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Emotional Trauma Burden Among Cervical Cancer Patients in Western Kenya

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Abstract

Cervical cancer is widespread and is associated with rising morbidity and mortality rates. A comprehensive intervention that includes mental health evaluations is crucial once a diagnosis of cervical cancer is established, as it helps to investigate emotional trauma (ET), which manifests as a range of mental disorders, including post-traumatic stress disorder (PTSD), anxiety, and depression. Some research indicates that ET may precede cervical cancer, while other studies assert that ET arises from the diagnosis of cancer and tends to worsen as the disease advances, consequently diminishing the quality of life. The impact of ET adds to the cancer burden by leading to decreased adherence to treatment and extended hospital stays. In Kenya, the occurrence of ET among cervical cancer patients is not thoroughly documented, given that mental health assessments and interventions are infrequently integrated at the time of diagnosis or during treatment. This study explored the prevalence and co-occurrence of ET (PTSD, Depression, and Anxiety) in a cohort of 218 women diagnosed with cervical cancer from two referral hospitals in Western Kenya, selected deliberately from hospital records. Data collection employed self-report questionnaires, including the Harvard Trauma Questionnaire, the Beck Anxiety Inventory, and the Beck Depression Inventory-II. Using the Statistical Package for Social Sciences (version 23), descriptive statistics revealed prevalence rates, while Spearman's Rank correlation assessed the interrelations among PTSD, Depression, and Anxiety. Findings indicated notably high prevalence rates of Anxiety (80.3%), and Depression (67%) and PTSD (28.9%). Spearman's correlation statistic (ρ) confirmed significant comorbidities, highlighting a statistically significant positive correlation between depression and anxiety (ρ= 0.539; p=0.000), PTSD and anxiety (ρ=0.474; p=0.000), as well as PTSD and depression (ρ=0.453; p=0.000). Consequently, the burdensome nature of ET was affirmed, with anxiety and depression presenting the highest prevalence, and comorbidity rates indicating the need for effective psychological intervention upon cervical cancer diagnosis.

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Keywords: Emotional Trauma (ET), Post-Traumatic Stress Disorder (PTSD), Anxiety, Depression, Cervical Cancer, Kenya.

Introduction

Cervical cancer is the leading cause of cancer-related morbidity and mortality among women in sub-Saharan Africa, with Kenya carrying a particularly heavy burden. Each year, approximately 4,802 women are diagnosed and 2,451 die from the disease, often at advanced stages due to limited screening and delayed diagnosis (Ngutu & Nyamongo, 2015). While biomedical and epidemiological aspects of cervical cancer have been extensively studied, the psychosocial and emotional dimensions remain underexplored. Women diagnosed with cervical cancer frequently face stigma, shame, and isolation, which exacerbate the trauma of living with a life-threatening condition. This study seeks to address the gap in systematic evidence on the emotional trauma burden among cervical cancer patients in Western Kenya, thereby contributing to a more holistic understanding of patient experiences and outcomes.

The prevalence of emotional trauma has been established by different global studies, albeit at varying rates. A study in the United States found that 14% of cancer patients experienced PTSD, while 20% reported suffering from anxiety and depression 12 months post-diagnosis. In China, depression rates among cervical cancer patients were reported at 52.2% and anxiety at 65.6%, emphasizing the urgency for early psychological treatment. Very high rates have also been reported in African contexts, such as Ethiopia, where 71.8% of cervical cancer patients faced depression, with those aged 41–50 experiencing heightened risk of anxiety. Late-stage diagnosis, deficiencies in cancer management, and limited cancer care services contribute to poor patient outcomes in sub-Saharan Africa (Osok et al., 2018), which may explain the high emotional trauma burden. However, there remains limited research in Kenya specifically addressing the mental health challenges faced by cervical cancer patients, which forms the basis and focus of the present study. The geographical variances in prevalence rates highlight the need for community-based studies to elucidate risk factors.

Comorbidity of emotional trauma is the norm rather than the exception, as reported in several global studies (Dold et al., 2017; Kangas et al., 2014; Niedzwiedz et al., 2019). Untreated trauma complicates treatment outcomes and reduces patients' quality of life. Emotional trauma may arise from multiple sources associated with the disease. Cervical cancer is frequently linked to stigma because of its association with sexual transmission, leaving many women vulnerable to shame and social judgment (Nyblade et al., 2017). Diagnosis and treatment side effects can also trigger anxiety disorders, as patients undergo numerous invasive medical procedures and evaluations (Hillesheim et al., 2017). These treatments often result in complications such as bladder or bowel dysfunction, neurological issues, and sexual difficulties, which contribute to cognitive, behavioral, and emotional distress (Pfaendler et al., 2015). A study in the USA found that 58% of anxiety disorders among cancer survivors began after diagnosis (Arch et al., 2020). The traumatic nature of cervical cancer can therefore lead to PTSD, anxiety, and depression

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(Mehnert et al., 2010), underscoring the importance of psychological support to improve overall quality of life.

