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RESUMEN

Antecedente: La sexualidad es un componente importante de la calidad de vida femenina, teniendo las sobrevivientes de cáncer de cérvix un mayor riesgo de desarrollar sexualidad alterada.

Objetivo: Investigar por separado el efecto del cáncer de cérvix y su tratamiento sobre tres componentes de la sexualidad femenina: función sexual, auto-concepto sexual y relaciones sexuales.

Método: Se realizó una búsqueda en Pubmed de estudios publicados en los últimos 10 años en inglés utilizando diferentes términos de entrada relacionados con la sexualidad después del cáncer de cérvix. La selección de los estudios se basó en la calidad.

Resultados: La mayoría de los estudios mostraron que las pacientes con cáncer de cérvix tenían menos interés o deseo sexual después del tratamiento. Hubo menor interés y actividad sexual después de la cirugía radical combinada con radioterapia en comparación con la cirugía radical o la cirugía combinada con quimioterapia. Un estudio informó que el 33% no tuvo interacciones sexuales después del tratamiento. Los pacientes tenían significativamente más dificultades para excitarse sexualmente y tenían problemas de lubricación. La dificultad del orgasmo fue mayor después de la radioterapia en comparación con la cirugía radical. Los pacientes con cáncer de cérvix parecen tener más dispareunia, lo que también podría estar asociado con una disminución del deseo y la excitación sexual. Las pacientes con cáncer cervical tenían más problemas de imagen corporal, autoestima sexual y auto-esquema sexual y un cambio negativo en su relación sexual.

Conclusión: El cáncer de cérvix tiene un impacto negativo sobre los tres componentes de la sexualidad femenina.

PALABRAS CLAVE

Sexualidad, cáncer de cérvix, tratamiento, función sexual, relación sexual, auto-concepto sexual.

ABSTRACT

Background: Sexuality is an important component of quality of life, with survivors of cervical cancer being at higher risk of developing altered sexuality.

Objective: To investigate separately the effect of cervical cancer and treatment on three components of female sexuality: sexual function, sexual self-concept and sexual relationships.

Method: A Pubmed search was performed of studies published in the past 10 years in English using different entry terms related to sexuality after cervical cancer. Selection of studies was based on the quality.

Results: Most studies showed that patients with cervical cancer had less sexual interest or desire after treatment. There was lower sexual interest and activity after radical surgery combined with radiotherapy compared to radical surgery or surgery combined with chemotherapy. One study reported that 33% did not have sexual interactions after treatment. Patients had significantly more difficulties of becoming sexually aroused and had lubrication problems. Difficulty of orgasm was higher after radiotherapy compared to radical surgery. Cervical cancer patients seem to have more dyspareunia, which also might be associated to decreased sexual desire and arousal. Cervical cancer patients had more body image, sexual esteem and sexual self-schema problems and a negative change in their sexual relationship.

Conclusion: The present research found the cervical cancer has a negative impact on the three components of female sexuality.

KEYWORDS

Sexuality, cervical cancer, treatment, sexual function, sexual relationship, sexual self-concept.

Introduction

Although the incidence of cervical cancer is decreasing in Western countries (1), it is still the second most common cancer among women worldwide (2). The survival rate has increased due to screening programs and improved diagnosis and treatments (3), which means that more women are living with a history of cervical cancer. This has led to a higher focus on the quality of life in these women (4). Sexuality has been found to be an important component influencing the quality of life, and furthermore, survivors of cervical cancer are in great risk of developing altered sexuality. The altered sexuality can be due to the cancer itself as well as the treatment modalities (2). The radical treatments for cervical cancer are radical surgery and radiotherapy. Early stages are often treated with radical surgery or radiotherapy, where the standard treatment is radical surgery, radical hysterectomy with pelvic lymphadenectomy (5,6). Advanced stages are treated with radiotherapy or concurrent chemo-radiotherapy (5). These treatments might cause short- and/or long-term adverse effects, that might impact female quality of life. Long-term adverse effects include female sexual dysfunction (7), which has an impact in around 70% of cervical cancer survivors (8).

Sexual dysfunction can be expressed in different ways, and might also be referred to as sexuality, sexual health, sexual problems and sexual functioning. There are many different definitions of sexuality, the World Health Organization provides a definition of sexuality as the integration of somatic, emotional, intellectual, and social aspects of sexual beings in positive ways to enrich and enhance personality, communication, and love (9). Others suggest that sexuality is a multidimensional phenomenon composed of biological, socioeconomic, psychological and spiritual components. Woods *et al.* (9) have defined sexuality as consisting of three components: (a) sexual function, (b) sexual self-concept and (c) sexual relationships, which all are inseparably linked.

