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Scientific Research

Consequences of Different Hysterectomy Techniques in Sexual Behavior—A Systematic Review

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Abstract

We conducted a systematic review of the literature to determine the influence of different hysterectomy techniques in the sexual behavior of women who underwent. We searched CENTRAL (The Cochrane Library), PubMed, SCOPUS, CINAHL and LILACS for studies between the years 1998 and 2010 that prospectively examined the sexuality after hysterectomy. Those that were not randomized controlled clinical trials were excluded. It was not available electronically, it was not related with the outcomes determined, it was not research, but publications before 1998 and study which women realized chemotherapy and radiotherapy. From the 455 identified studies, 9 met inclusion criteria. There was variability in how hysterectomies influence in the sexual behavior. Most of studies considered women who underwent vaginal hysterectomy had fewer changes in sexual behavior. Sexual desire, intercourse frequency and orgasm are the sexual aspects reported by women as more changes experimented after surgery. Findings from this study have implications for healthcare providers and policymakers. Each woman needs an individualized care plan that fits within the context of her life, and there are basic interventions that every woman who underwent hysterectomy should receive. This review draws attention to the need for different care plans for women who underwent different hysterectomy techniques.

Keywords

Hysterectomy; Sexual Behavior; Sistematic Review

1. Introduction

Hysterectomy is one of the most common surgical procedures performed on women and there are three main

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surgical approaches: abdominal, vaginal and laparoscopic that can be total or subtotal [1] [2]. It is estimated that by the age of 64 years, 40.5% women will have had a hysterectomy [3]. Most hysterectomy is done to control or eliminate symptoms and therefore improve quality of life [4].

The majority of patients who undergo hysterectomy are for benign gynecological conditions that often cause significant sexual problems, dyspareunia, chronic pelvic pain, and psychological difficulties [5]-[7]. When hysterectomy is considered the best treatment, there is debate whether subtotal hysterectomy, in which the cervix is preserved, has any advantage over total hysterectomy, in which both the cervix and the uterus are removed [8]-[11].

The uterus plays a role in the physiological and psychological sexual function of women, being hysterectomy an event that occurs at one point in the continuum of a woman's life [12]. Considering these aspects, the inconclusive results from previous studies and the suggestions of some authors about conduction of more systematic reviews about the thematic, we decided to realize this review to analyze most of realized studies and try to elucidate the consequences of different hysterectomy techniques in the sexual behavior.

This article provides a systematic review of the published literature on different surgical approaches (total or subtotal abdominal, vaginal, laparoscopic influence the sexual behavior of women who underwent).

2. Method

The databases searched were CENTRAL (The Cochrane Library), PubMed, SCOPUS, CINAHL and LILACS, being the limits articles published since 1998 and studies in English, Portuguese and Spanish. We searched the studies in the following electronic databases using MeSH's and DeCS' descriptors "hysterectomy" OR "hysterectomy, vaginal" ("histerectomia" OR "histerectomia, vaginal") AND "sexual behavior" OR "sexuality" ("comportamento sexual OR sexualidade).

The bibliographies from the identified references were also reviewed to identify additional relevant studies. We identified 455 records through database searching. After analyze of abstracts were selected 27 studies and excluded 433. Duplicate records were identified and removed, leaving 9 records for consideration (**Figure 1**).

Study Selection

We considered all published studies that assessed different surgical approaches (total or subtotal abdominal, vaginal, laparoscopic) that influence the sexual behavior of women who underwent. We included all published randomized controlled clinical trials and systematic reviews comparing different methods hysterectomy with each other or different techniques of hysterectomy with control groups (with uterus) and your influence in the sexuality, the studies should be available electronically and in the English, Portuguese or Spanish language. We excluded studies were published before 1998 due to a systematic review involving studies published between 1967 and 1997 conducted by Farrell and Kieser [13] about sexuality after hysterectomy.

