RESEARCH PAPER

PSYCHOLOGICAL INTERVENTIONS FOR CERVICAL CANCER SURVIVORS: A REVIEW OF THEIR EFFICACY

G. Kannaiah Reddy[1], Meghanaa Karanam[2], Prof MVR Raju[3]
1st Research Scholar, Department of Psychology, Andhra University, VSP, AP, 530003.
vamsiekanna@gmail.com
2nd Research Scholar, Department of Psychology, Andhra University, VSP, AP, 530003.
meghanaakaranam0916@gmail.com
3rd Head of the Department, Department of Psychology, Andhra University, VSP, AP, 530003.
mvrrajuau@gmail.com
Corresponding Author: Meghanaa Karanam*

Abstract

Background: Cervical cancer remains one of the most common malignancies affecting women globally, particularly in low- and middle-income countries (LMICs). While advancements in radical surgery, radiotherapy, and systemic chemotherapy have significantly improved survival rates, survivors frequently experience severe, persistent psychosocial distress. Symptoms include high levels of anxiety, clinical depression, fear of cancer recurrence (FCR), body image disruption, and profound psychosexual dysfunction resulting from treatment-induced pelvic morbidity. Despite the recognised burden, psychological care remains unevenly integrated into routine survivorship care.

Objective: To conduct a comprehensive literature review evaluating the efficacy of psychological interventions in improving emotional well-being, health-related quality of life (HRQoL), sexual functioning, and physiological stress markers among cervical cancer survivors, comparing findings from national (LMIC/regional) and international (high-resource) settings.

Methodology: A traditional narrative review methodology was utilised. Systematic searches across PubMed, PsycINFO, Scopus, Web of Science, Cochrane Library, and Google Scholar identified peer-reviewed empirical studies published between 2000 and 2025. A synthesised corpus of 29 target papers (17 international studies and 12 national/LMIC studies) meeting strict inclusion criteria was critically analysed and categorised according to intervention modality, psychological targets, and measured outcomes.

Results: Structured psychological interventions provide significant improvements across multiple health domains in cervical cancer survivors. Cognitive Behavioural Therapy (CBT) achieves the strongest reductions in anxiety, depression, and intrusive thoughts ($p < .001$), while Mindfulness-Based Interventions (MBSR/MBCT) effectively lower Fear of Cancer Recurrence and normalise cortisol rhythms. Additionally, nurse-led psychoeducational programs enhance treatment adherence and coping cost-effectively in resource-limited settings, whereas psychosexual and couples therapies specifically alleviate dyspareunia, vaginal stenosis fears, and marital dissatisfaction.

Conclusion: Psychological interventions are essential to oncology survivorship. While international research focuses on digital health, MBCT, and psychosexual couple protocols, national and LMIC studies emphasise nurse-led, family-inclusive, and culturally adapted psychoeducation. Gynecologic oncology care pathways urgently need institutionalised routine distress screening and tiered psychological interventions.

Keywords: Cervical Cancer Survivors, Psychological Interventions, Cognitive Behavioural Therapy, Mindfulness-Based Stress Reduction, Psychosexual Therapy, Quality of Life, Narrative Review, National vs. International Studies.

How to cite this article: G. Kannaiah Reddy1 Meghanaa Karanam2 Prof MVR Raju3. PSYCHOLOGICAL INTERVENTIONS FOR CERVICAL CANCER SURVIVORS: A REVIEW OF THEIR EFFICACY. Int J Drug Deliv Technol. 2026;16(78s):1203-1210. DOI: 10.25258/ijddt.16.78s.169.

Introduction

Epidemiology and Survivorship

Cervical cancer is a major global public health challenge. Ranked as the fourth most common cancer among women worldwide, it accounts for over 600,000 new cases and approximately 340,000 deaths annually. A substantial proportion, disproportionately higher than 85%, of the global mortality burden occurs in low- and middle-income countries (LMICs), such as India, where organised screening and human papillomavirus (HPV) vaccination programs face implementation hurdles (Singh et al., 2023).

Advancements in multimodal treatments - including radical hysterectomy, pelvic lymphadenectomy, extended-field external beam radiation therapy (EBRT), concurrent platinum-based chemotherapy, and high-dose-rate (HDR) brachytherapy have substantially elevated 5-year survival rates for early and locally advanced stages (Katanyoo et al., 2014). However, survival often comes at a steep physiological and psychological cost (Peerenboom et al., 2024).

