# "I Feel I'm in Best Hands with You!": A Survey of Patient Satisfaction in a German University Skin Cancer Centre

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**An important measure of hospital quality is the satisfaction of patients. The aim of this cross-sectional study, performed in the dermato-oncology unit of the university hospital in Erlangen, Germany, was to assess skin cancer patients' degree of satisfaction with healthcare services. Self-administered questionnaires on patient satisfaction regarding contact with staff, need for information, and recommendation of the skin cancer centre were distributed in the day-care unit and the outpatient department to patients between April and June 2017. Results were reported descriptively and subgroup differences were explored using the Mann–Whitney *U* test, binary logistic regression, or $\chi^2$ test. Overall, 496 of 571 questionnaires were returned (86.9%). The median of all satisfaction items ranged between 1 (very good) and 2 (good). The majority of patients wanted more detailed information about skin cancer (46.7%, 142/304). Long waiting times were often criticized (22.8%; 80/351). Particular attention in addressing specific needs and fears may further increase patient satisfaction.**

*Key words:* patient satisfaction; quality improvement; cross-sectional study; quality of care; skin cancer; melanoma.

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## SIGNIFICANCE

An important measure of hospital quality is patient satisfaction. This study examined skin cancer patients' degree of satisfaction with healthcare services in the unit of dermato-oncology of the university hospital in Erlangen, Germany. Self-administered questionnaires on patient satisfaction regarding contact with staff, need for information, and recommendation of the skin cancer centre were distributed to patients in 2017. A total of 496 of 571 questionnaires were returned. Patients' satisfaction for most aspects ranged between 1 (very good) and 2 (good). The majority of patients wanted more detailed information about skin cancer (46.7%, 142/304). Long waiting times were often criticized (22.8%; 80/351).

Patient satisfaction involves a patient's reaction to several aspects of their treatment experience (1). According to the 3-component model by Donabedian for evaluating the quality of care, patient satisfaction is a patient-reported outcome measure, while the structures and processes of care can be measured by patient-reported experiences (2, 3). Thus, patient satisfaction represents an important measure of hospital quality as it offers information on the provider's success at meeting patients' expectations from their own subjective point of view (4, 5). In addition, regular assessment of patient satisfaction is essential for identifying problems that need to be resolved in order to improve the quality of health services (6). Patient satisfaction might influence whether patients are willing to recommend the respective hospital (1, 4). In addition, higher patient satisfaction with healthcare services has a positive effect on patients' behavioural intentions, such as compliance with the physicians' proposed treatment and appointments to follow-up, which eventually results in better treatment outcomes (1, 7).

It has become common practice for healthcare organizations to measure patient satisfaction and, consequently, various instruments to measure patient satisfaction have been developed (8–10). In Germany, hospitals have been legally obliged to provide information about their work in quality reports since 2005 (11). The quality reports provide an overview of the structures and services of hospitals. Thus, measuring patient satisfaction has become an essential and mandatory part of the quality assurance process (11). Reports have to be published by all care providers aiming at supporting patients with information in order to enable comparability of hospitals (11, 12). The aim of this study is to report the results of the recent evaluation of skin cancer patients' degree of satisfaction with healthcare services at an academic medical centre. The results will contribute to increasing the transparency of our skin cancer centre and to deriving its strengths and weaknesses, which should be addressed in order to increase patient satisfaction.

## METHODS

### *Study design, setting, and participants*

This cross-sectional study was carried out from April to June 2017. It was conducted in the unit of dermato-oncology at the university



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hospital in Erlangen, Germany. The university hospital Erlangen is a hospital providing the maximum level of care, which is linked to the medical faculty of the Friedrich-Alexander-University (FAU) Erlangen-Nürnberg. This study was approved by the institutional review board of the university hospital Erlangen (approval number 20200812 01).