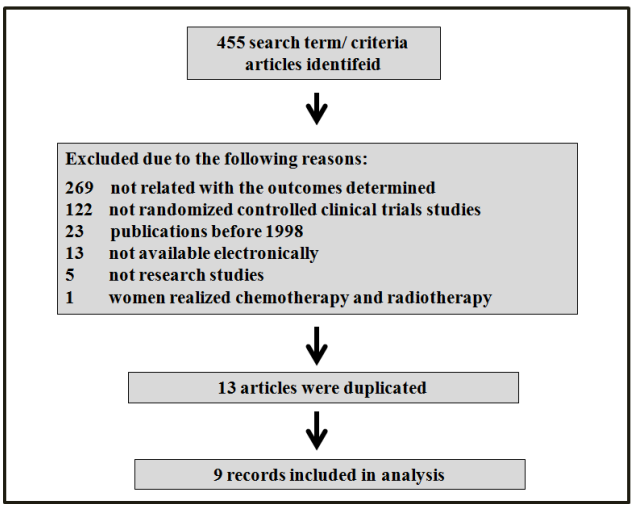

Figure 1. Study search and selection.

We selected the outcomes to measure considering that it is predictors in sexuality: sexual desire, sexual activity, orgasm and dyspareunia.

All decisions were discussed and reviewed by the authors. A full text version of those studies deemed to be potentially qualifying for inclusion was then obtained and authors established whether each individual study met the inclusion criteria or not in consensus. To extract data from the reviewed articles, a previously validated instrument was used with permission [14], which allowed recording of: methodological characteristics, methodological rigor, intervention type and results. We extracted information on the study design, participants, interventions, outcomes, study quality and the main results of the study.

In addition, a Jadad score [15] was assigned by each reviewer to each study to provide a measure of methodological quality. This measure is a reliable indicator of trial quality and is based on each trial's reporting and quality of randomisation, blinding and attrition. For each study, the primary reviewer allocated or subtracted points in each of these areas according to the Jadad protocol [15]. Thus, the maximum score of the clinical trial quality assessment is 5. Scores were cross-checked between the primary reviewers and resolved by consensus. The findings were revised with the original reviewers to validate the interpretation of the results and generate recommendations. The data were synthesized through of studies characteristics.

3. Results

The 9 studies included in this review [12] [16]-[23] were published between 2002 and 2008. All the nine studies examined the sexuality after hysterectomy. Six of them have compared the effects of hysterectomy between two groups with different techniques of hysterectomy, and only three of the hysterectomy group compared with other types of treatment, which have intact uterus (**Table 1**).

The articles describe various variables used to analyze sexuality after hysterectomy. Thus, the variables in common were selected for comparison. The most commonly used measure of sexuality after hysterectomy was the assessment of sexual intercourse frequency, orgasm, pain during the sexual intercourse and sexual desire (**Table 2**).

The quality assessment of studies using the Jadad's score [15] indicates that most of them are classified as good (score = 3 - 4) and excellent (score = 5). In all articles the instruments were administered before and after intervention. Only one study examined sexuality of six months after surgery. All others had a minimum postoperative follow-up of 12 months. The assessment of any aspect of sexuality must be made with validated and reproducible measurement instruments. Several instruments for assessing sexuality are available [24]-[26], however two studies did not describe the instruments used for assessment of sexuality, nor whether they were validated, which complicates the analysis of the reliability of results and to conduct other studies (**Table 3**).

Farrell and Kieser [13] in their systematic review, grouped the confounding factors that may influence sexuality controlled by studies in five categories: relationship with partner, hormonal effects, sociopsychological well-being, indication for surgery, and type of surgery. In this review, the control for confounding variables was strong (more than 50%) in the most of studies (**Table 4**).

The findings about the effect of hysterectomy on sexuality are presented in **Table 5**. The studies used different measures to assess each of the variables related to sexuality, which difficult makes comparison between them. However, in all the variables were measured before and after the intervention, revealing its effects. Another difficulty in assessing the results of the studies is that often it is mentioned that only certain variable was not related to the type of intervention evaluated by the study, without showing the figures.

4. Discussion

Hysterectomy is common surgical procedures performed on women. The quality of a woman's sexuality before and after hysterectomy is influenced by many factors, the relative importance of which is difficult to quantify. The factors that contribute positively to sexual function include a healthy relationship with a partner, good general health of both partners, freedom from severe life stresses, and absence of financial worry. A change in any of these factors can upset personal equilibrium resulting in a temporary or permanent impairment of sexuality [12].

