*

knowledge about complementary and alternative methods of dealing with some disease symptoms ".

The variable «education level» explains 6% of the item «*I wish nurses have knowledge about complementary and alternative methods of dealing with some disease symptoms*» variability.

DISCUSSION

According to a study, overall satisfaction with care is significantly predicted by treatment related toxicity and the level of global health status in cancer patients [23].

Nevertheless, levels of patients' satisfaction in our study were high. Patients generally reported to be "quite satisfied" or "very satisfied" with nursing care, as shown by the patients' satisfaction index 84.4. According to the findings of the study, the average values of satisfaction ranged between 3 (quite satisfied) and 4 (very satisfied) of Likert scale, while some items of the questionnaire regarding «nurses' respect» (Mean=4.26, SD=0.83) and «politeness» (Mean= 4.28, SD=0.76), «continuity of nursing care» (Mean=4.23, SD=0.66) and «technical aspect of care» the average values were greater than 4.

According to many studies that have been carried out in cancer patients, overall patient satisfaction scores are relatively high. These results are consistent with findings of studies involving patients with neoplastic disease. The study of Kavadas et al. [24] showed that the majority of surgical patients with oesophageal and gastric cancer who participated in the study were satisfied with the care provided during their hospitalization. Furthermore, the study of Skarstein et al. [18] showed that 92% of 2,021 cancer patients were satisfied with their stay in hospital and also, performance of nurses and physicians independently predicted 'patient satisfaction'. Moreover, Akhtari-Zavare et al. [25] found that the majority of patients with neoplastic disease who participated in the study were satisfied with the nursing care they received.

The results of our study, as far as the patient satisfaction index is concerned, seem to be enhanced by the fact that a) there is a correlation between age and patient satisfaction and the fact b) that the average age of the patients was relatively high (65 years). There are many studies which support that age is an important demographic determinant of patient satisfaction and that older patients are significantly more satisfied than younger patients [10,16,26-30]. These findings are in accordance with Theodosopoulou et al. who suggested that the majority of elderly patients were more satisfied in most aspects of care and the quality of care they received [31]. Also, they support that their findings could be attributed to the inability of elderly patients to clarify what quality

of care means to them. Younger patients tend to be less likely to comply with medical advice. Low satisfaction in young patients could be attributed to the fact that young patients tend to complain more, to be more dissatisfied with their health care and are also less likely to comply with staff instructions compared to older patients [32].

According to literature, a number of psychosocial determinants may influence the expressions of patient satisfaction or dissatisfaction [13]. Sitzia and Wood [32] suggest that "Social desirability response bias" may be an important factor that patients may report greater satisfaction than they actually feel because they believe positive comments are more acceptable to survey administrators. A number of researchers have suggested that patients may be reluctant to complain for fear of unfavourable treatment in the future [33]. Pleasing the physician' may be a particularly important factor that some patients may report high satisfaction [18].Therefore, because of this, many unhappy patients may not volunteer to participate in studies, resulting in a large percentage of dissatisfied patients abstaining from the studies. According to Sitzia and Wood [32] "cognitive consistency theory" and "gratitude" are well recognized to influence patients in expressing high levels of satisfaction.

In our study, patients seem to be less satisfied with the resting time, issues concerning information and education, personal preferences and participation in care, which highlight the needs of patients with neoplastic disease. According to Oberst patient satisfaction with health care quality reflects their needs, previous experiences of care and their expectations of health services [22]. Furthermore, in our study, patients expressed more satisfaction on aspects concerning nurses' respect and politeness, continuity of nursing care and technical aspects of care. Our findings are in accordance with the literature which suggests that patients are more satisfied with the technical aspects of care and less satisfied with the provision of information [21]. Similarly to our study, Milutinovic et al. [30] suggested that the average score on individual items in Patient Satisfaction Nursing Care Quality Questionnaire (PSNCQQ), ranged from 3.4 to 4.6.The lowest rating related to the item , "Recognition of Your Opinions" and highest ratings related to items concerning technical aspects of nursing care. The reason why patients express more satisfaction on technical aspects of care may be the fact that the majority of patients do not have the knowledge required to assess technical aspects of health care.

Patients focus rather on satisfaction of their basic physiologic needs, because this is the most important component of the hospital stay they clearly understand [34] and often is one of their unmet needs [26]. Furthermore, Fitzpatrick [35] and

Tishelman [36] suggested that cancer patients are more comfortable to comment and assess aspects related to interpersonal relationship with health professionals, such as kindness, respect and empathy. These findings are supported by the results of our study, as patients feel more comfortable to comment on aspects related to their psychological needs, such as: Interest-Communication (M: 3.76), Personal Preferences (M: 3.58), Information (M: 3.59), Participation in care (M: 3.60), in which patients seem to be less satisfied.

