

**Abstract:**

**Background:** There is little research regarding how everyday life is affected by colon cancer treatment.

Few studies exist which exclusively examine colon cancer Duke C patients. Most studies include other type of bowel cancer and different stages.

**Objective:** To explore and describe how colon cancer survivors experience everyday life in general and sexuality in particular after treatment of colon cancer Duke C

**Method:** The study is exploratory and descriptive and uses semi-structured interviews to collect data. Nine participants were interviewed regarding their everyday lives up until two years after concluded treatment. The analysis was done using Graneheim and Lundman's method of content-analysis.

**Results:** Bodily changes are a consequence of colon cancer. Exhaustion, colon problems and visible bodily changes are some of the challenges that survivors are faced with. Socializing with friends was different and work had to be facilitated. Social networks proved to be a good support and spouses were considered to be the most important source of social support. Sexual challenges were experienced by men and women alike

**Conclusion:** Participants experience changes in day to day life after cancer treatment. Social networks and the participants' own coping strategies are key to shaping everyday life after treatment.

**Implication for Practice:** It is crucial that healthcare professionals have a holistic view of patients. Both partners and physical activity were identified as an integral part of coping. Seniors are often less active and some have lost their spouses, it is therefore especially important to examine this demographic. A survey before and after treatment can help optimize rehabilitation.

Colorectal cancer is the third most common cancer in the world. The survival rate for colorectal cancer has increased by 50% since the 1970s<sup>1</sup>. Data from the Cancer Research UK registry shows an increase in the number of cases of colon and rectal cancer since the late 1970s, and in 2012, 1.36 million new cases of colorectal cancer were diagnosed, with incidence rates varying across the globe.<sup>1</sup> The number of cases worldwide is predicted to reach 1.36 million for men and 1.08 million for women by 2035.<sup>2</sup> The increase will primarily be caused by the aging of the population and, because of the number of occurrences, will increase drastically after the age of 60.<sup>3</sup> The increase in the number of occurrences combined with improved treatment strategies has resulted in a significant increase in the number of individuals living with side effects and late effects years after having completed treatment.<sup>4</sup> Norway, where this study was conducted, is one of the most affected countries with 4000 registered cases yearly. By 2020, that figure is expected to rise to 4500.<sup>5</sup>

Colorectal cancer is a generic term for colon and rectal cancer. Colon and rectal cancer and their various stages are subject to different treatment regimes. Rectal cancer is located further down in the pelvis and is treated with either radiation or surgery.<sup>6</sup> These treatments can result in complications and side effects since the intervention takes place deep in the pelvis area. In rare cases, chemotherapy is also administered.<sup>7</sup> However, colon cancer is located further up and is treated surgically and sometimes with chemotherapy depending on the stage. The Dukes staging system is used to differentiate between 4 stages of colon cancer<sup>8</sup> [Table 1].

All stages except Dukes D are treated curatively, but the treatment for patients with Dukes C is more comprehensive compared to Dukes A and B. Patients with Dukes' C represent a large group. Treatment lasts for 6 months, and patients are followed up for an additional 5 years. Nearly 65% are expected to survive for 5 years or longer after diagnosis.<sup>1</sup> Denlinger and

Barsevick<sup>9</sup> claimed that research that considers colon cancer and rectal cancer as one can reach incorrect conclusions, as diagnosis and treatment are different and produce different problems and different symptoms. Few studies focus solely on colon cancer, although there are more than 3 times as many occurrences of colon cancer as there are of rectal cancer. Therefore, more knowledge is required for this group of cancer survivors.

The complex treatment regimen has a significant impact on everyday life, and many live with side effects and late effects after successful curative treatment.<sup>10</sup> Everyday life takes place in several different arenas where the individual experiences togetherness and meaning in his or her interactions with others.<sup>11</sup>

Sexuality is a part of everyday life but it is more than just the act of sex or reproduction. Sexuality includes our need for intimacy, closeness, caring, and pleasure, as well as our sex drive, sexual identity, and sexual preferences.<sup>12</sup> However, few works in the literature describe sexuality after treatment has ended. In this article, we explore and describe how colon cancer survivors experience everyday life in general and sexuality in particular since sexuality is still regarded as a private and intimate topic.