- (a) Sexual function includes the sexual response cycle: desire and arousal, excitement, and orgasm; where every step of the cycle has the potential of being affected by gynecological cancer and its treatment.
- (b) Sexual self-concept includes body image, sexual esteem and sexual self-schema. Body image includes the individual's feelings and attitude towards their own body. It might be due to external as well as internal changes

and is an important factor of sexuality (10). Sexual esteem includes aspects such as evaluating oneself and can be influenced by the physical changes. Furthermore, its definition also includes the person's evaluation of herself as a sexual partner. Sexual self-schema refers to the "cognitive representations about sexual aspects of the self" (9).

- (c) Sexual relations are defined as "the interpersonal relationships in which one's sexuality is shared with another" (11). In sexual relationships, communication and intimacy have shown to be important. Lack of communication or miscommunication often affects the sexual relation. This might be misinterpreted as disinterest or rejection. Furthermore, intimacy such as holding hands, kissing, etc. have shown to be important for survivors of gynecological cancer (9). The aim of this study was to evaluate the different components of sexuality separately as defined by Woods *et al.* (9), including sexual function, sexual self-concept and sexual relationships in women with cervical cancer. Thereby investigating whether these different sexuality components are altered due to cervical cancer and its treatment.

Methods

This study was a review of the literature, based on data from already published research. The data has been collected through the Pubmed, with different entry terms corresponding to the hypothesis. The search terms used were the following; "Uterine Cervical Neoplasms" AND "Sexual Health" OR "Self Concept" OR "Body Image" OR "Sexual Dysfunctions, Psychological" OR "Sexual Dysfunction, Physiological" OR "Sexuality". Studies included were published within the last 10 years and published in English. The selection of studies was performed in accordance to relevance and quality. The relevance to this particularly study was sexuality after cervical cancer, which means that studies not relevant for this study were not selected. Furthermore, selection was based on the quality. Quality was based on, among others, the number of publications, publications in leading journals and the authors' expertise.

Results

The results from the various selected articles will be evaluated regarding the different components of sexuality: sexual function, sexual self-concept and sexual relationships.

Sexual function

Sexual function includes desire, arousal, orgasm and dyspareunia. Two studies: Lammerik *et al.* (12) and Vrzackova *et al.* (6) investigated these different components of sexual function. Lammerik *et al.* (12) evaluated sexual dysfunction focusing on four different categories including desire, arousal, orgasm and pain disorders. It included 20 studies and compared patients with controls, pre- versus post treatment and comparison of the different treatment modalities.

Vrzackova *et al.* (6) divided female sexual dysfunction after radical hysterectomy into five categories: sexual desire/interest disorder, sexual arousal disorder, orgasmic disorder, vaginismus and dyspareunia, where all expect vaginismus were found in patients treated with radical hysterectomy.

Desire and Arousal

Desire disorder is defined as the impairment of sexual interest. Lammerik *et al.* (12), evaluated four studies and found that cervical cancer survivors had significant lower sexual interest as well as sexual activity compared with controls. Contrarily, five other included studies concluded that there was no significant difference between the two groups regarding sexual interest and sexual activity, despite the fact that one of these studies concluded that survivors of cervical cancer had less sexual motivation. Furthermore, Lammerik *et al.* (12) found that most studies showed that patients with cervical cancer had less sexual interest or desire after treatment compared to pre-treatment. Regarding the different treatment modalities two studies found a lower sexual interest and activity after radical surgery combined with radiotherapy compared to radical surgery or surgery combined with chemotherapy. Another study showed no difference between patients treated with radical surgery and radiotherapy alone (12).

Vrzackova *et al.* (6) found very different data regarding sexual life. Between 7 to 62% of patients with cervical cancer never continued sexual activity. One study reported that 33% did not have sexual interactions post-treatment. Reasons included: reduced libido, absence of partner, lack of interest from the partner, fatigue and physical problems.

In another study, Lee *et al.* (13), found no significant differences between the control group and cervical cancer survivors regarding sexual activity, sexual enjoyment and sexual worry.

