



REVIEW

Sexual activity and cancer: A systematic review of prevalence, predictors and information needs among female Arab cancer survivors

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Abstract

Introduction: The objective of this review is to synthesise and present the best available evidence on the prevalence, predictors and information needs about sexual health among female Arab cancer survivors.

Methods: The databases searched included MEDLINE, Embase and CINAHL from inception of the database until March 2020. The review was undertaken according to the JBI guidelines. Proportional meta-analysis using a random effects model was used for statistical pooling through JBI SUMARI.

Results: Seven studies involving female Arab cancer survivors were included in the review. The overall prevalence of sexual dysfunction ranged from 16.7 to 67% (pooled estimate 51%, 95% CIs 21.7% to 80.2%). Dyspareunia and erectile dysfunction were the two main types of sexual dysfunction reported after diagnosis, and the overall prevalence ranged from 42.5% to 65% and 38% to 61%, respectively. The prevalence of vaginal dryness was ranged from 19.8% to 54.2%, and dyspareunia ranged from 22.2% to 65%. The lack of sexuality information and communication with health care providers (HCPs) was also reported in the included studies.

Conclusion: Cancer and its treatment may result in significant difficulties with sexual activity and sexual functioning among cancer survivor. Communication between the health care professionals and cancer survivors is essential to overcome this problem and improve the quality of life of female Arab cancer survivors.

KEYWORDS

Arab, cancer, female, sexual activity, sexual dysfunction, sexuality

1 | INTRODUCTION

Cancer is a major illness and one of the leading underlying causes of death worldwide (Australian Institute of Health and Welfare, 2017; World Health Organization, 2016). In the United States, cancer is the second most common cause of death, accounting for nearly one out

of every four deaths and in Australia, and one in two Australian women will be diagnosed with cancer by the age of 85 (Australian Institute of Health and Welfare, 2019).

However, in the Arab world that includes 22 countries across Northwest Africa to Southwest Asia (American-Arab Anti-Discrimination Committee, 2009), the overall incidence of cancer

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among Arabs is lower compared with the Western population (Hamadeh et al., 2017). Studies conducted in the Netherlands, France and Australia found that the incidence of cancer among the native population was higher than the Arab immigrants (Boulogne et al., 2012; Butow et al., 2013; Stirbu et al., 2006). However, the incidence of some types of cancer such as thyroid and liver was significantly higher among the Arab population (McCredie et al., 1994). For Arab women, stomach and gallbladder cancers were highly prevalent (Curado et al., 2007). Despite the high prevalence of these cancers, Arab women are less likely to participate in cancer screening tests (Phillipson et al., 2012) resulting in being diagnosed at a later stage of cancer (Abuelezzam et al., 2018; Alananzeh et al., 2019) and are less likely to access appropriate treatment (Phillipson et al., 2012). Irrespective of the type of cancer, the diagnosis and subsequent treatment has a profound effect on the physical, psychological, social and sexual life of cancer patients. Poor sexual quality of life has been identified as one of the most common and distressing consequences of cancer treatment (Sbitti et al., 2011). Due to the treatment, cancer survivors may have excised body parts leading to poor body image. In addition, changes in body function such as decreased sexual desire or interest, arousal disorder, vaginal dryness and difficulty or inability to achieve an orgasm due to treatment (Mayer et al., 2019) have a significant impact on their relationships and sexual functioning (Whicker et al., 2017).

The prevalence of sexual dysfunction in cancer patients varies depending on their ethnicity, sexual dysfunction definitions and assessment measurements. Bond et al.'s (2019) study found that 57% of cancer patients reported impaired sexual activity across different cancer types, stage and type of treatment. Another review found that the prevalence of sexual dysfunction was between 25% and 94% among women across all type of cancer (Maiorino et al., 2016). Higher prevalence of sexual dysfunction has been reported among women compared with men (Traa et al., 2012). Furthermore, a strong correlation between the patient age, partner age, levels of anxiety and depression, support from the partner, negative self-image and sexual dysfunction has been reported (Perz et al., 2014). The type of treatment received such as radiation therapy and surgery have also been identified as predictors of reduced sexual activity in women (Traa et al., 2012). Kowalczyk et al. (2016) found that the main three predictors of sexual dysfunction among women were the lack of sexual partner, lower levels of support from the partner and higher levels of anxiety.

Evidence suggested that cancer survivors report high needs for information about sexual health after cancer from health care providers (Gilbert et al., 2016; Hautamäki-Lamminen et al., 2013; Sbitti et al., 2011). Several studies have shown that cancer survivors expect health care providers to take the first step in discussing the sexual health concerns (Leung et al., 2016; Sporn et al., 2015) but workload, inadequate training, lack of resources and patient shame prohibit these kind of conversations (Errihani et al., 2010; Gilbert et al., 2016). Health care providers often prefer to focus on the disease treatment and avoid discussing sexual health issues. In a recent study, more than 60% of cancer reported needing information about sexual health and suggested that health care providers provide sexual information as standard care (Albers et al., 2020).

1.1 | Cancer and the Arab context

Female Arab cancer survivors like other cancer survivors also experience poor sexual quality life and require extensive social and emotional support to cope with the illness (Butow et al., 2013; Metusela et al., 2017; Ussher et al., 2017). A study conducted in Arab Australian cancer survivors reported higher levels of unmet supportive care needs than Anglo-Australian cancer survivors (Butow et al., 2013). Various barriers have been reported as to why female Arab cancer survivors do not access supportive services for sexual health needs. Cultural beliefs pose a major barrier to accessing health care and subsequent support as (Goldstein et al., 2014; Lockett et al., 2011) Arab people view cancer as a deadly and contagious disease (Donnelly et al., 2013) and cancer is associated with stigma and shame (Amin, 2008; Merry & Robinson, 2014). The cultural beliefs include the perception that a cancer diagnosis is a punishment from God, and hence, it cannot be avoided (Saleh et al., 2012). In addition, modesty requirements for women, objections from male spouses and loss of status in society are further cultural barriers to accessing supportive services (Saleh et al., 2012). In addition, low income and education level among Arabs can impact on knowledge about cancer access to services for sexual health. Reduced English language proficiency among migrant Arabs and understanding the health care system can impact on Arab cancer survivors' decisions toward cancer treatments and ongoing sexual health care (Obeidat et al., 2012).

