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Infectious disease risks during pregnancy in women with cancer: Impact on mental health and psychosocial wellbeing

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Abstract: Pregnant women with cancer face a distinctive combination of medical and psychosocial challenges that becomes more complex when infectious disease concerns are present. Pregnancy related immune adaptation, cancer induced immune disruption, and intensive clinical exposure create significant vulnerability to community and hospital infections. Beyond biological risk, the anticipation of infection and the potential for treatment interruption generate considerable psychological distress, intensifying anxiety, depressive symptoms, and health related uncertainty. Infection prevention measures further alter daily functioning, limit social interaction, and disrupt partner and family involvement, contributing to changes in maternal identity and the overall experience of pregnancy. Psychosocial wellbeing is shaped by interpersonal support, clarity of communication with clinicians, and access to community or psychological resources. Many women demonstrate notable resilience, drawing on coping strategies, cognitive adaptation, and supportive relationships to maintain emotional steadiness. However, evidence on infection related distress during cancer affected pregnancy remains sparse, with limited research on cultural variation, longitudinal patterns, and targeted interventions. Integrated psycho oncology care that addresses both medical vulnerability and psychological needs is essential for supporting women through treatment and pregnancy within an environment shaped by infectious disease risk.

Keywords: cancer; coping and resilience; infectious disease risk; psychological distress; psychosocial wellbeing; pregnancy

1. Introduction

Cancer during pregnancy creates a complex clinical and emotional situation where women must manage the demands of a serious illness while also protecting the developing fetus. Improvements in oncology and maternal health care have led to enhanced maternal and neonatal outcomes [1,2]. Nonetheless, the combination of pregnancy and cancer continues to generate substantial psychological strain, with concerns regarding physical health, future prognosis, fetal development, and treatment safety contributing to high levels of distress [3]. In this context, the risk of infectious disease represents an important yet often overlooked factor that affects mental health and psychosocial well-being [4,5].

Pregnancy involves significant changes in the immune system that support fetal tolerance but also modify susceptibility to infections [6]. Women undergoing treatment for cancer experience additional alterations in immune function due to the biological effects of the malignancy and the use of treatments such as chemotherapy, targeted agents, corticosteroids, or other immunosuppressive therapies [7]. Frequent

encounters with clinical environments expose patients to hospital-associated pathogens, while community infections like influenza, varicella, measles, cytomegalovirus, and respiratory viruses may pose risks to both mother and fetus [5,8]. Public health events, such as the coronavirus pandemic can further increase uncertainty regarding maternal vulnerability and fetal safety [2,8].

Infectious disease risk is not only a clinical problem but also a source of emotional distress. Many pregnant women with cancer experience persistent fear of becoming infected, transmitting an infection to the fetus, or facing treatment interruption due to infectious complications [9]. Concerns related to admission to intensive care units, separation from family members, and uncertainty regarding vaccination recommendations can intensify anxiety and depressive symptoms [10]. Infection control measures such as restricted visitation, reduction of partner presence during medical appointments, or temporary isolation during hospitalization may weaken social support and increase feelings of loneliness [11,12]. These pressures often extend beyond the individual and affect partners, children, and wider family networks.

Despite its relevance, the influence of infectious disease risk on mental health and psychosocial adjustment in pregnant women with cancer has not been systematically examined [13,14]. Research on cancer during pregnancy tends to emphasize oncological treatment and fetal outcomes, while studies on infectious diseases in oncology rarely address the unique psychological needs of pregnant patients [15]. Work in perinatal mental health frequently excludes women who are receiving cancer treatment, leaving important pathways linking infectious risk, emotional distress, and family functioning insufficiently understood [16].

This narrative review seeks to address this gap by synthesizing current evidence on the ways infectious disease risks during pregnancy in women with cancer affect mental health and psychosocial wellbeing. The review examines the clinical context of infection risk, explores its emotional and relational consequences, and identifies coping processes and protective factors that may reduce distress. The aim is to support the development of integrated psycho-oncology approaches that recognize both the biological complexity and the psychological demands experienced by this highly vulnerable group.

