

SUPPORTIVE CARE: HELP AND SUPPORT NEEDS OF PATIENTS WITH BREAST CANCER – THE EXAMPLE OF THE TUNIS UNIVERSITY HOSPITAL IN TUNISIA

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Abstract

Background: Cancer diseases are gaining in importance worldwide. Breast cancer shows the highest incidences. Patient care is sensitive and requires good training and further education in the field of supportive care. It has been shown that unsatisfactory care and support affects the quality of life of patients with breast CA.

Aims: This study aims to measure dissatisfaction with care of breast cancer patients at the university hospital Tunis in Tunisia. Furthermore, connections between unmet needs for supportive care and socio-demographic and medical characteristics should also be identified.

Method: The cross-sectional study was conducted with n=161 patients diagnosed with breast cancer. This corresponds to 93.60% of the people who could be included. The interview questionnaire contained the Supportive Care Survey Short Form 34 and a questionnaire on socio-demographic characteristics. A pretest is carried out on 10 patients. The medical data were collected from the medical records. A descriptive evaluation and a consideration of correlations took place.

Results: The mean age of the patients was 53.23 years. The patients are particularly dissatisfied in the area of information needs (mean = 34.62 ±7.79) and with aspects of psychological needs (mean = 34.44 ±8.14). There is a correlation between young age (p=0.009), professional status (p=0.005) and being married (p = 0.001) in the area of sexuality. Number of own children and psychological needs correlate (p=0.024). Similarly, the presence of metastatic cancer correlates in all domains (p<0.05) except sexuality.

Conclusion: Caregivers should pay particular attention to the caregiving of mammary CA patients. Training and further education should integrate the results into their curricula.

Keyword: oncological care, supportive care, breast cancer, oncology.

INTRODUCTION

Background

From an epidemiological point of view, diseases in the field of cancer are becoming more important. This is a major challenge worldwide. In 2008, the incidence and mortality rate worldwide was 10 to 12 million cases and 7.6 million deaths. In 2020, according to the WHO, the number was around 19.3 million. Around 12 percent of cancer patients are diagnosed with breast cancer. The mortality rate is 13.6 per 100,000 inhabitants worldwide. Breast cancer is the most common cancer disease worldwide (Erdmann et al., 2021, Gobrane et al., 2011, Wild et al., 2020). Advances in prevention, e.g. breast screenings, but also in the therapeutic area are changing the prognosis of cancer patients positively and fewer patients are dying. These changes make it necessary to consider the quality of life and satisfaction of patients, mostly women, in a more differentiated manner. These should be perceived, considered and accompanied accordingly based on physical, psychological and social aspects and needs (BreDart et al., 2012, McDowell et al., 2010, Moons et al., 2006). Oncology Supportive Care, a term that is not used uniformly, represents an important contribution to care. The Multinational Association of Supportive Care in Cancer (MASCC) describes supportive care as supportive care that

includes the prevention and treatment of side effects related to cancer and treatments, including physical and psychosocial symptoms and side effects. But it also acts as accompaniment during the course of the disease, both in curative and palliative care (MASCC, 2022, Olver et al., 2020). Special oncology care is tailored to the patient's needs and these represent a major challenge.

The role of nurses in Tunisia

Nurses in Tunisia are trained at universities in bachelor's and master's degrees, both theoretically and practically. In their practical work, nurses in Tunisia are guided by three roles: 1) autonomous, self-performed and responsible tasks, e.g. admitting patients, providing information/advice and instruction, controlling the nursing process; 2) interprofessional collaboration, e.g. assisting and 3) carrying out interventions for diagnostic, therapeutic and preventive purposes. There are no clear legal regulations in Tunisia regarding the tasks and fields of activity of nurses. A classification into a tendentially medical-nursing task can be described for the field of oncology in Tunisia, but this varies depending on the employer. A bachelor's degree is the minimum requirement, a master's degree is usually required.

Objectives and research questions

The study aims to contribute to further improving supportive care, for example in Tunisia, and to ensuring that the care provided to women in particular is accompanied and followed up.