Adult patients (≥18 years) presenting to the day-care unit or outpatient department were asked to complete a self-administered questionnaire (purposive sampling). Overall, 571 questionnaires were distributed to patients attending either the outpatient department or day-care unit to be treated for skin cancer or undergoing a radiological examination. The day-care unit has a focus on the treatment of skin cancer, while the outpatient department mainly covers the aspects of surveillance and diagnostics. Participation was voluntary and all participants gave verbal informed consent before completing the questionnaire. Refusals were documented and no incentives were provided. Relatives or accompanying persons were excluded from the study. Each patient was allowed to participate only once in the survey (cross-sectional design), despite multiple rounds of treatment. No further eligibility criteria were set.

### *Survey*

The evaluation of patient satisfaction was part of the mandatory, biannual survey conducted at the university hospital Erlangen to ensure quality assurance. The German version of the Picker Patient Survey questionnaire was modified by the quality management of the university hospital for the purpose of the study (9, 13). The questionnaire consisted of items on patient satisfaction regarding contact with physicians and nurses, need for information, general impression and recommendation of the skin cancer centre. Patients were asked to rate the questions according to the school grade system used in Germany (1 = very good, 2 = good, 3 = satisfactory, 4 = sufficient, 5 = poor, 6 = deficient). Another multiple-choice question asked patients about which disease-related topic they wanted to receive more information on. In addition, socio-demographic data, such as age and sex, were obtained. Participants could add further comments and suggestions for general improvement of their treatment in a free-text field. In addition, each item was re-coded as a dichotomous problematic value (school grade 1–3 vs 4–6), indicating the presence or absence of a problem for further analysis (14).

### *Data analysis*

SPSS (IBM SPSS Statistics version 24, IBM Corporation, Armonk, NY, USA) was used to analyse the data. Descriptive statistics were used to describe patient demographics. The results were reported as frequencies and percentages (%). In addition, the rated school grades of the items were indicated as medians. Subgroup differences were explored with the Mann–Whitney *U* test and Kolmogorov–Smirnov test or Kruskal–Wallis test. Furthermore, the $\chi^2$ test and Fisher's exact test was used to identify significant differences for the dichotomous re-coded problems. Spearman's correlation was used to investigate the relationship between the items. Binary logistic regression analysis was conducted to determine whether age, sex, number of appointments and type of clinic were significantly associated with patient satisfaction or patient recommendation as the dichotomized, dependent variable. Statistical significance was set at $p \leq 0.05$. The open-ended questions were analysed qualitatively. No sample size calculation was performed, due to the explorative design of the survey. A response rate of at least 80% was required for quality assurance. Missing values were excluded pairwise. In addition, missing data were addressed by indicating the number of participants considered in each analysis.

## RESULTS

### *Characteristics*

Overall, 496 of 571 questionnaires were returned (86.9%); 220 participants were male and 219 female ($n = 57$ missing, **Table I**). The majority was aged below 50 years (26.8%, 123/459), followed by 23.1% aged between 61 and 70 years (106/459), 22.4% between 71 and 80 years (103/459) and 21.4% between 51 and 60 years (98/459). The majority of patients were treated in the outpatient department (409/479), while the minority were treated in the day-care unit (14.6%, 70/479). There were no significant differences between the characteristics of the participants attending the outpatient department and day-care unit.

The median of all patient satisfaction items was estimated as good (=2 according to the school grade system), unless otherwise indicated. All satisfaction items were positively and statistically significantly correlated with each other, the highest correlation was identified between the items "Did the nurses properly address your fears and anxieties?" and "Did you trust the nurses?" ($r = 0.819$, $p < 0.001$).

### *Satisfaction with physician performance*

More than 80% (58/70) of the patients attending the day-care unit and 73.8% (290/393) of participants attending the outpatient department rated being very well or well informed about their disease or treatment ($p = 0.014$, **Fig. 1**a). In addition, 82.9% (58/70) of patients in the day-care unit stated that the physicians answered their questions in an understandable manner. In the outpatient department, 76.1% (296/389) felt that their questions had been answered understandably ($p = 0.003$). Notably, 80.0% (56/70, median satisfaction grade = 1) of patients in the day-care unit and 76.9% (300/390) in the outpatient department trusted the physicians ($p = 0.005$). Moreover, patients aged between 71 and 80 years trusted physicians rather more than did patients aged below 50 years ($p = 0.043$) or patients aged between 51 and 60