## **Background**

We rarely give our everyday lives a thought: those routines and small actions we perform every day without thinking. Gullestad<sup>13</sup> believed our everyday lives go unnoticed because they are nearly invisible. This is in line with Borg<sup>11</sup> who remarked that the social aspects of a patient's life are an important factor of recovery, but they are usually overlooked by health services. Disease can lead to changes and disruptions in one's everyday life, and restoring those daily routines is the first step toward reconstructing everyday life.<sup>14</sup> The literature shows that colorectal cancer treatment can lead to fatigue and reduced sexual activity during

chemotherapy.<sup>15</sup> Some studies examined measures of life quality for patients with colon cancer, but we have not identified studies that have explored how patients with colon cancer feel about their everyday lives after successful curative treatment.

Researchers who have examined the mental and physical challenges of patients with colorectal cancer showed that patients generally report good quality of life despite the disease's severity. Historically, quality of life has been attributed various definitions, but according to Rustøen,<sup>16</sup> there is consensus that quality of life includes biological, psychological, and social aspects and is based on an individual's life experiences. Dietmaier and colleagues<sup>17</sup> stressed the importance of more research regarding patients' needs after concluded treatment. The researchers recommended the application of a biopsychosocial model during treatment and support of patients with colon cancer to ensure their needs are attended to, including their social needs.

A review of the literature on body image and bowel cancer showed that there is ample focus on individuals with stomas and patients with rectal cancer are emphasized in these studies. Many of the studies pointed out that an individual's self-image before the onset of cancer is pivotal in determining how well he or she will handle changes in his or her body caused by the disease.<sup>18,19</sup>

An important aspect of quality of life is a person's sexuality. Cancer and chemotherapy can have a negative effect on sexuality.<sup>20</sup> According to Landmark and colleagues,<sup>21</sup> sexual behavior is complex and influenced by multiple factors. Sexual-physiological, psychosexual, and sociosexual levels influence each other. Sexuality has been considered in only a small fraction of colorectal cancer studies and rarely in conjunction with colon cancer. Individuals who have received chemotherapy are less satisfied with their sexual life.<sup>22</sup> Milbury et al<sup>23</sup> examined sexual dysfunction after bowel cancer treatment (regardless of stage or localization) and claimed that

psychosocial variables had little effect on sexual functionality, in contrast to demographic factors, such as age and destructive surgery, which are regarded as the main causes of sexual problems.<sup>23</sup>

With this research in mind, a biopsychosocial model was selected as the framework for this study.<sup>24</sup> The model entails a holistic understanding of individuals and their diseases. Social context and a person's psychological well-being are important factors in this model. It emphasizes the biological, psychological, and social aspects equally, and these aspects should be viewed in conjunction with one another.<sup>24 25</sup>

## **Methods**

### **Design**

The present study used an exploratory and descriptive design to gain insight into how persons who have undergone surgery for colon cancer experience changes in their everyday life in general and in their sexual life in particular. A qualitative approach with semi-structured interviews was used.

### **Recruitment and Sample**

Patients from 4 surgical outpatient clinics in eastern Norway were invited to participate in the study. These men and women had completed chemotherapy after surgery for colon cancer. The inclusion criteria were that the participants must have been diagnosed with colon cancer with metastasis in the lymph nodes, had undergone surgery, and had received chemotherapy with FLOX cures (F = Fluorouracil. L = Leucovorin. and OX = Oxaliplatin). They also had to speak Norwegian. Initially, we planned to include persons aged 60 and older because this range is most commonly associated with the diagnosis, but it was difficult to recruit a sufficient number of participants. Therefore, we included persons aged 50 and upward. Each of the 4 outpatient clinics

were provided 20 letters with information on the study, but we have no feedback regarding how many of these letters were actually passed on to patients. The letters were distributed by nurses at the surgical outpatient clinics. The information letters explained the study's goals and the patients' rights. The letters also informed patients that the study included questions about sexuality and body image. Patients who wanted to participate returned a signed form by regular mail to the first author.

Four men and 5 women gave their consent. [Table 2] The male participants were aged 50–73, and the female participants were in their early 50s. Patients were interviewed between 2 and 18 months after completion of treatment. The interviews were conducted between November 2014 and February 2015.

### **Data Collection**

The interviews were conducted by the first author, were carried out in the clinic offices, and lasted between 30 and 60 minutes. A semi structured interview guide was used [Table 3]. The main themes involved the body, sexuality, and social context. The interviews began with questions about how the interviewees discovered their cancer, followed by how they experienced different aspects of everyday life. Interviewees were also asked about what sexuality meant to them. The interviews were concluded by allowing interviewees to add details or fill in any gaps they considered relevant. Before questions about sexuality were asked, it was made clear to the interviewees that they were free to decide how much information they wished to disclose. After 6–7 interviews, little new information emerged, and data collection was concluded after the ninth interview.

