Reasons for low uptake of a psychological intervention offered to cancer survivors with elevated depressive symptoms

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Abstract

Objective: In line with screening guidelines, cancer survivors were consecutively screened on depressive symptoms (as part of standard care), with those reporting elevated levels of symptoms offered psychological care as part of a trial. Because of the low uptake, no conclusions could be drawn about the interventions’ efficacy. Given the trial set-up (following screening guidelines and strict methodological quality criteria), we believe that this observational study reporting the flow of participation, reasons for and characteristics associated with nonparticipation, adds to the debate about the feasibility and efficiency of screening guidelines.

Methods: Two thousand six hundred eight medium- to long-term cancer survivors were consecutively screened on depressive symptoms using the Patient Health Questionnaire-9 (PHQ-9). Those with moderate depressive symptoms (PHQ-9 ≥ 10) were contacted and informed about the trial. Patient flow and reasons for nonparticipation were carefully monitored.

Results: One thousand thirty seven survivors (74.3%) returned the questionnaire, with 147 (7.6%) reporting moderate depressive symptoms. Of this group, 49 survivors (33.3%) were ineligible, including 26 survivors (17.7%) already receiving treatment and another 44 survivors (30.0%) reporting no need for treatment. Only 25 survivors (1.0%) participated in the trial.

Conclusion: Of the approached survivors for screening, only 1% was eligible and interested in receiving psychological care as part of our trial. Four reasons for nonparticipation were: nonresponse to screening, low levels of depressive symptoms, no need, or already receiving care. Our findings question whether to spend the limited resources in psycho-oncological care on following screening guidelines and the efficiency of using consecutive screening for trial recruitment in cancer survivors.
INTRODUCTION

Depressive symptoms are common in cancer patients, not only shortly after diagnosis or during active treatment but also in cancer survivors.1-2 As effective psychological interventions exist to treat these symptoms,3-6 clinical guidelines currently recommend to routinely screen cancer patients on distress throughout the illness and treatment trajectory in order to detect distress and refer patients accordingly to additional care.7-8 These recommendations still hold, even though so far no well-conducted randomized control trials (RCTs) have demonstrated that mental health outcomes improve via these screening programs.9

Evidence for the efficacy on interventions has mostly been confirmed in patients in the short-term phase and women with breast cancer, whereas less evidence is available for the efficacy of these interventions among cancer survivors.3-6,10-12 Therefore, the Dutch Cancer Foundation released a call in 2013 for more evidence regarding the efficacy of psychological interventions among (nonbreast) cancer survivors. Following strict high-quality standards,13 including consecutively screening on depressive symptoms, we set up a multicenter RCT examining the efficacy of cognitive behavioral therapy (CBT) and mindfulness-based cognitive therapy (MBCT) for treating depressive symptoms in cancer survivors. Because of the low trial participation, no conclusion could be drawn about the efficacy of the interventions. As a means to reflect on reasons why an RCT following high-quality methodological standards failed to work in clinical practice, this observational study examined the reasons for nonparticipation in the RCT and the demographic and medical characteristics of depressed survivors that did (not) participate. Cancer survivors in our trial were consecutively screened on depressive symptoms as a part of standard care, as recommended by the current clinical screening guidelines7,8 and regarded as a quality standard in setting up an RCT.14,15 Yet, the screening procedure was not efficient (ie, resulting in low uptake). Findings of our study may therefore add to the debate regarding the feasibility and efficiency of current screening guidelines for identifying patients in need for care. Our aim is twofold:1 to inform clinical practice about cancer survivors’ levels of depressive symptoms and care needs and the use of consecutive screening2; to inform researchers in setting up future psychological RCTs in cancer survivors, to carefully reflect and make considerations regarding the use of consecutive and convenience sampling as a means for patient recruitment.

1 | METHOD

2.1 | Study design

This observational study used data collected as part of a multicenter RCT comparing MBCT and CBT with treatment as usual (TAU). For the current study, only the screening data was used. Data were collected from February 2015 until May 2017.