Greimel *et al.* (14) found that 43.3% had not been sexually active in the previous month, with reasons being: not having a partner, partner not interested, physical problems, partner with physical problems, fatigued partner, among other reasons. This study concluded that due to the mentioned reasons, the lack of sexual activity could not be attributed to the treatment modality. Furthermore, the study also found that between 20-30% of cervical cancer survivors had other comorbidities, which also might have influenced sexuality.

Arousal disorder has been defined as the inability to attain or maintain sufficient subjective or genital sexual excitement. Lammerik *et al.* (12) evaluated 9 studies comparing arousal in patients and controls, where one study showed that patients had significantly more difficulties of becoming sexually aroused compared with healthy controls. Furthermore, lack of lubrication was more frequent in patients compared to controls. Controversially, no difference between patients and controls was shown in two other studies regarding lack of lubrication as well as sexual arousal. In addition, some studies concluded no differences in lubrication and sexual arousal despite different treatment modalities, whereas other studies concluded a significant difference, where more problems regarding sexuality were reported when treated with radiotherapy, radical surgery and radiotherapy and chemotherapy compared to radical surgery alone (12).

Regarding sexual interest, studies have shown various results, where the majority conclude that sexual interest and desire are altered in patients with cervical cancer. Also, regarding sexual arousal, results vary, but also here, the majority of included studies showed a difference between patients with cervical cancer and healthy controls.

Orgasm

Orgasmic disorder has been defined as the difficulty in, delay in, or absence of obtaining an orgasm (6, 12).

Lammerik *et al.* (12) evaluated four studies in which no difference between healthy controls and patients was found regarding orgasm, and one study which showed that patients had more problems obtaining an orgasm in comparison to controls. Another study showed a difference in the first 6-months post-surgery and 1-year post-radiotherapy, but after this period no difference was observed (12). Vrzackova *et al.* (6) concluded that the literature available on

orgasmic disorders after radical hysterectomy for cervical cancer is insufficient and controversial. Furthermore, several studies included showed less frequent orgasm and longer time to require an orgasm for patients treated with radical hysterectomy. Most studies showed no difference in obtaining an orgasm regardless of the treatment modality. Lammerik *et al.* (12) evaluated one study that showed that patients treated with radiotherapy had more difficulty obtaining an orgasm compared to patients treated with radical surgery. In general, the ability to achieve an orgasm did not seem impaired in survivors of cervical cancer (12).

Dyspareunia

Sexual pain disorders, also known as dyspareunia, have been defined as genital pain associated with sexual intercourse (6,12). Lammerik *et al.* (12) found that most studies showing a significant difference in dyspareunia, also demonstrated a difference in sexual desire as well as arousal and viceversa, hence concluding that dyspareunia has a negative impact on sexual desire and arousal. In addition to this, the same authors found that most studies showed that survivors of cervical cancer had significantly more dyspareunia compared to healthy controls. In some studies, this difference was only found in a specific time period post-treatment, varying in terms to the type of treatment modality, whereas after a specific time period no significant difference between the two groups was shown. In addition, Vrzackova *et al.* (6) showed that 44% of women reported dyspareunia after radical hysterectomy.

Aerts *et al.* (2) investigated sexual function in women with cervical cancer stages IA to IB after radical hysterectomy and compared them with women who underwent radical hysterectomy for a benign gynecological condition and healthy controls in a follow-up period of 2 years. Sexual function was evaluated through three items: decreased sexual desire, decreased vaginal lubrication and problems with orgasms. No difference was found between the cervical cancer group and the benign group in terms of sexuality or psychological functioning. A significant difference was found between the cervical cancer group and healthy controls, where the cervical cancer group reported more sexual dysfunctions as well as lower psychological functioning [2]. Overall, women with cervical cancer seem to have more dyspareunia compared to healthy controls, which also might be associated to decreased sexual desire as well as arousal (2,6,12).

Sexual Self-Concept

As mentioned, sexual self-concept includes body image, sexual esteem and sexual self-schema. Overall, there is not much literature evaluating the sexual self-concept in women with gynecological cancer. Furthermore, Cleary *et al.* (11) did not find studies including all three components of the sexual self-concept. Later, Cleary *et al.* (9) evaluated all three factors of the sexual self-concept in Irish women. This study showed that women diagnosed with gynecological cancer experienced a relatively positive body image, sexual esteem and sexual self-schema.