The objectives of the study are derived from this: 1) To describe the dissatisfaction of breast cancer patients with the current care. 2) To analyze differences and correlations between dissatisfaction and socio-demographic/medical characteristics in order to identify support needs and generate ideas for specific offers for projects and further studies.

The research questions are:

- How dissatisfied are breast cancer patients with the support and care provided by nursing staff during the illness in five areas examined?
- Are there correlations between dissatisfaction and sociodemographic or medical characteristics?

Method

The study is a descriptive correlation study in a cross-sectional design. The correlations were used to show associations between unmet support needs and socio-demographic and medical characteristics. The sample was defined using inclusion and exclusion criteria. The number of patients who met the selection criteria was 172 patients. 161 participants (93.60%) took part in the study. 172 patients met the selection criteria, 93.60% (n=161) took part in the study. A pretest, including to check the comprehensibility of the questions, was carried out in advance with 10 people (n=10).

The inclusion criteria used for this study were as follows: patients aged 18 years and older who have been diagnosed with localized primary breast cancer and have undergone surgery or who have metastatic or recurrent breast cancer and who are receiving outpatient, radiological or inpatient oncological treatment. All participants in the main study did not take part in the pretest.

At the start of the study, the respondents' consent was obtained. The data was collected via interview, which was always conducted by the same person.

The study was conducted over a three-month period from April to June 2018 at the SALAH AZAIEZ Institute (ISA), a university hospital in Tunis, Tunisia, in the following departments: Oncology Outpatient Clinic, Medical Oncology, Surgery, Outpatient Oncology Care and Outpatient Cancer Surgery Clinic.

SALAH-AZAIIEZ INSTITUTE

The Salah Azaiez Institute (ISA) has been the state medical and nursing cancer center of Tunisia since March 20, 1969. 4,000 women are treated there every year, including around 2,000 for gynecological and breast tumors. Around 800 breast operations are performed annually (Ghaleb, Salah, 2019). The institute includes surgical oncology, medical oncology, radiation oncology, nuclear medicine, histology, immunohistology and cytology. A great success was the establishment of a structured screening program for breast and cervical cancer in collaboration with the National Association of Family Planning for Health. The university hospital is geared towards providing the population with optimal care at all times and with social justice in mind. In the 1970s, the ISA was selected as the reference center in North Africa for breast and cervical cancer. One of the central tasks of the ISA is to conduct studies related to breast cancer.

Ethical considerations

Approval and review of ethical aspects was carried out at the ISA. Institutional and ethical aspects must be taken into account. The study must be free of charge for the patients. Informed consent must be given. The data will be anonymized and treated confidentially.

Survey instrument

Sociodemographic and medical data were collected in interviews and by reviewing medical records, followed by a survey using the Supportive Care Needs Survey (SCNS) instrument to measure support needs. The multidimensional impact of cancer on patients' lives is recorded. The assessment of the care and health services received is also collected. The first version of the SCNS consisted of 59 items, which was then reduced to 34 items: "SCNS Short Form 34" (SCNS SF34). This questionnaire contains 34 items that cover five different areas: 1) Psychological aspects (PSY), 2) Information needs and health system (SI), 3) Physical aspects and aspects of daily life (PVQ), 4) Care and support (SS), 5) Sexuality (S). The quasimetric treatment of the five-point Likert scale allows the mean value to be determined. A high need is reflected in a higher score. The SCNS SF 34 is considered reliable (Cronbach's $\alpha = 0.86-0.96$). The survey instrument was translated into Arabic by a sworn interpreter. A pretest was carried out with 10 patients so that the questions could be checked for comprehensibility. The interviews were conducted orally, as illiteracy is widespread, especially in rural areas of Tunisia.

