Predictors of sexual dissatisfaction in partners of colorectal cancer patients

Predictors of sexual dissatisfaction in partners

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Predictors of sexual dissatisfaction in partners

Abstract

Background: Research focusing on sexual satisfaction in partners of colorectal cancer patients is rather scarce. Therefore, the aim of this prospective study is to examine the role of gender, age, marital satisfaction, avoidance of sexual intercourse, non-communication with the patient, non-sensuality (i.e., a lack of caressing in the sexual relationship), length of relationship, and sexual dysfunction of the partner in relation to sexual dissatisfaction in spouses of colorectal cancer patients.

Methods: All participants (N = 39) completed questions about sociodemographic factors, the Golombok-Rust Inventory of Sexual Satisfaction, and the Maudsley Marital Questionnaire before surgery and six months after surgery.

Results: The univariate linear regression analyses revealed that non-sensuality (β = 0.50; p = 0.001) and being a male (β = -0.32; p = 0.041) significantly contributed to the prediction of sexual dissatisfaction. The multiple linear regression showed non-sensuality (β = 0.50; p < 0.001) and being male (β = -0.41; p = 0.003) were significant predictors of sexual dissatisfaction. These predictors explained 41.1% (R square) of the total variance in sexual dissatisfaction.

Conclusion: This study found two predictors of sexual (dis)satisfaction in partners of colorectal cancer patients. Professionals should pay attention to sexual problems of partners as well, because patients and partners are both part of a system. Therefore, problems of partners could have an impact on the wellbeing of patients.

Key words: colorectal cancer, sexual satisfaction, partners, prospective study, predictors
Predictors of sexual dissatisfaction in partners

Introduction

Colorectal cancer is one of the most common forms of cancer after lung and breast cancer.\textsuperscript{1} Every year worldwide, more than one million persons are diagnosed with this disease.\textsuperscript{1} When colorectal cancer patients receive surgery, it is aimed at total removal of the tumour with sufficient margins and lymphadenectomy.\textsuperscript{2} For rectal cancer, more surgical options are available, but total mesorectal excision (TME) with adequate circumferential and distal margins and inferior mesenteric lymphadenectomy appears to be the best.\textsuperscript{2} Colorectal patients may receive a temporary post-operative colostomy.\textsuperscript{3} For rectal cancer patients, a permanent colostomy is inevitable, except for patients who had sphincter-saving surgery.\textsuperscript{3}

Surgery may cause physical impairments in patients, which may affect the quality of life in both patients and their partners. A common problem after surgery is sexual dysfunction.\textsuperscript{4,5} The percentage of patients who experienced sexual dysfunction after surgery varies from 5\% to 88\%.\textsuperscript{6} This variation in percentages is partly caused by differences in definition of sexual dysfunction, different populations, and measures of the studies. The impact of colorectal cancer on patients’ sex life can be substantial due to significant body changes.\textsuperscript{4,5,6} Males can suffer from nerve damage, leading to dysfunctions in erection and ejaculation.\textsuperscript{7} Females commonly suffer from decreased lubrication, vaginal atrophy, and pain during sexual intercourse.\textsuperscript{8}

Sexual dysfunction predicts low levels of general quality of life.\textsuperscript{9} The World Health Organization’s\textsuperscript{10} definition of sexual health is the absence of sexual dysfunction and negative emotions. One might infer from this definition that to improve sexual health, it is necessary to treat sexual dysfunction. However, in cases of colorectal cancer there often is no cure for sexual dysfunction. Still, there are many patients who adjust well to their dysfunction and are satisfied with their sexual lives.\textsuperscript{11} It can be concluded that there are more factors which influence sexual
Predictors of sexual dissatisfaction in partners

satisfaction besides sexual (dys)function. One study examined patients’ conceptualisation of sexual satisfaction.12 The patients responded that sexual satisfaction is about mutual pleasure and positive sexual experiences and not about absence of conflict or sexual dysfunction. However, another quantitative study claimed that sexual functioning does have an effect on sexual satisfaction.13 Further studies should demonstrate if this is a clinically relevant effect.

