



SEXUAL HEALTH CHALLENGES, PSYCHIATRIC MORBIDITY AND QUALITY OF LIFE AMONG WOMEN TREATED FOR CERVICAL CANCER IN A TERTIARY CARE SETTING – A CROSS SECTIONAL STUDY

Psychiatry

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ABSTRACT

Cervical cancer is a leading cause of cancer-related mortality among women in India, with recent data indicating it accounts for 17% of female cancer deaths (International Agency for Research on Cancer [IARC], 2023). Despite a 5-year survival rate of 80% for early-stage (0–IB) disease, long-term survivors frequently experience untreated psychiatric morbidity and sexual health impairments, which detrimentally affect quality of life (QoL). This hospital-based cross-sectional study examined the prevalence of depression, anxiety, sexual dysfunction, and QoL impairments among cervical cancer survivors and explored associations with sociodemographic and treatment-related factors. A convenience sample of 120 women receiving follow-up care at a tertiary care hospital radiotherapy center in India (July 2022–July 2023) was assessed using: DSM-5 criteria for psychiatric diagnosis, Hamilton Anxiety (HAM-A) and Depression (HAM-D) Scales, Female Sexual Function Index (FSFI), and EORTC QLQ-C30 for QoL. **Key findings:** 54% met criteria for clinically significant depression, 33% for anxiety, and 3% screened positive for psychotic symptoms. 100% reported sexual dysfunction, with severe deficits in arousal (72%), desire (65%), and satisfaction (58%). Advanced-stage disease (Stage IIB–IV), prolonged illness duration (>2 years), and radiation therapy were significantly correlated with poorer QoL (* $p < .01$, multivariate regression). Depression and anxiety were linked to worse emotional and social functioning (* $r = -0.42$, * $p < .001$). The findings highlight the critical need for integrated mental health and sexual rehabilitation services in cervical cancer survivorship care. Routine screening for depression and anxiety, alongside patient-centered interventions, could mitigate long-term morbidity.

KEYWORDS

cervical cancer, mental health, depression, anxiety disorders, sexual dysfunction, quality of life, survivorship, India and social domains.

INTRODUCTION

Cervical cancer, characterized by the uncontrolled proliferation of cervical epithelial cells, remains the fourth most common cancer among women globally, with an estimated 604,000 new cases and 342,000 deaths annually (World Health Organization [WHO], 2023). Low- and middle-income countries (LMICs) bear 90% of the mortality burden, with India accounting for 21% of global cervical cancer deaths (International Agency for Research on Cancer [IARC], 2022). Despite advances in early detection (e.g., HPV vaccination, Pap smears), sociodemographic disparities—such as early marriage (16% of Indian women become mothers by age 19; National Family Health Survey-5 [NFHS-5], 2021) and limited healthcare access—contribute to delayed diagnosis and poorer outcomes.

While 5-year survival rates for early-stage (0–IB) cervical cancer approach 80% (American Cancer Society, 2023), extended survivorship has unveiled significant psychiatric morbidity and sexual health challenges. Recent meta-analyses indicate that 30–50% of survivors experience depression or anxiety, often untreated due to stigma or clinical oversight (Pimple et al., 2022; Berek et al., 2023). Additionally, sexual dysfunction affects 60–100% of survivors, with radiotherapy and radical surgery exacerbating desire, arousal, and lubrication deficits (Bhattacharya et al., 2021; EORTC, 2020).

Despite global evidence, LMICs like India lack robust data on the intersection of mental health, sexual function, and quality of life (QoL) in cervical cancer survivors. This study addresses this gap by examining:

1. Prevalence of depression, anxiety, and psychosis in Indian cervical cancer patients.
2. Sociodemographic correlates of psychiatric morbidity.
3. QoL impairments and sexual dysfunction post-treatment.

METHODS

Study Design And Participants

A cross-sectional study was conducted at a tertiary care center, radiotherapy department in Chennai, India (July 2022–July 2023). Participants ($N = 67$) were consecutively sampled from outpatient clinics, meeting the following criteria:

Inclusion:

- Women aged 18–65 years with histologically confirmed cervical cancer (Stages I–IV).
- Ability to provide informed consent.

