Impact of endometriosis on work productivity and activity impairment: a descriptive literature review

Mohammad Amin Bahrami, Kefayat Chaman-Ara, Elham Bahrami

ABSTRACT

Introduction: Endometriosis is a common chronic condition which affects different aspects of patients’ life. This study was aimed to review the current literature about the impact of endometriosis on the work productivity of suffering patients.

Methods: We conducted a descriptive review of the literature on endometriosis impact on work productivity of suffering women. An electronic search was performed in Medline/ PubMed, Science direct, Embase, Scopus, Google scholar, Magiran, and SID (Scientific Information Database) up to January 10, 2017, using the text search terms “productivity,” “work productivity,” “job,” “job loss,” “job productivity,” “absenteeism,” “presenteeism,” “under working,” and “activity impairment” in combination with “endometriosis” and their Persian equivalents. The bibliographies of the articles located were searched manually. Peer-reviewed articles that have reported impacts of endometriosis on work productivity and activity impairment were assessed for eligibility. All studies that had reported the impacts of endometriosis on work productivity aspects were included in the review. Only those studies that used a work productivity and activity impairment survey were included in the study.

Results: A total of 2903 studies were retrieved in the initial search. After eligibility assessment, five studies were included in the study. From those, four studies have used work productivity and activity impairment (WPAI) survey, and one has evaluated the work records of patients. All of these studies have reported the negative effect of endometriosis and its related symptoms on work productivity and daily activity of women suffering from the disease.

Conclusion: The negative effects of endometriosis on the work productivity confirm its high socioeconomic burden for patients, their family, and the society at large. More investment in research to achieve the diagnosis protocols and treatment interventions is needed.

Keywords: Endometriosis, pelvic pain, work productivity, activity impairment


INTRODUCTION

Endometriosis, which is usually called as the cancer of the career-woman, is a common estrogen-related disease that affects women of reproductive age.1–4 Current evidence shows the prevalence of endometriosis has been reported in up to 17% of reproductive-age women.5,6 Endometriosis has a diverse etiology, and to date, no effective treatment exists. This condition imposes a high physical, psychological, and socioeconomic burden on the patients, affects all aspects of their daily life, and results in the loss of healthy and active body conditions. Many studies have shown that endometriosis threatens the patients’ quality of life and imposes high socioeconomic burden; thus, the disease has been recognized as a social disease.1,4,7–18 Productivity loss is one of the negative consequences of endometriosis. Endometriosis decreases the work productivity of patient through different paths. Its long-term signs such as chronic pelvic pain and fatigue reduce the work productivity.9,16–21 Also, the psychological aspects of endometriosis, which have been reported in many studies, were also found to affect patients’ productivity negatively. Indeed, disruption of personal and social life due to the negative effects of endometriosis can severely affect both the professional and the personal life of the patient. For this, “work” has been included in endometriosis health profile-30 (EHP-30), the commonly used instrument for measuring the endometriosis patients’ quality of life, as a part of the optional modular questionnaire.22–30 Work productivity losses, in a cycle, negatively affect the individual, family, and social life of patients. It can result in loss of job and reduced income. Due to the rising rate of women employment, reducing their income could threaten the economic power of families, which in turn can have negative effects on the health status. So, reduced productivity and job loss along with the high cost of treatment and care could result in a serious disruption in the endometriosis patients’ life. Also, considering that endometriosis affects women in reproductive ages, which are the active years of the workforce, its negative effects on the work productivity can also adversely affect the gross domestic product (GDP) of countries and threaten sustainable development.16,17 Therefore, job- and work-related aspects of endometriosis are worthy of attention. In this study, we attempted to
review the available evidence about the effects of endometriosis on the work productivity of patients.

METHODS

Data sources and search strategy
We conducted an extensive review of the published studies about the impact of endometriosis on the work productivity and activity impairment. An electronic search was performed in Medline/PubMed, Embase, Science direct, Scopus, Google scholar, Magiran, and SID (Scientific Information Database) up to March 12, 2017, using the text search terms “productivity,” “work productivity,” “job,” “job loss,” “job productivity,” “presenteeism,” “absenteeism,” “under working,” and “activity impairment” in combination with “endometriosis” and their Persian equivalents. The bibliographies of the articles located were searched manually.

Inclusion criteria
All peer-reviewed articles that have reported the effect of confirmed endometriosis on the work productivity, job, and activity impairment were included in the study. Only those studies that used a work productivity and activity impairment instrument were reviewed.

Exclusion criteria
Studies that used quality of life questionnaires that included a work dimension were excluded from study because these studies have been reviewed in authors' previous published systematic review and meta-analysis (Chaman-Ara K, Bahrami MA, Moosazadeh M, Bahrami E. Quality of Life in Women with Endometriosis: A Systematic Review and Meta-analysis. World Cancer Research Journal, in production).

Eligibility assessment
Retrieved studies were screened for eligibility. First, duplicates were removed. Then, titles, abstracts, methods, and results section and in cases where needed full texts were screened by all authors independently.