Much of the literature has focused on the sexual health among Western populations; hence, this review is valuable in its exploration of the prevalence, predictors and information needs about sexual health among female Arab cancer survivors.

A preliminary search of PROSPERO, MEDLINE, the Cochrane Database of Systematic Reviews and the JBI Database of Systematic Reviews and Implementation Reports was conducted and no systematic reviews that assessed sexual functioning among female Arab cancer survivors were identified. The preliminary search used the following search terms (Arab* OR Middle East AND Cancer* OR Tumor AND Sexuality* OR Sexual dysfunction OR sexual health AND needs* OR Health needs OR supportive care needs AND attitude* OR perception* perception* OR experience* OR perspective and review*).

Due to the lack of synthesised evidence on the sexual health of female Arab cancer survivors, the focus of this systematic review was to use the available quantitative studies to identify the prevalence, predictors and information needs about sexual health among Arab Cancer survivors.

1.2 | Review question

What is the prevalence of sexual activity, sexual dysfunction, types of sexual dysfunctions, predictors of sexual dysfunction and sexual information needs among female Arab cancer survivors?

2 | METHODS

2.1 | Design

A systematic review was undertaken to synthesise the evidence relating to the prevalence and predictors of sexual dysfunction and information needs relating to sexual health among Arab cancer survivors. The review was guided by the Joanna Briggs Institute (JBI) guidelines (Aromataris & Munn, 2017). The PRISMA systematic review reporting checklist (Moher et al., 2009) was used as a basis for reporting the review.

2.2 | Search strategy

Using a structured search strategy, the electronic databases CINAHL, MEDLINE, EMBASE, PubMed, Google Scholar, Cochrane Library, MedNar, ProQuest and Index to Theses were searched in December 2019. Keywords used in the search were: (Arab* OR Middle East AND Cancer* OR Tumor AND Sexuality* OR Sexual dysfunction OR sexual health AND needs* OR Health needs OR supportive care needs AND attitude* OR perception* perception* OR experience* OR perspective*.

The search strategy aimed to find both published and unpublished quantitative studies, with no time limitations, in the English language only. Studies were included if studies reported the sexual health issues of female Arab cancer survivors or (and) on the sexual supportive care needs. Studies that included both males and females were included if they reported data for the female participants separately or if more than 60% of the participants were females. Studies that investigated medical treatments for sexual health were excluded. Hand searching of the reference lists of studies assessed for eligibility was also undertaken.

2.3 | Study selection

Following the search, all identified citations were collated and uploaded into EndNote X8 (Clarivate Analytics) and duplicates removed. Two independent reviewers screened the titles and abstracts for assessment against the inclusion criteria for the review. Potentially relevant studies were retrieved in full and their citation details were imported into the Joanna Briggs Institute System for the Unified Management, Assessment and Review of Information (JBI SUMARI) (Joanna Briggs Institute, Adelaide, Australia). The full text of selected citations were assessed in detail against the inclusion criteria by two independent reviewers. Reasons for exclusion of full text studies were recorded and are reported in the review. Any disagreements that arose between the reviewers at each stage of the study selection process were resolved through discussion.

2.4 | Assessment of methodological quality

Studies selected for critical appraisal were assessed by two independent reviewers for methodological quality using the JBI critical appraisal instrument for cross sectional studies (Aromataris & Munn, 2017). Using the JBI critical appraisal tool, each question was allocated a score (Yes = 2, No = 0, Unclear = 1) with a maximum obtainable score of 20. These scores were then converted to a percentage with a score of 100% the highest possible score. Where additional data or missing data required clarification, authors of these papers were contacted. Any disagreements between the reviewers were resolved through discussion. All studies irrespective of the methodological quality were included in the review.

2.5 | Data extraction

Two authors independently extracted the data from included papers using the standardised data extraction tool from JBI SUMARI (Joanna Briggs Institute, Adelaide, Australia). The data extracted included geographical location, setting, number of participants, participant demographics (e.g., age, sex and cancer type), method of data collection and study findings. Disagreements were resolved by discussion.

2.6 | Data synthesis

The JBI SUMARI software was (Munn et al., 2018) used to derive a pooled effect estimate of the reported prevalence of sexual activity, types of sexual dysfunction, sexual dissatisfaction, negative of body image and receiving information about sexual health. Given the various instruments used to measure outcomes, a random effects model using the Freeman-Tukey transformation approach was used. Meta-analysis of continuous outcomes including the level of sexual function was undertaken using rBiostatistics.com tool. A random effects model using the Inverse variance method was used. Effect sizes of prevalence data are expressed as a proportion and that of continuous data as a weighted mean with 95% confidence intervals around the summary estimate. The I^2 statistic was used to quantify heterogeneity with 25%, 50% and 75% indicating low, moderate and high heterogeneity, respectively (Higgins et al., 2003). In addition, for continuous data, the DerSimonian-Laird estimator for τ^2 was calculated to assess heterogeneity. Where statistical pooling was not possible, the findings have been presented in narrative form.

3 | RESULTS

3.1 | Description of studies

The search yielded a total of 63 citations, of which 20 were duplicates. The remaining 43 citations were screened for relevance using

the title and abstract, and 20 were retrieved for potential inclusion (Figure 1). The references of these papers were scrutinised; however, no new papers were identified. Thirteen of the 20 papers did not meet the inclusion criteria and were excluded. A total of seven papers involving 958 females patients were appraised and included in the final review. The scores for the methodological quality ranged from 10 to 12. No studies had reported on all the items in the methodological quality instrument Methodological quality assessment for each included study is detailed in Table 1.