2.2 | Participants

Eligibility criteria for being approached for screening were: a cancer diagnosis (except breast cancer), age between 18 to 75 years at the time of diagnosis, currently no active cancer, and completion of curative treatment 1 to 5 years ago. For trial participation, an additional eligibility criterion was the report of moderate levels of depressive symptoms (PHQ-9 ≥ 10). Exclusion criteria for trial participation were: not being able to read and write Dutch, having psychiatric comorbidity, receiving psychological treatment for depressive symptoms (currently or less than 2 months ago) and an unstable antidepressant regimen (ie, starting/changing less than 2 months ago).

2.3 | Screening procedure

Individuals were routinely screened for depressive symptoms at departments radiotherapy, surgery, oral and maxillofacial surgery, gynecology, hematology, endocrinology, medical oncology, and colorectal surgery. Individuals received a letter from their department inviting them to complete a mood questionnaire (PHQ-9) on paper or online and in case this score was elevated, they would be contacted. Individuals reporting elevated depressive symptoms (PHQ-9 ≥ 10) received feedback about their elevated levels and were informed that they would receive a telephone call to discuss the depressive symptoms and a possible need for psychological support. These telephonic interviews were executed by graduate clinical psychologists or research/student assistants who had received special training, in which they made a clinical assessment of the psychological problems. Subsequently, persons were selected on eligibility (using a standardized interview to check for exclusion criteria), interest in psychological support and willingness to participate. If this was the case, they received written information about the trial, a questionnaire, an informed consent form, and a prepaid return envelope. They were asked to return a completed informed consent and
questionnaire within 2 weeks. Individuals expressing interest in psychological support but who were ineligible or unwilling to participate were given advice to discuss their care needs with their medical specialist or general practitioner.

2.4 Variables

For screening on depressive symptoms, the Patient Health Questionnaire-9 (PHQ-9) was used, which is a self-report screening tool based on the nine depression criteria according to the Diagnostic and Statistical Manual of Mental Disorders. Each item can be scored from 0 (not at all) to 3 (nearly every day), resulting in total scores ranging from 0 to 27, with higher scores indicating more depressive symptoms.

2.5 Statistical analyses

SPSS 25.0 was used for executing statistical analyses. Demographic (ie, age and gender) and cancer-related characteristics (ie, years since diagnosis, years since treatment, cancer type, treatment type and recurrence) were calculated. Chi-square tests and t-tests compared groups (ie, respondents versus nonrespondents; depressed versus not depressed; in trial versus not in trial) on demographic and cancer-related variables.

3 RESULTS

Initially 2608 cancer survivors were invited to complete a screening questionnaire (Figure 1). In total 25 individuals agreed to participate in the RCT, which was 1.0% of the approached individuals.

Of the 2608 cancer survivors approached for routine screening, 1937 returned a valid questionnaire. Table 1 describes the demographic and cancer-related characteristics of the 1937 cancer survivors. Mean age was 63 years with 61% being male. Average time since diagnosis and time since treatment were both 3 years. Most common cancer type was gastro-intestinal cancer and only receiving surgery was the most common treatment. In total, 166 individuals (8.6%) reported a cancer recurrence.

Those 1937 persons who returned the questionnaire were compared with those who did not return it. Compared with those who

![Flowchart of participant recruitment and flow through the study. PHQ, patient health questionnaire; CBT, cognitive behavioral therapy; MBCT, mindfulness-based cognitive therapy; TAU, treatment as usual](image-url)
did not return the questionnaire, cancer survivors returning the ques-
tionnaire were significantly older (63.3 years ±10.3 versus 59.4 years
±13.0), more often male (61% versus 53%) and had more often a
cancer recurrence (8.6% versus 4.8%). No significant differences were
found in years since diagnosis or years since treatment. Concerning
cancer site, highest response rates were found among survivors with
bone and soft tissue (91.5%) and survivors with urological cancer
(88.4%) with lowest response rates among lung cancer survivors
(65.4%). A full overview regarding response rates and elevated depres-
sive symptoms (PHQ-9 ≥ 10) according to demographic and cancer-
related characteristics can be found in the Appendix.