### **Data Analysis**

Notes were taken directly after the interviews to avoid forgetting details during analysis.

Facial gestures, tears, laughter, intonation, and body language were some of the details included in the notes. The interviews were transcribed verbatim. The analysis started after the fourth interview had been conducted. Data was analyzed using the content analysis method described by Graneheim and Lundman.<sup>26</sup> The transcriptions were reviewed and discussed by the authors repeatedly to form a picture of the assembled material as a whole. Microsoft Excel's filtering capabilities were used to organize the analysis steps. Transcribed text, meaning units, condensed meaning units, codes, subcategories, categories, and themes were each assigned to individual columns in the Excel sheet. This approach made it easy to identify which meaning units belonged to which codes and eventually to which subcategory, category, and theme.

Example:

From meaning unit to code: [Table 4]

The meaning units were condensed without loss of meaning.<sup>26</sup> Meaning units with similar content were highlighted in the same color. The filter function made it possible to sort the columns by words, interviewees, and colors. All meaning units were coded. A code is a common term for a group of meaning units, a kind of keyword. Codes were used to group similar content.

From code to theme: [Table 5]

The next step involved abstraction on a higher level where subcategories were created as codes were sorted by their similarity. The subcategories led to 6 categories. The final step was to construct themes based on the categories.<sup>26</sup>

### **Validity**

The validity of the findings was addressed by carrying out and evaluating a pilot interview with colleagues and fellow researchers.<sup>27</sup> To maintain validity, the researcher assured himself that he had correctly understood the interviewee by asking questions if anything was

unclear. The interviewer repeated selected sentences from the interviewee's responses, to confirm that the interviewer had correctly understood what the interviewee wanted to convey. Verifiability was improved by using the participants' own words in the findings. The data was also discussed internally among the research team members.

### **Ethics**

The project fell outside the jurisdiction of Norwegian medical ethics committees. However, as audio recordings were used, approval was requested and received from the Norwegian Centre for Research Data (NSD). Informed consent was required by the Norwegian Centre for Research Data. Participants were informed that the study would not affect their treatment and that they could withdraw from the study at any time without providing an explanation. Information that could identify the informants was not included in the Word files. After the interviews, participants who expressed a need for more support regarding their disease were provided with information on support groups and other experts.

### **Results**

The analysis resulted in 4 main themes; 3 of them had 2 categories each (Table 6). The main themes were changes in the body, changes in social life, importance of a partner's closeness, and putting one's life into perspective.

#### **Changes in the Body**

Participants experienced that their bodies were not the same as before. Surgery and chemotherapy had taken a toll on their bodies. At the same time, the participants' physical condition was important to them, and they wanted to have bodies that would function in their everyday lives as they had done before the onset of the disease. In addition, the participants experienced many body changes that were invisible to others, such as bowel problems, fatigue,



and a “lack of energy in everyday life.” Participants also struggled with the visible consequences of the treatment.

### **CATEGORY: INVISIBLE BODY CHANGES**

Most participants experienced bowel problems. Although they decreased over time, they resulted in changes in everyday life. Some interviewees experienced leakages only during the initial treatment phase, while others were still bothered by leakages a year after treatment. This affected their everyday lives. “It still happens that I need to get to the bathroom quickly. Some accidents still happen with stools, but it’s much better now, but it happens... I’m still not completely rid of the problem” (Man H). Another participant discussed the consequences of not having control: “After having diarrhea, it’s as though the sphincter no longer works, because if I’m more than one minute away from a restroom—things go wrong” (Woman A).

Another challenge participants experienced was fatigue and tiredness. The degree of tiredness was not related to the length of time since the treatment had ended. Some informants were troubled by feeling tired even a year and a half after treatment. When asked what the greatest change was since her disease was diagnosed, one participant replied: “I’m more tired. I can feel that I’m tired in a different way and earlier in the day. It’s possible that I’m more conscious of it as well, but no, I think maybe the tiredness is what lingers the longest” (Woman C). Many of the informants stated that they were “tired of being tired.” They wanted bodies that functioned in everyday life the way they had before the disease. “But mainly I was happy to have a body that functioned well, and now I’m going to have a body that functions well in the time to come” (Woman B). Another informant struggled because there were many things she wanted to do, but her body was too weak and holding her back (Woman D). She missed the time before the disease and the energy she had had, but she hoped that time and training would help her return to

her “old shape” (Woman D).