The findings of our study support previous research where the most common complaints made by cancer patients related to poor communication with nursing staff and inadequate provision of information [37]. According to another study [38] adequate provision of information to cancer patients is highly correlated with high satisfaction rates. A systematic review clearly suggests that assessment and management of adverse effects and provision of information are two areas which need urgent attention [39]. According to Charalambous et al. [40] the major problem reported by oncology patients who participated in their study was the fact that many nurses in the process of communicating information to the patients failed to tailor this information to suit patient's educational background and their general level of comprehension. It was also found that nurses and other health care professionals believe that patients are incapable of handling disease related information provided to them because it can be psychologically harmful for them. Tamburini et al. [41], found that one out of two cancer patients request to receive more information both about their future condition and their diagnosis. Moreover, the results of Osse et al. [42] study indicate that the need for information is not limited to newly diagnosed cancer patients but to patients who receive palliative care as well.

One reason why patients are less satisfied with the information provided to them may probably be the insufficient communication skills of nurses. The results of Georgaki et al. [43] study indicate that the majority of nurses, find it difficult to discuss openly with their patients about the disease and the possibility of death and report that they are not sufficiently trained in communication techniques.

Moreover, the diagnosis of cancer affects patient, relatives and the structure of the whole family, so in most cases, patients' families, choose to have a more active role in their next of kin care [44]. Therefore, we can conclude that provision of information to patients' families, is an important factor of patient care because gives relatives the opportunity to be active participants in patients' health care.

About 73% of patients in this study indicate they would like to get informed in a scientific level about their treatment protocol by the nursing staff. However, it still raises concerns, the result of this question when nearly 27% of patients neither agree nor disagree with this item. This may be due to the fact that some patients believe that doctors are the ones who have the ultimate authority to inform patients, especially in a scientific level and the role of nurses is basically medication administration, checking etc. According to literature, some patients are unable to distinguish between care provided by doctors and care provided by nurses, thereby they answer all questions, bearing mostly in mind medical services they receive during their hospitalization [45].

In this study, we found that patients need the nursing staff spend more time inpatient education, both while they are hospitalized and after discharge (M: 3.66). Literature supports that effective patient education, particularly after surgical procedures, helps with recovery in the early period, improves compliance with the chemotherapy regimen, decreases anxiety, improves ability in coping with side effects [46] and increases patient satisfaction during their treatment [47].

The results of this study indicate that that there is room for further improvement in time nurses spent for patients care (M: 3.76). One possible reason why nurses do not devote much time to patient education is probably because of large nurses' workload and staff shortages. Merkouris et al. [21] after qualitative analysis on participants' comments suggested that patients might not be dissatisfied with nursing care and/or nurses per se, but rather with the circumstances under which care was provided. As Bredart et al. [23] report, an increasing number of nurses per bed, is associated with higher levels of satisfaction with nurses.

According to literature, nurses' politeness and respect have been determined to have an effect on patient satisfaction. The results of our study indicate that patients are very satisfied with the nurses' politeness (M: 4.28) and respect (M: 4.26) and agree with the results of previous research by Can et al. [46]. In the course of the study, several patients commented that it was very important for them to have an active role in health care and their personal wishes to be taken into account by nursing staff. In the literature there are many studies that indicate the importance of these aspects of care [37,48].

One of the main purposes of this study was the correlation between demographic and clinical characteristics of patients and the patient satisfaction index. According to the bivariate analysis age, educational level, marital status, place of residence and living alone, are associated with

the patient satisfaction index. However, in the multivariate analysis, we found a statistically significant correlation between educational level and the patient satisfaction index (p <0,001), with results indicating that patients with a lower educational level express higher levels of satisfaction with nursing care. These results are in agreement with other study findings [23,29,30,32].

As far as age is concerned, Avery et al. [49] and Bredart et al. [23] found no correlation between age and cancer patients' satisfaction with overall care, while Walker et al. [50] found that overall satisfaction was predicted by younger age and female gender. Most of previous studies in patient satisfaction, support that there is no correlation between gender and patient satisfaction [28,32,51], however there are some studies where women seem to be more satisfied [10,16] and some others where men seem to be more satisfied with health care [29-30]. Regarding cancer patients, Akhtari-Zavare et al. did not find a correlation between gender and level of patient satisfaction, which is in agreement with our findings [25].