**Table I. Baseline characteristics of the patients attending the outpatient department and day-care unit**

| Characteristics | All<br>*n* = 496<br>% (*n*) | Outpatient department<br>*n* = 409<br>% (*n*) | Day-care unit<br>*n* = 70<br>% (*n*) |
|---|---|---|---|
| Sex ($p = 0.158$) | | | |
| Female | 48.9 (219) | 51.4 (188) | 41.4 (24) |
| Male | 50.1 (220) | 48.6 (178) | 58.6 (34) |
| Not specified, *n* | 57 | 43 | 12 |
| Age ($p = 0.502$) | | | |
| ≤ 50 years | 26.8 (123) | 28.3 (108) | 21.0 (13) |
| 51–60 years | 21.4 (98) | 21.5 (82) | 22.6 (14) |
| 61–70 years | 23.1 (106) | 23.6 (90) | 22.6 (14) |
| 71–80 years | 22.4 (103) | 21.0 (80) | 24.2 (15) |
| ≥ 81 years | 6.3 (29) | 5.5 (21) | 9.7 (6) |
| Not specified, *n* | 37 | 28 | 8 |
| Number of presentations/appointments ($p = 0.926$) | | | |
| One | 24.5 (87) | 24.2 (72) | 18.8 (9) |
| Multiple | 75.5 (268) | 75.8 (225) | 81.3 (39) |
| Not specified, *n* | 141 | 112 | 22 |

