The Breast 29 (2016) 1–7

Contents lists available at ScienceDirect

The Breast

journal homepage: www.elsevier.com/brst

Original article

Don't forget the dentist: Dental care use and needs of women with breast cancer

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ARTICLE INFO

Article history:
Received 24 March 2016
Received in revised form
10 June 2016
Accepted 11 June 2016
Available online 1 July 2016

Keywords:
Dental care
Breast cancer
Health care use
Care needs

ABSTRACT

Purpose: Patients with breast cancer may develop dental problems due to treatment. We examined the prevalence of their dental care use and needs, compared the prevalence of use with that of the general population, and examined which factors predict patients' dental care use.
Methods: Patients with primary breast cancer completed a questionnaire at 6 and 15 months post-diagnosis. Medical data were retrieved from medical records. The prevalence of dental care use and needs was examined with descriptive analyses. Associations between predictors and dental care use were examined with multivariate analyses.
Results: Twenty-one percent of 746 participants visited their dentist at least once in the past three months at 6 months, and 23% at 15 months post-diagnosis. The estimated percentage of women with at least one contact with their dentist in 12 months was low compared to the general female population (31.9% versus 79.5%). One to two percent of the respondents wanted more contact. Having dental care insurance (odds ratio 1.80; 95% CI, 1.08–3.00), chemotherapy (odds ratio 1.93; 95% CI, 1.21–3.06), and clinical distress 6 months post-diagnosis (odds ratio 2.53; 95% CI, 1.70–3.79) predicted use of dental care 9 months later.
Conclusions: Up to 15 months post-diagnosis, breast cancer patients' dental care use is lower than warranted. Oncologists and cancer nurses are recommended to inform patients about dental risks, and to encourage them – particularly those without insurance – to visit their dentist. Occurrence of dental problems should be monitored, especially in patients who receive chemotherapy or who are clinically distressed.

Introduction

Breast cancer survivors face a range of disease- and treatment related difficulties, including fatigue, distress, lack of physical fitness, and menopausal problems [1,2]. It is less recognized that they may also suffer from dental problems, primarily after

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http://dx.doi.org/10.1016/j.breast.2016.06.012
0960-9776/

adjuvant systemic chemotherapy [3–12] and less after radiotherapy [4,8]. Reported dental problems include bleeding, periodontal infection, caries, dry mouth, and especially oral mucositis. Oral mucositis is defined as inflammatory or ulcerative lesions of the oral tract [13]. Symptoms range from having taste loss, pain and infections to problems with eating solid foods. The condition may become severe enough to interfere with scheduled treatments, which in turn may lead to higher health care use and costs [14–17]. Of all cancer patients who receive conventional chemotherapy, between 20 and 40 percent develops mucositis [18]. For patients with breast cancer, the prevalence of mucositis is particularly high among those who receive TAC (docetaxel, doxorubicin and cyclophosphamide) chemotherapy [19].

There is some evidence that anti-estrogen treatments can also have a negative impact on the oral health of women with breast cancer. A pilot study demonstrated that women with postmenopausal breast cancer on aromatase inhibitors more often experienced periodontitis, with more oral sites that bled on probing, more sites with hardened dental plaque, and higher maximum attachment loss, compared to women without a breast cancer diagnosis [20]. Treatment with Tamoxifen or an aromatase inhibitor possibly also increases the risk for other dental problems [4], but, as for yet, these effects have to be further examined [21] (see also [5]).

In order to prevent or restrict the range and severity of dental problems, patients with breast cancer may benefit from a visit to their dentist before starting adjuvant therapy [4,12,22–24]. Clinicians, nurse practitioners, and cancer nurses may advise them to do so. The better the condition of the mouth and teeth, the less likely the chance that dental infections and problems will occur or intensify when treatment weakens the patients' immune system. If needed, the dental care provider may offer additional information about treatment-related dental problems, give instructions about appropriate self-care oral hygiene practices, or – depending on the type of treatment – recommend additional visits during treatment. However, to date, little is known about breast cancer patients' actual dental care use and predictors thereof. Oncologists and cancer nurses have limited insight into whether and which patients with breast cancer visit their dentist.

In this multicenter study we prospectively investigated Dutch breast cancer patients' dental care use and needs, and compared the patients' dental care use to that of women in the Dutch general population. There were two assessment points: 6 months post-diagnosis, and 9 months later when most patients have had their primary surgery and have completed adjuvant radio- and chemotherapy. We also investigated whether dental care use is associated significantly with age, educational level (as a proxy for income), having dental care insurance, cancer stage, treatment type, and clinical distress. Our goal was to determine which patients are at increased risk of underutilization of dental care services over time. Distress was included as a potential risk factor for underuse of dental care because it has been suggested that women with breast cancer who have high distress levels, may be less likely to see such care as a priority [25].

Methods

Participants and design

Women with primary breast cancer who had been diagnosed up to six months earlier in one of nine hospitals in the Netherlands were eligible for the study, irrespective of type of treatment. Patients younger than 18 years, not literate in Dutch, or with a prognosis of three months or less were excluded. Participating centers could also exclude patients who were already participating in a concurrent study. Inclusion took place between March, 2011 and March, 2013.

The study had a prospective, observational design. Participants received a questionnaire at 6 months (time window 5–7 months) and 15 months (time window 14–16 months) post-diagnosis. Medical data were retrieved from the medical records. Following Dutch guidelines and regulations regarding ethics review, the study was exempted from formal ethical review by the institutional review boards of the participating centers, based on its purely observational nature.

Construction of the questionnaire and pilot study

The questionnaire was constructed by three of the co-authors (DNNL, MAGS, JCJMdH); one junior and two senior Medical Psychology researchers. The assessed study variables and answer modalities were described in a study protocol, which was sent to a study steering group, and at least one involved health care provider of each participating hospital for evaluation. Nurse practitioners, oncologists, radiation oncologists, medical psychologists, and a breast cancer surgeon were represented. The resulting questionnaire was pilot tested for content, comprehension and ease of completion in a group of ten women, of whom five had had breast cancer. Based on their responses, a few minor textual revisions were made.

Procedure

Eligible patients were identified and informed about the study by their oncologist, nurse practitioner, or cancer nurse, and subsequently invited to participate. The investigator then approached interested patients. Participants could choose between a web-based questionnaire and a paper questionnaire sent by regular mail. Formal agreement to participation involved signing an informed consent form. If necessary, patients received e-mail or telephone reminders after two and four weeks.

Measures

Outcome measures

To assess dental care use, respondents were asked to indicate how often in the past three months they had contact with a dentist to prevent or treat dental problems (answer categories: 0, 1, 2, 3, 4, 5, >5). To assess dental care need, respondents were asked to indicate whether they found the number of contacts satisfactory (answer categories: needed fewer contacts, number of contacts was sufficient, needed more contacts). These questions were posed at both time points.

Sociodemographic and clinical characteristics and distress

Age at diagnosis (open ended question), nationality (response categories: Dutch and/or other), educational level (8 multiple choice response categories, including the option 'other'), living situation (5 multiple choice response categories: with partner/with partner and child(ren)/with child(ren)/alone/other), employment status (5 multiple choice response categories: paid work/homemaker/retired/no work or unpaid/(partly) work-disabled due to breast cancer), and having dental insurance (y/n) were assessed with the self-report questionnaire that was administered 6 month post-diagnosis.

Type of breast cancer (ductal carcinoma in situ and/or invasive breast cancer), cancer stage via pTNM-classification, and types of treatment received (y/n) were retrieved from patients' medical records.