In Kenya, cervical cancer patients often experience profound emotional trauma shaped by intersecting cultural and socioeconomic factors. Stigma surrounding the disease, frequently linked to misconceptions about sexual promiscuity, contributes to shame, secrecy, and social isolation (Ngutu & Nyamongo, 2015). Patriarchal norms exacerbate distress, as women may face blame, rejection, or intimate partner conflict following diagnosis, undermining emotional resilience (ACCESS Forum, 2025). Socioeconomic constraints, including poverty, high treatment costs, and limited access to specialized care, intensify psychological suffering by creating financial strain and delaying treatment (Were et al., 2021). Low health literacy and cultural beliefs that interpret cancer as a curse or punishment further hinder coping mechanisms and reinforce trauma (Ngutu & Nyamongo, 2015). These factors collectively highlight the need for holistic interventions that integrate psychosocial support into cancer care, addressing not only the physical but also the emotional and cultural dimensions of the disease.

It is therefore essential for healthcare professionals to prioritize mental health assessments and support within the overall care framework for individuals diagnosed with cervical cancer, ensuring that both physical and psychological needs are adequately addressed. The insufficient mental health data among cervical cancer patients in Kenya highlights the pressing necessity for psychological evaluations and interventions to improve quality of life and treatment outcomes. The current study thus seeks to investigate the prevalence and comorbidity rates of emotional trauma, providing critical evidence to inform mental health intervention programs that can be offered alongside medical treatments.

2. Methods

2.1 Participants

The study population comprised women diagnosed with cervical cancer and receiving care at two major referral hospitals in Western Kenya: Moi Teaching and Referral Hospital (MTRH) and Jaramogi Oginga Odinga Teaching and Referral Hospital (JOOTRH). These institutions were purposively selected due to their comprehensive oncology services and large patient catchment areas, which ensured access to the target population.
Eligibility criteria included:

- Confirmed diagnosis of cervical cancer,
- Age ≥ 18 years,
- Current or past engagement in treatment at either hospital,
- Ability to provide informed consent.

Patients with incomplete medical records or those unable to consent were excluded. In total, 218 women aged between 18 and over 60 years were recruited.

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2.2 Sampling Procedures

A purposive sampling technique was employed. Hospital medical records departments provided lists of eligible patients diagnosed during the study period. Recruitment was conducted in collaboration with oncology clinic staff, who facilitated initial contact during routine clinic visits or hospital admissions. Researchers explained study objectives and procedures in private settings to safeguard confidentiality, and written informed consent was obtained prior to enrollment.

This approach minimized selection bias by relying on hospital records rather than convenience sampling. Institutional approval was granted to access patient records and contact eligible participants.

2.2.1 Sample Size, Power, and Precision

A total of 218 women were recruited, representing the intended sample size for the cross-sectional survey. The achieved sample was consistent with the target population of cervical cancer patients attending referral hospitals in Western Kenya.

2.3 Measures and Covariates

Data were collected using self-report questionnaires administered in a cross-sectional survey format. The primary outcome variables were emotional trauma indicators, specifically, Post-Traumatic Stress Disorder (PTSD), anxiety and depression.

Operational definitions followed established diagnostic criteria, and validated psychometric instruments were employed to assess each construct. The questionnaires were adapted for cultural relevance and administered in languages familiar to participants.

2.3.1 Instrumentation

PTSD was assessed using the *Harvard Trauma Questionnaire (HTQ)*. Raw scores were averaged according to the scoring method described by Rasmussen et al. (2015), which involves summing item scores and dividing by the total number of items answered. A score exceeding 2.5 on the HTQ indicates a high likelihood of PTSD. Anxiety was measured using *Beck's Anxiety Inventory (BAI)*, with a cut-off score of 10 indicating clinically significant anxiety symptoms. Depression was assessed using *Beck's Depression Inventory-II (BDI-II)*, where a score of 14 or higher was indicative of depression.

2.4 Research Design

The study adopted a cross-sectional design, observing participants naturalistically without experimental manipulation. All participants were assessed under the same condition, and no random assignment was applied. The design permitted estimation of prevalence and comorbidity rates of emotional trauma among cervical cancer patients, as well as identification of associated psychosocial factors.