Evaluation

The evaluation is carried out using software from IBM SPSS[®] Version 24.0. The descriptive part includes data on the need for support; it was presented using location and distribution measures, e.g. in histograms. The analytical part is then described. The mean comparisons were carried out and bivariate inference analyses were carried out to calculate differences and relationships between the dependent and independent variables. The t-test carried out for the mean comparison was used for the analysis of dichotomous variables (origin, type of surgical treatment, attitude). Variance analyses (ANOVA) were carried out to compare several means (overall mean) in relation to the ordinal categorized variables (e.g. age groups) and non-ordinal scaled variables (e.g. type of cohabitation). The correlation analysis was carried out using the Pearson test. In addition, an assessment was carried out with the significance level 0.05.

Results

Sociodemographic aspects: The mean age of the patients was 53.23 years (MIN 27/MAX 80; $\sigma = 11.14$). Grouping by age shows that 61% of the patients were between 40 and 60 years old. Most were between 50 and 60 years old (see Figure 1).

66% of those examined come from urban areas. 12% had an academic education status. 30% did not attend primary or secondary schools. Almost half (49.1%) of the test subjects have an average socioeconomic level, and almost as many (46%) have a below-average socioeconomic level. 54% of those examined are housewives, 31% workers, 12% civil servants, 1.2% were self-employed, 1.2% were pensioners. 67% are married, 5% divorced, 14% single, and 14% widowed. Only 14.3% were childless. 22.4% have one to two children, 56.5% have three to five children, and 6.2% have more than five children. Only 0.6% (n=1) live alone, 0.6% (n=1) in a shared flat, most of them with their spouses with children (64.6%) or without children (5.6%).

16.8% live alone with their children, 11.8% live with their parents or relatives.

Medical aspects: 45.3% (n=73) of the participants had a family history of cancer. Of these, 53.4% were first-degree relatives, 37% were second-degree relatives, and 9.6% were third-degree relatives. 61.6% (n=45) stated that the family member had breast cancer. 5% (n=8) of the study population had a history of depression that existed before the cancer diagnosis. 19.3% (n=31) of the study population had already been diagnosed with cancer in their medical history. 0.6% (n=1) had uterine cancer, and 18.6% had breast cancer at some point. 23% had been diagnosed with breast cancer within the last year. 64.6% had been diagnosed with breast cancer within the last 2 years, and 5.6% had been diagnosed with breast cancer more than 5 years ago. 78.9% (n=127) of the cancers were localized, 11.8% (n=19) metastatic and 9.3% (n=15) recurrent. 35.4% (n=57) were being

treated with chemotherapy at the time of the survey, followed by 21.7% surgical therapy (n=35) and 17.4% radiotherapy (n=28). In 86.3% (n=139) of the cases, a curative goal was pursued, in 13.7% (n=22) a palliative goal. 62.7% (n=101) received radical treatment with a standard mastectomy. In 37.3% (n=60) conservative treatment with lumpectomy, i.e. breast-conserving therapy, was carried out. Only 1.2% (n=2) had undergone breast reconstruction after mastectomy, 20% (n=32) wore external breast prostheses.

Support needs: The analysis of the data shows that needs mainly exist in the area of information needs and the health system (SI) and in the area of psychological support (PSY). There is a high level of dissatisfaction with the health system and information (SI) and is on average the highest (M=34.62, \pm 7.8), followed by psychological needs (PSY) (M=34.44, \pm 8.14) (see Table 1).

Table 1: Descriptive characteristics of the individual areas

Abbr.	Area	Median	M	SD	Range (Min-Max)
sI	Information needs	33	34.62	7.79	38.18-92.72
PSY	Psychological aspects	35	34.44	8.14	26-100
PVQ	Physical and everyday things of life	17	16.29	4.75	24-100
SS	Care and support	10	11.72	3.16	36-96
S	sexuality	3	4.67	2.75	20-100
Possible values between 0-100: Min=0 (no dissatisfaction) Max=100 (high dissatisfaction)					

Unmet support needs
70% (n=113) of respondents stated that SI, PSY and PVQ do not meet the expectation of support and they are dissatisfied. Table

2 presents the ten least satisfied needs, six of which are related to SI.