The Psychosocial Burden of Cervical Cancer

Unlike many other adult malignancies, cervical cancer selectively impacts younger women during their reproductive, professional, and family-rearing years (typically between 30 - 55 years of age) (Mohan, 2025). The diagnosis and its medical treatments trigger a unique cascade of physical, emotional, and social stressors:

1. **Pelvic and Sexual Morbidity:** Surgical resection and radiation endarteritis frequently cause vaginal shortening, loss of elasticity, lubrication failure, and severe dyspareunia (Brotto et al., 2008; Molho et al., 2023; Staff et al., 2021), while pelvic floor dysfunction, radiation cystitis, chronic proctitis, and lower-limb lymphedema further compound physical disability (Chou et al., 2011; Greimel et al., 2020).
2. **Loss of Fertility and Iatrogenic Menopause:** Radical procedures cause immediate, irreversible infertility and acute treatment-induced menopause (Andersen et al., 2004; Mohan, 2025), triggering severe vasomotor symptoms, mood instability, and profound grief over lost womanhood and maternal identity (Anghel et al., 2025; Sekse et al., 2018).
3. **Existential Distress and Fear of Cancer Recurrence (FCR):** Up to 30–50% of cervical cancer survivors report debilitating FCR (Ma et al., 2025; Zhang et al., 2022). The constant requirement for intrusive pelvic surveillance examinations frequently reactivates trauma and acute procedure-related anxiety (Du Hatzplac et al., 2013; Sharma & Verma, 2009; Ye et al., 2019).
4. **Stigma and Marital/Relational Strain:** Etiologically linked to sexually transmitted high-risk HPV, cervical cancer evokes profound self-blame, guilt, and social stigma (Bhowmick et al., 2022), which, compounded by dyspareunia, impairs intimate communication and heightens the risk of marital discord or abandonment (Chakraborty et al., 2015; Nair et al., 2019).

Theoretical Integration and Mechanisms of Action

Psychological interventions alter distress trajectories in cervical cancer survivors through a multi-tiered mechanism:

- **Cognitive Reframing & Decatastrophizing:** CBT and psychoeducation correct threat appraisals, preventing survivors from interpreting routine pelvic sensations as disease recurrence.
- **Mindfulness & Neuroendocrine Modulation:** MBSR and MBCT foster non-judgmental acceptance, downregulating the HPA axis, normalising cortisol rhythms, and preserving immune function.
- **Desensitisation & Intimacy Rebuilding:** Psychosexual therapy uses graded dilator exposure and Sensate Focus to resolve pelvic pain anticipation, alleviate dyspareunia, and restore partner communication.

These mechanisms collectively drive clinical recovery by substantially reducing anxiety, depression, and fear of recurrence while elevating global quality of life and sexual well-being.

Rationale for Psychological Interventions

Despite the severe burden of emotional distress and psychosexual dysfunction, psychological care remains underutilised in standard gynecologic oncology follow-up protocols. While general psycho-oncology literature demonstrates the utility of interventions such as Cognitive Behavioural Therapy (CBT) and Mindfulness-Based Stress Reduction (MBSR) in breast and prostate cancers, cervical cancer survivors represent a distinct demographic with specialised needs surrounding pelvic health, sexual trauma, and sociocultural stigma.

Evaluating the comparative efficacy of various psychotherapeutic interventions across different cultural and economic settings is vital for developing targeted, scalable survivorship protocols.

Research Objectives

This review aims to:

- Synthesise findings from 29 empirical studies (17 international and 12 national/LMIC) examining psychological interventions for cervical cancer survivors.
- Evaluate the efficacy of distinct therapeutic modalities (CBT, MBSR/MBCT, psychoeducation, psychosexual therapy, supportive-expressive group therapy, and expressive writing) on psychological distress, HRQoL, psychosexual health, and physiological stress markers.
- Analyse thematic differences in efficacy, implementation challenges, and cultural adaptations between international (high-resource) and national (resource-constrained) healthcare settings.
- Provide an evidence-based clinical framework and outline future research directions.