In total, 147 persons reported moderate levels of depressive symp-
toms (PHQ ≥ 10) and these persons were compared with those 1790
persons not depressed. Those depressed were significantly younger
(63.7 ± 10.1 versus 59.3 ± 11.9) compared with those not depressed.
No significant differences between those survivors with or without
moderate levels of depressive symptoms were found for gender, year
since diagnosis, year since treatment, and cancer recurrence. Highest
levels of depressive symptoms were found among lung cancer survi-
vors (17.1%) and lowest levels of depressive symptoms among gastro-
intestinal cancer survivors (3.9%).

Table 2 describes a comparison between 122 individuals with ele-
vated levels of depressive symptoms not included in the trial versus
25 individuals with elevated levels of depressive symptoms who partic-
ipated in the trial. No significant differences were found between these
groups on age, gender, depressive symptoms, time since diagnosis, time
since treatment, or cancer recurrence.

3.1 Reasons for nonparticipation

Four major reasons for nonparticipation were identified. The first rea-
son was not responding to the screening questionnaire, with 671
persons (25.7% of 2608 cancer survivors) not returning a valid ques-
tionnaire. Secondly, low rates of depressive symptoms were observed,
with only 147 persons (ie, 7.6% of those completing screening) scoring
moderate levels of depressive symptoms. A third reason for nonpartic-
ipation involved low care needs, with 44 depressed persons (29.9% of
147) reporting no need or time for psychological care. A final reason
for not being able to participate was already receiving treatment,
reported by 26 depressed persons (17.7% of 147).

4 DISCUSSION

As part of an RCT, we screened a large group of cancer survivors on
depressive symptoms, with those reporting moderate or higher levels
depressive symptoms being contacted to discuss their need for care, and
inform them about the possibility to receive psychological care, as
part of an intervention study. We encountered a very low participation
rate. The current paper examined the reasons for not participating, as
we believe this will provide more insight into the feasibility of routinely
screening for depressive symptoms in cancer survivors as well as of the
use of consecutive screening for recruiting cancer survivors for a psy-
chological RCT. Of the 2608 survivors approached, only 7.6% reported
moderate levels of depressive symptoms, and of those, almost 50%
reported no psychological care needs or already received treatment.

<table>
<thead>
<tr>
<th>TABLE 1 Demographic and medical characteristics of 1937 cancer survivors</th>
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<td><strong>Demographic variables</strong></td>
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</tr>
<tr>
<td>Age (M, SD)</td>
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<tr>
<td>Gender, male (N, %)</td>
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<tr>
<td><strong>Cancer-related variables</strong></td>
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<tr>
<td>Years since diagnosis (M, SD)</td>
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<tr>
<td>≤ 2 y (N, %)</td>
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<tr>
<td>&gt; 2 y</td>
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<tr>
<td>Years since end treatment (M, SD)</td>
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<td>1 y (N, %)</td>
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<td>2 y</td>
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<td>3 y</td>
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<td>4 y</td>
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<tr>
<td>5 y</td>
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<td><strong>Cancer type (N, %)</strong></td>
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<tr>
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<tr>
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<tr>
<td>Surgery + chemotherapy (N, %)</td>
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<td>Surgery + RT + chemotherapy (N, %)</td>
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<tr>
<td>No (N, %)</td>
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<tr>
<td>Yes (N, %)</td>
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</tbody>
</table>

Abbreviation: RT, radiation therapy. Numbers may slightly differ because of
missing variables.
sufficient screening instrument. Regarding cancer type, two reviews con-
migrate differences in cancer type, time since diagnosis, and the spe-
heterogeneity in prevalence rates can be observed, related, among
ence depressive symptoms in the years following curative treatment.