Table 2: Needs of at least 70% of the subjects, ordered by frequency of dissatisfaction (n participants = 161)

rank	Items	Area	discontent	
			n	%
1	Opportunity to speak with hospital staff (aspects of the disease, treatment, aftercare)	sI	146	90.68
2	Opportunity for yourself or people in your environment to gain access to professional support and advice (psychologist, social worker, specialist nurse, etc.)	sI	142	88.19
3	Fear that the cancer will spread	PSY	132	81.98
4	Lack of energy or fatigue	PVQ	131	81.36
5	Worrying about your own relatives	PSY	130	80.74
6	Feelings when thinking about death	PSY	128	79.5
7	Fear	PSY	127	78.88
8th	Dejection or depression	PSY	124	77.01
9	Feeling of sadness	PSY	122	75.77
10	Pains	PVQ	118	73.28
Dichotomization of needs using the five-point Likert scale (SCNS SF34)				

Analytical study and correlations

Age: Table 3 shows the dissatisfaction in the areas examined according to selected age groups. For the areas PVQ, PSY, SI and SS there was no significant correlation with advancing age.

In area S the dissatisfaction of the patients was on average 4.87 (\pm 3.22) for the group under 40 years and 5.65 (\pm 3.32) in the group of 40-49 year olds. In the group 50-59 years an average dissatisfaction of 4.54 (\pm 2.43) and for the group > 60 years a

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value of 3.76 (± 1.90) was found. The analysis of variance (see Table 3) showed that in area S there is a significant difference

according to age ($F=3.98$; $p=0.009$). These are shown below in Table 3.

Table 3: Analysis of variance age groups and the five areas examined

Area	Age group			F	P			
	<49	50-59	>60 years					
	M	σ	M	σ	M	σ		
PVQ	16.20	4.69	16.80	4.38	15.87	5.26	0.32	0.80
PSY	34.14	7.89	35.58	7.92	33.61	8.72	0.66	0.57
sI	34.15	7.87	35.09	8.64	34.72	6.76	0.15	0.92
SS	12.09	3.39	11.94	3.46	10.97	2.32	1.62	0.18
S	5.46	3.29	4.54	2.43	3.76	1.90	3.98	0.009
SI = Information needs ^[1] _{SEP} PSY = Psychological support PVQ = Physical and activities of daily living ^[1] _{SEP} SS = Care and support S = Sexuality								

Place of residence: In all areas, no connection could be found between dissatisfaction and place of residence (rural, urban).

People from rural areas were generally more dissatisfied (see Table 4).

Table 4: Analysis of variance by place of residence and the five areas examined

Areas	Place of residence		t	p		
	urban	rural				
	M	σ	M	σ		
PVQ	15.93	4.75	17.01	4.72	-1.36	0.17
PSY	33.64	7.75	36.03	8.73	-1.77	0.078
sI	34.11	7.54	53.62	8.23	-1.16	0.24
SS	11.66	3.21	11.83	3.08	-0.32	0.74
S	4.57	2.52	4.87	3.16	-0.62	0.51
SI = Information needs ^[1] _{SEP} PSY = Psychological support PVQ = Physical and activities of daily living SS = Care and support S = Sexuality						

Educational level: The results showed that there is no relationship between educational level and dissatisfaction with the need for support in the five areas.

type of living together, with $F=5.51$ and $p=0.001$. The highest dissatisfaction was shown in the arithmetic mean for partnerships with ($M=5.24$) or without children ($M=5.0$). This was compared to shared accommodation/in the family environment ($M=3.1$) and single households ($M=3.6$).

Socioeconomic aspect and professional status: Patients with a high socioeconomic level report on average less dissatisfaction than patients with a medium or low socioeconomic level. A significant difference was calculated for PVQ ($F=4.65$, $p=0.011$) and PSY ($F=5.48$, $p=0.005$).