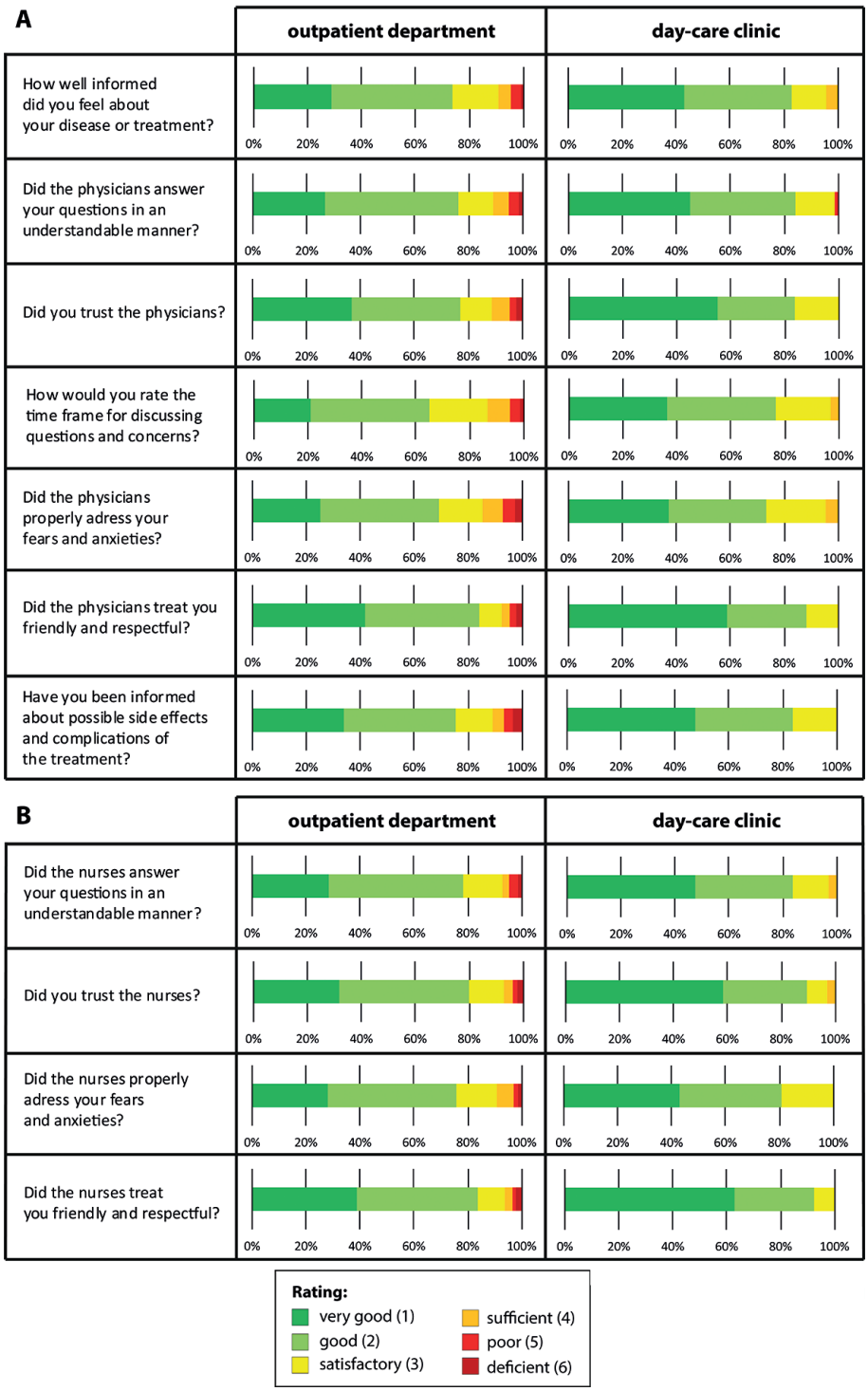


**Fig. 1. Bar charts showing frequency distribution of skin cancer patients' satisfaction with** (A) physicians and (B) nurses.

years ($p=0.022$). Of patients attending the day-care unit 76.8% (53/69) voted the time frame for discussing their questions and concerns as good or very good. In contrast, 65.1% of patients in the outpatient department (250/384) rated the time frame as good or very good ($p=0.003$).

Furthermore, 73.1% (49/67) of patients in the day-care and 69.2% (261/377) of patients in the outpatient clinic considered that their fears and anxieties were properly addressed ($p=0.051$). The majority of patients in the day-care unit rated information about possible adverse events and complication of the treatment as very good or good (83.6%, 56/67). This rate was 75.3% (274/364) for the outpatient department ($p=0.014$). In addition, patients aged between 71 and 80 years agreed that the physicians treated them in a respectful and friendly manner rather more than did patients aged between 51 and 60 years ($p=0.014$).

*Satisfaction with nurse performance*

Of patients attending the outpatient department and the day-care unit, 67.2% (45/67) and 78.1% (278/356), respectively, rated their questions as answered in an understandable manner by the nurses ($p=0.006$, Fig. 1b). Furthermore, more patients (89.6%, 60/67) in the day-care unit (median satisfaction grade = 1) than those attending the outpatient department (79.8%, 284/356) trusted the nurses ($p<0.001$). Of patients in the day-care unit 81.0% (51/63) stated that the nurses had properly addressed their fears and anxieties and 92.3% (60/65) perceived the nurses to be friendly and respectful (median satisfaction grade = 1). In contrast, 76.0% in the outpatient department (256/337) stated that the nurses had properly addressed their fears and anxieties ($p=0.026$) and 83.5% (304/364) perceived the nurses to be friendly and respectful ($p<0.001$).

*Need for information*

Data on the need for additional information was provided by 76.8% (304/496) of the patients. The majority of participants stated wanting more detailed information about skin cancer (46.7%, 142/304), followed by information related to the treatment (38.5%, 117/304), and follow-up (36.8%, 112/304) (**Fig. 2**a). In addition, 91 of the 304 participants (29.9%) stated that they were interested in more information on nutrition and knowledge on the possibility of second opinion, respectively. Another 64 (21.1%) participants wanted more detailed information on physical exercise and 60 (19.7%) on complementary medicine. Few participants stated being interested in the aspects related to psycho-oncology, social services and patient support groups.