2. Methods

2.1. Review design

This review follows a narrative synthesis approach that allows the integration of diverse forms of evidence from clinical oncology, perinatal mental health, infectious disease, and psychosocial science. A narrative design was selected because research on infection risks during pregnancy in women with cancer is heterogeneous in aims, methodologies, and outcome measures. This approach permits the inclusion of quantitative, qualitative, and mixed methods studies and supports the identification of conceptual patterns across different clinical and cultural contexts. The purpose of the review is to examine how infectious disease risks influence mental health and psychosocial wellbeing among pregnant women with cancer rather than to generate pooled statistical estimates.

2.2. Search strategy and data sources

A structured literature search was conducted across major scholarly databases, including PubMed, Embase, Scopus, and PsycINFO. Searches were carried out using controlled vocabulary and free text terms related to cancer during pregnancy, infectious disease, maternal psychological distress, emotional adjustment, and psychosocial or family outcomes. Additional sources were identified through manual searches of reference lists in relevant articles and reviews.

The search targeted studies that examined either actual infectious events or perceived infection risks in the context of cancer during pregnancy. The time range was kept broad in order to capture foundational clinical reports, contemporary perinatal oncology research, and recent publications that emerged in response to the coronavirus pandemic. No language restriction was imposed at the search stage, although only studies with English abstracts and adequate methodological description were considered suitable for inclusion. The search strategy was iterative, and key terms were refined as initial results revealed conceptual variations in the literature.

2.3. Inclusion and exclusion criteria

The review included studies that met three criteria. First, the population involved pregnant women with a cancer diagnosis at any stage of gestation, regardless of cancer type. Second, the study addressed infectious disease in the form of documented infections, susceptibility, exposure, vaccination concerns, infection control measures, or subjective perceptions of infectious risk. Third, the study reported at least one mental health or psychosocial outcome, such as anxiety, depression, stress, coping, quality of life, family functioning, partner distress, or perceived support.

Studies were excluded if they focused on non-pregnant adults with cancer, children or adolescents, or if they addressed infectious disease without any psychological component. Editorial commentaries, conference abstracts without data, and studies lacking adequate methodological detail were also excluded. When ambiguity existed, the full text was reviewed to determine whether psychological or psychosocial dimensions were sufficiently addressed. This inclusive yet critical screening process ensured that the evidence base reflected the multidimensional nature of the topic.

2.4. Data extraction and synthesis

Data extraction was conducted manually by reviewing each eligible study and recording information related to study design, sample characteristics, cancer type, gestational stage, nature of infectious risk, mental health outcomes, psychosocial findings, and key conclusions. Because the included literature encompassed clinical case series, observational studies, qualitative interviews, and mixed methods research, data were not pooled statistically. Instead, thematic synthesis was used to identify recurring concepts and relationships across studies.

The synthesis emphasized the intersection between biological vulnerability, psychological stress, and social context. Special attention was paid to studies that

described subjective perceptions of infectious risk, since emotional interpretation often influences mental health more strongly than objective clinical indicators. The extraction process also documented gaps in the evidence base, such as limited data on family systems or cultural variations.

2.5. Ethical considerations

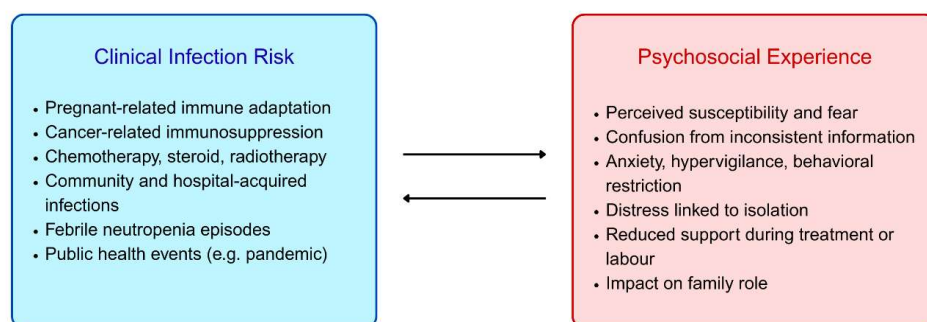
As this work is a secondary review of published literature, no direct interaction with patients or personal health information occurred. Ethical approval was therefore not required. Nevertheless, the review adheres to established principles of academic integrity, accurate representation of evidence, and transparency in reporting.