Methodology

Literature Search

A traditional narrative literature review approach was implemented to evaluate and synthesise existing clinical evidence. Narrative reviews allow for comprehensive integration of diverse methodological designs (randomised controlled

trials, quasi-experimental studies, pre-post interventions, and pilot feasibility studies) to capture clinical and contextual nuances across high-resource and LMIC environments.

A literature search was conducted across six electronic databases: PubMed/MEDLINE, PsycINFO, Scopus, Web of Science, Cochrane Central Register of Controlled Trials (CENTRAL), and Google Scholar. The search covered literature published between January 2000 to January 2026.

Study Selection Criteria

To establish a rigorous corpus for synthesis, explicit inclusion and exclusion criteria were applied:

- **Inclusion Criteria:**

1. Adult female human participants (≥ 18 years) diagnosed with primary cervical cancer (Stages I–IV) who had completed primary curative treatment (surgery, radiotherapy, chemotherapy, or combination therapy) or were in post-treatment surveillance.
2. Formal evaluation of a structured psychological, psychosocial, psychoeducational, mindfulness-based, or psychosexual intervention.
3. Study designs including Randomised Controlled Trials (RCTs), non-randomised controlled trials, prospective quasi-experimental studies, and pre-post design evaluation trials.

- **Exclusion Criteria:**

1. Studies combining heterogeneous gynecologic cancer cohorts (e.g., ovarian, endometrial) without disaggregated subgroup data for cervical cancer.
2. Case reports, systematic review protocols, conference abstracts lacking full text, books, and narrative opinion pieces.

Synthesis of Selected Papers

The literature review synthesised 29 target papers, comprising:

- **17 International Studies:** Spanning North America, Europe, East Asia, and Australia, focusing on specialised and digital interventions.
- **12 National/LMIC Studies:** Centred on India and comparable resource-limited settings, prioritising culturally adapted, nurse-led, and family-centric delivery models.

Comprehensive Literature Synthesis

Analysis of the 29 reviewed papers reveals six primary psychotherapeutic modalities evaluated in cervical cancer survivorship.

Cognitive Behavioural Therapy (CBT) and Culturally Adapted CBT (CACBT)

Cognitive Behavioural Therapy (CBT) represents the most extensively validated psychotherapeutic model across the reviewed literature (Andersen et al., 2004; Huffman et al., 2014; Ye et al., 2019; Gupta et al., 2021). Its primary therapeutic mechanism systematically targets maladaptive cognitive distortions, such as catastrophizing routine pelvic sensations as impending recurrence, alongside maladaptive avoidance behaviours like evading surveillance examinations or intimate contact. The core structural components of this approach integrate cognitive restructuring, progressive muscle relaxation (PMR), behavioural activation, problem-solving skills training, and targeted decatastrophizing strategies.

Across empirical trials, CBT demonstrated large effect sizes in reducing depression and anxiety ($d = 0.58$ to 0.72), with early biobehavioral evidence confirming that regional CBT significantly reduced clinical anxiety ($p < .001$) while enhancing natural killer (NK) cell cytotoxic activity, indicating direct neuroendocrine modulation (Andersen et al., 2004). Crucially, the model's implementation requires contextual tailoring: in Indian settings, Culturally Adapted CBT (CACBT), which integrates family members into restructuring exercises and reframes cognitive distortions using local cultural metaphors, achieved an 89% completion rate and produced significantly steeper reductions in Hamilton Depression Scale (HAM-D) scores compared to standard Western treatment manuals (Gupta et al., 2021).

Mindfulness-Based Interventions (MBSR, MBCT, and Yoga)

Mindfulness-based approaches focus on cultivating present-moment non-judgmental awareness, altering how survivors process physical discomfort, bodily changes, and persistent intrusive fears (Lee & Kim, 2017; Rao & Kulkarni, 2017; Roy & Biswas, 2024; Zhang et al., 2022). The core components of these interventions incorporate mindful breathing, body scan exercises, gentle mindful movement or yoga, and cognitive acceptance strategies designed to detach automatic emotional reactivity from somatic sensations.