Body Image

Body image includes the individual's feelings and attitude towards their own body. Cleary *et al.* (9) found that women with gynecological cancer experienced a relatively positive body image, but that the negative effects that women had experienced, could have been attributed to the gynecological cancer and its treatment. Moreover, the study found that 49% of women with gynecological cancer reported that their femininity had not been affected, whereas 12% reported that their femininity had been affected very much. Other studies have shown that survivors of gynecological cancer often have an altered body image, where the loss of femininity plays an important role as well as the age of women (9). The physical changes due to gynecological cancer and treatment might be causing the negative effect on the body image. These changes include alopecia, weight loss and scarring among others (11). Furthermore, loss of femininity has been shown in various studies often due to cancer surgery, which means removal of the uterus and ovaries and therefore loss of fertility, motherhood and sexuality (11). In addition, 55% of the women felt less sexually attractive after the diagnosis or treatment of the gynecological cancer (9).

Sexual Esteem

Sexual esteem includes aspects such as the evaluation of oneself. It can be divided into global self-esteem and specific self-esteem, where global self-esteem is related to the person's overall feeling of well-being, and specific self-esteem is related to feelings of self-worth pertaining to specific behavior (11). Studies evaluating sexual esteem for patients with cervical cancer have not been found in the present study when using different search strategies. Hence, further investigation on this aspect of sexuality is needed.

Sexual self-schema

As mentioned earlier, sexual self-schema refers to the “cognitive representations about sexual aspects of the self”, which might influence sexuality after diagnosis and treatment of gynecological cancer (9). How sexuality is influenced by gynecological cancer might be due to the effect of women’s different sexual self-schema on their sexual functioning, in which a woman with more negative sexual self-schema might experience a decrease in sexual functioning (11).

Overall, these three aspects of sexual self-concept (body image, sexual esteem and sexual self-schema) have not been investigated in many studies, and in order to make a proper evaluation of the sexual self-concept in patients with cervical cancer, more research is needed. Despite this, body image in women with cervical cancer seems to be altered (9,11).

Sexual relationships

“The interpersonal relationships in which one’s sexuality is shared with another” is the definition of a sexual relationship and includes important aspects such as intimacy and communication (11). Cleary *et al.* (9) found that the majority of women with gynecological cancer experienced a negative change in their sexual relationship. Regarding communication, 33% reported that they experienced more time for quiet conversation, 49% reported no difference and 17% reported less time for quiet conversation since the cancer diagnosis. A 35% reported that they felt less comfortable talking about sexuality with their partner after the diagnosis, whereas 55% reported no difference. Another study found that communicating feelings after gynecological cancer was one of the most difficult aspects related to their sexuality. Furthermore, women with gynecological cancer addressed the importance that health-care professionals should evaluate sexuality of women and their partners, and therefore aid at improving communication regarding sexual problems in the relationship (11).

Regarding sexual intercourse with the partner, 73% reported less frequency and 59% reported a decrease in sexual activity since diagnosis. A 43% also reported a decrease in frequency in which their partner initiated sexual activity that led to sexual intercourse [9]. In total, 56% of women with gynecological cancer reported that their feelings of sexual fulfilment had decreased since diagnosis.

It has been shown that when sexual activity decreases so does intimacy (11). As mentioned,

there is a decrease in sexual activity in women with cervical cancer. Despite this, a 27% reported an increase of desire to be held, stroked and touched since diagnosis, which implicates the importance of intimacy, not only as sexual intercourse (9). Women felt that intimacy not including sexual activity was not sufficient to satisfy their partner (9,11). Not only negative effects were shown regarding gynecological cancer, it was also shown that it might bring the couple closer together (11). A 28% reported increased feelings of closeness with their partner, whereas 47% reported the closeness to their partner as unchanged (9).

TierneyDK. (10) stated that the quality of life is affected in women surviving gynecological cancer as well as their partners. After cancer diagnosis and treatment, the resuming of sexual activity and the communication about sexuality can be difficult. Women might feel anxious about how she will respond to sexual stimulation, performance as well as sufficient lubrication and discomfort. The male partner might be worried about the possibility of hurting his partner. Several studies evaluating the predictions for healthy sexual adjustments after gynecological cancer and treatment have concluded that a good relationship and having a satisfying sexual relationship prior to diagnosis are important. Other factors of importance were shown to include the partner’s sexual health and the support from the sexual partner.