3. Infectious disease risks in pregnant women with cancer

Infectious disease vulnerability in pregnant women with cancer develops through the convergence of pregnancy related immune adaptation, cancer induced alterations in immune function, and the extensive clinical exposures required during oncological treatment. These medical processes cannot be separated from the psychological and social contexts in which they occur, since risk perceptions, emotional responses, and behavioral changes often develop in parallel with clinical events.

3.1. Immunological changes in pregnancy

Pregnancy is characterized by coordinated shifts in immunity that allow for fetal tolerance while maintaining sufficient host defense. This involves changes in cytokine expression, fluctuations in T cell activity across trimesters, and modulation of innate immune responses [17,18]. Although these adjustments are physiologically adaptive, they can alter the maternal response to pathogens, increasing the risk of more severe infections [19]. When these immune alterations occur alongside cancer-related immune dysfunction, the result is a layered vulnerability in which the physiological changes of pregnancy and malignancy-related immune alterations reinforce one another [20]. The broader implications of these interconnected processes for psychosocial distress and perceived susceptibility are reflected in the structure of **Figure 1**.



Clinical vulnerability increases psychosocial distress; distress modified infection-related behaviors

Figure 1. Conceptual relationship between clinical infection risk and psychosocial experience in pregnant women with cancer.

3.2. Cancer-related immune disruption and treatment effects

Cancer influences immune regulation through tumor-mediated cytokine signaling, disruption of antigen presentation, and chronic inflammation. Treatment further intensifies this disruption. Chemotherapy reduces neutrophil and lymphocyte activity, while targeted therapies may inhibit antiviral defense pathways, and corticosteroids suppress inflammatory responses across multiple systems [21]. Radiotherapy may reduce bone marrow activity and weaken cellular immunity, particularly concerning the immune response during treatment [22]. These treatment effects accumulate over time, creating a clinical environment in which even common pathogens may lead to significant complications [23]. The anticipation of these risks often shapes how women prepare for treatment, interpret bodily sensations, and adjust their level of social engagement [24].

3.3. Exposure to community and hospital acquired infections

Pregnancy combined with cancer increases the frequency of clinical encounters, including outpatient evaluations, imaging, infusion therapy, and occasional hospital admissions. These exposures heighten the risk of hospital-acquired infections, particularly those associated with invasive devices such as central venous catheters [25]. Additionally, community-acquired infections remain a major concern; they can include respiratory viruses, influenza, varicella, measles, cytomegalovirus, and various bacterial pathogens that may adversely affect both maternal and fetal health [26]. Febrile neutropenia can emerge with little warning and necessitates immediate management [27]. A consolidated overview of these clinical threats, along with their potential consequences for maternal health and psychosocial wellbeing, is provided in **Table 1**, which summarizes key infection types, mechanisms of vulnerability, and associated stressors.

Table 1. Infectious disease risks in pregnant women with cancer.

Infection type	Mechanisms of vulnerability	Maternal or fetal consequences	Psychosocial links
Community acquired viral infections (influenza, varicella, measles, respiratory viruses)	Pregnancy related immune changes; weakened antiviral response from treatment	Pneumonia, severe illness, fever, fetal infection risk depending on pathogen	Anxiety about fetal harm, fear of attending clinical appointments
Community acquired bacterial infections	Increased susceptibility due to pregnancy and cancer therapy	Maternal sepsis, treatment delay	Worry regarding need for hospitalization
Hospital acquired infections	Frequent clinical contact and invasive procedures	Bacteremia, sepsis	Distress associated with repeated hospital stays, fear of contamination
Febrile neutropenia	Chemotherapy induced neutrophil depletion	Life threatening infection, forced treatment interruption	Acute psychological distress, uncertainty regarding cancer control
Pandemic related infection patterns	Rapidly shifting guidance, higher transmission	Respiratory compromise, obstetric intervention	Heightened fear, behavioral restriction, isolation