Studies were published between years 2009 (Abasher, 2009) and 2018 (Dahbi et al., 2018; Nair et al., 2018), and the study design was mainly cross-sectional. Five studies were undertaken only in women and three in both men and women. The females' age ($n = 958$) were

between 18 and 70+ years, and sample sizes ranged from 97 to 596 participants. Seven of the included studies were conducted in Morocco (Dahbi et al., 2018; Errihani et al., 2010; Sbitti et al., 2011), Tunisia (Leila et al., 2016), United Arab Emirate (Nair et al., 2018), Sudan (Abasher, 2009) and Bahrain (Jassim & Whitford, 2014) and covered a range of cancer types such as breast cancer (Abasher, 2009; Jassim & Whitford, 2014; Leila et al., 2016; Sbitti et al., 2011), cervical cancer (Dahbi et al., 2018; Errihani et al., 2010) and a mix of all other cancer types (Nair et al., 2018). Prevalence of sexual activity was assessed by asking women if they engaged in sexual activity during and after the cancer treatment. Sexual function was assessed using the Watts Sexual Function Questionnaire (WSFQ) (Abasher, 2009), sexuality items of the European Organization for the

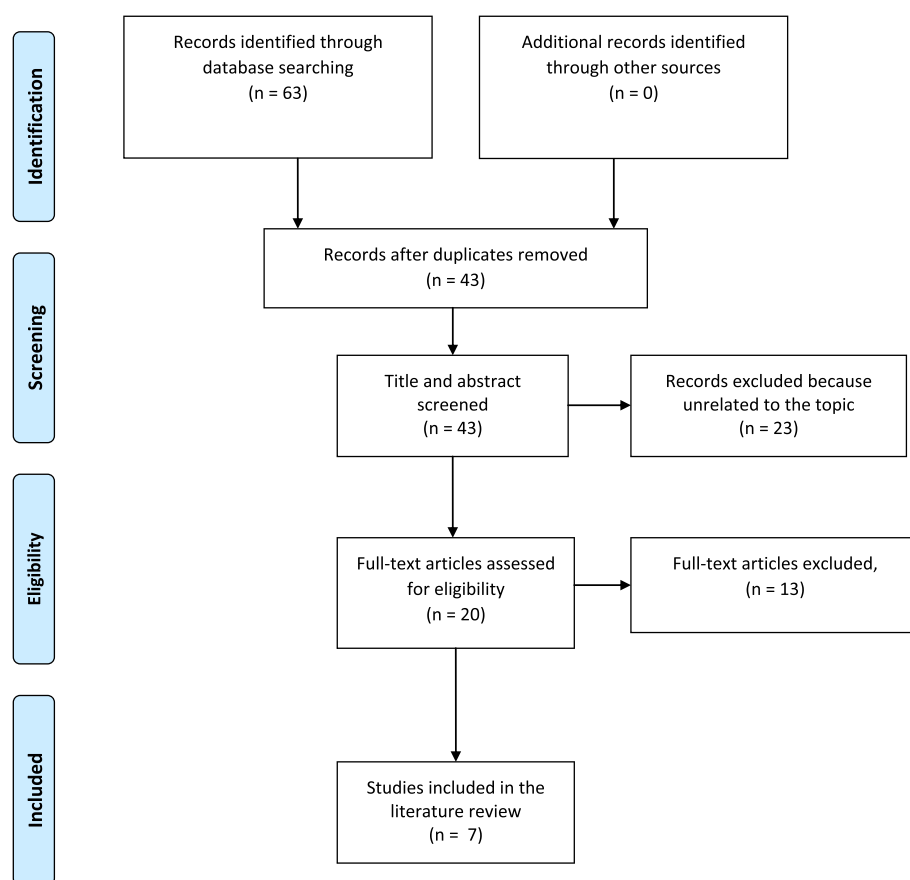


FIGURE 1 Flow diagram showing identification of studies for inclusion in this systematic review according to PRISMA guidelines

Citation	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
Abasher, 2009	Y	Y	Y	Y	U	U	Y	Y
Dahbi et al., 2018	Y	Y	Y	Y	U	U	Y	Y
Jassim & Whitford, 2014	Y	Y	Y	Y	U	U	Y	Y
Leila et al., 2016	Y	Y	Y	Y	U	U	Y	Y
Nair et al., 2018	Y	Y	Y	Y	U	U	Y	Y
Errihani et al., 2010	Y	Y	Y	Y	U	U	Y	Y
Sbitti et al., 2011	Y	Y	Y	Y	U	Y	Y	Y
%	100.0	100.0	100.0	100.0	0.0	12.5	100.0	100.0

TABLE 1 Critical appraisal results

Research and Treatment of Cancer Quality of Life Questionnaire (EORTC QLQ-BR23) (Jassim & Whitford, 2014; Leila et al., 2016), the Female Sexual Function Index (FSFI) (Dahbi et al., 2018; Sbitti et al., 2011) and investigator-developed instrument (Errihani et al., 2010). The WSFQ is a 17-item self-report instrument, and each item is measured on a 5-point Likert scale (1–5) with scores ranging from 17 to 85. High scores on the WSFQ indicate positive sexual function (Watts, 1982). The FSFI is a 19-item self-report instrument, and each item is measured on a 6-point Likert scale (0–5) with scores ranging from 2 to 36. High scores on the WSFQ indicate positive sexual function (Reed et al., 2014). The sexual functioning domain of the EORTC QLQ-BR23 incorporates two questions rated on a Likert scale (1–4) with scores transformed to a scale of 0 to 100. High scores on the WSFQ, FSFI and the EORTC QLQ-BR23 indicate higher sexual function.

Perception of body image was assessed using the 10-item body image scale (Sbitti et al., 2011), the body image domain of the EORTC QLQ-BR23 (Leila, Jassim) and an investigator-developed questionnaire (Abasher). Although the studies presented the results of prevalence of a negative impact on body image, none of the studies reported a cut off score used to determine negative impact. Information needs assessment was undertaken using the Supportive Care Needs Questionnaire (SCNS) (Nair et al., 2018). The characteristics of the included studies are detailed in Appendix A.

3.2 | Prevalence of sexual activity

Five studies reported on prevalence of sexual activity in Arab cancer survivors (Abasher, 2009; Dahbi et al., 2018; Errihani et al., 2010; Leila et al., 2016; Sbitti et al., 2011). The reported prevalence of sexual activity ranged from 3% (Dahbi et al., 2018) to 84% (Sbitti et al., 2011) (pooled estimate 39.2%, 95% CIs 12.6% to 69.8%, $I^2 = 98.1\%$) (Figure 2). For women with breast cancer only ($n = 3$ studies) (Abasher, 2009; Leila et al., 2016; Sbitti et al., 2011), the reported prevalence of sexual activity ranged from 40% (Abasher, 2009) to 84% (Sbitti et al., 2011) (pooled estimate 58.3%, 95% CIs 29.4% to 84.5%, $I^2 = 95.5\%$).