Disposition, previous illnesses, progression: No correlation was calculated between dissatisfaction in the five areas and the background of a positive family history. However, there was a significant difference between a personal history of cancer and the five areas in PSY ($F=2.25$, $p=0.001$), SS ($F=2.35$, $p=0.007$) and S ($F=2.50$, $p=0.006$). In the case of a previous mental illness, significant values were calculated in SI ($F=1.93$, $p=0.007$), SS ($F=4.18$, $p\leq 0.0001$) and S ($F=4.08$, $p\leq 0.0001$). The stage of the illness, i.e. the progression of the illness, showed a significant difference in the SS area ($F=4.99$, $p=0.002$). Patients with a metastatic tumor had, on average, a higher unmet need in all five areas, followed by those with recurrent tumor and localized, non-metastatic carcinoma.

The difference between professional status and the above-mentioned dissatisfactions in the five areas was only significant in area S with a $p=0.005$ ($F=4.42$). All other areas showed no significance in this regard.

Marital status, children, type of cohabitation: There was only a significant difference in marital status in area S ($F=5.52$, $p=0.001$). The number of children did not make a significant difference in any area. However, a significant positive connection was found in the correlation between number of children and psychological needs via the Pearson coefficient ($r=0.17$, $p=0.024$). The "type of living together" showed in the three areas PVQ, PSY, S that childless partners on average indicated more needs, but without a significant difference. For the SS area, the average dissatisfaction values for the different groups are comparable. In the SI area, there was a significant correlation between dissatisfaction with the need for care and the

Treatment: In the area of SS, a significant difference between treatment and dissatisfaction was found ($F= 2.22$, $p=0.05$). Further results are shown in Table 5 ^[1]_{SEP}

Table 5: Analysis of variance of the therapy type and the five areas examined

Area	Therapy form						F	p
	chemotherapy	Radiation	Surgical intervention	Hormone therapy	Antibody therapy	No therapy		
	M SD	M SD	M SD	M SD	M SD	M SD		
PVQ	16.33 5.38	15.85 3.54	17.37 4.22	14.81 4.63	16.87 5.25	14.87 5.9	0.91	0.47
PSY	35.75 7.79	31.64 6.38	36.05 6.83	31.58 9.89	33.56 8.77	35.75 12.23	1.77	0.12
sI	36.15 7.72	31.39 5.37	33.97 8.12	33.35 8.27	36,00 9.28	37.7 7.40	1.95	0.08
SS	12.21 3.84	10.71 1.97	10.80 2.29	12.29 3.34	12.25 2.90	13,50 3.25	2.22	0.05
S	1.26 0.66	1.21 0.56	1.34 0.72	1.17 0.72	1.37 0.61	1.37 0.74	0.30	0.91
SI = Information needs ^[1] _{SEP} PSY = Psychological support PVQ = Physical and activities of daily living SS = Care and support S = Sexuality								

The five areas and the therapeutic goal were analyzed. In all areas, there was a higher average level of dissatisfaction among the palliative patients than among those receiving curative care. Larger differences were seen in the areas of PVQ (M=19.22 to 15.83), PSY (M=41.40 to 33.34) and SS (M=14.18 to 11.33).

The t-test comparing the means found significant differences between the two therapeutic settings for four areas, PVQ (p=0.03), SI (p=0.040), SS (p ≤ 0.0001) and S (p ≤ 0.0001) (see Table 6).

Table 6: Analysis of variance of the care goals and the five areas examined

Areas	Care (according to therapeutic goal)						
	curative	palliative	t	p			
	M	σ	M	σ			
PVQ	15.83	4.77	19.22	3.55	-3.19	0.03	
PSY	33,34	7.72	41.40	7.39	-4.57	0.37	
sI	33.89	7.39	39.22	8.80	-3.06	0.040	
SS	11.33	2.70	14,18	4.57	-4.11	≤ 0.0001	
S	4.51	2.45	5.72	4.08	-1.94	≤ 0.0001	
SI = Information needs ^[1] _{SEP} PSY = Psychological support PVQ = Physical and activities of daily living SS = Care and support S = Sexuality							

Differences between the type of surgical treatment (radical, breast-conserving therapy) and dissatisfaction in the five domains showed that patients who underwent radical surgery expressed, on average, more unmet needs in all domains compared with patients who received breast-conserving surgery.