3.4. Subjective understanding of infectious threat

The interpretation of infectious disease risk among pregnant women with cancer is shaped not only by clinical information but also by personal beliefs, previous health experiences, and broader emotional context. Many women navigate treatment

decisions while simultaneously attempting to safeguard fetal development, and this dual priority often heightens sensitivity to signs of potential infection [28]. In settings where guidance evolves rapidly, such as during widespread public health events like the COVID-19 pandemic, women may encounter inconsistent messages from different clinicians or health authorities. These inconsistencies can generate confusion, making it difficult to determine which precautions are necessary and which risks are acceptable [29]. For some, routine symptoms such as fever, cough, or fatigue may be interpreted as signs of serious infection, and this may result in increased anxiety that does not necessarily correlate with the actual clinical likelihood of serious infection [30].

Subjective appraisal also influences the way women engage with clinical environments and follow preventive recommendations. Concerns about exposure during hospital visits can lead to reluctance to attend appointments, even when monitoring is essential for maternal and fetal well-being. Conversely, some women may minimize personal risk to maintain continuity of care or to avoid burdening their families with additional responsibilities [31]. Cultural beliefs, access to credible health information, and the quality of communication with health professionals further shape how infectious threats are perceived [32]. These interpretations play an important role in determining emotional responses and often influence behavioral choices in ways that may either mitigate or intensify actual risk [33].

3.5. Psychosocial implications of infection prevention

Infection prevention during cancer-affected pregnancy frequently requires adjustments that extend well beyond clinical environments. Women may limit participation in social activities, avoid crowded settings, or reduce contact with friends and extended family. These measures, while intended to reduce exposure to pathogens, can inadvertently diminish sources of emotional support at a time when reassurance and social connection are particularly needed [13]. Feelings of separation from loved ones may be amplified if absence from important events or family routines becomes prolonged. Such restrictions can alter expectations for pregnancy, transforming what is usually experienced as a period of anticipation into one marked by vigilance and reduced interpersonal engagement [34].

Hospital-based prevention measures can also have significant psychosocial consequences. Restrictions on partner presence during treatment sessions or labor can reduce opportunities for shared decision-making and emotional comfort [35]. Women who are responsible for caring for young children may struggle with the tension between maintaining protective isolation and fulfilling parenting responsibilities, sometimes leading to guilt or a sense of diminished maternal identity [34]. When preventive measures require increased reliance on others for household tasks or childcare, women may feel that they have lost autonomy or have become a burden to those around them [36]. These experiences contribute to cumulative distress and reflect the broader ways in which infection-related precautions shape both day-to-day functioning and emotional well-being [37].

4. Impact on mental health

The psychological consequences of infectious disease risk during cancer affected pregnancy emerge through a combination of biological vulnerability, subjective interpretation of threat, and the emotional demands of navigating treatment while anticipating childbirth. Women often experience these concerns as intertwined rather than separate challenges, which can intensify the emotional weight of both their cancer diagnosis and their pregnancy. The overall process through which infection related concerns shape emotional outcomes is reflected in the conceptual pathway shown in **Figure 2**, which highlights how cognitive appraisal contributes to anxiety, depressive symptoms, and disruptions in the experience of pregnancy.

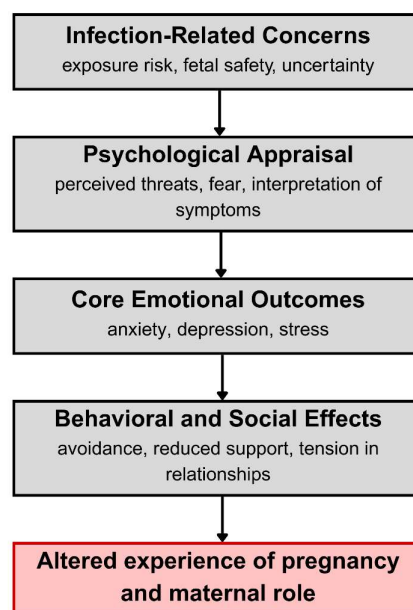


Figure 2. Psychological pathways linking infection-related concerns to mental health outcomes in pregnant women with cancer.