The time interval between treatment and return to regular sexual activity (in term of frequency) was reported in one study (Dahbi et al., 2018; Sbitti et al., 2011) and ranged from 5.8 months for women with non-gynaecological cancer to 8 months for women with cervical cancer.

3.3 | Sexual function

Three studies reported on mean scores for sexual satisfaction in Arab cancer survivors (Dahbi et al., 2018; Leila et al., 2016; Sbitti et al., 2011). The mean score for sexual satisfaction scores using the FSIF ranged from 3.6 (SD = 0.9) (Sbitti et al., 2011) to 3.8 (SD = 2.2) (Dahbi et al., 2018). The maximum obtainable score obtainable for sexual satisfaction using the FSIF is six. Sexual satisfaction scores using the EORTC QLQ-BR23 was 43.9 (SD = 25.1) (Leila et al., 2016). The maximum obtainable score obtainable for sexual satisfaction using the QLQ-BR23 is 100.

3.4 | Types of sexual dysfunction

The types of sexual dysfunctions in women were reported in four studies (Dahbi et al., 2018; Errihani et al., 2010; Leila et al., 2016; Sbitti et al., 2011).

Dyspareunia was reported in three studies (Errihani et al., 2010; Leila et al., 2016; Sbitti et al., 2011). Pooled data demonstrated that the prevalence of dyspareunia ranged from 22.2% (Errihani et al., 2010) to 65% (Sbitti et al., 2011) (pooled estimate 43%, 95% CIs 19.4% to 68.3%, $I^2 = 93.6\%$) (Figure 3). The prevalence of vaginal dryness or lubrication difficulties was reported in three studies and ranged from 19.8% (Errihani et al., 2010) to 54.2% (Sbitti et al., 2011) (pooled estimate 37.6%, 95% CIs 18.5% to 58.9%, $I^2 = 90.7\%$) (Figure 4). Other types of sexual dysfunction included reduction of sexual desire (64%), absence of sexual desire (48%) (Sbitti et al., 2011), inhibited female orgasm (40%) (Sbitti et al., 2011), brevity of intercourse and arousal (38%) (Sbitti et al., 2011), low libido (47%) (Errihani et al., 2010) and asthenia (53%) (Errihani et al., 2010) (Figure 4).

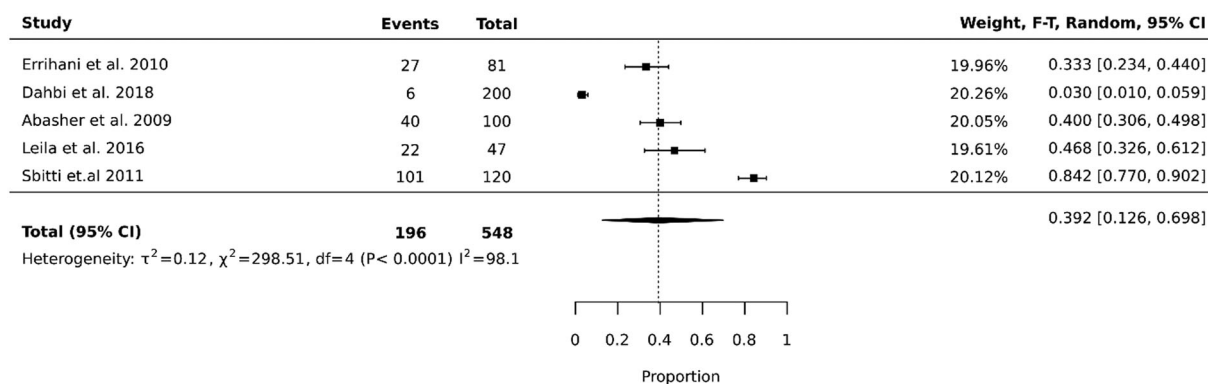


FIGURE 2 Prevalence of sexual activity (all patients)

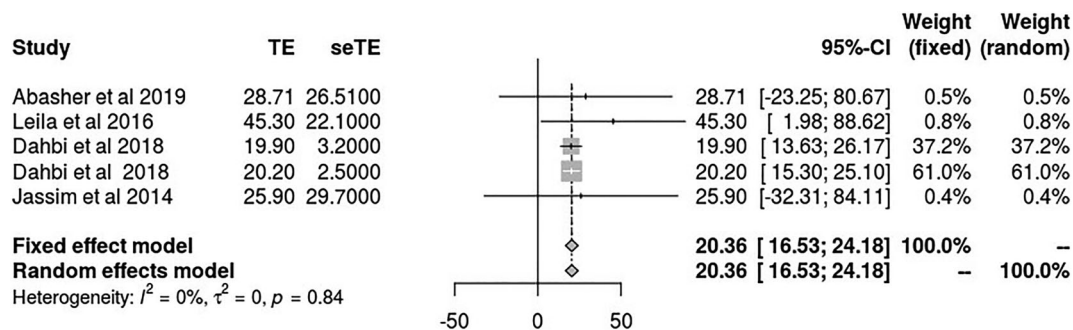
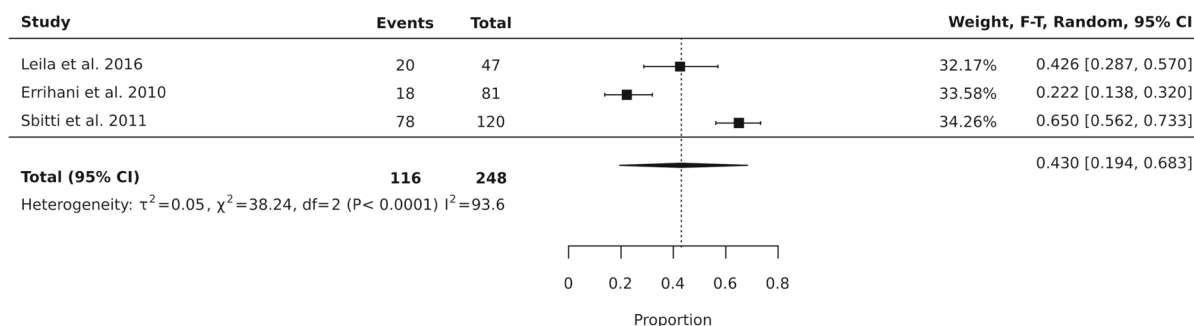