All patients ($n=62$) attending the day-care unit felt adequately involved in the definition of treatment goals and planning the therapy (median satisfaction grade = 1) (Fig. 2b). Furthermore, 98.3% (59/60) had enough time to consider their decisions, with a median satisfaction grade of 1. In addition, 95.7% (311/325) perceived being adequately involved in defining treatment goals and planning their therapy (median satisfaction grade = 1) in the outpatient department. Furthermore, 96.8% (298/308) had enough time to consider their decisions (median satisfaction grade = 1). There was no statistical difference between the day-care unit and the outpatient department in adequately involving patients in the definition of treatment goals and planning regarding their tumour disease ($p=0.487$) as well as giving the patients enough time to consider their decision ($p=0.404$).

*General impression*

Overall, the majority of patients in the day-care unit, as well as in the outpatient department (93.2%, 55/59 vs 79.3%, 279/352; $p<0.001$), rated the care and treatment as very good or good, with a day-care unit median satisfaction grade = 1 and an outpatient median satisfaction grade = 2 (**Fig. 3**a). In addition, most participants in the day-care unit (86.9%, 53/61) and in the outpatient depart-

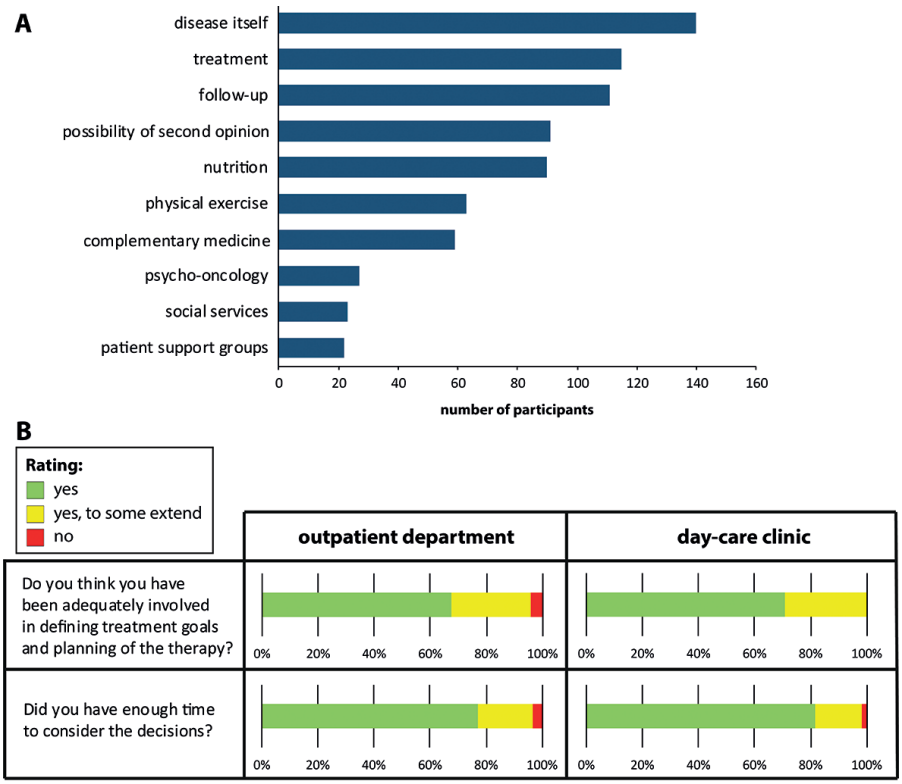


**Fig. 2.** Bar charts illustrating (A) the need for information, and (B) involvement of the patients in treatment decisions.

ment (75.2%, 261/347) rated that the professional groups worked well or very well together ($p=0.039$). In total, all patients (100%, 61/61) in the day-care unit would recommend it to their family or friends, and nearly all patients in the outpatient department (97.8%; 353/361,) except for 8 patients (2.2%) who stated they would rather not recommend it (Fig. 3b, **Table II**). However, organization of processes was most often identified as a problem in both groups, and patients in the outpatient department criticized this significantly more often than patients in the day-care unit (outpatient department vs day-care unit: 17.7% vs 3.3%, $p<0.004$).