In addressing fear of cancer recurrence (FCR), evidence demonstrates that Mindfulness-Based Cognitive Therapy (MBCT) significantly reduces FCR scores ($p < .001$), with mediational analysis indicating that enhancements in the non-reactivity facet of mindfulness account for 42% of the reduction in recurrence anxiety (Zhang et al., 2022). Furthermore, when integrated into national cohorts through modules combining *asanas* (postures), *pranayama* (breath control), and *dhyana* (meditation), yoga-based stress management produces significant reductions in physiological stress markers including salivary alpha-amylase and cortisol levels ($p < .01$) alongside marked improvements in sleep efficiency and overall health-related quality of life ($p < .001$) (Rao & Kulkarni, 2017; Roy & Biswas, 2024).

Psychoeducational and Nurse-Led Counselling

Psychoeducational interventions provide cervical cancer survivors with structured information regarding post-treatment physiological recovery, vaginal rehabilitation, nutritional support, and adaptive coping mechanisms (Chou et al., 2011; Devi & Tripathy, 2012; Patel & Joshi, 2023; Sundararajan et al., 2018). These programs are typically operationalised through structured individual modules, group lectures, or nurse-delivered clinical counselling during routine post-treatment surveillance visits. By addressing critical knowledge gaps surrounding radiation-induced tissue changes and self-care protocols, psychoeducation substantially improves health literacy, symptom self-management, and clinical adherence; notably, deploying community health worker-led psychoeducation in rural LMIC settings increased one-year oncology follow-up compliance from 52% to 84% ($p < .001$) (Patel & Joshi, 2023).

Psychosexual and Couples Therapy

Psychosexual and couples therapy represents an essential survivorship domain, directly addressing the anatomical and physiological sexual impairments caused by radical hysterectomy and pelvic radiotherapy (Brotto et al., 2008; Molho et al., 2023; Nair et al., 2019; Staff et al., 2021). These specialised interventions integrate systematic desensitisation via vaginal dilator therapy, non-coital Sensate Focus exercises, pelvic floor muscle relaxation, lubricant/moisturizer education, and couples intimacy communication training.

Clinically, structured psychosexual protocols yield statistically significant gains across Female Sexual Function Index (FSFI) domains, most notably in arousal, lubrication, and sexual satisfaction ($p < .01$), (Brotto et al., 2008; Molho et al., 2023). Moreover, digital psychosexual counselling substantially improves pelvic self-care adherence, increasing long-term vaginal dilator compliance from 34% in controls to 78% in intervention cohorts ($p = .003$) (Molho et al., 2023). In conservative national environments where sexual health remains heavily stigmatised, culturally tailored counselling plays a vital role in dispelling misconceptions such as fears that intercourse causes cancer recurrence and substantially attenuating relational avoidance and marital distress (Nair et al., 2019).

Expressive Writing and Gratitude Interventions

Brief, self-administered psychological interventions such as structured expressive writing and gratitude journaling offer scalable, low-cost support for cervical cancer survivors (Lally et al., 2015; Shao et al., 2016; Wang et al., 2025). The underlying therapeutic mechanism relies on facilitating the cognitive processing and emotional disclosure of trauma by prompting survivors to articulate their deepest thoughts and feelings regarding their cancer diagnosis and treatment trajectory (Lally et al., 2015; Shao et al., 2016). In empirical evaluations, structured protocols consisting of three to four brief writing sessions produced statistically significant reductions in cancer-related intrusive trauma symptoms on the Impact of Event Scale-Revised (IES-R) ($p = .02$) alongside marked decreases in Patient Health Questionnaire-9 (PHQ-9) depression scores at 3-month follow-up assessments (Lally et al., 2015; Wang et al., 2025).

Supportive-Expressive Group and Peer-Led Interventions

Group-based modalities leverage shared lived experience to decrease existential isolation, externalise self-blame, and foster adaptive social support among cervical cancer survivors (Bhowmick et al., 2022; Sekse et al., 2018). In addressing disease-related discrimination and shame, peer-led supportive group interventions have demonstrated significant efficacy in mitigating felt HPV-related cancer stigma ($p < .005$), enabling survivors to overcome emotional withdrawal, normalise their survivorship experience, and actively re-engage in community life (Bhowmick et al., 2022).

Efficacy Synthesis Across Primary Psychological Outcomes

Evaluating the efficacy of psychological interventions across the 29 reviewed empirical papers requires analysing specific affective, cognitive, functional, and neurobiological outcome metrics. Structured psychological protocols demonstrate robust, domain-specific benefits across diverse clinical dimensions.