FIGURE 3 Sexual function

Dyspareunia



Vaginal dryness

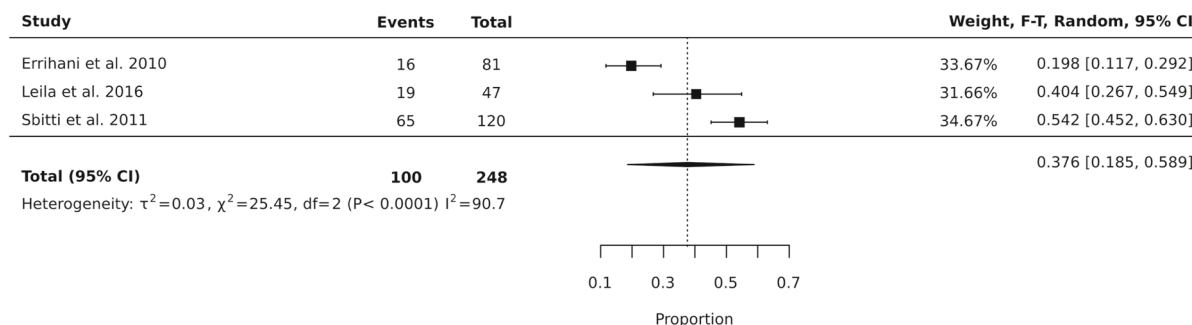


FIGURE 4 Types of sexual dysfunction

3.5 | Sexual satisfaction

Three studies reported on sexual satisfaction scores in Arab cancer survivors (Dahbi et al., 2018; Leila et al., 2016; Sbitti et al., 2011). The sexual satisfaction scores using the FSIF ranged from 3.6 (0.9) (Sbitti et al., 2011) to 3.8 (2.2) (Dahbi et al., 2018) while the sexual satisfaction scores using the QLQ-BR23 were 43.9 (25.1) (Leila et al., 2016).

3.6 | Sexual dissatisfaction

Three studies reported on prevalence of sexual dissatisfaction in Arab cancer survivors (Jassim & Whitford, 2014; Leila et al., 2016; Sbitti

et al., 2011). Pooled data from the three studies all involving women with breast cancer demonstrated a prevalence range from 10.6% (Leila et al., 2016) to 66.4% (Jassim & Whitford, 2014) (pooled estimate 43.7%, 95% CIs 37.9% to 49.6%, $I^2 = 96.3\%$).

3.7 | Perception of body image

The impact of cancer on body image or physical attractiveness was reported in four studies all in women with breast cancer (Abasher, 2009; Jassim & Whitford, 2014; Leila et al., 2016; Sbitti et al., 2011). The prevalence of a negative impact on body image ranged from 50% (Sbitti et al., 2011) to 80.9% (Leila

et al., 2016) (pooled estimate 66.6%, 95% CIs 50.2% to 81.1%, $I^2 = 92.1\%$).

3.8 | Predictors of sexual functioning

Four studies undertaken in women with breast cancer reported the association between the sexual functioning and participant characteristics. In one study, each younger women (Abasher, 2009) and those who were premenopausal (Jassim & Whitford, 2014) had significantly higher sexual functioning. In contrast, other studies reported no association between age (Leila et al., 2016; Sbitti et al., 2011) and menopausal status (Leila et al., 2016) on sexual functioning. Married women ($p < 0.001$) (Jassim & Whitford, 2014), those with longer married life (Abasher, 2009), long-term survivors ($p = 0.027$) (Jassim & Whitford, 2014) and higher monthly income ($p < 0.001$) (Jassim & Whitford, 2014) had significantly higher sexual functioning. Higher sexual functioning was reported to be associated with higher education level ($p = 0.031$) in two studies (Abasher, 2009; Jassim & Whitford, 2014), but not in the third study (Sbitti et al., 2011). There was no statistically significant correlation between sexual dysfunction and financial dependence, stage of the disease, type of surgery and type of medical therapy (Sbitti et al., 2011).

3.9 | Predictors of sexual satisfaction

Significantly higher sexual satisfaction was reported among premenopausal compared with post-menopausal women ($p = 0.018$) (Leila et al., 2016). Higher sexual satisfaction was also reported in women whose partners had no sexual difficulties ($p = 0.014$) (Leila et al., 2016), those who had higher education and those who were recently married (Leila et al., 2016). Gender correlated strongly with sexual needs with women expressing significantly lower unmet sexual needs (Nair et al., 2018).

3.10 | Information about sexual health

Pooled data from three studies undertaken in women (Abasher, 2009; Dahbi et al., 2018; Sbitti et al., 2011) demonstrated that 84.7% (95% CIs 44.1% to 100%, $I^2 = 98.4\%$) of the cancer survivors reported lack of information about the effect of cancer on their sexual health.

Moreover, pooled data from another two studies (Errihani et al., 2010; Sbitti et al., 2011) demonstrated that 98.7% (95% CIs 96.5% to 99.9%, $I^2 = 87.6\%$) of the cancer survivors had never discussed their sexual health with their doctors.

3.11 | Barriers to accessing sexual information

Only one study (Errihani et al., 2010) reported on barriers to accessing sexual information which included lack of opportunities to speak

about their sexual health with the health team was related to the difficulties in communicating on the subject, lack of knowledge on the subject working conditions and lack of time (Errihani et al., 2010).

4 | DISCUSSION

Poor sexual quality of life is one of the most common and distressing consequences of cancer treatment for all cancer survivors. This systematic review is the first to explore the prevalence, predictors and information needs about sexual health among Arab cancer survivors. For this review, only seven studies met the inclusion criteria and were analysed. The overall methodological quality of the included studies was good. The majority of the included studies primarily focused on women with breast cancer.