gests that most cancer survivors are able to adapt and do not experi-
Appendix).
would be contacted in case an elevated score was reported (See
show up for medical check
responding to a screening questionnaire are also more likely to not
screening may be the information given in the accompanied letter, using
levels of depressive symptoms,17,18 which could explain why rates in our study were lower
related, among
Another factor that may explain variation in rates of depressive
Concerning time since diagnosis, two meta-analyses among cancer
patients found depressive symptoms to decrease over time, varying
from 27% (in the acute phase) to 21% (within the first year post-
treatment), to 15% (at least 1 y post-treatment), with similar levels as
healthy controls after 2 years following diagnosis.1,27 This could also
explain lower rates of depressive symptoms in our study, as cancer sur-
vivors were diagnosed and completed medical treatment on average
more than 3 years ago. When interpreting the above-mentioned find-
ings, it should be taken into account that both meta-analyses (like
meta-analyses in general) have included a variety of screening instru-
ments, which hampers drawing firm conclusions regarding rates of
depressive symptoms. Generally, the efficacy of screening greatly
depends on the timing of the screening (ie, phase of the cancer trajec-
tory). In our study, we targeted medium- to long-term cancer survivors
for screening, but if recently diagnosed cancer patients or those in
active treatment would have been approached, efficacy of screening
may have been higher (because of higher rates of depressive symptoms
and greater uptake).

Another factor that may explain variation in rates of depressive
symptoms is the measurement of symptoms, which includes the use
of a clinical diagnostic interview to classify major depressive disorder
versus self-report screening questionnaires.1,28 Although screening
questionnaires are often used because of their convenience (ie, inex-
pensive and quick to administer to large groups), it should be noted that
screening questionnaires overestimate the prevalence of depression.28
In addition, variation in rates of depressive symptoms may not only be
explained by using different screening instruments but also by using

| TABLE 2 | Characteristics of individuals participating in the RCT compared with those with elevated depressive symptoms that did not participate in the trial |
|-----------------|-----------------|-----------------|-----------------|-----------------|
|                 | Depressed, Not In Trial | Depressed, In Trial | Total            | P value         |
| N (%)           | 122 (83.0%)       | 25 (17.0%)       | 147 (100%)       | 0.149           |
| Age (M, SD)     | 59.93 ± 11.86     | 56.16 ± 11.71    | 59.29 ± 11.88    | 0.921           |
| Gender (% male) | 54.90            | 56.00            | 55.10            | 0.552           |
| Depressive symptoms (M, SD) | 14.42 ± 3.83 | 13.92 ± 3.67     | 14.33 ± 3.80     | 0.552           |
| Time since diagnosis | 3.38 ± 1.22     | 3.75 ± 1.25      | 3.45 ± 1.23      | 0.179           |
| Time since treatment | 3.03 ± 1.16     | 3.09 ± 1.07      | 3.04 ± 1.14      | 0.829           |
| Recurrence (% yes) | 10.70           | 20.00            | 12.20            | 0.194           |

A key finding is that most cancer survivors reported no or only mild
levels of depressive symptoms (taking into account that we excluded survivors of breast cancer who are known to be a group at risk for depressive symptoms17,18). Another main finding is that many survivors reporting elevated depressive symptoms were not interested in receiv-
ing psychological care. Our findings question whether consecutive
screening on depressive symptoms as part of standard clinical practice
(as recommended by clinical guidelines as well as research recommenda-
tions for recruiting trial participants)7,8,14 is feasible among cancer
survivors and an efficient way to detect those with a need for care
and referral. Four major reasons for nonparticipation were identified2:
one in four cancer survivors did not return the screening question-
naire,2 rates of depressive symptoms were lower than expected accord-
ing to literature,3 one in three depressed cancer survivors did not wish
to receive psychological care, and4 a group of depressed cancer survi-
vors already found psychological help themselves.

One in four cancer survivors could not be screened on depressive
symptoms, a response rate of 75% that can be considered high when
using a survey19 and which is also somewhat higher than response rates
in other screening studies (varying from 63% to 68%) among cancer
patients using surveys.20-22 Research has shown that patients not
responding to a screening questionnaire are also more likely to not
show up for medical check-ups, suggesting that these patients may in
general be difficult to reach.24 An explanation for the nonresponse to
screening may be the information given in the accompanied letter, using
words like “depressive symptoms” and informing patients that they
would be contacted in case an elevated score was reported (See
Appendix).