### **CATEGORY: VISIBLE BODY CHANGES**

Visible changes in the body, such as increased weight, muscle loss, and scars, were experienced as less dramatic than the invisible changes. The patients had a new self-image where body and looks no longer were the most important aspects of their lives. It became important to them to appear well-groomed but not perfect. “Before, I was more like: I need to lose weight. I can’t look this way. There’s a little bit of fat here and there around the waist, and the big scar in the middle... you see it’s not a young woman’s body. I don’t care so much about that now” (Woman C).

The informants stated that they had come to grips with their changed bodies. They recalled compliments they had received and considered them positive. Several women pointed out that before they became sick they had focused too much on their weight and looks, while after treatment, they had become much less important. The women had learned to accept the changes their bodies had undergone.

Participants explained their skin had become old and saggy—an aging body. Therefore, training became important to maintain bodily health. “I want my body to look good, but I’m equally concerned that it’s a healthy body” (Woman B).

### **Changes in Social Life**

This theme includes the participants’ social lives and networks, and their life at work. Friends were an important part of the patients’ lives. Some side effects of treatment, such as bowel problems and fatigue affect not only the patients themselves but also their interactions with others. Patients described friends as facing the patients’ new circumstances with understanding, and were a resource in the patients’ everyday lives. Accepting assistance was

something the patients had eventually learned. They learned at which time of the day they were most energetic and wanted to be with friends. For some, fatigue was the greatest challenge that influenced their daily lives; for others, it was bowel problems.

### **CATEGORY: THE IMPORTANCE OF SOCIAL NETWORKS**

Social relations were important during all phases of treatment, as well as after the treatment had ended. The social network provided sympathy for the situations the patients were in, which was highly appreciated. Their friends' presence not only allowed the patients to talk about their disease but also showed love for and genuine interest in them. A man explained that he felt his manliness was threatened because he was dependent on others, and this was one of the main forces that drove his recovery. He said it was a horrible experience: "You know; I've always gotten by on my own. I've never been a burden to anyone, and I've always thought I'd be independent in all matters. The diseases meant that I became completely dependent on help, and being so far down was very difficult psychologically. It was really a big thing, and that's why it was so important for me to get back on my feet as quickly as possible because being like this isn't a life" (Man F).

Social events with many people present were the most challenging for participants. Some women explained they did not have problems organizing social get-togethers before the disease, but they no longer had enough energy for that kind of thing. One informant who enjoyed seeing friends felt she no longer had enough energy to keep up with all of them and as a result lost part of her social life.

Friends were mentioned as support players throughout the treatment and rehabilitation phases. Female participants felt it was easier to talk about feelings with their friends and family while men thought these feelings were to be shared only with their partners. Women gave the

impression that they spoke a lot with friends and close family members. Girlfriends were described as kind, considerate friends who could assist with anything. There was consensus among the participants that showing feelings and communicating was typical for women. Women did not sense any change in their womanliness, but some of them sometimes felt inadequate. One woman felt inadequate compared to the way she had been. She did not feel she was as caring as she used to be and she described being caring as an important female trait (Women D). Patients' openness about their disease varied. Some chose social media as their information channel and felt that the support they received there was very rewarding, while others replied when asked but never raised the topic themselves. "I've even posted on Facebook that I've been operated for colon cancer and received a lot of support, intimacy and sympathy, and that has created an openness and improved relations in many ways. As a result, we now discuss more serious matters and less superficial things" (Woman C).

Some of the male patients chose not to discuss bodily problems with their friends. One male informant said people spoke a little about the cancer during the onset of the disease, but it was not an issue anymore, something he was very pleased with. Another male participant felt the same way about keeping the challenges related to cancer treatment and its side effects private: "At least I don't talk about treatment and stuff, not with buddies I don't" (Man G).

Patients participated in courses on physical activity, nutrition, and life management skills, which were held at various cancer care centers (Montebello Center, Vardesenteret, Pusterommet, and others) where some participants acquired coping strategies. Our findings clearly show that the participants felt that these courses were rewarding; not only did the participants learn various practical methods for managing their new lives, but they also met people who understood them without needing to explain their situations. This understanding was very important to the

participants.