There is limited research available of the variables which have an influence on sexual (dis)satisfaction, especially in partners. The research available on this topic has focused primarily on patients and not on partners. Marital satisfaction has been found to be positively associated with sexual satisfaction, love, and commitment.14 Persons who showed the highest sexual satisfaction also reported high scores on relationship satisfaction. This association is stronger in men than in women.14

There is also little information on how the spouses cope with all the changes in their lives caused by the patients’ illness. One study examined the sexual life of spouses of colorectal cancer patients with a permanent colostomy.15 All spouses were sexually active before surgery. One year after surgery, 20 out of 26 male and 10 out of 30 female spouses were sexually inactive. The patients’ dependence on a stoma had an effect on both the sexual and social life of spouses. That is, the frequency of sexual intercourse decreased in all spouses due to the stoma and about 23% of the patients expected that their spouse would manage the stoma care.15 Higher levels of psychosocial coping resources and psychological adaptation of spouses showed a significant negative correlation with physical complains (r = -0.29, p<0.001) and changes in their daily routine (r = -0.35, p<0.001).16 Couples with an ill partner experience marital difficulties, like affection problems, problems with communication, and problems with the sexual
Predictors of sexual dissatisfaction in partners

relationship.\textsuperscript{17} Twenty-one percent of the couples had a problem with showing affection and 13% with their sexual relationship.

Findings regarding the role of psychosocial factors on sexual dysfunction are inconsistent. One study found that psychosocial factors (quality of life, body image, sexual pleasure, depressive symptoms, social support and dyadic adjustment) appear to have little effect on sexual dysfunction, when controlled for the kind of medical procedures and the age of the patient, while another study in breast cancer patients showed that personality (more specific agreeableness) and psychological factors predict patients’ sexual functioning and not clinical factors, like type of surgery.\textsuperscript{18,19} From these studies it cannot be concluded which type factors have the greatest influence on sexuality. Therefore, it is interesting to further investigate which factors do have an influence on sexual satisfaction. If there are many other factors which are associated with sexual satisfaction besides sexual dysfunction, new programs can be developed to improve quality of sexual and general life in colorectal cancer patients and their partners. This is of great importance because research shows that colorectal cancer patients have a lower score on sexual satisfaction than a healthy control group.\textsuperscript{20} It would be interesting to examine whether this has also an effect on the sexual satisfaction of their spouses.

The aim of this prospective study is to examine the role of gender, age, marital satisfaction, avoidance of sexual intercourse, non-communication with the patient, non-sensuality (i.e., a lack of caressing in the sexual relationship)\textsuperscript{21}, length of the relationship, and sexual dysfunction of the partner in relation to sexual dissatisfaction in spouses of colorectal cancer patients. The expectation is that avoidance, non-communication, and non-sensuality of the partner are positively related to sexual dissatisfaction. Marital satisfaction and length of the relationship are
Predictors of sexual dissatisfaction in partners

expected to have a negative influence on sexual dissatisfaction. Having (a) sexual dysfunction(s) is expected to be a predictor of sexual dissatisfaction.
Predictors of sexual dissatisfaction in partners

Methods

Participants

The data collection took place in six hospitals in the South of the Netherlands. Participants were asked to complete a number of questionnaires before surgery and six months after surgery. The following exclusion criteria were applied: partners younger than 18 years and older than 75 years, metastases at baseline, insufficient mastering of the Dutch language, dementia, and a history of psychiatric illness. During a preoperative appointment, patients and partners were asked by their treating physician if they could be approached by a member of the research staff who informed them about the study. Afterwards, the participants were contacted by a member of the research staff and learned about the study details. If partners agreed to participate in the study, they were asked to complete several standardized questionnaires at home. Participants returned the questionnaires in a sealed envelope. Partners who agreed to participate but did not send the questionnaires back within two weeks received a phone call or a reminder letter. Six months after surgery, participants completed again several standardized questionnaires. The institutional review board approved the study. All participants signed an informed consent.

Measures

Before surgical treatment of the patients, partners completed questions about sociodemographic factors like, age, gender, marital status, length of relationship, number of children, paid work, and educational level.