As regards the type of surgery, we could identify vaginal hysterectomy is less invasive than the abdominal once dispensation the abdominal incision, it can be performed without general anesthesia, with less surgical time, which certainly reduces operative risks, has a better prognosis after surgery which favors less interference in the

Table 1. Clinical Trials (CT) identification.

Reference, Year	N	Compared groups	Type of surgery	Type of hysterectomy
Thakar *et al*., 2002	91	Hysterectomy	Abdominal laparoscopic	Subtotal
	86	Hysterectomy	Abdominal laparoscopic	Total
Total	177			
Ellsrom *et al*., 2003	38	Hysterectomy	Abdominal laparoscopic	Total
	36	Hysterectomy	Abdominal laparoscopic	Total
Total	74			
Zobbe *et al*., 2004	161	Hysterectomy	Abdominal laparoscopic	Subtotal
	158	Hysterectomy	Abdominal laparoscopic	Total
Total	319			
Kuppermann *et al*., 2004	31	Hysterectomy	No reference	Total
	32	MT[a]	-	-
Total	63			
Kuppermann *et al*., 2005	68	Hysterectomy	Abdominal laparoscopic	Subtotal
	67	Hysterectomy	Abdominal laparoscopic	Total
Total	135			
Flory *et al*., 2006	32	Hysterectomy	Vaginal laparoscopic	Total
	31	Hysterectomy	Abdominal laparoscopic	Subtotal
	30	SVS[b]	Abdominal laparoscopic	-
	40	HCNS[c]	-	-
Total	133			
Hehenkamp *et al*., 2007	75	Hysterectomy	Abdominal and vaginal (laparoscopic)	Total e Subtotal
	81	UAE[d]		
Total	156			
Thakar *et al*., 2008	91	Hysterectomy	Abdominal laparoscopic	Subtotal
	90	Hysterectomy	Abdominal laparoscopic	Total
Total	181			
Gorlero *et al*., 2008	51	Hysterectomy	Abdominal laparoscopic	Subtotal
	54	Hysterectomy	Abdominal laparoscopic	Total
Total	105			
Total	1.343			

a = Medicative Treatment; b = Small Vaginal Surgery; c = Healthy control Non-Surgical; d = Uterine Arterial Embolization.

sexual behavior of the woman who undergoes this surgery. This has also been identified in some randomized studies [27] [28].

On the other hand, study with 185 women showed that the type of hysterectomy did not affect the attitudes of respondents ostensibly [29]. Overall, procedural satisfaction reflected the patient's own sense of well-being and sexuality. Neither self-image nor sexuality need diminish in the patient after hysterectomy. It is hoped that these findings offer greater insight in helping women make more informed decisions regarding hysterectomy [29].

As this study shows, Salimena and Souza [30] found that women's sexuality is also considered hysterectomy sexual activity by expressing themselves about sex, sexual intercourse if sex is tranquil and comfortable, or if it caused pain was not possible to resume this practice due to problems after surgery. After hysterectomy, sexual activity proved inherent in daily lives of these women, being practiced or not. There is then the possibility of happening or not happening. In the daily lives of these women, non-resumption occurs: lack of appetite, not practice it before, cannot have relationships, fear of AIDS, are widows, or pain. The recovery also occurs because it is normal to have sex.

Recent attention has focused on sexual functioning after different hysterectomy methods, with numerous reports demonstrating significant improvements in this important domain [18] [31] [32]. However, there are observational studies comparing Total Abdominal Hysterectomy (TAH) and Subtotal Abdominal Hysterectomy

Table 2. Variables used in studies to assess sexuality.