### **CATEGORY: THE IMPORTANCE OF WORK**

Work is an important part of social life. Participants had problems spending time surrounded by many people and would feel completely exhausted afterward. Participants who worked regularly before being diagnosed were accustomed to spending much of their time at work. Many patients had to work shorter days after treatment. Work was portrayed as a place where they enjoyed themselves with their colleagues and/or customers. All of the informants expressed that work was an important part of their lives. It gave the informants a sense of accomplishment and utility and provided structure to their lives. At the time of the data collection, most of the informants had returned to work, but only a few worked the same number of hours as previously. The number of work hours varied depending on how long it had been since the patients had completed treatment. Two participants who had worked full-time before they got sick had more trouble than the rest. Both participants now worked part-time. Both had figured out how to optimally schedule their work hours. In most cases, fatigue was the reason participants were forced to work part-time. Some participants had to schedule their work due to bowel problems: “Working 40% allowed me to go to the toilet one time before going to work, after that I could work normally” (Man H).

Most of the participants enjoyed working so much that working again was an important goal. All of the participants who had jobs had positive experiences regarding facilitating their work. One of the informants was self-employed and it was important for him to return to work as well but he faced challenges because he was no longer able to perform his work to the same level of expectation.

### **Changed Relationships with Partners**

The theme “changed relationships with partners” includes relations among partners in general and sexual relations in particular.

### **CATEGORY: VULNERABLE RELATIONSHIP**

Patients were concerned about their partners. A central finding of the study is the importance of the partner during and after treatment. Participants expressed that partners were their most important source of support, for practical necessities and psychological needs. Intimacy was very important, along with a feeling of being seen and heard. Men, in particular, pointed out that the disease and its treatment were a bigger burden for their wives than for themselves and they were grateful to their partners. “I feel she’s been through so much she didn’t deserve. I can clearly see it has taken its toll on her. I think, psychologically, it’s been worse for her than for me” (Man I). Some informants did not want to bother their partner more than necessary but were happy they could talk about their problems with the person closest to them. “Sometimes, I can tell that he’s very tired, but I can’t do much more than tell him to relax and that everything will be okay” (Woman D). Several informants felt hopeless in these situations, because they did not know how they should act toward their partner, but also because they had problems of their own. Still, they were positive about the future, although they knew that these things take time. Our analysis showed that the informants tried to lead normal lives. It was clear that men, in particular, tried to normalize their lives as soon as possible. In some cases, not only had the patient been sick; their partners had also been through disease or injuries. It can no longer be taken for granted that partners are healthy and full of energy and that may lead to additional strain in a relationship. To review a relationship after cancer treatment, it is essential to know how the relationship was before the disease. Some informants said that in cases where the relationship was not perfect before the disease, one could not expect it to be better afterward.

Despite domestic challenges, the partner was generally regarded as an important source of support. The majority of people in relationships were not embarrassed of their bodies in front of their partners. A single woman with a stoma did not have any sexual experiences during her period of disease, but said that if she had, she probably would have covered it up with a scarf: “I don’t feel so attractive around that area [points at her stomach where the stoma is], but other than that I feel just as womanly. I don’t think it’s nice to look at that bag and that lump, it’s related to your own self-image when feeling sensual and that kind of thing” (Woman B).

### **CATEGORY: SEXUAL CHALLENGES**

All of the informants who were in relationships had active sex lives before the disease. Sexuality was generally regarded as something more than intercourse: love, feelings and intimacy were among the aspects mentioned. For the most part, the informants’ sexual activity decreased during the first weeks after diagnosis. Men and women insinuated they wanted this part of their lives back.

One participant mentioned it could be difficult to awaken sexual desire when the partner isn’t helpful. Another male participant commended his girlfriend’s patience: “She doesn’t challenge me in any way, I get the time I need, but of course, she wants our sexual life to return to the way it was and so do I” (Man F).

The interviews also showed that sexuality is still a taboo that is not discussed publicly, and sometimes, it is not even discussed between partners. Regarding sexuality, several participants felt guilty toward their partners. Participants said they were far less active sexually after treatment. They also stated that their partners understood did not pressure them directly. For their own sake, they wanted to return to where they once had been. Pain and discomfort during sexual activity were not a problem. Some women experienced dried mucosa after chemotherapy,

but this issue improved over time. “Yes, that’s another thing that’s been affected by the chemotherapy: that my skin and mucosa have become more sensitive. And yes, that kind of thing, or rather the desire, hasn’t been there either because I’ve been so affected down there by the chemotherapy, and well, that’s something I hope will improve” (Woman A).