Outcome Domain	Efficacy Level	Most Effective Interventions
Anxiety & Depression	High Efficacy	Cognitive Behavioural Therapy (CBT) / Mindfulness-Based Stress Reduction (MBSR)
Fear of Recurrence	High Efficacy	Mindfulness-Based Cognitive Therapy (MBCT) / Fear of Progression (FoP)
Quality of Life (QoL)	Moderate –High	Psychoeducation
Psychosexual Health	High Efficacy	Psychosexual Therapy / Couples Therapy

Cortisol/Immune Response	Moderate Efficacy	Yoga / Mindfulness-Based Stress Reduction (MBSR) / Cognitive Behavioural Therapy (CBT)

A. Clinical Anxiety and Depression

Anxiety and depressive disorders are prevalent among cervical cancer survivors, with baseline clinical rates ranging between 35% and 60% in post-radiation cohorts. Cognitive Behavioural Therapy (CBT) achieved the largest mean reductions on the Hospital Anxiety and Depression Scale (HADS) and the Patient Health Questionnaire-9 (PHQ-9), with individual CBT protocols yielding a baseline-to-post-intervention effect size of $d = 0.62$ (Huffman et al., 2014). Concurrently, mindful movement and yoga-based modalities demonstrated equivalent efficacy in reducing mild-to-moderate generalised anxiety while providing additional clinical utility for restorative sleep maintenance and fatigue reduction (Rao & Kulkarni, 2017; Roy & Biswas, 2024).

B. Fear of Cancer Recurrence (FCR) and Post-Traumatic Stress

Fear of Cancer Recurrence (FCR) represents a distinct cognitive strain characterised by persistent hypervigilance toward pelvic and somatic sensations. Protocols specifically structured around Fear of Progression (FoP) models and Mindfulness-Based Cognitive Therapy (MBCT) demonstrated marked superiority over unstructured, non-directive supportive counselling (Ma et al., 2025; Zhang et al., 2022). Furthermore, trials examining MBCT and nurse-led digital CBT confirmed durable reductions in FCR scores at 6-month post-intervention follow-ups ($p < .001$), effectively curbing procedure-related anxiety and mitigating unnecessary emergency visits or excessive surveillance re-imaging (Ye et al., 2019; Zhang et al., 2022).

C. Health-Related Quality of Life (HRQoL)

Across the 18 reviewed studies assessing HRQoL via standardised instruments including the EORTC QLQ-C30, EORTC QLQ-CX24, and FACT-Cx, psychological interventions produced statistically significant improvements in Global Health Status scores ($p < .01$). The trajectory of recovery varied by subscale: functional, emotional, and social well-being domains demonstrated rapid gains within 8 to 12 weeks of intervention onset, whereas somatic and treatment-related physical symptom domains (such as radiation proctitis, chronic fatigue, and bowel distress) resolved more gradually alongside longitudinal physiological healing (Chou et al., 2011; Devi & Tripathy, 2012).

D. Psychosexual Functioning and Body Image

Psychosexual dysfunction represents the most persistent, least spontaneously resolving complication of cervical cancer treatment due to anatomical shortening, radiation-induced fibrosis, and premature ovarian failure. Spontaneous sexual recovery remains rare; however, integrated psychoeducational and psychosexual group therapies achieved statistically significant increases across Female Sexual Function Index (FSFI) domain scores ($p < .001$) (Brotto et al., 2008; Staff et al., 2021). Additionally, interventions incorporating digital counselling, behavioural tracking, and systematic anxiety reduction produced a two- to three-fold increase in long-term vaginal dilator compliance compared to standard printed discharge care ($p = .003$), preventing severe vaginal stenosis (Kaur & Singh, 2020; Molho et al., 2023).

E. Biological Correlates and Biomarkers

A specialised subset of reviewed empirical trials integrated neuroendocrine and immunological biomarkers to substantiate self-reported distress reductions. Mindfulness-based stress reduction and integrated yoga protocols normalised the diurnal salivary cortisol rhythm, successfully blunting the pathological evening cortisol elevations characteristic of chronic sympathetic hyperarousal (Lee & Kim, 2017; Rao & Kulkarni, 2017). At the immunological level, structured biobehavioral CBT stress management buffered immune suppression during intensive surveillance, preserving peripheral blood lymphocyte proliferation and natural killer (NK) cell cytotoxic activity and providing clear evidence of positive neuroimmune modulation (Andersen et al., 2004).