4.1. Anxiety and heightened vigilance

Anxiety is often the earliest and most persistent emotional response to infection risk during cancer-affected pregnancy. Many women become acutely aware of bodily sensations, including minor fluctuations in temperature, respiratory discomfort, or changes in energy level. These sensations may trigger concerns about whether an infection is developing, whether the fetus could be harmed, or whether treatment might be delayed [38]. The emotional intensity of such worries may be amplified when women feel responsible for detecting early symptoms to protect both themselves and the unborn child. As a result, even brief or ambiguous symptoms can provoke disproportionate fear and initiate cycles of hypervigilance [39].

Over time, heightened vigilance may evolve into a persistent cognitive pattern that shapes daily life. Women may continually assess the risk of exposure in public settings or even within their own households. This may influence decisions about social contact, work attendance, or participation in prenatal activities. Persistent

anxiety can interfere with sleep, reduce concentration, and contribute to irritability or exhaustion [40]. When these reactions accumulate, they may diminish the woman's ability to engage fully in treatment and pregnancy-related experiences, perpetuating a sense of fragility and uncertainty [41].

4.2. Depressive symptoms and emotional burden

Infectious risk can contribute to the development or worsening of depressive symptoms, particularly when women feel overwhelmed by competing demands or perceive their situation as beyond their control. The emotional fatigue associated with trying to protect fetal health, responding to cancer treatment, and adjusting personal routines to minimize exposure has been documented [42]. Feelings of sadness, demotivation, or emotional heaviness may arise when women have to limit social engagement, forego anticipated pregnancy experiences, or accept restrictions that alter their sense of autonomy [43]. Women may also experience grief for a pregnancy experience that differs significantly from their expectations [44].

Depressive symptoms can become more pronounced when infection risk intersects with treatment delays, hospitalization, or a decrease in everyday support. Disruptions in routine, prolonged periods of isolation, or uncertainty about treatment plans may lead to feelings of helplessness or discouragement [45]. As depressive symptoms deepen, some women may withdraw from sources of comfort or struggle to maintain connections with family members [46]. These emotional changes can impact maternal attachment, decrease engagement in prenatal preparation, and reduce the ability to utilize coping strategies that might otherwise alleviate distress [47].

4.3. Fear of treatment interruption and health related uncertainty

Fear that an infection could interrupt or delay cancer treatment is a significant source of mental distress. Women often recognize that continued therapy is essential for survival, and the possibility that an infection might necessitate postponement can provoke strong emotional reactions [48]. Early signs of illness, such as mild fever or cough, can trigger anxiety about whether a scheduled treatment cycle will proceed. This heightened sensitivity to potential disruptions increases emotional reactivity and may contribute to ongoing rumination about health and treatment outcomes [13].

Uncertainty is further compounded by fluctuations in clinical guidelines or public health policies, particularly during widespread infectious outbreaks [49]. As recommendations shift, women may struggle to determine which behaviors are safe or appropriate. This instability can undermine trust in clinical information, complicate decision-making processes, and intensify the perception of unpredictability. Persistent uncertainty may erode emotional resilience, leading to a heightened sense of vulnerability that affects both treatment experiences and expectations related to pregnancy [50].

4.4. Social isolation, reduced support, and family strain

Infection prevention efforts often require limiting social contact, attending appointments without partners, or adjusting family routines to reduce exposure.

Although these measures protect maternal health, they may diminish access to emotional and practical support Quiroga-[51]. Many women rely on social interaction, shared decision-making, and partner presence to navigate the stresses of cancer treatment and pregnancy. When these supports are constrained, feelings of loneliness or abandonment may arise. Such emotional isolation can intensify internal distress and create barriers to expressing concerns or seeking reassurance.