Finally, the binary logistic regression analysis did not show any significant association between patient satisfaction or recommendation as dependent variable, and age, sex, number of appointments and type of presentation (day-care vs outpatient).

### *Potential for improvement*

In a free-text field, participants could add further comments and suggestions for improvement. Waiting times for doctors or collecting blood samples were most often criticized ($n=80$), followed by 13 patients who stated not having been thoroughly examined, not taken seriously, or felt like an object to be shown around. In addition, 12 patients reported high physician fluctuation, contradictory statements by physicians, and time pressure.

### *Strengths*

Four patients stated that organization was good and one reported that scheduling was optimal. Other patients appreciated their treatment and stated that everything was fine: "I have felt very well taken care of for more than 10 years! Thanks!" or "I feel I'm in best hands with you!" The remaining statements acknowledged the behaviour and competence of the employees who were involved in taking care of the patients ($n=38$).

## DISCUSSION

This cross-sectional study provided insights into the degree of satisfaction with treatment at a major German skin cancer centre in a university hospital-based setting experienced by patients with skin cancer. Interestingly, the patients in this study were highly satisfied with the treatment and care provided, including the performance of both physicians and nurses. In general, a median of school grade 1 (very good) or 2 (good) was awarded by the patients to the different satisfaction items, illustrating that patients expectations were often met.

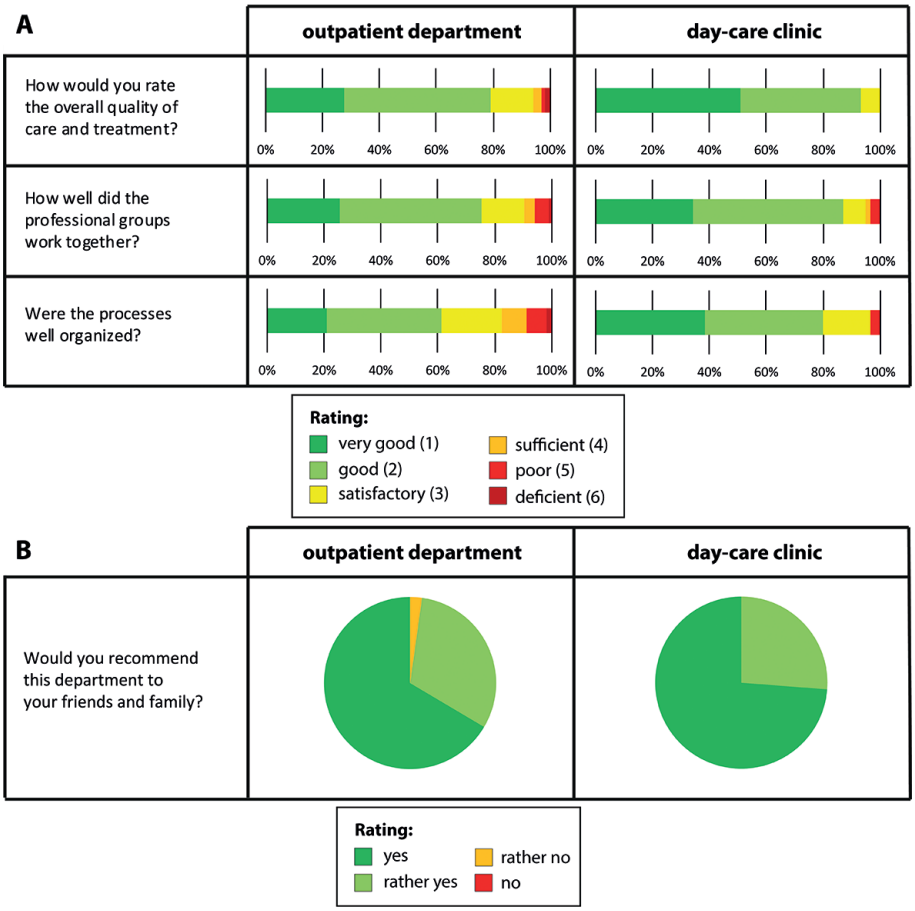


**Fig. 3.** (A) Bar charts illustrating the patients' general impression, (B) pie chart depicting whether patients would recommend the department to family or friends.