Reference, Year	Variables used to assess sexuality
Thakar *et al*., 2002	• Intercourse frequency, sexual desire and early sexual intercourse; • Orgasm frequency, multiple orgasm frequency, vaginal lubrication; • Assessment of sexual relationship with the partner; • Deep and superficial dyspareunia.
Ellsrom *et al*., 2003	• Intercourse frequency, sexual fantasies frequency; • Orgasm frequency, sexual pleasure and satisfaction, lubrication, dyspaurenia, excitement and satisfaction with the partner.
Zobbe *et al*., 2004	• Intercourse frequency, sexual desire frequency; • Masturbation frequency, orgasm frequency, orgasm quality, satisfaction with sexual life.
Kuppermann *et al*., 2004	• Sexual desire, orgasm frequency, orgasm quality, sexual satisfaction.
Kuppermann *et al*., 2005	• Sexual problems, sexual desire, orgasm; • Sexual satisfaction.
Flory *et al*., 2006	• Sexual desire, sexual arousal, orgasm, sexual global functioning, sexual relationship pain, sexual self-image.
Hehenkamp *et al*., 2007	• Sexual activity (pleasure, discomfort, habit); • Sexual life satisfaction, sexual welfare.
Thakar *et al*., 2008	• Orgasm/multiple orgasm, relationship with partner; • Vaginal lubrication, deep and superficial dyspareunia.
Gorlero *et al*., 2008	• Number of sexually active women; • Pleasure in the sexual act, dyspareunia, sexual habit.

Table 3. Studies characterization according to instrument used and methodological quality assessment.

Reference, Year	Instrument	Validation	Instrument application	Jadad score
Thakar *et al*., 2002	Questionnaire	Not included	• Before surgery • 6 e 12 months after	5
Ellsrom *et al*., 2003	McCoy scale	Yes	• Before surgery • 12 months after	1
Zobbe *et al*., 2004	Questionnaire	Yes	• Before surgery • 2 e 6 months after	3
Kuppermann *et al*., 2004	Combination of 5 scales and include new questions	Not included	• Before surgery • 2 years after	3
Kuppermann *et al*., 2005	Medical Outcomes Study (MOS) Sexual problems scale	Yes	• Before surgery • 6 months and 2 years after	3
Flory *et al*., 2006	Derogates Interview for Sexual Functioning (DISF) -Likert Scale Sexual Self Schema	Yes - Yes	• 2 - 3 weeks before surgery • 6 - 7 years after	3
Hehenkamp *et al*., 2007	Sexual Activity Questionnaire (SAQ)	Yes	• Before surgery • 6 weeks after • 6, 12, 18 e 24 months after	4
Thakar *et al*., 2008	General Health Questionnaire-28	Yes	• 7 to 11 years after	5
Gorlero *et al*., 2008	Sexual Activity Questionnaire (SAQ)	Yes	• 2 weeks before surgery • 12 months after	3

Table 4. Control for confounding factors of sexuality after hysterectomy.

Confounding factor	Studies controlling for factor (Total = 09)	%
Age	08	88.8
Socioeconomic status	03	33.3
Education	04	44.4
Race/Ethnicity	05	55.5
Partnership status	06	66.6
Parity	08	88.8
Weight/Body mass index	07	77.7
Menopausal Status	08	88.8
Hormone replacement	02	22.2

Table 5. Control for confounding factors of sexuality after hysterectomy.

Reference, Year	Compared groups	Sexual relationship				sexual desire				orgasm				Dyspareunia			
		baseline		after		baseline		after		baseline		after		baseline		after	
		g1	g2	g1	g2	g1	g2	g1	g2	g1	g2	g1	g2	g1	g2	g1	g2
Thakar *et al.*, 2002	G1 = ASH G2= ATH	73	68	82	69					3.2	3.1	3.3	3.2	42	33	6	12
		NS		NS		-		-		NS		NS		NS		NS	
		Time effect $p = 0.01$												Time effect $p < 0.001$			
Ellsrom *et al.*, 2003	G1 = HTA G2 = ALTH	NS		NS						NS		NS		NS		NS	
Zobbe *et al.*, 2004	G1 = ASH G2 = ATH	29%	34%	33%	38%	39%	38%	39%	44%	74%	78%	77%	79%	31%	32%	13%	6%
		$p = 0.25$		$p = 0.33$		$p = 0.94$		$p = 0.24$		$p = 0.37$		$p = 0.68$		$p = 0.71$		$p = 0.37$	
Kuppermann *et al.*, 2004	G1 = DS G2 = MT	45	56	17	18	41	43	20	07	53	62	12	13				
		$p = 0.17$		$p = 0.89$		$p = 0.72$		$p = 0.04$		$p = 0.38$		$p = 0.84$		-		-	
Kuppermann *et al.*, 2005	G1 = ASH G2 = ATH	56	49	72	73	47	39	59	56	65	55	71	69				
		$p = 0.25$		$p = 0.93$		$p = 0.13$		$p = 0.47$		$p = 0.07$		$p = 0.47$		-		-	
Flory *et al.*, 2006	G1 = ASLH G2 = VTLH G3 = SVSC G4 = HCNS	28*	33	46*	58	35	37	45	56	29	29	38	53	2.4	1.4	0.0	0.5
		38	38	38	37	45	49	53	40	39	36	42	44	0.5	0.5	0.1	0.1
		NS		$p < 0.001$		$p = 0.05$		$p < 0.05$		NS		NS		NS		$p = 0.05$	
		*$p < 0.01$															
Hehenkamp *et al.*, 2007	G1 = DS G2= UEA	61%	67%	61%	67%							1.1	0.8			0.49	0.43
		NS		$p = 0.07$		-		-		$p = 0.76$		$p = 0.74$		$p = 0.76$		$p = 0.88$	
Thakar *et al.*, 2008	G1 = ASH G2= ATH	NS		2	2	NS		3	3	NS		3	3	NS		20	31
				$p = 0.97$				$p = 0.28$				$p = 0.45$				$p = 0.17$	
Gorlero *et al.*, 2008	G1 = ASH G2= ATH	64%	59%	84%	70%							13	15	NS		NS	
		NS		NS		-		-		NS		NS					