A t-test comparing means found significant differences between the two types of surgical treatment for the domains PVQ (t=-2.12, p=0.04) and SI (t=-0.69 p=0.01) (see Table 7).

Table 7: Comparison of average dissatisfaction with care needs and surgical procedures

Areas	Surgical care					
	Breast-conserving therapy	Mamectomy	T	p		
	M	SD	M	SD		
PVQ	15.27	4.10	16.91	5.04	-2.12	0.04
PSY	33.10	8.20	35.30	8.04	-1.66	0.65
sI	34.10	6.90	35.00	8.27	-0.69	0.01
SS	11.25	2.89	12.00	3.30	-1.45	0.06
S	4.25	2.46	4.94	2.89	-1.52	0.12
SI = Information needs ^[1] _{SEP} PSY = Psychological support PVQ = Physical and activities of daily living SS = Care and support S = Sexuality						

DISCUSSION

Sociodemographic aspects: The study population consisted of patients with an average age of 53.23 years, of which 61% of cases were between 40 and 60 years old. This average age is close to that used in research measuring the level of dissatisfaction with the care needs of breast cancer patients in other countries (Akechi, et al., 2011, Aranda et al., 2005, Aranda et al, 2006). The increase in incidence is greatest between the ages of 50 and 59 years. National and international data from cancer registries confirm this. 109 study participants were married, 22 widows, 22 single and 8 divorced. This dominance of married women is explained by age. 66% were of urban origin. In addition, several Tunisian studies describe higher breast cancer rates in urban than in rural areas (You, 2016, Ahmed et al., 2002, Tabbane, et al., 1977). 54.7% of the participants were housewives. One third of the patients were illiterate (30%). This result is not surprising considering that this is an older group of study participants from a rural region (34%) in Tunisia. The level of education is an important factor to be assessed, as Griesser et al. (2011) point out that a low level of education is a predictor of dissatisfaction with care needs, especially with regard to information-related needs (Griesser et al., 2011, Mills & Sullivan, 1999). The socioeconomic level was low to medium in 95% of cases. This aspect must be limited because people with a high income go to private clinics. About 2/3 of the participants live with children. Krajc et al. (2022) also provides another result in a systematic review and meta-analysis. They describe that married people have a cancer-specific higher survival rate of 34%.

Clinical data: A positive family history of cancer was found in 45.3% of the people examined. 61.64% of them stated that it was breast cancer. This genetic predisposition is described in the literature, and a high relative risk (RR=2-4) of developing breast cancer is mentioned, especially in first-degree family members (Griesser et al., 2011). 5% of those examined had a psychiatric history before the diagnosis of breast cancer. Another study describes this as significant for psychological help needs (Akechi et al., 2011).

The survey showed that the majority of participants (64.6%) were diagnosed with breast cancer 1 to 2 years ago. According to Griesser et al. (2011), this aspect is a consistent predictor of dissatisfaction in the areas of PVQ, PSY and SI over time.

In terms of disease stage, 78.9% were local, 11.8% metastatic and 9.3% recurrent cancers. The authors of the study believe that early tumor detection and mammography screenings play an important role here. 35.4% received chemotherapy, 21.7% were operated on and 17.4% received radiotherapy. Since in 87.6% of cases the cancer diagnosis was new and had been present for less than two years, an adjuvant procedure is typical. 86.3% received curative treatment and 13.7% palliative treatment. This result is consistent with the stage of the disease.

The dissatisfaction mainly affects the areas of SI ($M=34.62 \pm 7.8$) and PSY ($M=34.44 \pm 8.14$). These results are confirmed by the study by Sanson and Carey (2009).

Furthermore, in several studies (Galvez et al., 2021, Gaston et al., 2005, Husson et al., 2011, Mallinger et al., 2005, Raschper, 2015; Vogel et al., 2009), information needs seem to depend on psychological needs, that is, better satisfaction of information needs could reduce emotional distress and vice versa. The fact that the sample consists of a majority of patients in the treatment phase (95%) may also explain the moderately high values in these two need areas (Steginga et al., 2000).