Data collection and analysis
A data extraction process was developed and used for all studies. Studies that met the inclusion criteria were examined comprehensively, and the following data were abstracted: study title and authors, study design, country, population characteristics (e.g., age), number of subjects, tools or methods used to measure the work productivity and activity impairment, and the reported results about the effect of endometriosis on work productivity and activity impairment.

RESULTS
A total of 2903 studies were retrieved in the search process of this review, from which 1716 studies were removed due to duplicates and 1129 were removed after a screening of titles and abstracts. Remaining 58 studies were used for full-text screening and out of those 58 studies, 53 failed to meet the study criteria, and the remaining 5 studies were included in the review. The flow diagram of literature identification and selection is presented in Figure 1.

Table 1 and Table 2 represent the methodological design and the main findings of included studies.

DISCUSSION
Endometriosis is a common condition among women of reproductive age which has various signs and consequences. Chronic pelvic pain,
infertility, dysmenorrhea, dyspareunia, abdominal pain, fatigue, sexual dysfunction, and loss of healthy and active body conditions are among the complications of endometriosis. Due to these widespread consequences, endometriosis is called a social disease. It means that the disease affects all aspects of life, including physical, psychological, social, and economic aspects. Therefore, it results in disruption in personal, family, and social life. Delays in disease diagnosis and the lack of definitive treatment intensify all of these negative effects. To date, many studies have studied the effects of endometriosis on different aspects of the quality of affected women’s life and have strongly documented these effects. Work and job situation is one aspect of quality of life (QoL) which can be affected by the disease. It seems that the consequences of endometriosis, such as chronic pelvic pain and fatigue, as well as the psychological effects of the disease, can lead to reduced productivity, increased absenteeism, presenteeism, and even loss of job. These, in turn, affect the health status of patients and their family negatively, through reducing the household income. Therefore, endometriosis imposes a considerable social and economic burden in addition to morbidity. Endometriosis has a decisive effect on the work situation; thus, a “work” subscale has been included in the common measures of endometriosis patients’ QoL, such as EHP-30 and EHP-5. Therefore, in this study, we tried to review the published evidence about the endometriosis effect on the work productivity. We did an extensive search but excluded those studies that have used the QoL measurement instruments with a work subscale due to two reasons. First, these studies have not studied the effect of endometriosis on the work productivity specifically. Second, the authors have reviewed the studies that used the same instruments in their previous publication. So, a total

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<th>Authors</th>
<th>Main findings</th>
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<td>Donatella et al. (2013)</td>
<td>Findings showed that the mean time missed from work during 7 days prior to complete WPAI survey because of problems related to endometriosis was 2.3 ± 5.3 hours. More than 73% of participants confirmed that endometriosis interfered with their work. Also, more than 88% of patients reported that the disease affected their work productivity.</td>
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<td>Fourquet et al. (2012)</td>
<td>Patients reported a significant disability in their physical health due to the symptoms of the disease. Also, they reported approximately one working day loss in the week when the symptoms are worse. WPAI scores showed the high impact of endometriosis on work-related domains, including an average loss in work time (absenteeism), impaired work (presenteeism), loss in efficiency levels (work productivity loss), and daily activities impairment.</td>
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<td>Nnoaham et al. (2011)</td>
<td>Unadjusted p-value showed the statistical difference between patients and controls in presenteeism. Overall work productivity loss, and activity impairment but adjusted p-value confirmed this difference only in overall work productivity, loss of work productivity, and activity impairment questionnaire.</td>
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<td>Fourquet et al. (2010)</td>
<td>The majority of participants reported that endometriosis and its related symptoms affect the quality of their work. 20% of them reported being unable to work due to pain. 69% of patients reported presenteeism and 60% reported a mean of 2.8 days per month as missing-work days due to being unable to perform physical activities. Also, their yearly missed work was on average 19.3 days because of treatments, surgeries, and recovery. 40% of patients reported that their career growth had been negatively affected due to the consequences of the disease. 3% of participants reported being totally incapacitated, and 3% were dismissed from or quit their jobs due to symptoms of endometriosis. Logistic regression analysis showed that among endometriosis symptoms, menstrual pain, incapacitating pain, depression, and abdominal pain affect professional work negatively more than others.</td>
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<td>Boling et al. (1998)</td>
<td>Findings showed a 6.2% prevalence of endometriosis in the female population in the US Army. This study revealed a mean sick time of 15 days per admission per active-duty patient regardless of age or race of patients. Also, it was estimated that a total of 21746 workdays were lost considering all active-duty patients in the study (five years of records).</td>
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of five studies that specifically examined the effect of endometriosis on the work productivity were included in the present review. From these six publications, four have used Work Productivity and Activity Impairment (WPAI) questionnaire to quantify the effect of disease on the work productivity and the last one has used duty records to study the work absenteeism due to the endometriosis. All of these studies have shown that endometriosis affects work productivity and interferes with daily work activities negatively. It also leads to increased absenteeism from work and presenteeism and even withdrawal from work or loss of a job. These effects of the disease on the work is worthy of attention at two levels, including individual/family level and society/national level. At individual and family level, the negative effects of disease on the women's work can reduce individual and household income and disrupt the life. At the society/national level, the disease consequences can reduce national economy.

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CONFlict of interests
Not declared

REFERENCES


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