(SAH) without conclusions about the effect of hysterectomy in the sexuality, the other study found a decreased in sexual functioning after TAH compared to SAH [33]-[36], while other found no differences between the surgery methods [12].

Thus, sexual intercourse after hysterectomy can be better than before, it can be as it was before or be an obligation of the woman. They expressed a rating of good, bad or better, considering sexual intercourse as possible in the day-to-day. Each of these women has its own expression and particularly involving the partner or not the situation with regard to sexual activity.

A prospective study indentified that women who engaged in sexual relations increased significantly from 70.5% before hysterectomy to 77.6% and 76.7% at 12 and 24 months after hysterectomy [31]. Besides, the rate of frequent dyspareunia dropped significantly from 18.6% before hysterectomy to 4.3% and 3.6% at 12 and 24 months after hysterectomy. The rates of not experiencing orgasms dropped significantly from 7.6% before hysterectomy to 5.2% and 4.9% at 12 and 24 months after hysterectomy. Low libido rates also decreased significantly from 10.4% before hysterectomy to 6.3% and 6.2% at 12 and 24 months after hysterectomy.

About the orgamsm, an American study with 75 women did not find significant changes in sexual desire and frequency, orgasmic frequency, or orgasmic strength after hysterectomy [32]. Most of the patients expected to have no change in desire (53%), orgasm frequency (76%), or orgasm strength (67%) after hysterectomy. However, their findings suggest a significant benefit for patients with pelvic pain and dyspareunia who undergo hysterectomy.

A qualitative study reported that many hysterectomized women would have liked more information on the aftereffects of the operation, including physical, sexual, and emotional aspects [37]. It found negative attitudes seemed to be related to a woman's capacity for childbearing and her sexuality. Other concern centered on the women wanted to feel again their sexual desire, and become sexually active.

Other qualitative study, including 25 men (black 11 and white 14), revealed many men did not know much about hysterectomy and they perceived it had negative effects on women [38]. Some men believed there could be negative effects from the hysterectomy for men as well, including an inability to perform sexually and a change in a man's experience of sexual intercourse. There is no doubt that little change happen after hysterectomy but it is irrelevant when compared to the benefits. Many others studies showed this [39] [40].

5. Conclusions

In summary, this review examines the impact of hysterectomy on postoperative sexuality by evaluating the methodologic quality of the literature and highlighting the importance of many confounding factors that are independent of hysterectomy, influence sexuality. Sexual functioning improves overall after hysterectomy. The frequency of sexual activity increases and problems with sexual functioning decrease. The current evidence about the impact of hysterectomy on sexuality is summarized.

The nursing clinical practice must be improved based on these results because it can understand how the different types of hysterectomies surgery will change women's life. As a result, a differentiated care, a specific care plan and therefore more efficient assistance can be offered to the patient.

Conflict of Interest Statement

None declared.

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