The reported prevalence of sexual activity for women irrespective of the type of cancer ranged from 3% (Dahbi et al., 2018) to 84% (Sbitti et al., 2011). These results are similar to the prevalence among cancer patients in Asia (58.3–85.5%) and America (68.7–88.5) and higher than those in Europe (45.5–59.8%). These differences may be attributable to differences in the instruments used to measure outcomes cancer types, treatment, ethnic, social or cultural factors (Jing et al., 2019). The low 3% is understandable as the majority of the women in the study had cervical cancer and the sexual activity was assessed during the treatment period. For women with breast cancer, only 58.3% reported having sexual activity after treatment; the lack of sexual activity could be not related to the cancer treatment, but it could be that some women did not have a partner or were not in an intimate relationship, or were not interested in sexual activity as a result of other physical co-morbidity (Panjari et al., 2011).

This review also identified that cancer survivors returned to regular sexual activity up to 8 months following diagnosis. It should be noted however that the results identified in this review were based on a single study conducted in women with non-gynaecological cancer and cervical cancer. Nevertheless, this result is congruent with another study where women who had a radical hysterectomy were sexually inactive for around 3 months after surgery (Jensen & Froeding, 2015). Similar findings were reported in another study where women who treated for cervical cancer became more sexually active within 24-months. The findings support that the time taken to resume sexual activity is also dependant on the type of cancer and treatment received. Time remains an important factor for return to normal sexual activities with better sexual quality of life associated with longer time since diagnosis (Jassim & Whitford, 2014; Yang et al., 2012).

Sexual dysfunction is a common distressing consequence of cancer treatment with all four studies reporting poor sexual functioning. This result is not surprising as cancer affects the cancer survivors' sex organs, and sexual desire (sex drive or libido), sexual function, well-being and body image can be affected by cancer and cancer treatment. Sexual problems often develop because of physical and psychological side effects of cancer and cancer treatments (Den Ouden et al., 2019; Veneroni et al., 2020). Evidence from the literature demonstrates that a diagnosis and treatment of cancer can create depression

and anxiety in the patient, which in turn affects their sexual activity (Kamen et al., 2017). Therefore, early identification of these factors and implementing strategies to address these are imperative to promote sexual quality of life for Arab patients with cancer.

For women, dyspareunia and vaginal dryness or lubrication difficulties were the two main types of problems that were identified in this review. These results are similarly reported in other studies with non-Arab participants (Chappell & Woodard, 2017; Maiorino et al., 2016). The dyspareunia could be due to the significantly lower amounts of oestrogen by the hormonal therapy in the body, which can cause lubrication difficulties and vaginal dryness (Simon, 2011).

Absence of sexual desire, asthenia, low libido and inhibited female orgasm were the other dysfunctions that were reported. These results are also similarly reported in other studies with non-Arab participants (Acquati et al., 2018; Chappell & Woodard, 2017).

It should be noted that the types of sexual dysfunctions were assessed based on investigator-developed questions as there are currently no diagnostic criteria for sexual dysfunction in women; hence, the results should be interpreted with caution.

In this review, sexual dissatisfaction was reported in 43.7% of the patients with breast cancer. This result can be explained by the sensitivity of the affected organ and the physical and psychological impact of cancer disease and treatment on the patient body image, which might include dissatisfaction with appearance and dissatisfaction with surgical scars and can impact on patient sexual satisfaction. Recent study found greater sexual dissatisfaction was associated with lower marital adjustment for partners who reported low levels of mutual constructive communication (Marsh et al., 2020).

In this review, women had lower number of unmet sexual needs (Nair et al., 2018). This result is consistent with studies undertaken in other ethnic groups (Coreil et al., 2004; Lam et al., 2011; Wen et al., 2014). For instance, in a study conducted among Chinese women with breast cancer, comparatively fewer women reported unmet sexual needs (Lam et al., 2011). It could be possible that irrespective of their cultural background, women are shy and reluctant to speak about their sexual needs and hence suffer in silence (Reese, Bober, et al., 2017). Hence, health professionals need to initiate the topic of unmet sexual needs among women with cancer.

Unsurprisingly, older age was identified as one of the factors affecting the sexual activity of Arab cancer survivors. This may be explained by the fact that ageing itself is associated with decreased sexual activity and can be affected by the presence of cancer and other comorbidities (Mercer et al., 2013). Recent study found that age was one of the main demographic factors that were significantly associated with sexual dysfunction and intimacy. Older patients were less likely to discuss sexual issues with their partners and seek help from the health care providers that can impact on their sexual activity (Hay et al., 2018).

In this review, having high income was associated with higher sexual function among cancer survivors, which is consistent with results obtained from other studies (Diehl et al., 2013; Rana et al., 2019; Rossen et al., 2012). A possible explanation might be that patients with high income have not only access to hospital care but can also afford other health support services, for example, mental health

service or sexual dysfunction clinics compared with those with low income (Rana et al., 2019). This finding is important given that some countries in the Middle East region do not have universal medical coverage for their citizens and health care is based on a user pay system. Hence, women on low incomes may not be able to afford the services to promote their sexual functioning given that they also have to pay the costs associated for the treatment of cancer (Liu et al., 2021).

Similarly, having high level of education was associated with higher sexual functioning among cancer survivors. This could be related to the ability of patients with a higher education level to obtain information from other sources such as the internet as well as have a greater understanding of cancer. As a result, these women may have the knowledge about health support services available and access these to confront their sexual dysfunctions (Ghweeba et al., 2017; Rana et al., 2019).