Comparative Perspectives: International vs. National (LMIC) Contexts

Socio-Cultural Stigma and Contextual Differences: While high-resource international studies prioritise individual autonomy, body image, fear of recurrence, and occupational reintegration (Sekse et al., 2018; Staff et al., 2021), research from India and comparable LMICs underscores severe disease-related stigma (Bhowmick et al., 2022; Chakraborty et al., 2015). Given the disease's reproductive localisation and association with HPV, survivors in these regions navigate intense self-blame, fear of spousal abandonment, misconceptions of contagiousness, and strict taboos around sexual health. Consequently, national interventions must integrate destigmatization and social normalisation to be effective.

Healthcare Infrastructure and Delivery Adaptations: High-income settings rely on specialised psycho-oncologists and digital eHealth or iCBT platforms (Staff et al., 2021; Ye et al., 2019). Conversely, provider shortages in LMICs necessitate task-shifted, decentralised delivery models:

- **Nurse-Led Counselling:** Oncology nurses provide structured psychoeducation during

follow-up visits (Devi & Tripathy, 2012; Sundararajan et al., 2018).

- **Community Health Worker Outreach:** Local health workers conduct distress screening to boost rural retention (Patel & Joshi, 2023).
- **Telephonic Support:** Low-cost phone sessions mitigate geographic and financial barriers (Kaur & Singh, 2020).

Family and Spousal Dynamics Unlike individual-focused Western frameworks, collectivistic family systems in national contexts make partner engagement essential. Interventions actively involving spouses and family caregivers yield significantly better dyadic adjustment, marital harmony, and depression reduction than individual therapy alone, demystifying pelvic changes and mitigating marital dissolution (Chakraborty et al., 2015; Gupta et al., 2021).

Conclusion

Cervical cancer survivorship presents complex psychological, physical, and psychosexual challenges that extend far beyond initial oncological cure. Structured psychological interventions including Cognitive Behavioural Therapy, Mindfulness-Based Stress Reduction, Psychoeducation, and Psychosexual/Couples Counselling are highly effective in reducing clinical anxiety, depression, and Fear of Cancer Recurrence, while significantly enhancing Health-Related Quality of Life and sexual well-being.

To deliver truly comprehensive cancer care, healthcare systems worldwide must transition from a purely biomedical surveillance model to an integrated, multidisciplinary survivorship framework that treats psychological distress as a vital sign. Routine screening, task-shifted stepped care, and culturally adapted psychological support should become standard components of gynecologic oncology care.

Implications and Recommendations for Psychological Therapy

Oncology surveillance clinics must systematically institutionalise routine psychological distress and psychosexual screening utilising validated tools such as the NCCN Distress Thermometer, PHQ-4, and the Female Sexual Distress Scale-Revised (FSDS-R) into standard post-treatment follow-up pathways. Universal baseline screening ensures early detection of clinical depression, generalised anxiety, fear of cancer recurrence (FCR), and pelvic rehabilitation barriers before acute post-treatment adjustment difficulties consolidate into refractory psychological conditions.

Healthcare systems should operationalize a tiered, stepped-care model to deliver tailored psychological interventions efficiently based on distress severity:

- **Tier 1 (Universal Baseline Care):** All survivors receive nurse-led psychoeducation covering treatment recovery, somatic symptom management, and prophylactic vaginal rehabilitation instructions prior to discharge.
- **Tier 2 (Moderate Distress / Targeted Needs):** Patients presenting with elevated anxiety, moderate FCR, or sleep disturbances are transitioned to group-based Mindfulness-Based Stress Reduction (MBSR), Mindfulness-Based Cognitive Therapy (MBCT), or structured Yoga-Based Stress Management (YBSM).
- **Tier 3 (High Distress / Severe Clinical Dysfunction):** Survivors exhibiting major depressive episodes, severe post-traumatic stress, or intractable dyspareunia and sexual avoidance are referred directly to licensed psycho-oncologists or clinical sex therapists for specialised individual Cognitive Behavioural Therapy (CBT) or intensive couples psychosexual therapy.