The challenges related to having an active sex life include reduced sexual desire, erectile problems, and fatigue. For the majority of the women interviewed, the main cause of reduced sexual activity was reduced sexual desire. Participants explained that they had not received any information prior to surgery that how their sexual lives might be affected. Participants called for more information from health care institutions on what could be done and what should be avoided with regards to the surgery the participants had undergone: “Timing can be important, when is it appropriate to comment on it. I can remember a cancer nurse sitting down on my bed before surgery, and it’s possible she mentioned it, but you know, for me, I was ready when I was in the ward afterward. I had started to think about going home. I think that would have been a better time” (Woman E).

One participant discussed his erectile problems with his doctor and felt offended by the reply he received. “I’ve asked, I mentioned it briefly to the doctor, but he thought the problem was ‘located between my ears’ as he put it” (Man G). Consequently, that informant did not dare open up to other professionals later. He wanted respect and advice from a professional.

### **Reviewing One’s Perspectives On Life-Influenced Coping Strategies**

From being completely healthy to having cancer can turn one’s life upside down, not only during treatment but for a long time afterward. Some of the participants experienced other types of challenges in addition to the physical ones. Statements such as the following make it clear just how demanding cancer treatment can be: “All of a sudden, your life is turned upside down, your



body changes, I'm no longer working full-time, I'm not going to bike home from work: it hasn't been very easy. It makes you feel like part of your life has been taken away from you" (Woman A). One participant, however, considered the time as a break from all the duties and stress in his day-to-day life.

As a result of having "lost time," the participants wanted to prioritize differently, to seize the day and not waste time thinking about the time that felt wasted. Some people managed to retain something positive from their experiences.

Participants chose direct and indirect strategies that helped, among other things, to reduce the stress in their everyday lives. Activity and communication with others were mentioned as one of the most important measures. "I've had enough people to talk to and the intimacy with friends and family did me good" (Woman D). Physical activity was also mentioned as a strategy for coping with stress.

Participants had to learn to find the strategy that worked best for them. Some failed several times before they found a satisfactory solution. The participants expressed hope and faith. They believed they would recover and that their everyday lives would eventually return to normal. Several participants retained positive experiences, although they would rather have been spared the disease and its treatment. The informants agreed that being adults allowed them to better cope with their situation. Several had been previously confronted with challenges in their lives and they had mastered various coping strategies.

## **Discussion**

The findings in this study are discussed in light of the biopsychosocial model.<sup>24</sup>

In line with previous studies we also identified that patients have several challenges, such as fatigue and a changed body image. In the discussion we will focus on how social factors can

affect the patient's life.

The study showed that informants who had undergone surgery and chemotherapy after colon cancer were faced with many challenges in their everyday lives. It also showed that the informants were coping with the challenges to the best of their abilities. They had all experienced changes in one form or another, and it was clear that their social networks and partners were important in coping with these challenges. In the discussion, much attention focused on patients' social networks and partners since there is little mention of this in existing literature regarding patients with bowel cancer. Patients conveyed that they had received sufficient social support. Researchers have shown that individuals with good social support experience less stress than those with little support.<sup>28,29</sup> It does not necessarily matter how many people support a patient, but cancer patients need to feel that their social support is adequate. In couples, men and women exhibited equal amounts of social support for each other. These findings are not entirely in accordance with those of other researchers who claim that male patients receive more support from their partners than female patients.<sup>28</sup> The findings in this study show the importance of social networks and partners which aligns well with Fröhlich-Rüfenachta et al's findings.<sup>30</sup> However, the present results also show a distinct difference in the way men and women use their networks. Women implied they had good relations with their partners, other women, and family members: these were people the female patients could talk to about joy and sorrow. Goldzweig et al<sup>31</sup> showed that friends and family are important for female identity, while men generally rely on their partners and professional colleagues. Rennoldson et al<sup>29</sup> explained that social relations for men that do not necessarily involve cancer can be important. This finding corroborated our findings.