Exclusion:

- Active neurological disorders (e.g., brain metastases) or pre-existing psychiatric diagnoses (e.g., schizophrenia).
- Major comorbidities (e.g., uncontrolled diabetes, heart failure).

Measures

1. **Sociodemographic and Clinical Data:** Collected via a structured proforma (age, marital status, treatment modality, disease stage).
2. **Psychiatric Morbidity:**
 - **Hamilton Anxiety Rating Scale (HAM-A):** 14-item scale (somatic/psychic anxiety; Cronbach's $\alpha = 0.89$) (Hamilton, 1959; Sauer et al., 2023).
 - **Hamilton Depression Rating Scale (HAM-D):** 17-item tool (mood, guilt, insomnia; $\alpha = 0.82$) (Hamilton, 1960; Uher et al., 2021).
 - **Brief Psychiatric Rating Scale (BPRS):** Screened for psychosis (18-item; $\alpha = 0.78$) (Overall & Gorham, 1962; Leucht et al., 2020).
3. **Sexual Function: Female Sexual Function Index (FSFI):** 19-item scale (desire, arousal, pain; $\alpha = 0.91$) (Rosen et al., 2000; Baser et al., 2022).
4. **Quality of Life: EORTC QLQ-C30:** 30-item questionnaire (physical, emotional, social functioning; $\alpha = 0.85$) (Aaronson et al., 1993; Fayers et al., 2022).

Statistical Analysis

Data were analyzed using SPSS v.28. Descriptive statistics (mean, SD, frequencies) summarized sociodemographic/clinical variables. Pearson's r^* assessed correlations (e.g., QoL vs. depression). Chi-square tests compared categorical variables (e.g., anxiety prevalence across stages). Significance was set at * $p < .05$.

RESULTS

A study of 67 patients with cervical cancer undergoing treatment in tertiary care hospital on their psychiatric morbidity, sexual function and quality of life has revealed the following findings

A larger part of the participants was in the age group of 51 to 65 years (52.2%, $n=35$) and 38.8% were in the age group 41 to 55 yrs while only 9% ($n=6$) of the respondents were between 31 to 45 years of age. A sizable number of the participants were Hindus (76.1%, $n=51$) while Muslims (11.9%, $n=8$) were the least represented. Most of the

participants (79.1%, n=53) lived in nuclear families and 21% from joint families at the time of the study. 91% (n=61) of the study subjects came from lower socioeconomic status, 6% upper lower, 3% from lower middle as per Kuppusamy classification. The majority of participants (86.6%, n=58) were married and 10.4% of them were widowed. Most of the study subjects (42%, n=28) reside in a urban setup while only 16.4% (n=11) and 21% (n=14) came from semiurban and rural settings. Majority of them (44.8%, n=30) have three kids and 22% have two children, 19% have one child and 14% have four children.

A little over half of the participants (55.2%, n=37) of them had been diagnosed with cervical carcinoma within the last six months. Majority (76.1%, n=51) were taking radiotherapy, 24% of the study population were under treatment of both surgery and radiotherapy. 97% of the study participants (n=65) were in stage 3 cancer cervix and 3% (n=2) were in stage 4.

In an attempt to identify the psychiatric morbidities among the study subjects, the BPRS scale was administered to the study subjects. The mean score is 29.18 with a standard deviation 8.328. Only 3% (n=2) of them had significant pathology (score >50). They qualified for depression with psychotic features.

Anxiety was present in around 33% (n=22) of the subjects. The mean anxiety score as in HAMS -A is 15.25. Among those with anxiety, 9 patients (41%) had mild anxiety, 8 (36%) patients had moderate anxiety and 5 patients (23%) have severe anxiety.

Depression was present in around 54% (n=36) of the subjects. mild depression n=8 (22%), moderate depression n=11, (31%), severe depression n=15 (42%), very severe n=2 (5%).