There are several studies that have investigated the relationship between marital status and patient satisfaction with nursing care. The findings have indicated that there is rarely any significant correlation between these two variables, which is in agreement with our findings. However, there are studies that support that marital status is associated with patient satisfaction on several aspects of care they receive during hospitalization [30,52].

We also studied the influence of the working status of our patients but we did not find that this variable had any influence on our sample patient satisfaction, which is in agreement with other studies [29]. This is probably due to the fact that the majority of patients (62.4%) were retired, as "cancer" is a chronic disease and affects mostly the elderly population.
In the multivariate analysis, we found a statistically significant correlation between patient satisfaction index and the "chemotherapy" clinic (p=0.002). These findings are in agreement with the findings of Akhtari-Zavare et al. [25] where patients receiving chemotherapy were found to be more satisfied with the nursing care as compared to those who underwent other types of treatment such as patients who received radiotherapy.

Many studies [18,23] have not been able to identify any statistically significant differences among the variables "location", "stage of disease," and the patient satisfaction index. In our study, we found no correlation between the time elapsed since diagnosis and the patient satisfaction index, unlike Liekweg et al. [19] who suggested that more recently diagnosed patients had higher satisfaction scores than other patients [19].

As far as length of stay is concerned, there are studies [29,31], which suggest that the length of stay in hospital has negative correlation with patients' satisfaction while in others the positive correlation between the two variables is confirmed [46].

The majority of patients, 56.9% described their health condition as quite serious while 58.6% reported that they were aware of quite a lot of things about their health condition. According to a study [23] treatment toxicity and poor self-reported health status were all associated significantly at the multivariate level with satisfaction with nursing care, while another study [48] found that overall self-assessed health was only weakly associated with satisfaction.

Patients in our study reported that they would choose the same nursing staff in the future (60.8%) and also that they 'would recommend the same staff to a friend or relative' (62.4%). Nevertheless, it raises concerns the fact that majority of patients (63%), reported that it would be useful to be taken care of a private nurse or a familiar person, during their hospitalization. These results are consistent with the findings of Merkouris et al. [21] where patients reported that they depended mostly on relatives or privately hired practical nurses for assistance with the activities of daily living.

The majority of patients enrolled in our study "wish nurses have knowledge about complementary and alternative methods of dealing with some disease symptoms" (Picture 4) and we found a statistically significant difference between patients educational level and the above item (p =0,001).

The results of our study are in agreement with other studies' findings [53] which suggest that education is an important variable that affects CAM use, but in contrast to other studies [54] our results showed that patient educational level is negatively associated with CAM use. However, these findings may be explained by the fact that the majority of respondents in our study were retired (62.4%) with primary educational level (54.1%).

We found in the bivariate analysis that there is a correlation between age and the item "I wish nurses have knowledge about complementary and alternative methods of dealing with some disease symptoms" which was noted to increase with younger age. Generally, according to a European survey by Molassiotis et al. [54] the profile of the CAM user is that of younger people, female and with higher educational level.

CONCLUSIONS

The experience of surgery is a very stressful procedure for cancer patients. Therefore, it is very important that nurses make an ongoing

effort to improve this experience. Although, patients in our study seemed to be very satisfied with the nursing care, which is in agreement with the literature, there are some aspects of care which need to be improved. These aspects refer to resting time, provision of information, education, personal preferences and participation in care. No one can dispute the fact that communication skills are a very important in everyday nursing practice. Therefore, it has been suggested that nursing staff should participate in communication skills training courses [55]. Patients seem to be more satisfied with the technical aspects of care and less satisfied with provision of information. As far as education and provision of information are concerned, the findings of this study indicate that patients, who had higher educational level, had more demands on information-giving process. The results of bivariate analysis seem to indicate that age is associated with the levels of patient satisfaction, and like other studies, the results of multivariate analysis indicate that patients with a lower educational level (p <0,001) express higher levels of satisfaction with nursing care. Majority of patients (67%), reported that they wish nurses have knowledge about complementary and alternative methods in order to deal with some disease symptoms, which means that it is useful nurses attend training courses in complementary and alternative methods.

Continuing healthcare assessment is necessary to identify less obvious problems of health care that patients may be reluctant to report themselves. This way patients feel that they are involved and have a say in nursing care. Moreover, effective management of problematic aspects of care will result in patients feel more satisfied and therefore be more likely to cooperate with their treatment which is, in turn, associated with better clinical outcomes [16,18,56]. However, further qualitative and quantitative studies must be carried out in order to identify cancer patients' needs.

Conflicts of interest

None declared

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