Support from partners and social networks can positively affect patients' health. The

experience may contribute to a reduction in the patient's stress levels and thus protect against negative consequences of stress, which in turn may influence biological and/or behavioral reactions.<sup>32</sup> Examples of such consequences might be weakening of the immune system or the use of unhealthy stimulants. Social support is important for well-being, but social relations can also be stressful and burdensome.<sup>32</sup> This may be seen in patients who had not received as much social support as they had expected. This was frustrating, but the participants did not want to waste time thinking about it and focused instead on the positive support they had received. Another finding was that certain patients became very tired in large gatherings and hindered others in performing necessary tasks at home. A holistic approach to this group was one of the concerns of Caravati-Jouvencaux et al,<sup>33</sup> who pointed out the importance of social support and psychological and clinical expertise. Elderly patients should also receive special attention. Cancer patients become less active, and their social networks may be a resource.<sup>34</sup> Physical activity is especially important for cancer survivors due to secondary diseases such as coronary artery disease, diabetes and osteoporosis. A positive finding of this study is that all participants exercised to improve their physical condition.

Among partners, intimacy and physical contact were an important part of the relationship. Intimacy with the partner becomes more important as the need and desire for intercourse subsides. This contradicts Graugaard et al<sup>35</sup> who claims that many men think of the disease as a sexual setback and therefore withdraw from intimacy. For some informants, sex was an important part of their lives, but they had gained new perspectives in life, and for some time, sex was no longer a priority. Feelings and musings about the disease and its side effects have become part of the lives of the informants and their partners. The treatment was regarded as stressful, which can negatively influence sexual functioning.<sup>36</sup> According to Simonsen and Møhl<sup>37</sup>,

psychological and physical stress symptoms include muscle tension, drowsiness, sadness, and palpitations. These factors have a negative influence on an active sex life. Personality can greatly influence how an individual copes with stressors, according to the authors.

Some study limitations need to be acknowledged before the conclusions are presented. The sample was very small, all of the participants seemed resourceful, and all had good social networks. Therefore, the results should be interpreted with caution. The researcher had no influence on participant selection other than the predefined criteria.

### **Clinical implications**

Building on the current study's findings, the social network, body image and sexuality of the patients should be assessed before and after treatment by a health professional. This is an important step in taking action to optimize rehabilitation. In this study, partners and physical activity were identified as an integral part of coping. Seniors are often less active and some had lost their partners. It is therefore especially important to examine this demographic. Health personnel should inquire about the resources available in the patients' social networks. In addition, health personnel need to initiate conversations regarding sexuality and the challenges they can expect to face after their treatment has ended. The patient should receive relevant information and guidance and if necessary be referred to a sexual counsellor. Patients struggling with fatigue should receive information on the important balance between relaxing and various other activities. Health personnel can refer patients to courses regarding fatigue where patients receive relevant information and advice on how to cope with everyday life. In addition, such courses often invite participants to share experiences with one another and they are introduced to various relaxation techniques. Furthermore, nurses and doctors should ask patients about bowel problems and find solutions if applicable. Possible solutions could be medicine, fitness or an

appointment with a nutritionist. Nurses should pay special attention to patients with limited resources and consider referring them to support groups, cancer nurses or home nurses.

## **Conclusion**

Our findings show that people who have been treated for colon cancer (Dukes' C) experience changes in their everyday lives and their sexuality. The invisible changes, such as fatigue, a body that no longer works the way it used to, and bowel problems, represented a heavier burden than the visible changes. People wanted a body that worked the way it should. Changes in social activity affected the informants' daily lives, but with good social support, the participants maintained active social lives. Friends and family were a great resource for the informants. Granted, it was more restricted than previously, but the participants also appreciated time spent with others more than they had before.

Partners were regarded as important sources of support. Sexuality was changed due to reduced sexual desire, erectile problems, and fatigue, but the participants had not given up hope that their sexual problems would subside over time.

Participants used various strategies to cope with the challenges of their daily lives. The interviews made it very apparent that the interviewees were forward-looking and optimistic, attempted to enjoy their lives and were thankful for what they had. Furthermore, the participants were very resourceful. The findings show that the informants had various approaches to the challenges they faced, and men and women exhibited different coping strategies. Both genders benefitted from durable social networks.

This study showed that people who have been treated for colon cancer face various challenges after the treatment has ended. One cannot exclusively study the patient's physiology;

one must also take psychological and social factors into account.