In the other domains the proportions were lower: $M=16.29 \pm 4.75$ for the PVQ domain and $M=11.725 \pm 3.16$ for the SS domain. These results are confirmed by the results of the correlation study by Aranda et al. (2005).

The results showed a lower dissatisfaction in the area of sexuality 4.67 ± 2.75 compared to the other areas. The variability of needs related to the sexual area is also described in the literature, which reports a low prevalence (5%) of unmet needs in the initial phase of treatment in a heterogeneous population (Galvez et al., 2021). This is also the case when the affected organ is involved in sexual function, since it is during this phase that SI and PSY needs are most pronounced (Akuoko, 2021). Other studies have found that dissatisfaction is higher when an organ involved in sexual functions is affected by cancer (33-49%) (Prashar, 2022). The area is generally little studied in breast cancer, as shown by the systematic literature review (57 included studies) by Harrison (2009).

70% of respondents indicated SI as an unsatisfied area. Similar results were shown by the RCT and other studies by Akechi et al. (2011, 2021). Fatigue was unsatisfactorily managed in 81.6% of patients, but this is a very common symptom in patients at the start of chemotherapy and radiotherapy. Carlson et al (2004) showed in their study of a sample of 3095 cancer patients that the most common problem was this need (fatigue) with a prevalence of 48.5%. Many other studies describe this. Expectations of support services, especially information and advice, are also described by Helden (2021).

In the area of psychology, 80.74% of participants stated that they were worried about their relatives, but also feared death and were depressed. The study by Sanson-Fisher et al. (2000) confirmed this. Sutherland et al. (2009) used the SCNS-31 on a small population in the initial phase (less than 1 month) of the illness: here, dissatisfaction was significantly lower. This supports the hypothesis that duration has an impact on PSY. Aspects of distress are also important here (Afiyanti et al., 2018). Fear of or existing pain was named as unsatisfied by 73.28% of participants. A study in Indonesia found a value of around 63.4% (ibid.)

Dissatisfaction in the context of the variable Socioeconomic and medical aspects: Regarding the second research question, the results of the correlation analyses that were carried out for each of the variables examined are now discussed.

Old

Only in relation to the S domain was a higher proportion of dissatisfaction with regard to sexual issues found in patients under 49 years of age. This was expected, as young age is a predictor (Fobair et al., 2006, Griesser et al., 2011). Nursing staff also rarely discuss this issue (Katz, 2005, Tierney, 2008).

In general, it can be seen that young or old age is a predictor of dissatisfaction in the five areas. For example, according to Zabora et al. (2001), young people (< 30 years) and older people (> 80 years) are exposed to greater emotional stress. The need for information also varies depending on age. This is greater among young people than among older people, as is the need for participatory decision-making (Agard et al, 2004, Jenkins et al., 2001, Meade et al, 2017, Vogel et al., 2009).

Place of residence

The results show, on average, a higher need in the five areas among patients living in rural areas. The difference is not statistically significant compared to those living in urban areas. Giris et al. (2000) confirm this.

Educational level

There was no connection between educational level and the areas examined. All expressed similar unmet needs and no significant difference could be found. Griesser et al. (2011) showed that a low educational level among women is a predictor of dissatisfaction in the areas of PVQ and PSY. Mills and Sullivant (1999) describe that in their systematic review the results in this area are varied.

Socioeconomic aspects

The result of the mean values shows that patients with a low or middle socioeconomic level perceive greater dissatisfaction in the areas of physical and daily living and in those of psychological aspects. This can be explained by the fact that they do not have the financial strength to seek help with family and domestic tasks and to cover their expenses. This can subsequently lead to further unmet psychological needs. Carlson et al. (2004) describe that low income is also a predictor of more emotional stress in cancer patients.

Employment

The results regarding occupational activity indicate that employees with a freelance or commercial function are the ones who have the most unmet needs in four areas (SI, PSY, SS, S). A statistically significant difference is only found for S. The five areas related to workload become particularly important in physically demanding jobs (Griesser et al. 2011; Ream et al., 2008).