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2.5 Data Analysis

Data analysis was conducted using the *Statistical Package for Social Sciences (SPSS, version 23)*. Both descriptive and inferential statistics were employed. Descriptive statistics summarized participant characteristics and prevalence rates of PTSD, anxiety, and depression. Inferential analysis utilized the Spearman rank correlation coefficient to evaluate relationships between PTSD, anxiety, and depression among respondents.

2.6 Ethical Considerations

Ethical approval for the study was obtained from Daystar University Institutional Review Board (DU-ISERC), the National Commission on Technology, Innovation and Research (NACOSTI) and the Institutional Review boards of Moi Teaching and Referral Hospital and Jaramogi Oginga Odinga Teaching and Referral Hospital. Permission was granted to access patient records and recruit participants. All procedures adhered to established ethical standards for research involving human subjects, including the principles of autonomy, beneficence, and confidentiality. Written informed consent was obtained from all participants after a clear explanation of the study objectives, procedures, potential risks, and benefits. Privacy was safeguarded by conducting interviews in private settings and anonymizing all data during analysis. Participation was voluntary, and patients were assured of their right to withdraw at any stage without consequences for their ongoing medical care.

3. Results

3.1 Recruitment

Recruitment was conducted between March 2021 and May 2021 at the two referral hospitals Moi Teaching and Referral Hospital (MTRH) and Jaramogi Oginga Odinga Teaching and Referral Hospital (JOOTRH). Recruitment was facilitated in collaboration with oncology clinic staff, who introduced the study to patients during routine clinic visits and hospital admissions.
Eligibility criteria included:

- Confirmed diagnosis of cervical cancer,
- Age ≥ 18 years,
- Current or past engagement in treatment at either hospital,
- Ability to provide informed consent.

Patients with incomplete records or those unable to consent were excluded. From the lists provided, 218 eligible patients were approached and subsequently enrolled after providing written informed consent. Recruitment procedures were consistent across both hospitals, and no differences in recruitment dates or processes were observed between groups.

Follow-up was limited to the study period, as the cross-sectional design did not require longitudinal tracking. All participants completed the survey instruments during the recruitment phase, ensuring that data collection was contemporaneous with enrollment.

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3.2 Prevalence of PTSD, Anxiety, and Depression

Results for the prevalence of emotional trauma (PTSD, Anxiety and Depression) are presented in table 1

Table 1: Prevalence of PTSD, Anxiety and Depression among the Study Participants (N=218)

Emotional Trauma	Status	Prevalence N (%)
PTSD	No PTSD symptom (≤ 2.50)	155(71.1%)
	PTSD symptoms (≥ 2.51)	63(28.9%)
Anxiety	Normal anxiety (0-9)	43(19.7%)
	Anxiety present (10-63)	175(80.3)
Depression	Normal ups and downs (0-13)	72(33.0%)
	Depression (14-63)	146 (67.0)

As shown in Table 1, the prevalence of PTSD was n=63(28.9%), anxiety 80.3% and depression was at 67% showing that one third of the patients had PTSD, four out of five respondents had anxiety, and more than half of the participants presented with symptoms of depression.

3.3 The Association between PTSD, Anxiety and Depression

Spearman Nonparametric Correlations Test statistics were used to determine the association between PTSD, anxiety and depression as shown in Table 2.0

Table 2: Spearman Nonparametric Correlations Test to Examine the Association Between PTSD, Anxiety and Depression

Disorder	Statistics	PTSD	Anxiety	Depression
	N	218	218	218
PTSD	Spearman Correlation(ρ)	1	.474	.453
	Sig. (2-tailed) (p)		<.001	<.001
	N	218	218	218
Anxiety	Spearman Correlation(ρ)	.474	1	.539
	Sig. (2-tailed) (p)	<.001		<.001
	N	218	218	218
Depression	Spearman Correlation(ρ)	.453	.539	1
	Sig. (2-tailed) (p)	<.001	.001	
	N	218	218	218

. Correlation is significant at the 0.05 level (2-tailed).
. Correlation is significant at the 0.01 level (2-tailed).

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As shown in Table 2, The Spearman's correlations statistic (ρ) affirmed comorbidities where there was a statistically significant positive relationship between PTSD and depression (ρ=0.453; $p < 0.001$), PTSD and anxiety (ρ=0.474; $p < 0.001$) and depression and anxiety ρ= 0.539; $p < 0.001$). This shows that the three disorders co-occurred among the patients diagnosed with cervical cancer.