Marital satisfaction and sexual satisfaction were assessed with the Maudsley Marital Questionnaire (MMQ). The MMQ consists of 20 items, which are divided into three domains:
Predictors of sexual dissatisfaction in partners

relationship in general, sexual relationship, and life in general. The items were answered on a nine-point Likert scale. Scores on the marital satisfaction subscale ranged from 0 to 80 and on the sexual satisfaction subscale from 0 to 40. The items in each domain were summed up. For each domain a higher score indicates lower satisfaction. The psychometric features of the Dutch MMQ were satisfactory.22

Partners completed the Dutch Golombok- Rust Inventory of Sexual Satisfaction (GRISS).23 The GRISS has a version for men and one for women and consists of 28 items. This questionnaire is divided into four domains of quality of sexual life: Avoidance, Satisfaction, Non-communication, and Non-sensuality, and three domains of sexual functioning: for women Vaginismus and Anorgasmia, for men Premature ejaculation and Impotence, and for both sexes Infrequency of intercourse. All subscales consisted a score range from 4 to 20. The items were answered on a five-point Likert scale. Finally, all scores were summed up to provide a total score. High scores indicate more problems with sexual functioning and quality of sexual life. The psychometric properties of the Dutch GRISS were satisfactory.23 The present study used the following scales in the analysis: avoidance, non-communication, non-sensuality, and for sexual functioning an overall scale was created.

Creation of the variable sexual dysfunction

To construct the sexual dysfunction scale the subscale vaginismus, anorgasmia, premature ejaculation, and impotence were selected. Participants were allotted a label of 1 when they scored 4 – 5 or 1 - 2 (depending on the phrasing of the item), indicating a problem on that item. A label of 2 was given when their answer did not indicate a problem. The labels for each subscale were combined to provide a total score for that problem area. For the subscales
Predictors of sexual dissatisfaction in partners

consisting of 4 items (vaginismus, anorgasmia, and premature ejaculation) a total scores of 5 or less were an indication for dysfunction. For the subscale impotence which consists of 3 items a total score of 4 or less indicated dysfunction. Participants were designated as having sexual dysfunction when there was an indication on at least one of the subscales that they are experiencing sexual problems.

Statistical Analysis

Frequencies were calculated for the demographic variables (i.e., gender and sexual dysfunction). Gender is a dichotomous variable. Men were given a label of 0 and women a label of 1. Descriptive statistics were calculated for continuous variables (i.e., age, marital satisfaction, avoidance, non-communication, non-sensuality, and length of relationship) at baseline. For each variable an univariate linear regression analyses was executed to minimize the number of variables in the final multiple linear regression analysis. Only significant predictors of sexual dissatisfaction at six months after surgery were entered in the final multiple linear regression analyses. The Enter model was used, in which all variables were entered at the same time without making decisions in which order the variables were put in. A p-value of 0.05 was used as cut off score for significance. In order to check for multicollinearity, the variance inflation factors (VIF’s) were inspected. A VIF score of 6 was indicative for multicollinearity. All analyses were performed with the Statistical Package for Social Sciences (SPSS version 17.0).
Predictors of sexual dissatisfaction in partners

Results

Study characteristics

In total, 180 partners were suitable for this study. About 50% of the participants were older than 62 years (SD = 9.92). The majority of the partners were women (N = 129; 71.7%). About 22% of the partners (N = 39) experienced sexual dysfunction. The large majority of the partners had been together for an extended period of time. Nineteen (13%) partners had been together between 1 and 20 years, 39 (37%) between 20 and 35 years, and 89 (60%) between 35 and 54 years. For 33 couples there was no record on the duration of their relationship. At six months after surgery, there were complete datasets available for 39 (21.7%) partners.

* Insert Table 1 about here *

Predictors of sexual (dis)satisfaction

The univariate linear regression analyses revealed that age (β = 0.15; p = 0.338), sexual dysfunction (yes/no) (β = -0.25; p = 0.115), length of relationship (β = 0.08; p = 0.646), non-communication (β = 0.26; p = 0.11), avoidance (β = 0.10; p = 0.561), and marital satisfaction (β = 0.15; p = 0.381) did not significantly contribute to the prediction of sexual dissatisfaction. Therefore, these variables were not entered in the final regression analyses. Non-sensuality (β = 0.50; p = 0.001), and being a male (β = -0.32; p = 0.041) predicted sexual dissatisfaction and were entered in the final analyses.

* Insert Table 2 about here *
Predictors of sexual dissatisfaction in partners

The multiple regression showed that high scores on non-sensuality ($\beta = 0.50; p < 0.001$) and being male ($\beta = -0.41; p = 0.003$) were significant predictors of sexual dissatisfaction. The VIF scores were below 6, multicollinearity was not present. The predictors explained 41.1% ($R^2$) of the total variance in sexual dissatisfaction.