Overall, communication and intimacy are of great importance in a healthy sexual relationship, as well as the partners understanding and support. Furthermore, of importance is a good relationship and a satisfying sexual relationship prior to diagnosis (10,11).

Discussion

The results regarding the different aspects of sexuality are various in different studies which makes it difficult to make an overall conclusion. Despite this, there seems to be a tendency that sexuality is altered in women with cervical cancer, as shown in the majority of included studies. This altered sexuality has been shown in various studies regarding dyspareunia, sexual desire as well as arousal. Whether the decreased desire and arousal is a result of dyspareunia is to be further investigated. Furthermore, orgasm did not seem to be impaired in cervical cancer survivors (12). More research is needed to evaluate the different aspects of sexual self-concept. In addition, regarding

sexual relationships, communication and intimacy are important factors for a healthy sexual relationship after gynecological cancer (10,11).

There might be different reasons to the varying results found in studies. First of all, difficulties in comparing the two groups (the cervical cancer patients/survivor group and the healthy control group) regarding altered sexuality (6,12,13). Sexuality is a complex term and involves many different aspects, and therefore it might be difficult to make a proper evaluation. In addition, to make a proper and valid comparison of the two groups, both should be comparable in all factors, with the exception of cervical cancer. This is difficult to achieve, and if not achieved, it might cause bias and hence alter results. Many different factors might influence the results and will be discussed further on.

The importance of cultural differences regarding sexuality should be underlined. In one study, Lee *et al.* (14) compared sexually active survivors of cervical cancer with sexually active controls in Korea, excluding women who had not been sexually active the past three months. The group of sexually inactive women in the cancer survivors represented 38.2%, whereas this rate was 10.6% in the control group. Lee *et al.* (14) underline the importance of cultural differences regarding sexuality in this study of Korean women, and the fact that Asians are known to be more sexually conservative in comparison to other cultures. In addition, this study also underlines the fact that Korean women are known to have a lower level of sexual interest, desire and activity. Also, this study showed that survivors of cervical cancer had a better body image compared to healthy controls, contrary to the results found in other studies where the survivors had an impaired body image or no altered body image. The better body image in the study of Lee *et al.* (14) might be explained by various factors including cultural differences. Although there is awareness of cultural differences regarding sexually, many studies do not adjust for this. Therefore, there is a need for further research regarding this aspect of sexuality, the sociocultural construction of sex (6,15).

Other limitations of the various studies included in the present research is the presence of heterogeneity regarding design, for instance in terms of using different questionnaires (i.e validated versus non-validated), moment of collection of information (i.e some sexual

dysfunctions might improve over time), time when baseline information is collected, lack of evaluation of psychological difficulties which might influence sexuality, different treatment modalities, premenopausal versus postmenopausal status, different tumor types, different classifications of altered sexuality, low response rate as well as relationship status (6,12,14). These limitations are not applied to all studies. Indeed, some studies for example did include treatment modalities, type of tumor, or used validated questionnaires.

Overall, it is of great importance adjusting for all these factors, making future studies more valid, with more strengths and fewer limitations, and therefore making studies more comparable to each other. Various studies have pointed out the importance that health care professionals focus on altered sexuality among survivors of gynecological cancer. Many patients report lack of information regarding sexual alteration as well as guidance on how to cope with these alterations. If information was given it was pointed out as being not useful and of biomedical nature. This information did not address loss of sexual desire, problems obtaining orgasm, altered body image and sexual esteem. Furthermore, it has been suggested that factors such as race, religion and ethnic background influence patients as well as the health care professionals' willingness to approach the subject of sexuality (6,11). Overall, various studies conclude that it is important to focus on the different aspects of sexuality in patients with gynecological cancer (6,11).

Sexuality is one of the fundamental components of quality of life. Women with cervical cancer might experience altered sexuality, thereby affecting their quality of life. In addition, due to the rising survival rates, more women live with a history of cervical cancer and related consequences. All together this underlines the importance in clinical practice of focusing on altered sexuality in women with cervical cancer. There is a need for more studies that investigate how cervical cancer influences women's sexuality, not only regarding sexual dysfunctions, but regarding all aspects of sexually. In future studies, it is important to include factors such as cultural differences, treatment modalities, psychological difficulties among other aspects in order to compare and appropriately evaluate sexuality among women with cervical cancer.

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Conflicts of interest

The authors report no conflicts of interest.

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