It has been well established that sexual health is considered a largely unmet need area for cancer patients (Park et al., 2009; Reese, Sorice, et al., 2017). Evidence from the literature indicates that for Arab cancer survivors, their doctor or health care provider is the most trusted source of information, and they were more likely to source sexual health information from their doctor or health care providers to meet their unmet sexual needs (Alananzeh et al., 2019). However, this review identified a lack of communication about sexual concerns between the patients and their health care providers. This result is congruent with the existing literature where patients report not getting enough information and help for their sexual needs from the health care providers (Dyer & das Nair, 2013; Rasmusson et al., 2013). In one study, around 90% of cancer survivors reported that their oncologist did not address their sexual health concerns (Sporn et al., 2015). Various reasons could be postulated for the lack of information. First, health care providers could have personal inhibitions to discuss sexual health with female patients or could lack appropriate training in initiating or discussing the subject with patients or may not consider discussing sexual health a priority given their busy workloads (Park et al., 2009; Vermeer et al., 2015). It could also be possible that health care providers rely on patients to raise any sexual health concerns and consider that there are no problems if the patient has not identified any concerns (Hill et al., 2011). Therefore, appropriate training for health care professionals in order to discuss these topics with patients remains vital. Alternately, health services could have a trained health care professional (for example, trained nurses or sexologist) to accompany and support cancer survivors in sexual health issues. Second, for female Arab cancer survivors, sexual health could have been a secondary subject as they were more focused on the disease; hence, discussing about their sexual needs was not given a priority (Errihani et al., 2010). They could believe that if issues relating to sexual health are important or likely to be affected by their treatment, their doctor will raise the issue and hence they do not need to report sexual health needs (McDowell et al., 2010). Another major barrier to discussing sexual health by health care providers and Arab cancer survivors is that sexual and reproductive health conversations are regarded as a taboo topic in most Arabic cultures (Bell et al., 2013; McGrane et al., 2014). Sexual health is associated with shame, stigma and dishonour

termed as “ayb” in Arabic. It could be assumed that the lower reporting of and reduced attention to their sexual needs while undergoing treatment could be to prevent the shame and stigma and uphold the cultural beliefs in the Arabic community (McDowell et al., 2010). In addition, it could be possible that female Arab cancer survivors may be less likely to raise the topic of their sexual needs to a male health care provider. Moreover, in Arabic cultures, a male or the husband generally attends health appointments with the female cancer survivor, which could also deter the woman from expressing her sexual concerns even to a female health care provider due to the presence of a male (Madkhali et al., 2019).

Given the various barriers at both the health care provider level and the patient level, there is a need to develop information resources on sexual health needs for Arab people and make it easily available to them during visits to their health care provider.

4.1 | Study strengths and limitations

The strengths of the review included a comprehensive systematic search for all literature that explored the prevalence, predictors and information needs about sexual health among female Arab cancer survivors. In addition, assessment of the methodological quality, data extraction and data analysis of the included studies was assessed by two authors to minimise the potential risk of bias. It is important to note that the included studies were conducted in a range of countries using different methodologies and scales that were culturally appropriate to their target groups. Despite the robustness in which the review was undertaken, some limitations need to be acknowledged.

First, the majority of the participants in the included studies were women with breast cancer that limited the ability to conduct an analysis of different consequences based on type of cancer; hence, the results cannot be generalised to women with other types of cancer. Second, there was high heterogeneity between the studies that could be attributed to the instruments used to measure outcomes and the stages of disease. Nevertheless, the meta-analysis provides a very modest guidance on the prevalence of sexual well-being among women with cancer. The outcomes in five studies were reported in aggregate; hence, outcomes based on the various types of cancers could not be reported. In addition, given the varying follow-up periods in the studies, the timing of the sexual dysfunctions can vary from the immediate post-operative period to a longer term. Finally, gender bias in the sample of some studies was included, which hinders speaking about male sexuality in an appropriate way. Despite these limitations, the findings of this study provide a conceptual understanding of the difficulties experienced by female Arab cancer survivors.

4.2 | Implications for practice

The evidence obtained from this review provides an understanding of some of the sexual dysfunctions among female Arab cancer survivors. It is clear that there is a huge gap in communication and providing

information on sexual health between the health care providers and Arab cancer survivors. Providing health providers with training in discussing sexual health and having gender-specific health care providers may encourage female Arab cancer survivors to discuss their sexual health needs. In addition, developing and disseminating information resources on sexual health for Arab people are urgently needed. Moreover, a culturally appropriate counselling and educational programme may help to improve the knowledge level regarding body image and address sexual health needs, which will in turn improve the quality of life among female Arab cancer survivors.

4.3 | Implications for research

Further research is needed into the sexuality of Arab cancer survivors. They constitute important aspects of the lives of cancer survivors who are clearly heavily affected by both the diagnosis and the effects of various treatment modalities. Considering that the majority of the studies were focused on women with breast cancer, there is a need for further investigations with larger cohort studies that include Arab women with other types of cancers. Future research should examine the different ways in which sexuality is experienced and negotiated in the context of cancer across a range of cultural groups, where sexuality may have different meanings for males and females, given the sociocultural construction of sex. It is also critical for research to include a focus on sexual well-being for female partners, as there is evidence that patient partners have reported a variety of sexual needs and issues with cancer survivors, which must be documented. Finally, the use of better research methodology is necessary to gain more insight into the effect of cancer and cancer treatment on sexuality. It is important that the assessment tools are standardised, valid and reliable and specialised for the study of sexuality.

5 | CONCLUSION

The evidence from this review demonstrates that less than 50% of cancer survivors participate in sexual activity following cancer with dyspareunia was the most common types of sexual dysfunction reported. The review also identified that Arab women have unmet sexual needs but are hesitant to ask for information. There is also a very wide gap in communication and providing information on sexual health by care providers to female Arab cancer survivors. Hence, culturally appropriate strategies to improve the sexual quality of life of female Arab cancer survivors are urgently needed.

Different cultural groups have different needs and expectations to health education and the ways that they receive the health care. This study provides a rich, conceptual understanding of what female Arab cancer survivors with sexual dysfunction are facing. Considering the lack of culturally appropriate programmes to support Arab cancer survivors, an educational intervention programme that takes a culturally sensitive approach may help to improve Arab cancer survivors' awareness and knowledge level regarding body image and

sexuality issues and could also be of a great help to reduce their stress level.

This review finds that the majority of the included studies were primarily focused on women with breast cancer. There is a need for further studies to address this gender bias/gap with larger cohorts before making any conclusion on the sexual health needs of the Arab population. We suggest, based on the findings in this review, that clinicians explicitly consider the unique needs of sexual health education/information and cultural differences as an important strategy in the care of this ethnic group of population.