Family dynamics may also be affected as women attempt to reconcile the demands of cancer treatment with the responsibilities of caregiving and household management. For those with young children, preventive measures may require significant adjustments that disrupt routines and strain relationships. Partners and family members may also experience stress or uncertainty, reducing their capacity to provide stable support. These shifts can create tension, misunderstandings, or role changes within the family system. Over time, such relational strain may influence coping capacity and exacerbate both anxiety and depressive symptoms [52].

4.5. Changes in maternal identity and pregnancy experience

The combination of infection-related vigilance, treatment demands, and behavioral restrictions may profoundly influence how women experience pregnancy and construct maternal identity. Activities that typically promote anticipation and bonding, such as attending prenatal classes or preparing the home environment, may be constrained or omitted altogether. As a result, women may feel disconnected from the positive aspects of pregnancy or perceive their experience as dominated by medical concerns, particularly during times of health crises such as disease outbreaks [12]. Some women may struggle with a sense of loss or disappointment when cherished expectations cannot be fulfilled.

These disruptions can also influence the development of maternal identity. When concerns about health overshadow typical emotional milestones, women may experience uncertainty about their ability to protect or care for the child. Feelings of vulnerability or diminished confidence may persist through late pregnancy and into the postpartum period [53]. The emotional landscape becomes shaped not only by the realities related to health concerns but also by the psychological consequences of living within a heightened-risk environment. This altered experience of pregnancy can have lasting implications for maternal well-being and early parent–infant interaction [54].

5. Psychosocial wellbeing

Psychosocial wellbeing during cancer affected pregnancy is shaped by the interaction of emotional, relational, and practical demands that intensify when infectious disease concerns are present. Women must adapt to a changing environment in which daily routines, family roles, and sources of support are often disrupted by efforts to reduce exposure. These adjustments influence their ability to cope with treatment, maintain social connections, and sustain a sense of stability during pregnancy. A summary of the principal psychosocial domains affected by infection related concerns is presented in **Table 2**, which provides a broad overview of the types of disruptions commonly described in the literature.

Wellbeing also depends on the strength of interpersonal support, the clarity of communication with clinicians, and the availability of community or psychological resources. When infection-related precautions reduce opportunities for shared activities or limit contact with key support figures, women may experience heightened vulnerability or diminished coping capacity [55]. Understanding these influences provides important context for the psychosocial challenges discussed in the following subsections [56].

Table 2. Psychosocial domains affected by infection-related concerns in pregnant women with cancer.

Psychosocial domain	Key disruptions	Underlying processes	Implications for wellbeing
Daily functioning and social roles	Reduced participation in work, social activities, community life	Behavioral restriction to reduce exposure; loss of routine	Feeling of disconnection, decreased autonomy, poorer life satisfaction
Partner relationship and communication	Limited partner presence at appointments; increased relational tension	Reduced shared decision making; partner stress and protective behaviors	Emotional distance, reduced support, strain on couple functioning
Family dynamics and caregiving roles	Altered childcare routines; reliance on extended family	Balancing infection control with parenting responsibilities	Guilt, role conflict, increased family stress
Social support and community resources	Interrupted support networks; limited access to psychosocial services	Reduced physical contact; service disruptions; telehealth limitations	Heightened vulnerability, diminished coping capacity
Meaning making and coping	Difficulty integrating multiple stressors; reliance on unbalanced coping strategies	Threat appraisal, uncertainty, disrupted expectations of pregnancy	Increased distress or, in some cases, adaptive growth depending on coping style
Maternal identity and pregnancy experience	Loss of anticipated milestones; medicalized experience of pregnancy	Continuous vigilance and treatment demand overshadowing bonding	Weakened maternal identity, altered expectations, emotional detachment

5.1. Disruption of social roles and daily functioning

Infection precautions often require women to limit participation in work, education, religious gatherings, and community activities. These changes can significantly alter the sense of normalcy that many rely upon to maintain emotional equilibrium, as evidenced by studies examining the impact of disruptions on maternal mental health during the COVID-19 pandemic [57]. For individuals accustomed to active social engagement, the abrupt narrowing of their world may lead to feelings of disconnection or loss of identity. Restrictions on mobility or the avoidance of public spaces can also reduce access to restorative activities, such as meeting friends, exercising, or engaging in hobbies that previously served as coping mechanisms.