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**Table 1****Duke's stages**

Dukes'	Stage	Surgical treatment	Medical treatment	Age
A	The cancer hasn't grown through the muscularis propria. The cancer has not spread to the lymph nodes.	Surgery		All
B	The cancer has grown through the muscularis propria. The cancer has not spread to the lymph nodes.	Surgery	Adjuvant chemotherapy (5-FU and Calcium Folate/Leucovorin combined with Oxaliplatin or 5-Fu and Calciumfolinat/Leucovorin) is to be considered when: a perforation has been identified near the tumor (before or during the surgery) or if the number of examined negative lymph nodes $\leq 8$	Patients < 75 years
			Individual assessment based on comorbidity, function and general health condition	Patients > 75 year
C	The cancer has spread to the lymph nodes near the bowel.	Surgery	Adjuvant chemotherapy is recommended.	Patients < 75 years
			Individual assessment based on comorbidity, function and general health condition	Patients > 75 years

D	The cancer has spread to another part of the body, such as the liver, lungs or bones.	Sometimes surgery (symptom relief)	Palliative chemotherapy or radiation or both are to be considered	All
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National action plan with guidelines for diagnostic, treatment and follow-up of cancer in the colon or rectum.(Helsedirektoratet, 2015)

**Table 2****Participant Information**

<b>Participant</b>	<b>Age</b>	<b>Civil Status</b>	<b>Work</b>	<b>Time Since Operation</b>	<b>Additional Information</b>
Woman A	51	Divorced. In a relationship.	Office	8 months	Temporary stoma
Woman B	55	Divorced	Unemployed	9 months	Stoma
Women C	55	Married	Kindergarden manager	18 months	
Women D	52	Married	Physiotherapist	9 months	
Woman E	52	Married	Sales clerk.	12 months	
Man F	65	In a relationship	Self-employed	8 months	
Man G	55	Married	Factory worker	14 months	
Man H	62	Married	Factory worker	10 months	
Man I	73	Married	Retired	11 months	

**Table 3**

**Interview Guide**

<b>Research Questions</b>	<b>Interview Questions</b>
<p>How do they experience their bodies after cancer treatment?</p>	<p>What did you think of your body before you were diagnosed with cancer?</p> <p>What do you think of your body now?</p> <p>Do you have any complications relating to the treatment? If so, please describe them.</p> <p>To what extent do you feel your womanhood/manhood has been affected by the disease and its' treatment?</p>
<p>How does cancer treatment affect a patient's social life?</p>	<p>Have you participated in any courses? (If so, what did you get from them? If not, why not?)</p> <p>Who could you share your thoughts and concerns with?</p> <p>Could you speak openly about your disease and its' treatment? Why?</p> <p>How has your disease affected your work?</p>
<p>How does the disease and its' treatment affect your sexuality?</p>	<p>Was it easier to speak with someone of equal gender?</p>

	<p>Was there anything relating to sexuality which you didn't dare to ask health personnel? Why?</p> <p>How has the diagnosis/treatment affected your sexuality?</p>
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**Table 4****Form Meaning Unit to Code**

<b>Meaning Unit</b>	<b>Condensed Meaning Unit</b>	<b>Code</b>
I have to admit I have always been very preoccupied with my body and looks.	Preoccupied with body and looks.	Focus looks/apperance and body
I could talk with my friends , I was open about everything and had many understanding friends.	Openness and security with friends.	Support network, converastion
I wish I had a functioning sex life.	Sexual life does not work as desired.	Sexual life has been negatively affected.
My husband is relaxed and patient with regard to our sexual life.	The husband is understanding with regard to sexual life.	Partner support.

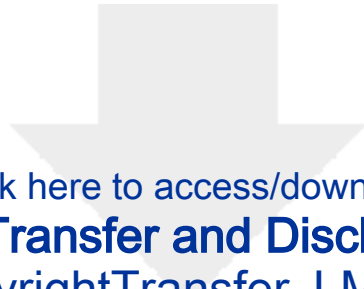
**Table 5****From Code to Theme**

<b>Code</b>	<b>Sub Category</b>	<b>Category</b>	<b>Theme</b>
Looks, scars, stoma, importance of the body	Bodily changes after treatment	Visible bodily changes	Changes in the body
Leakage problems, new bowel habits, diarrhea	Changed bowel functions	Invisible body changes	Changes in the body
Increased sleep requirements, lethargy, lack of energy, rest,	Everyday life with little energy	Invisible body changes	Changes in the body

**Table 6**

**Themes and Categories**

<b>Theme</b>	Changes in the body	Changes in social life	Changed relationships with partners	Reviewing one's perspectives of life-influenced on coping strategies
<b>Category 1</b>	Invisible body changes	The importance of social networks	Vulnerable relationship	
<b>Category 2</b>	Visible body changes	The importance of work	Sexual challenges	



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