4. Discussion

The study investigated the prevalence of post-traumatic stress disorder (PTSD), anxiety, and depression among cervical cancer patients in referral hospitals in Western Kenya. Results revealed high rates of emotional trauma, with PTSD affecting 28.9% of participants, anxiety 80.3%, and depression 67%. Although PTSD prevalence was lower than that of depression and anxiety, this pattern is consistent with findings from other studies, which generally report PTSD rates as comparatively lower. Notably, anxiety tends to be the most common condition across similar research, suggesting it may serve as a primary disorder that contributes to the subsequent development of depression and PTSD symptoms.

Posluszny et al. (2011) study involving 111 women in the USA examined the prevalence of PTSD among those with different cancer stages: advanced-stage (n=22), early-stage (n=31), benign disease (n=33), and with no disease (n=25). Assessments using the PTSD Checklist (PCL) were conducted at various points: baseline, one week before surgery, 7 weeks after surgery, and 16 months post-surgery. The study revealed PTSD prevalence rates of 34% in women with advanced cancer, 16% in those with early cancer, and 15% in women with benign conditions, thus the range for the various cancer stages was 15% to 34%.

On the same line, Jentschke et al. (2020) study among cancer survivors found 30% exhibited PTSD symptoms. A broader systematic review of 25 studies with 4,189 cancer survivors reported varying PTSD rates from 5.1% to 11.2% (Abbey et al., 2015), hence PTSD rates remain on the lower end at mostly below 30%.

As for anxiety, the high rates seen in this study have also been noted in other studies. A survey conducted among 600 cancer patients and 200 control in five hospitals of Nepal, found that cervical cancer patients had significantly higher levels of anxiety and lacked functional wellbeing than those with other cancers and controls, who had significantly lower levels of anxiety (Chowdhury et al., 2021). Similarly, high rates of anxiety (79%) were found in a study carried out in Kenya among cervical and breast cancer patients (n=157) undergoing chemotherapy (Bosire et al., 2022). Another study in Ethiopia also found similarly high rates of anxiety (79.7%) among patients (n=385) with advanced cervical cancer (stage IIB-IVB) (Kebebew et al., 2021). The high prevalence rates of anxiety in cancer patients should therefore be a cause of concern that needs urgent attention.

Over half of the respondents in this study (67%) exhibited depressive symptoms, which also align with other global studies. In one study in China, the prevalence of depression among

cervical cancer patients was also quite high at 71.13% (Hong & Tian 2014). Another study in Zambia among 102 cervical cancer patients receiving cancer treatment found that 80% of the patients presented with depressive symptoms (Paul et al., 2016). In a study in at Tikur Anbessa Specialized Hospitals in Ethiopia among cervical cancer patients (n=163) the prevalence of depression was at 71.8% (Kinfu, 2019). One study in Kenya, found close prevalence rates of depression among patients with breast cancer (n= 79) at MTRH at 59.4% (Saina et al., 2021). There are some exceptions however, where in some studies, lower prevalence rates of depression are reported. A cross- sectional study among cervical cancer patients at a public oncology hospital in Mexico (n= 165) found that 41.2% of the participants had depression (Doubova & Pérez-Cuevas., 2021). Cervical cancer patients (n = 31) undergoing multiple fraction high dose radiotherapy at the National Institute of Oncology in Morocco, also reported lower prevalence of depression (16.1%) (Benali et al., 2022). The varying prevalence rates could thus point to geographical risk factors, warranting community-based research for more informed interventions.

Comorbidity of PTSD, anxiety and depression was affirmed in this study, as also reported in other studies globally. Kline et al., (2021) study involving 405 adult cancer patients in the USA, found that among 397 patients who reported either pain, depression, or both, 34% exhibited co-occurring anxiety and depression. Additionally, 174 patients had depression without anxiety. When analyzed separately, both anxiety and depression showed significant associations with all measured domains ($p<0.0001$). The study concluded that mental health factors and physical symptoms in cancer patients were strongly and independently linked to anxiety and depression.

A study among cervical cancer patients (n=59) in Serbia reported that depression and anxiety were increased in all the study participants regardless of the stage of cancer. The study found a significant correlation between disease stage and both depression (p = 0.002) and anxiety (p = 0.016). Majority of the participants presented with locally advanced stage disease while undergoing a combination of treatment, which could explain the higher percentage anxiety and depression symptoms observed (Tosic et al., 2022).