*Insert Table 3 about here*
Predictors of sexual dissatisfaction in partners

Discussion

In the literature, there is only limited information on sexual (dis)satisfaction. Therefore, the objective of this prospective study was to examine the role of gender, age, marital satisfaction, avoidance, non-communication, non-sensuality, length of the relationship, and sexual dysfunction of the partner in relation to sexual dissatisfaction in spouses of colorectal cancer patients. This study points out that being a male and having high scores on non-sensuality (i.e., a lack of caressing in the sexual relationship)\textsuperscript{21} were significant predictors of sexual dissatisfaction. A previous study reported that men were less likely than women to be satisfied with their level of sexual activity, while another study found that general sexual satisfaction was the same for both sexes.\textsuperscript{25,26} This inconsistency may be explained by the fact that the current study and the study on sexual activity researched a group of elderly persons, while the latter study researched persons between 18 and 54 years old. The hypothesis could be that men are traditionally more focused on physical factors (i.e., attractiveness, frequency) and women more on emotional factors. Due to emancipation younger women may have changed their attitudes towards sexuality and this could explain the results of the study with the younger participants.

One study showed that sexual satisfaction is not about the absence of sexual dysfunction, but also depends on other factors, like mutual pleasure and positive sexual experiences.\textsuperscript{12} Another study showed that spouses who perceived their partners’ communication style as more positive, reported higher scores on marital satisfaction; this effect was partly moderated by higher scores on sexual satisfaction and emotional intimacy.\textsuperscript{27} My study showed that length of relationship and age were not significantly related to sexual dissatisfaction. This could be explained by the fact that the large majority of the partners had been together for an extended period of time and most of them were about the same age, so there was little variation
Predictors of sexual dissatisfaction in partners

This study provides new insights in factors that influence sexual satisfaction of partners of colorectal cancer patients and illustrates the long term effects. Few studies on this topic have been conducted. This study has a number of strengths. It is a prospective study. Data were assessed with standardized questionnaires which had satisfactory psychometric properties. This is a multicenter study: the data in this study were derived from different hospitals in the south of the Netherlands. Therefore, it is unlikely that there is a coincidental factor in one hospital which affects the results.

The current study has some limitations. Depression is not included in the analyses, because this study has a small sample size and choices had to be made about which predictors to include in the analyses. Data about sexual functioning prior to diagnosis were not included in the analysis. It is plausible that couples who experienced problems with sexuality after diagnosis, already had problems prior to diagnosis. Furthermore, the majority of participants did not complete the questionnaires. Information about which partners declined participation is unknown, because there were no data available about the response rate of the partners. Two important reasons for declining participation were the intimate nature of the questions of the GRISS and experienced stress. It is plausible that participants who experienced impairment were the persons who declined participation. This may lead to underestimation of the problems. In the current study, only 21.7% of the partners completed the GRISS six months after surgery. Another limitation is that there is no consensus on which is the best cut off score for the GRISS questionnaire that differentiates persons with and without sexual dysfunction. If there was a clear cut off score this study would have been more valid.

It is notable that all the nonsexual dysfunction subscales of the GRISS in the univariate
Predictors of sexual dissatisfaction in partners

analyses had a significant effect. One study showed that the correlations between the subscales, especially the nonsexual dysfunction subscales, are rather high.\textsuperscript{22} This could indicate a shortcoming of the GRISS questionnaire, or this could indicate that the variables have high correlations in a particular population. In this study, multicollinearity was not present. Further research is needed to obtain more valid results through the availability of good cut off scores. A prospective research with data prior to diagnosis would greatly enhance knowledge of the sexual situation before diagnosis, but is very difficult to conduct. Researchers should take into account that only patients with a partner are able to complete the GRISS questionnaire. This means that conclusions based on the GRISS are conclusions about a subpopulation (patients with a partner) and not about the total population.

Due to the illness and treatment, couples can experience problems in their relationship, such as difficulties communicating about sex and avoidance of sexual activity.\textsuperscript{28,29} Physicians should educate their patients better about the possibility of negative effects of treatment. At the moment, this is rather uncommon: 9\% of women and 39\% of men report that they remembered discussing sexual effects with their physician.\textsuperscript{8} When patients and their partners get information about the possible negative effects of the treatment on their sexual lives, they are better prepared and can take precautions in order to keep their sexual pleasure and thereby improve quality of life.