The screening identified only a small group of cancer survivors
(7.6%) reporting moderate levels of depressive symptoms. This sug-
gests that most cancer survivors are able to adapt and do not experi-
ence depressive symptoms in the years following curative treatment. When comparing rates of depressive symptoms in cancer patients, heterogeneity in prevalence rates can be observed, related, among
others, to differences in cancer type, time since diagnosis, and the spe-
cific screening instrument.3 Regarding cancer type, two reviews con-
cluded that women with breast cancer are at risk for depressive
symptoms,17,18 which could explain why rates in our study were lower
than expected, as women with breast cancer were not approached. In
fact, most cancer survivors in our study were diagnosed with gastro-
intestinal or urological cancer, which have been associated with lower
levels of depressive symptoms.17,20 Related to this, in contrast to most
previous research focusing on female survivors,1,17,18,25 more than
half (61%) of our sample were men that received only surgery. It has
been shown that male cancer survivors have lower levels of depres-
sive symptoms compared with women,21 and it can be argued that
because of a good prognosis and advances in targeted cancer treat-
ment, the impact of cancer treatment may have been reduced
throughout the years, which could also have resulted in relatively
low levels of depressive symptoms.26 Additionally, psychosocial sup-
port throughout the cancer trajectory has improved and cancer survi-
vors in our study have possibly received intensive psychosocial
support during cancer diagnosis and active treatment.

Concerning time since diagnosis, two meta-analyses among cancer
patients found depressive symptoms to decrease over time, varying
from 27% (in the acute phase) to 21% (within the first year post-
treatment), to 15% (at least 1 y post-treatment), with similar levels as
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pensive and quick to administer to large groups), it should be noted that
screening questionnaires overestimate the prevalence of depression.28
In addition, variation in rates of depressive symptoms may not only be
explained by using different screening instruments but also by using
and similar percentages were reported by another Dutch trial among
individuals who visited psychological help themselves. In our study, this was 17.7%,
which is lower than the 7.0% to 9.8% reported in the same Dutch trial.36-38 A possible explanation for the relatively high
percentage of individuals already receiving treatment, as well as the fact that relatively few depressed cancer patients to be already in treatment, varying
between countries in terms of insurance and coverage of psychosocial aftercare for cancer survivors. For instance, in the Netherlands, this is
mostly covered by the insurance, making psychological care accessible for anyone irrespective of trial participation. This could explain why
depressed cancer survivors already found professional psychological care in our trial. In contrast, in the United States, where psychosocial care is
covered by insurance for only a minority, fewer than 10% of the approached individuals participated in the RCT. Several other trials on psychological outcomes in oncology
also found low inclusion rates between 2.5% and 3.5%.29,36 Above-
mentioned trials and our trial used consecutive sampling for patient
recruitment, which encompasses systematically screening every indi-
vidual who meets the selection criteria.14 Another frequently used sam-
pling method involves convenience sampling in which individuals are recruited by means of (self)referral, which has advantages in terms of
cost, time, and logistics, but may produce an unrepresentative sample.14
For this reason, consecutive sampling is generally seen as the golden
standard and is favorable to convenience sampling, because the latter is
more prone to selection bias.14 However, in practice, this may not
completely be the case, because a recent trial found that consecutive sampling still resulted in considerable selection bias in terms of enrolling predominantly young and highly educated patients.29 Moreover, con-
secutive sampling is not mandated in the CONSORT guidelines (recom-
mandations for high-quality reporting of RCTs in order to maintain high internal validity), implying that consecutive sampling is not a preferred method to convenience sampling for trial recruitment. Furthermore, convenience sampling may result in general in higher motivation among participants because of the self-referral method.40 Given these consid-
erations and our finding that most cancer survivors were not depressed and those that were did not want or already found help, it can be
debated whether the methodological advantages of consecutive sam-
pling outweigh its time and resource-consuming procedures.40 We do
not presume either consecutive or convenience sampling to be a su-
perior method, but instead recommend that in the future the trial’s aims and objectives should be decisive for choosing the appropriate sampling method.