**Table II. Number of problems reported by the patients among the different satisfaction items***

| | All $n = 496$ % ($n$) | Not specified ($n$) | Outpatient department $n = 409$ % ($n$) | Not specified $n$ | Day-care unit $n = 70$ % ($n$) | Not specified $n$ | $p$-value |
|---|---|---|---|---|---|---|---|
| *Problems with physician performance* | 314 | 188 | 298 | 167 | 9 | 13 | |
| How well informed did you feel about your disease or treatment? | 8.6 (41) | 18 | 9.2 (36) | 16 | 4.3 (3) | 0 | 0.176 |
| Did the physicians answer your questions in an understandable manner? | 9.3 (44) | 22 | 10.8 (42) | 20 | 1.4 (1) | 1 | **0.014** |
| Did you trust the physicians? | 9.3 (44) | 23 | 11.3 (44) | 19 | 0 (0) | 3 | **0.004** |
| How would you rate the time frame for discussing questions and concerns? | 11.8 (55) | 28 | 13.3 (51) | 25 | 2.9 (2) | 1 | **0.013** |
| Did the physicians properly address your fears and anxieties? | 13.0 (60) | 36 | 14.6 (55) | 32 | 4.5 (3) | 3 | **0.024** |
| Did the physicians treat you in a friendly and respectful manner? | 6.4 (31) | 12 | 7.8 (31) | 10 | 0 (0) | 2 | **0.014** |
| Have you been informed about possible side-effects and complications of the treatment? | 8.7 (39) | 49 | 10.7 (39) | 45 | 0 (0) | 3 | **0.005** |
| *Problems with nurse performance* | 109 | 245 | 105 | 223 | 4 | 18 | |
| Did the nurses answer your questions in an understandable manner? | 6.2 (27) | 57 | 7.0 (25) | 53 | 3.0 (2) | 3 | 0.283 |
| Did you trust the nurses? | 6.4 (28) | 56 | 7.3 (26) | 53 | 3.0 (2) | 3 | 0.284 |
| Did the nurses properly address your fears and anxieties? | 7.5 (31) | 81 | 9.2 (31) | 72 | 0 (0) | 7 | **0.008** |
| Did the nurses treat you in a friendly and respectful manner? | 5.2 (23) | 51 | 6.3 (23) | 45 | 0 (0) | 5 | 0.034 |
| *Problems in need for information* | 25 | 216 | 24 | 185 | 1 | 18 | |
| Do you think you have been adequately involved in defining treatment goals and planning of the therapy? | 3.5 (14) | 98 | 4.3 (14) | 84 | 0 (0) | 8 | 0.139 |
| Did you have enough time to consider the decisions? | 2.9 (11) | 118 | 3.2 (10) | 101 | 1.7 (1) | 10 | 1.00 |
| *General impression problems* | 133 | 273 | 125 | 221 | 5 | 39 | |
| How would you rate the overall quality of care and treatment? | 4.9 (21) | 70 | 6.0 (21) | 57 | 0 (0) | 11 | 0.055 |
| How well did the professional groups work together? | 8.8 (37) | 77 | 9.5 (33) | 62 | 3.3 (2) | 9 | 0.244 |
| Were the processes well organized? | 15.6 (67) | 67 | 17.7 (63) | 54 | 3.3 (2) | 10 | **0.004** |
| Would you recommend this department to your friends and family? | 1.8 (8) | 59 | 2.2 (8) | 48 | 0 (0) | 9 | 0.609 |
| *Overall* | 581 | 922 | 552 | 796 | 19 | 88 | |

*Each satisfaction item was re-coded as a dichotomous problematic value (school grade 1–3 vs 4–6), indicating the presence or absence of a problem.

