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Review

Psychological outcomes after hysterectomy for benign conditions: a systematic review and meta-analysis

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ABSTRACT

Hysterectomy is one of the commonest operative procedures in the developed world, mostly occurring among premenopausal women, with contradictory results regarding post-operative psychological wellbeing. This review aims to inform practice by examining whether hysterectomy predicts depression or anxiety outcomes. We searched PubMed, EMBASE, and PsycINFO electronic databases for articles published before November 2012. Reference lists of relevant articles were hand searched, and expert opinions were sought. Refereed studies investigating an association between hysterectomy for benign (non-cancerous) conditions and post-operative symptoms of depression or anxiety were chosen for this review. Two authors independently abstracted data from original articles. Authors of relevant studies were contacted for data that could not be extracted from the published articles. Review Manager 5.1 was used throughout the meta-analysis to calculate the summary relative risks (RRs), and the weighted standardized mean difference (WstdMD), and their corresponding 95% confidence intervals (CI). A random effects model was used in data analysis and verified using a fixed effect model. Overall, hysterectomy was associated with a decreased risk of clinically relevant depression (RR = 1.69, 95% CI 1.19–2.38). Additionally, hysterectomy was associated with a decrease in standardized depression outcomes (standardized mean difference (SMD) 0.38 (95% CI 0.27–0.49)). Conversely, there was no significant association between hysterectomy and risk of clinically relevant anxiety (RR = 1.41, 95% CI 0.72–2.75). In conclusion, data from before and after studies suggest that hysterectomy for benign gynecological conditions is not adversely associated with anxiety and may be positively rather than adversely associated with depression.

Contents

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1. Introduction

Among many gynecological procedures, hysterectomy has shown a significant decrease in the previous three decades all over the world, but it still remains one of the most frequently performed operative procedures [1–3]. Hysterectomy involves one of two surgical approaches, traditional abdominal laparotomy and minimally invasive hysterectomy: the latter could be one of two approaches, vaginal or laparoscopic hysterectomy [4]. The current literature reports that hysterectomy is more often performed during the premenopausal period [3–6]. Approximately 10 to 30% of women in the industrialized world undergo hysterectomy by the age of 65 [7,8]. And around 20% of women in the unindustrialized world undergo hysterectomy by the age of 55 [9]. Noteworthy; there has been a fall in the prevalence of hysterectomy in the later group by almost 1% every decade since 1980 [9], perhaps due to some cultural and ethnic beliefs [10].

Epidemiological studies have reported that over 90% of hysterectomies are performed for benign surgical indications [4,6]. For instance, premenopausal women undergo hysterectomy to alleviate bothersome gynecological symptoms including dysfunctional uterine bleeding and uterine fibroids, whereas postmenopausal women undergo hysterectomy to repair a prolapsed uterus or any other pelvic organ [11]. Regardless of the surgical indication, the benefits and risks of hysterectomy remain uncertain [12–15].

Growing evidence from clinical studies indicates that women with hysterectomy suffer both psychological and physical co-morbidities [16] that usually overlap and interact with one another [16,17]. Hysterectomy-related psychological morbidity typically includes depression [5,18], anxiety [6,19], and stress-related symptoms [16]. Psychological co-morbidity associated with hysterectomy could be triggered by negative perceptions about body image, femininity, youth, energy and activity levels [20], as well as loss of child-bearing capacity [21].

Physical co-morbidity associated with hysterectomy typically includes increased risk of developing pelvic floor prolapse, urinary incontinence and sexual dysfunction [16,22]. Recent literature on the sexual effects of hysterectomy has added to the confusion around the psychosocial outcomes of this surgery. Interestingly, Ryan et al. [1] suggested hysterectomy-related physical and psychological co-morbidities to be preoperative, and reported that in almost all the cases women linked their psychological symptoms with their physical symptoms as their motivation to accept hysterectomy. Conversely, evidence from randomized trials suggests that hysterectomy is associated with high levels of psychological wellbeing compared to women's pre-hysterectomy status, since they experience relief of distressing gynecological symptoms [23–25]. The controversy regarding quality of life with regard to psychological wellbeing following hysterectomy has raised a notable doubt about the appropriateness of hysterectomy for benign conditions [26,27].

An initial analysis of the available published literature indicates an absence of a high-quality review or systematic review that examined the relationship between psychosocial wellbeing and hysterectomy, which could help resolve these uncertainties. We therefore conducted a systematic review and meta-analysis of longitudinal studies to evaluate whether hysterectomy for benign (non-cancerous) conditions in adult female populations predicts depression or anxiety outcomes.

2. Methods

2.1. Data sources

We searched PubMed, EMBASE, and PsycINFO electronic databases for articles published prior to November 2012. Search syntaxes were developed in consultation with an experienced university research librarian taking into account a broad range of terms and phrases used in definitions of depression or anxiety and hysterectomy (Appendix S1). Reference lists of potentially eligible articles were searched by hand to identify additional studies missed by our search strategy. We also contacted four experts in the field on 26 November 2012 to review a preliminary list of studies retrieved for inclusion and comment on the existence of additional studies not yet identified, and we updated the search on 26 May 2013.

2.2. Study selection

One reviewer (MD) identified potentially relevant studies for inclusion by screening titles and/or abstracts of all citations identified with our database searches. A second screening was performed on the full text of these articles. Longitudinal studies in adult female populations (aged 18 years or older) that reported on an association between depression or anxiety and hysterectomy for benign (non-cancerous) conditions were eligible. Hysterectomy had to be the predictor variable (exposed versus non-exposed controls) while the other was the outcome. Only English-language articles were eligible.

Eligible study designs included: randomized controlled trials, controlled clinical trials, before and after studies, interrupted time-series studies, case–control studies, and cohort studies. Among the eligible study designs, we only included studies that psychologically assessed participants before and after hysterectomy for benign conditions. This review aimed to determine whether hysterectomy had adverse effects on psychological wellbeing after hysterectomy in the medium to long term, hence the use of the patients' baseline data in a form of self-controlled designs. We included studies reporting psychological outcomes for either a single type of hysterectomy or multiple types of hysterectomy. Studies were identified for exclusion if they included hysterectomy for emergency or oncologic conditions, non-English studies, non-human studies, and studies that did not assess the participants before hysterectomy.

3. Data extraction and quality assessment

Data extraction and quality assessment of included studies were performed and/or verified independently by two reviewers (MD and TMT). Discrepancies were resolved through discussion. Authors of relevant studies were contacted, where possible, for data that could not be extracted from the published articles. After studies had been excluded because they did not meet the inclusion criteria, a checklist devised prior to the review assessed the quality