4.1 Study limitations

Findings of our study need to be set in the context of several limita-
tions. The first is that no information is available for nonresponders regarding depression, so our findings can only be generalized to those
returning the questionnaire. Possibly among nonresponders, there
were depressed individuals that would have influenced rates of depressive symptoms. Another limitation was the self-report measure of depressive symptoms, which may have resulted in not depressed individuals (ie, false-positives) being contacted or that false-negatives were not approached for help.

4.2 Clinical implications

Our findings suggest that screening cancer survivors consecutively on
depressive symptoms as part of standard care was not effective for
recruitment in a psychological trial. Of the initially approached cancer
survivors, 99% was ineligible, unwilling to participate, or could not be
reached. Major reasons for nonparticipation included nonresponse to
screening, low rates of depressive symptoms, low care needs, or
already receiving psychological treatment. Overall, given the minimal
gain from routine screening as suggested by our findings as well as previous research,9 it can be questioned whether the required resources would seem better spent on providing inexpensive or free
resources to those who need them or on providing psychological edu-
cation to patients. These findings should be considered when
designing future psychological trials in cancer survivors or when screening (for patient recruitment) is considered.

ACKNOWLEDGEMENT
This study was supported by the Dutch Cancer Society (RUG 2013-6190).

CONFLICT OF INTEREST
The authors have no potential conflicts of interest to report.

ETHICS STATEMENT
The study was approved by the Medical Ethical Committee of the University Medical Center Groningen (METc 2014/214).

REFERENCES
APPENDIX

A.1. Response rates and elevated depressive symptoms (PHQ-9 ≥ 10) according to demographic and cancer-related characteristics

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Response Rate, %</th>
<th>Elevated Score, %</th>
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<td>Age⁴</td>
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<td>Gender</td>
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<tr>
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<td>Female</td>
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<td>Cancer type</td>
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<tr>
<td>Lung</td>
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Characteristic Response Rate, % Elevated Score\textsuperscript{c}, %

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<td>Other</td>
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<td>Less than 2.5 y</td>
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<td>86.7</td>
<td>7.5</td>
</tr>
<tr>
<td>3 y</td>
<td>83.6</td>
<td>9.4</td>
</tr>
<tr>
<td>4 y</td>
<td>81.7</td>
<td>7.6</td>
</tr>
<tr>
<td>5 y</td>
<td>86.6</td>
<td>6.1</td>
</tr>
<tr>
<td>Cancer recurrence</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>84.9</td>
<td>7.3</td>
</tr>
<tr>
<td>Yes</td>
<td>91.2</td>
<td>10.8</td>
</tr>
</tbody>
</table>

\textsuperscript{a}Categories were based on quartiles.
\textsuperscript{b}RT = Radiotherapy Treatment.
\textsuperscript{c}Determined by PHQ-9

A.2. Screening letter for patients that was attached to the screening questionnaire

Dear [MISS/SIR],

You are in follow-up at our department because you have had cancer in the past. Whenever you visit our hospital for a medical check-up, our main aim is to find out how you are doing in terms of medical health. Research, however, has shown that a diagnosis of cancer and treatment can cause feelings of tension, sadness and insecurity and that these emotional complaints can persist for a long while after cancer treatment has finished.

Questionnaire

Our department considers it important to also give attention to the emotional consequences of having had cancer. For this reason, a short questionnaire has been developed with questions regarding your current mood. You can fill in this questionnaire within five minutes at home via the internet. If you do not have internet access or if you encounter other problems when filling in the questionnaire, you can also make use of the attached paper questionnaire and send this back using the prepaid return envelope (a stamp is not required).

To fill in the online questionnaire at home, you can visit: [WEBSITE]

In the questionnaire, you will be asked about your security code. Your personal security code is: [SECURITY CODE]

Results

If the results from the questionnaire indicate that you have, for instance, depressed or tensed feelings, you will be contacted. The result of the questionnaire will also be in your medical records, making the information also accessible for your medical practitioner. Therefore, you can, if you want to, discuss the results of the questionnaire with your medical practitioner. You can call us as well if you have any questions. [PHONE NUMBER]

We would like to thank you in advance for your cooperation.

Kind regards,

[NAME]