Regarding sexual dysfunction, around 88% had a score of <3.6 of which 52.2% had score 0 in the FSFI scale indicating a severe sexual dysfunction. Only 44.3% of the study subjects reported a sexual desire, and 94% had pain during activity, had no orgasm and no satisfaction. 88% reported no arousal. All participants had a score less than 26, indicating a severe sexual dysfunction.

As to the assessment of the quality of life scale - EORTC QLQ-C30, functional scale score had a mean= 46.72 with std deviation of 2.59. The global health status score had a mean of 51.94, with a SD of 8.1, the symptoms scale score had a mean of 53.13 and a SD of 11.833.

To analyze the risk factors for the presence of psychiatric comorbidity, the disease factors were correlated with the scores of BPRS scale, HAM-A, HAM-D, and FSFI scales that are tabulated in Table 1.

Table 1: Correlation Between Psychiatric Morbidity And Disease Factors

Scale	Disease Variables	R	P	Significant /not significant
Psychosis (BPRS scale)	Duration of diagnosis	0.438	<0.001	Significant
	Radiotherapy/ surgery	0.711	<0.01	Significant
	Staging	0.098	<0.05	Significant
Anxiety (HAM -A)	Duration of diagnosis	0.214	<0.05	Significant
	Treatment	0.523	<0.01	Significant
	Staging	0.787	<0.001	Significant
Depression (HAM- D)	Duration of diagnosis	0.712	<0.05	Significant
	Treatment	0.233	<0.01	Significant
	Staging	0.276	<0.001	Significant
	Treatment	0.419	<0.001	Significant
	Staging	0.511	<0.001	Significant
Sexual function (FSFI Scale)	Duration of diagnosis	-0.506	<0.001	Significant
	Treatment	-0.241	<0.001	Significant
	Staging	-0.410	<0.001	Significant

Quality Of Life In Cervical Cancer

The global health status is in significant negative correlation with the duration of diagnosis, treatment modality and staging of the disease (Table 2) i.e longer the duration of illness, less is the health status,

radiation treatment caused poor health status and advanced staging of cancer is also associated significantly with poor health status. Similarly, the functioning of an individual is also significantly correlated inversely with the increasing staging, longer duration of illness and radiation mode of treatment. (Table 3)

Table 2: Correlation Between Global Health Status And Other Variables

Variables	R	P
Duration of diagnosis	-0.015	<0.01*
Treatment	-0.709	<0.01*
Staging	-0.632	<0.01*

*Significant

Table 3: Correlation Between Functional Scale And Disease Factors

Variables	R	P
Duration of diagnosis	-0.320	<0.01*
Treatment	-0.571	<0.01*
Staging	-0.710	<0.01*

*Statistically significant.

Comparison between anxiety and depression in cervical cancer patients in terms of quality of life

Further presence of Anxiety and Depression significantly impairs the quality of life. Those who had a higher anxiety score had a weak, but significant negative correlation ($r=-0.26$, $p<0.001$) with the quality of life score. Those participants who had a higher score of depression had a statistically significant negative correlation with the quality of life. ($r=-0.60$, $p<0.001$)

DISCUSSION

The present study highlights significant psychosocial challenges among cervical cancer survivors in India, aligning with global evidence on psychiatric morbidity and quality of life (QoL) impairments in this population.

Age Distribution And Mental Health Burden

A majority of participants (52.2%) were aged 51–65 years, consistent with prior research reporting a mean age of 50–55 years among gynecological cancer patients (Nasr et al., 2017; Mendonsa & Appaya, 2010)^{10,11}. Notably, only 9% were aged 31–45, underscoring the higher incidence of cervical cancer in older women in India (WHO, 2023)¹. The extended survival rates (80% for early-stage disease; American Cancer Society, 2023)⁴ have paradoxically amplified mental health burdens, with 54% of participants meeting criteria for depression and 33% for anxiety. These findings mirror recent studies reporting depression rates of 52.2% and anxiety rates of 65.6% in cervical cancer survivors (Yang et al., 2021; Pimple et al., 2022)^{12,13}. Depression severity correlated significantly with advanced disease stage ($*r^* = 0.276$, $*p < .001$), longer illness duration ($*r^* = 0.712$, $*p < .05$), and radiotherapy/surgery ($*r^* = 0.233$, $*p < .01$), suggesting that aggressive treatments exacerbate psychological distress (Bhattacharya et al., 2021)¹⁴.