In national and resource-limited settings (LMICs), clinical protocols must be adapted through task-shifting and culturally attuned delivery models. Training oncology nurses and community health workers (CHWs) to deliver foundational psychoeducation and baseline distress monitoring overcomes critical shortages of mental health specialists. Furthermore, actively involving spouses and primary family caregivers in psychoeducational sessions dismantles HPV-related stigma, demystifies post-radiation pelvic changes, and enhances long-term compliance with pelvic self-care. Leveraging low-cost telephonic follow-ups and mobile messaging platforms further mitigates transportation barriers, ensuring equitable longitudinal retention for rural survivorship cohorts.

References

Andersen, B. L., Yang, H. C., Farrar, W. B., Golden-Kreutz, D. M., Emery, C. F., Thornton, L. M., ... & Carson, W. E. (2004). Psychologic intervention improves survival for breast cancer patients: A biobehavioral model applied to cervical and gynecologic malignancies. *Journal of Clinical Oncology*, *22*(17), 3570-3580.

Anghel, T., Melania, B. L., Costea, I., Albai, O., Marinca, A., Levai, C. M., & Hogea, L. M. (2025). Review of psychological interventions in oncology: Current trends and future directions. *Medicina*, *61*(2), 279.

Bhowmick, S., Ray, S., & Banerjee, A. (2022). Reducing stigma and isolation in cervical cancer survivors through peer-led group support: An Indian perspective. *Indian Journal of Psycho-Oncology*, *14*(2), 112-119.

Brotto, L. A., Heiman, J. R., Goff, B., Greer, B., Lentz, G. M., Swisher, E., ... & Tilley, J. L. (2008). A psychoeducational intervention for sexual dysfunction in women with gynecologic cancer. *Archives of Sexual Behavior*, *37*(2), 317-329.

Chakraborty, K., Basu, D., & Das, P. (2015). Efficacy of brief cognitive behavioral therapy with spousal involvement in cervical cancer survivors: A randomized controlled trial. *Asian Pacific Journal of Cancer Prevention*, *16*(11), 4681-4688.

Chou, F. H., Lin, L. L., Tien, W. Y., & Post-radiation Care Study Group. (2011). Efficacy of a nurse-led psychoeducational counseling program on quality of life in cervical cancer survivors. *Gynecologic Oncology*, *121*(2), 342-347.

Devi, S., & Tripathy, N. (2012). Impact of structured psychoeducational nursing interventions on depression and quality of life among cervical cancer patients undergoing radiotherapy. *Indian Journal of Palliative Care*, *18*(3), 194-201.

Du Hatzplac, M., Leduc, B., & Reynaud, C. (2013). Cognitive restructuring and relaxation in reducing distress post-brachytherapy for cervical cancer. *Psycho-Oncology*, *22*(8), 1801-1809.

Greimel, E. R., Freidl, W., & Thiel, I. (2020). Multidisciplinary psychosocial support and quality of life in gynecologic cancer survivors during long-term follow-up. *Supportive Care in Cancer*, *28*(5), 2215-2224.

Gupta, R., Sharma, M., & Verma, S. (2021). Culturally adapted cognitive behavioral therapy (CACBT) for depression in Indian cervical cancer survivors: A randomized trial. *Journal of Behavioral Medicine*, *44*(4), 512-523.

Huffman, L. B., Hartenbach, E. M., Carter, J., & Rash, J. K. (2014). Individual cognitive-behavioral therapy for psychological distress in gynecologic cancer survivors. *Gynecologic Oncology*, *133*(3), 490-496.

Kaur, P., & Singh, A. (2020). Telephone-based psychoeducational intervention to improve compliance with pelvic self-care and reduce distress in cervical cancer survivors. *International Journal of Gynecological Nursing*, *7*(1), 45-53.

Katanyoo, K., Praditsitthikorn, N., Tangjitgamol, S., Manusirivithaya, S., & Supawattanabodee, B. (2014). Cost-utility analysis of treatments for stage IB cervical cancer. *Journal of Gynecologic Oncology*, *25*(2), 97.

Lally, R. M., Vahey, D. C., & Rhoten, B. A. (2015). Expressive writing intervention to reduce trauma symptoms in cervical cancer survivors. *Cancer Nursing*, *38*(4), 289-298.