In conclusion, the findings from this study indicate that being a male and non-sensuality have an impact on partners’ sexual dissatisfaction. However, future studies could provide additional information on partners’ sexual (dis)satisfaction of colorectal cancer patients. Professionals should pay attention to sexual problems of partners as well, because patients and
Predictors of sexual dissatisfaction in partners

partners are both part of a system. Therefore, problems of partners could have an impact on the wellbeing of patients.
Predictors of sexual dissatisfaction in partners

References


Predictors of sexual dissatisfaction in partners


Predictors of sexual dissatisfaction in partners


Predictors of sexual dissatisfaction in partners


Predictors of sexual dissatisfaction in partners

Table 1

*Demographic characteristics and psychological characteristics assessed at baseline*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (mean ± SD)</td>
<td>60.9 ± 9.9</td>
</tr>
<tr>
<td>Gender (men/women; n (%))</td>
<td>51 (28.3)/129(71.7)</td>
</tr>
<tr>
<td>Sexual dysfunction (yes/no; n (%))</td>
<td>39 (21.7)/141 (78.3)</td>
</tr>
<tr>
<td>Non communication (mean ± SD)</td>
<td>5.6 ± 2.1</td>
</tr>
<tr>
<td>Avoidance (mean ± SD)</td>
<td>5.6 ± 2.4</td>
</tr>
<tr>
<td>Non sensuality (mean ± SD)</td>
<td>6.7 ± 2.9</td>
</tr>
<tr>
<td>Marital satisfaction (mean ± SD)</td>
<td>15.5 ± 9.4</td>
</tr>
<tr>
<td>Length of relationship (mean ± SD)</td>
<td>35.4 ± 12.1</td>
</tr>
</tbody>
</table>

Abbreviations: *SD = standard deviation*
Predictors of sexual dissatisfaction in partners

Table 2

*Beta weights and 95% Confidence Intervals for univariate linear regressions on sexual dissatisfaction*

<table>
<thead>
<tr>
<th>Predictors</th>
<th>Beta</th>
<th>P-value</th>
<th>95% Confidence Interval for Beta</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>0.15</td>
<td>0.34</td>
<td>-0.07 – 0.20</td>
</tr>
<tr>
<td>Gender</td>
<td>-0.32</td>
<td>0.04</td>
<td>-5.34 – -0.12</td>
</tr>
<tr>
<td>Sexual dysfunction</td>
<td>-0.25</td>
<td>0.12</td>
<td>-4.64 – 0.53</td>
</tr>
<tr>
<td>Non communication</td>
<td>0.26</td>
<td>0.11</td>
<td>-0.13 – 1.19</td>
</tr>
<tr>
<td>Avoidance</td>
<td>0.10</td>
<td>0.59</td>
<td>-0.54 – 0.98</td>
</tr>
<tr>
<td>Non sensuality</td>
<td>0.50</td>
<td>&lt;0.01</td>
<td>0.30 – 1.12</td>
</tr>
<tr>
<td>Marital satisfaction</td>
<td>0.15</td>
<td>0.38</td>
<td>-0.01 – 0.23</td>
</tr>
<tr>
<td>Length of relationship</td>
<td>0.08</td>
<td>0.65</td>
<td>-0.11 – 0.17</td>
</tr>
</tbody>
</table>
Predictors of sexual dissatisfaction in partners

Table 3

*Beta weights, 95% Confidence Intervals, and VIF scores for multiple linear regression on sexual dissatisfaction*

<table>
<thead>
<tr>
<th>Predictors</th>
<th>Beta</th>
<th>P-value</th>
<th>95% Confidence Interval for Beta</th>
<th>VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-sensuality</td>
<td>0.49</td>
<td>&lt;0.001</td>
<td>0.33 – 1.07</td>
<td>1.00</td>
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<tr>
<td>Gender</td>
<td>-0.41</td>
<td>0.003</td>
<td>-5.66 – -1.24</td>
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<tr>
<td>Multiple R Square</td>
<td>0.41</td>
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<tr>
<td>F-value</td>
<td>12.55</td>
<td>&lt;0.001</td>
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*Abbreviation: VIF = Variance Inflation Factor*