CONFLICT OF INTEREST

R.F. who is an author on this paper is also a member of the JBI editorial board. The other authors declare no conflicts of interest.

DATA AVAILABILITY STATEMENT

Data sharing is not applicable to this article as no new data were created or analysed in this study.

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APPENDIX A: CHARACTERISTICS OF INCLUDED STUDIES

Study/country	Study design	Participant characteristics	Findings	Outcome measured using
Abasher (2009) Sudan	Cohort study	100 women with breast cancer recruited from Radiation and Isotopes Centre Age: 25–55 years (no <i>M</i> and <i>SD</i>) Marital status: married 100%. Time since diagnosis: Various stages of breast cancer	<u>Prevalence of sexual activity:</u> 40% <u>Sexual function:</u> Mean score 28.71 (± 26.51) <u>Negative changes on sexual life:</u> 50% <u>Body image:</u> Felt less attractive: 55% <u>Predictors of sexual function</u> <ul style="list-style-type: none"> Decreased sexual function among younger women Increased sexual function among women with higher education level and those who had a longer length of marriage. <u>Patient information</u> <ul style="list-style-type: none"> Given some information about side effects of treatment: 53%. 	Watts Sexual Function Questionnaire
Dahbi et al. (2018) Morocco	Prospective cohort study	Moroccan female survivors of cervical cancer (<i>n</i> = 100) and survivors of non-gynaecological cancer (<i>n</i> = 100) recruited from hospital archive Mean age: 52.8 (no <i>SD</i>) Marital status: Single 17.3%, Married 26.4%; Divorced/widowed 56.3%. Time since diagnosis: not stated	<u>Prevalence of sexual activity during treatment:</u> 6/200 (3%) <u>Sexual functioning</u> <ul style="list-style-type: none"> Patients with cervical cancer: Mean score 19.9 (± 3.2) Patients with non-gynaecological cancer: Mean score 20 (± 2.5) <u>Sexual satisfaction</u> <ul style="list-style-type: none"> Patients with cervical cancer: Mean score 3.7 (± 1.8) Patients with non-gynaecological cancer: Mean score 3.8 (± 2.2) <u>Time interval between treatment and regular sexual activity</u> <ul style="list-style-type: none"> Patients with cervical cancer: 8 months Patients with non-gynaecological cancer: 5.8 months. <u>Patient information</u> <ul style="list-style-type: none"> Received guidance from doctor about sexual matters: 53%. 	Female Sexual Function Index
Errihani et al. (2010) Morocco	Descriptive transversal study	97 male and female Moroccan patients diagnosed with cancer 84% were female Age: 18–72 years Marital status: Married 81% (<i>n</i> = 79) Time since diagnosis: not stated	<u>Prevalence of sexual activity:</u> 27/81 (33%) <u>Types of sexual dysfunction</u> <ul style="list-style-type: none"> Women: asthenia (53%) and low libido (47 %) Men: erectile dysfunction (61%) and asthenia (53 %). <u>Patient information</u> <ul style="list-style-type: none"> Never discussed sexuality needs with their doctor: 95% 	Self-developed questionnaire

(Continues)

Study/country	Study design	Participant characteristics	Findings	Outcome measured using
Leila et al. (2016) Tunisia	Descriptive cohort study	50 Tunisian women with breast cancer recruited from hospital setting Mean age: 52.06 (SD = 10.07) Marital status: Married 94% (n = 47) Time since diagnosis: At least 3 months after initial treatment of breast cancer.	<u>Prevalence of sexual activity during treatment</u> 22/47 46.8% <u>Sexual functioning:</u> Mean score 45.3 (±22.1) <u>Sexual satisfaction:</u> Mean score 43.9 (±25.1) <u>Body image:</u> diminished sense of sexual attractiveness: 80.9% <u>Types of sexual dysfunction</u> <ul style="list-style-type: none"> • Women: dyspareunia (42.5%); • Men: decreased libido (55.6%); sexual dissatisfaction (27.8%), and erectile dysfunction (16.7%) <u>Predictors of sexual function</u> Increased sexual function among premenopausal women	European Organization for Research and Treatment of Cancer Questionnaire Specific scale of breast cancer QLQ-BR23
Nair et al. (2018) UAE	Cross-sectional study	210 male and female Arabic speaking patients with cancer recruited from hospital and a regional oncology referral centre Age: 18–75 years Marital status: single 13% (n = 28), Married 76 % (n = 159) Time since diagnosis: newly diagnosed with cancer or recurrent cancer diagnosis.	<u>Patient information</u> Needed information about sexual relationships (16.7%) and changes in sexual feelings (9.5%) <u>Predictors of unmet sexual needs</u> men had significantly higher unmet sexual need than women	Supportive care needs survey-- short form
Jassim and Whitford (2014) Bahrain	Cross-sectional study	239 Bahraini women with breast cancer recruited from Cancer Registry Mean age: 50.2 (SD = 11.1) Marital status: Not reported Time since diagnosis: 4.22 (±2.69) years	<u>Sexual functioning:</u> Mean score 25.9 (±29.7) <u>Predictors of sexual function</u> <ul style="list-style-type: none"> • Better sexual functioning was observed for married women those with high income and long-term survivors 	European Organization for Research and Treatment of Cancer QoL Cancer Specific Version
Sbitti et al. (2011) Morocco	Exploratory prospective study	120 Moroccan sexually active women with breast cancer in recruited from an outpatient clinic Mean age: 45.3 (SD = 5.24) Marital status: Married 100%. Time since diagnosis: not stated	<u>Prevalence of sexual activity:</u> 84% <u>Sexual satisfaction scores:</u> Mean score 3.6 (±0.9) <u>Sexual functioning:</u> Patients reported worse sexual functioning. <u>Types of sexual dysfunction</u> <ul style="list-style-type: none"> • Dyspareunia (65%), lubrication difficulties (54%), absence sexual desire; reduction of sexual desire (64%); inhibited orgasm (40%), lack of satisfaction (37%), and brevity of intercourse and arousal (38%). 	The Body Image Scale The Female Sexual Function Index