Other studies among cervical cancer patients have also found evidence for comorbid emotional trauma. Adellund et al. (2016) study in Denmark among 151 women with cervical cancer found 21.1% and 22.5% of the women had PTSD and depressive symptoms respectively and 49.2% showed co-occurring PTSD and depression symptoms. Yang et al (2020) research from multi-center research conducted in China among cervical cancer patients (n=224) at two cancer hospitals additionally showed the comorbidity of anxiety at 65.6% and depression at 52.2%. Higher scores were found at 4 to 6 months after diagnosis of patient at stage II cancer in the study. In another study conducted among 171 palliative care patients with cancer in Tikur Anbessa Specialized hospital in Ethiopia, 64.9% of the patients had both anxiety and depression (Atinafu et al., 2022). Hence, there is need to assess emotional trauma among cervical cancer patients.

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Emotional trauma, including PTSD, anxiety, and depression, can arise shortly after a diagnosis of cervical cancer or during the course of treatment (Kim et al., 2009). Chronic PTSD, anxiety, and depression, has also been documented continuing well beyond the medical treatment for cancer. This was shown in a study was conducted in Korea examining the prevalence of anxiety and depression among 828 cervical cancer survivors who had finished their treatment, where 39.5% had depression and anxiety (Kim et al., 2010). In another study De Padova et al. (2021) among 212 cancer survivors found high levels of cancer-related PTSD years after finishing treatment. The study explained that psychopathology appeared to result from intricate interactions between coping mechanisms, prior disorders, and interpersonal dynamics. This shows that poor coping strategies long after completing cancer treatment may affect the emotional experience of the survivors and caregivers.

Overall, the findings from this study are in agreement with other global studies regarding the comorbidity of PTSD, anxiety and depression, among cervical cancer patients, though at varying rates but nevertheless present either at diagnosis, treatment stage or the recovery phase. The confirmation of high levels of anxiety, depression, and post-traumatic stress disorder (PTSD), alongside their comorbidity, has significant implications for both healthcare providers and policymakers. For clinicians, these findings emphasize the necessity of routine psychological screening for cervical cancer patients, ensuring that mental health challenges are identified early and addressed alongside physical treatment. Integrating counseling services, trauma-informed care, and referral pathways to psychiatric support within oncology clinics can improve adherence to treatment and overall patient outcomes (Ngutu & Nyamongo, 2015).

For policymakers, the evidence highlights the need to embed psychosocial care into national cancer management guidelines. This includes allocating resources for mental health professionals in referral hospitals, developing community-based support groups, and implementing stigma-reduction campaigns to counter harmful cultural narratives. Financial interventions, such as subsidized treatment and transport support, would also reduce the socioeconomic stressors that exacerbate emotional trauma (Were et al., 2021).

By recognizing the comorbidity of psychological disorders in cervical cancer patients, health systems can move toward a holistic model of care that addresses both physical and emotional needs. Such an approach not only improves quality of life but also strengthens health system efficiency by reducing treatment dropouts and enhancing long-term survivorship.

5. Conclusion

This study revealed a high prevalence of anxiety, depression, and post-traumatic stress disorder (PTSD) among cervical cancer patients in Western Kenya, with comorbidity between these conditions firmly established. These findings highlight the profound psychological burden that accompanies the physical challenges of cervical cancer, underscoring the need for a more holistic approach to care.

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For clinical practice, the results call for the integration of routine psychological screening into oncology services, ensuring that mental health challenges are identified early and addressed alongside physical treatment. Counseling services and trauma-informed care should be embedded within oncology clinics, supported by training programs that equip healthcare providers with skills in mental health assessment and referral. Community-based peer-support groups and stigma-reduction campaigns can further help patients cope with emotional trauma, while financial support mechanisms such as transport subsidies and treatment assistance would ease socioeconomic stressors that exacerbate psychological distress.

For future research, longitudinal studies are needed to track the trajectory of emotional trauma across diagnosis, treatment, and survivorship, identifying critical points for intervention. Intervention trials should evaluate the effectiveness of psychosocial support strategies, such as cognitive-behavioral therapy or group counseling, in improving adherence and quality of life. Further exploration of the interplay between cultural beliefs, gender dynamics, and socioeconomic status will provide deeper insights into context-specific determinants of trauma. Finally, policy-oriented research should assess the feasibility and impact of integrating psychosocial care into national cancer management guidelines, offering evidence to inform sustainable reforms in Kenya's health system.

By embedding these recommendations into practice and research, healthcare providers and policymakers can ensure that cervical cancer management addresses both the physical and emotional dimensions of the disease, ultimately improving patient outcomes and advancing equity in cancer care.

Limitations

The research was conducted amidst the COVID-19 pandemic, which imposed social distancing measures and restricted patient movements due to curfews. To address the challenges posed by COVID-19, various mitigation strategies were implemented, including reducing face-to-face interactions in accordance with physical distancing guidelines.

Conflict of Interest: The authors declare that they have no conflicts of interest.

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