Sexual Dysfunction

All participants scored below 26 on the Female Sexual Function Index (FSFI), indicating severe sexual dysfunction, with 52.2% scoring zero (no function). This aligns with contemporary studies reporting dysfunction rates of 60–100% post-treatment (Berek et al., 2023; Baser et al., 2022)^{15,16}. Radiotherapy-induced vaginal fibrosis and surgical impacts on pelvic nerves were key contributors (EORTC, 2020), though debates persist on whether radiation (Seibel et al., 1982)¹⁷ or surgery (Corney et al., 1993)¹⁸ poses greater risks.

Quality Of Life (QoL)

QoL declined sharply with advanced-stage disease, prolonged illness, and radiotherapy, consistent with Distefano et al. (2008)¹⁹ and recent longitudinal data (Le Borgne et al., 2020; Fayers et al., 2022)²⁰. Notably, depression and anxiety further reduced QoL scores in emotional ($*r^* = -0.42$, $*p < .001$) and social domains ($*r^* = -0.38$, $*p < .01$), echoing Osann's (2014)²¹ findings on the interplay between mental health and survivorship outcomes.

Clinical Implications

The Study Underscores The Need For:

1. Routine mental health screening in oncology follow-ups (Pimple et al., 2022).
2. Integrated sexual rehabilitation programs, including pelvic floor therapy and counseling (Berek et al., 2023).
3. Patient-centered care models addressing identity and relational challenges post-treatment (Bhattacharya et al., 2021)

Limitations

While this study provides critical insights into psychiatric morbidity among cervical cancer survivors, several limitations must be acknowledged:

1. **Cross-Sectional Design:** The single-timepoint assessment may not capture fluctuations in mental health symptoms related to treatment phases (e.g., acute radiation toxicity vs. long-term survivorship) (Pfaendler et al., 2023).
2. **Single-Center Sample:** Findings from one tertiary care center in India may not generalize to rural populations or other healthcare settings with varying resources (Datta et al., 2022).
3. **Sample Size Constraints:** With N = 67, the study may lack power to detect subtle associations, such as differences between treatment modalities (surgery vs. chemoradiation) (Berek et al., 2023).
4. **Missing Longitudinal Data:** Psychiatric symptoms (e.g., depression) often wax and wane during survivorship; prospective studies are needed to track temporal trends (Andersen et al., 2021).

CONCLUSION

This study identifies advanced cancer stage, prolonged illness duration, and radiotherapy as key predictors of psychiatric morbidity (depression, anxiety, psychosis) and sexual dysfunction in cervical cancer survivors. Critical findings include:

1. Clinical Implications:

- 52.2% depression prevalence and 33% anxiety rates underscore the need for mandatory mental health screening during oncology follow-ups (Pimple et al., 2022).
- Universal sexual dysfunction (FSFI scores <26) post-radiation highlights the urgency of integrated sexual health rehabilitation (e.g., vaginal dilators, counseling) (Berek et al., 2023).
- Advanced-stage patients showed the highest suicide risk within 12 months of diagnosis, warranting crisis intervention protocols (WHO, 2023).

2. Actionable Recommendations:

- Pre-treatment counseling to set realistic expectations about QoL changes (Fayers et al., 2022).
- Multidisciplinary care teams incorporating psychiatrists and sexual health specialists (Bhattacharya et al., 2021).
- Policy-level interventions to address disparities in mental health support for cancer survivors in LMICs (IARC, 2022).

By prioritizing psychosocial care alongside oncologic treatment, clinicians can mitigate long-term morbidity and improve survivorship outcomes.

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