Family status

The results of the study showed that married women are dissatisfied in all five areas. This was only statistically significant for area S. There are several studies that also describe this. McDowel et al. (2010) identified that female gender is a variable that increases dissatisfaction with support needs in relation to the PVQ and the SS. With regard to the PSY area, Akechi et al. (2011) and Sanson-Fisher et al. (2009) have shown that 'being a woman' is an important variable in the PSY area. In addition, marriage brings with it additional demands, responsibilities in the household, family and married life. Beesley et al. (2008) describe that married women also have high dissatisfaction in area S. The spouse also plays an important role here.

Number of Children

In our study, the number of dependent children did not correlate statistically with unsatisfied care needs. Aranda et al. (2006) came to similar results in their study. However, in three areas (PVQ, PSY, SI) higher dissatisfaction scores were found among people with more children: physical and daily life, psyche and information. Griesser et al. (2011) confirm this in the area of PVQ.

Living together

The type of cohabitation and dissatisfaction in the SI area was confirmed with a significant result. Griesser et al. (2011) found a connection with the PVQ area. This was not found in this study. In addition, people who live with a partner without children expressed more needs on average in all areas except information than people who live with a partner and children. We can hypothesize here that children play a role in informing patients, especially since this is a largely illiterate or primary school-aged population. But the acquisition of information, e.g. via the Internet, must also be considered.

Medical aspects

Progression and stage

The correlation between dissatisfaction with support in the area of SS and disease progression was significant. Minstrell et al. (2008) and McDowel et al. (2010) found that needs in the area of PSY decrease significantly just three months after diagnosis. On average, patients with metastatic cancer have significantly higher unmet needs in all areas than patients with recurrent or non-metastatic cancer. Rainbird et al. (2005) confirm this in the area of PSY. Sanson-Fisher et al. (2008) and Fobai et al. (2008) describe this as a main factor. The same trend can be observed in the present study in the area of SI, as Mills and Sullivan (1999) also found. A difference was also calculated in the area of PVQ for patients with metastatic and recurrent cancer compared to patients with non-metastatic cancer. Similarly, one study showed that the stage of the disease is associated with a progressive increase in the severity of physical symptoms (Siddiqi et al., 2009). Moreover, according to several studies, the time elapsed since diagnosis also correlates with the appearance of more physical needs (McDowell et al., 2010, Minstrell et al., 2008, Sanson-Fisher et al., 2008).

Type of treatment and therapeutic goal

The results showed that patients who had undergone radical surgery expressed higher unmet needs in all areas than patients who had undergone conservative surgery. Significant results were measurable in the areas of PVQ and SI. However, it must be clear that the female breast is an important part of 'being a woman' (Girgis, 2000). Studies have shown that post-mastectomy patients do not like their naked appearance and avoid looking in the mirror (Brix et al., 2008). Women who undergo breast-conserving surgery describe fewer problems with their body image (Langgellier, Sullivan, 1998). According to Speer et al. (2005), women with a changed body image after breast cancer show less sexual satisfaction than women with a positive body image.

Strengths and limitations of the study

Firstly, the study represents an important addition to the few studies conducted in this field in Tunisia to date. The research questions can be answered by the chosen study design. The questionnaire used (SCNS-Sf34) was translated by a sworn translator and pre-tested with patients with breast cancer. The process of validating the measurement instrument to adapt it to the cultural context was not carried out for research-pragmatic reasons. The research area and its special framework conditions in the health care system are internationally comparable with industrialized countries, in particular the solid training of nursing staff. However, the results cannot generally be transferred.

CONCLUSION

The results of this study provide further information on the requirements for supportive care, which particularly relate to patient information, support for psychological needs and self-management of symptoms. These three main areas should be the subject of nursing and medical training. Specialization is and remains necessary. In addition, suitable screening instruments can be developed to identify the needs of patients with breast cancer at an early stage.

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