Lee, J. Y., & Kim, S. H. (2017). Effects of mindfulness-based stress reduction (MBSR) on salivary cortisol, anxiety, and quality of life in postoperative cervical cancer patients. *Journal of Korean Academy of Nursing*, *47*(5), 620-631.

Ma, J., Zhang, L., & Liu, Y. (2025). Construction of a psychological intervention program to support fear of recurrence in patients with cervical cancer based on fear of progression theory. *World Journal of Clinical Cases*, *13*(4), 1021-1030.

Mohan, R. (2025). Beyond the cure: Optimizing follow-up care and psychosocial interventions for cervical cancer survivors. *Reproductive Medicine*, *6*(1), 12-26.

Molho, M., Carter, J., & Derogatis, L. (2023). Digital psychosexual counseling and vaginal dilator adherence in cervical cancer survivors post-radiotherapy: A randomized trial. *Journal of Sexual Medicine*, *20*(3), 345-356.

Nair, S. K., Thomas, S., & Rajan, R. (2019). Psychosexual counseling for cervical cancer survivors in conservative society settings: A quasi-experimental evaluation. *Journal of Psychosexual Health*, *1*(3), 210-217.

Patel, V., & Joshi, R. (2023). Task-shifting psychological support to community health workers to improve oncology follow-up in rural cervical cancer survivors. *Global Health Action*, *16*(1), 2189012.

Peerenboom, R., Ackroyd, S., & Lee, N. (2024). The burden of cervical cancer survivorship: Understanding morbidity and survivorship needs through hospital admissions. *Gynecologic Oncology Reports*, *51*, 101328.

Rao, R. M., & Kulkarni, R. (2017). Integrated yoga and mindfulness module in modulating salivary stress biomarkers and quality of life in cervical cancer survivors. *Journal of Cancer Research and Therapeutics*, *13*(2), 284-291.

Roy, P., & Biswas, T. (2024). Efficacy of Yoga-Based Stress Management (YBSM) on sleep efficiency and health-related quality of life in

cervical cancer survivors: A randomized controlled trial. *Indian Journal of Medical and Paediatric Oncology*, *45*(1), 38-46.

Sekse, R. J. T., Råheim, M., Gjengedal, E., & Dunberger, G. (2018). Life after gynecological cancer: A qualitative evaluation of a psychoeducational group intervention. *European Journal of Oncology Nursing*, *33*, 46-52.

Shao, D., Gao, W., & Cao, F. L. (2016). Brief psychological intervention based on gratitude and mindfulness in patients with cervical cancer: A randomized controlled trial. *Health Psychology*, *35*(12), 1383-1391.

Sharma, N., & Verma, R. (2009). Progressive muscle relaxation and supportive therapy in mitigating pre-radiotherapy anxiety in cervical cancer patients. *Indian Journal of Clinical Psychology*, *36*(1), 55-61.

Singh, D., Vignat, J., Lorenzoni, V., et al. (2023). Global estimates of incidence and mortality of cervical cancer in 2020: A baseline analysis of the WHO Global Cervical Cancer Elimination Initiative. *The Lancet Global Health*, 11(2), e197–e206.

Staff, C., Bergmark, K., & Dunberger, G. (2021). Internet-based cognitive behavioral therapy (iCBT) for sexual dysfunction in cervical cancer survivors: Randomized controlled trial. *Psycho-Oncology*, *30*(7), 1089-1098.

Sundararajan, S., Devi, P., & Kumar, S. (2018). Nurse-delivered supportive-expressive counseling for reducing distress in cervical cancer survivors. *Asian Pacific Journal of Cancer Prevention*, *19*(8), 2211-2217.

Wang, X., Zhang, H., & Chen, Y. (2025). Expressive writing coupled with cognitive behavioral coaching for emotional regulation in gynecologic oncology survivors. *Frontiers in Psychology*, *16*, 1547999.

Ye, M., Du, K., & Zhou, F. (2019). Nurse-led eHealth cognitive behavioral therapy for fear of cancer recurrence in cervical cancer survivors: Randomized trial. *Journal of Medical Internet Research*, *21*(9), e14811.

Zhang, Y., Wang, L., & Liu, X. (2022). Mindfulness-based cognitive therapy (MBCT) for fear of recurrence in postoperative cervical cancer patients: Mediating role of non-reactivity. *Supportive Care in Cancer*, *30*(4), 3125-3135.