Surprisingly, patients attending the day-care unit were slightly more satisfied than patients attending the outpatient department, and the differences were mostly statistically significant. One reason might be that the outpatient department is only open once a week to patients with skin cancer in the university hospital in Erlangen. Therefore, many patients present to this department at the same time and may be treated in a restricted time window, as the physicians' time for consultation is usually limited. This may also explain why, for example, 12 patients commented that physicians were constantly changing, had time pressure, and that the statements were contradictory. This implies that constant care provided by the same team is important for the patient and that the team must communicate well to avoid contradictory statements. Furthermore, long waiting times were often criticized by the patients. Future efforts should be undertaken to improve the organization of patients to reduce waiting times to increase patient satisfaction. These results are comparable to a French survey on patient satisfaction in a dermatology outpatient setting, which also showed that physician's concern, interest in the medical problem, and attention given to symptoms influences overall satisfaction (15). In addition, they identified the performance of a full-body skin examination, use of dermoscopy, performance of a skin biopsy, and the comfort of the waiting room, as additional factors for increased patient satisfaction of patients aged over 50 years.

Also, approximately 30% of patients in both units felt that the physician did not properly address their fears and anxieties. The diagnosis of cancer is a highly sensitive topic that needs to be addressed with caution when speaking to or treating patients, especially when patients are affected by metastatic disease. Although the approval of use of immune checkpoint-blocking (ICB) antibodies has greatly changed the dermato-oncology field and prolonged the survival of patients (16), fears and anxieties still need to be adequately addressed by the physicians in order to improve participatory decision-making and strengthen patients' sense of coherence (17). As the time for the physician's consultation is limited, it may be feasible to involve psycho-oncologists or offer to contact one in order to address the patient's fears and anxieties in a target-group specific manner. Another cross-sectional survey among German patients with melanoma showed that most of them also felt poorly or not informed about psychosocial support. However, with 24–31% of answers, the need for information on psychosocial support was even higher than in our sample (17). In addition, a recent survey among inpatients assessing their psychosocial situation suggests that physicians are the preferred reference persons for distressed skin cancer patients (18). Hence, regular workshops to educate physicians regarding communication strategies with patients may be implemented in the future.

When asked about unmet needs, the overwhelming majority of patients wanted more detailed information about skin cancer, followed by information related to the treatment, which is in line with findings from the German multicentre, cross-sectional study among melanoma patients' unmet information needs (17). Following the approval of new treatments for melanoma, such as ICB or targeted therapy, an increasing need to educate patients has been observed. In general, cancer patients in

Germany prefer medical consultations to acquire information about their condition (19, 20). However, as the physician's time is usually limited, patients use various other sources to acquire disease-related information, e.g. internet platforms, booklets, videos provided on the open access video-sharing platform YouTube™ or websites (20). Currently available booklets for German-speaking patients with melanoma are inappropriate due to insufficient information and need didactic revision to improve their quality (21). YouTube™ is increasingly used to disseminate health information. However, recent analysis of videos about melanoma on this platform showed that they are of medium quality, commonly inaccurate, and without source references (22). Hence, patients should be advised and instructed to critically evaluate the source and content of a video and not to simply trust the number of likes. Furthermore, urgent implementation of quality control of videos on YouTube™ is needed. Another analysis of internet websites on melanoma immunotherapy demonstrated that webpages are of mediocre quality, good usability, and understandability, but low reliability and very low readability (23). The authors concluded that, especially simplification of the readability of information and further adaption to reliability criteria, are required to support the education of patients with melanoma and laypersons (23). In addition, as for videos on YouTube™, transparency criteria are often missing (22, 23). Therefore, physicians treating patients with skin cancer should bear in mind that, at the time, additional media may be of limited benefit for patients and that the medical consultation should additionally focus on addressing patients' information needs.

The strengths of this study are its prospective design and the high response rate (86.9%). However, a limitation is the lack of data on the diagnosis and severity of the patients, as the unmet needs of patients with different skin cancer entities are heterogeneous.

In conclusion, overall, the majority of patients were satisfied with their experience at the skin cancer centre and their expectations were mostly met. However, patients' information needs and fears, in general, require particular attention to further increase patient satisfaction. In addition, measures are needed to reduce waiting times.

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*The authors have no conflicts of interest to declare.*

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