The reorganization of daily functioning can extend into essential routines, including transportation to medical appointments, household management, and care for existing children. When women are unable to perform these tasks due to infection risk or treatment demands, they may feel that their independence has been compromised [58]. Reliance on others for basic activities can evoke discomfort or concern about burdening family members. Over time, the accumulation of these disruptions may erode emotional stability, making it more difficult to adapt to evolving clinical demands [59].

5.2. Partner relationships and communication challenges

Partner relationships often carry substantial emotional weight during pregnancy

and cancer treatment, yet infection-related restrictions can interfere with shared experiences that strengthen relational bonds. Limitations on partner attendance at medical appointments can reduce opportunities for joint decision-making and may leave women feeling unsupported during complex consultations, as highlighted in the literature addressing the psychological implications of such circumstances in pregnant cancer patients [60]. Even partners who wish to be present may be unable to do so due to institutional policies or concerns about bringing infection into the home. These barriers can affect communication patterns, sometimes leading to misunderstandings or a sense of emotional distance.

The stress experienced by partners themselves may further influence relational functioning. Partners may fear transmitting infection to the mother or fetus, struggle with their own uncertainty regarding treatment outcomes, or assume additional household responsibilities during periods of isolation, as suggested by guidelines and ethical considerations for cancer treatment during pregnancy [2]. These pressures can create tension within the relationship, especially if communication becomes strained or if each individual attempts to protect the other by withholding concerns. Despite these challenges, strong relational support remains a key protective factor, emphasizing the importance of including partners in psychosocial care whenever possible, particularly within ethical and patient-centered frameworks for care in this context [61].

5.3. Family dynamics and the burden of caregiving

The presence of children in the home adds another layer of complexity, as parents must balance infection prevention with the developmental and emotional needs of their family. Parents often experience guilt, sadness, or inadequacy when physical closeness with children is reduced to minimize exposure, particularly when children are young and struggle to understand the need for restrictions [62]. This emotional burden may intensify if caregivers' routines are disrupted or if extended family members or domestic helpers are unavailable due to infection-related constraints.

Family dynamics may shift as caregiving responsibilities are redistributed to partners or other relatives. While this support can be essential, it may also introduce tension if expectations differ or if the redistribution increases stress on caregivers [63]. Families may struggle to adjust to new routines while also facing financial strain due to reduced employment or increased childcare costs. These pressures can influence collective well-being, affecting communication, cohesion, and the emotional climate within the household [64].

5.4. Social support, community resources, and barriers to access

Social support networks play a critical role in buffering psychological stress, yet infection-related concerns often reduce opportunities for in-person connection. Supportive gatherings, such as prenatal groups, religious meetings, or informal visits with friends, may be limited or avoided altogether, which can exacerbate feelings of isolation and distress among affected individuals [65]. Women who rely on community resources for childcare, transportation, or emotional support may find

these services disrupted or unavailable during periods of heightened health risks associated with an infectious disease outbreak like COVID-19 [66]. Even when alternative forms of support exist, such as telephone check-ins or online groups, they may not fully replicate the comfort and stability provided by face-to-face interaction, potentially diminishing the overall effectiveness of support for mental well-being [67].

Access to professional psychosocial resources may also be adversely affected by health-related restrictions that alter service delivery models, reducing opportunities for in-person counseling or support groups [68]. Although telehealth can partially address these gaps, some women may find virtual interactions insufficient for expressing complex emotional concerns or may lack privacy at home, which can hinder full engagement with telehealth services [69]. Structural barriers such as limited digital access, financial constraints, or cultural norms regarding help-seeking can further hinder the utilization of crucial psychosocial services [70]. These challenges underscore the importance of flexible, multimodal support systems that can adapt during periods of heightened infection risk to effectively meet the diverse needs of individuals seeking mental health assistance [71].

5.5. Meaning making, coping, and adaptation

Despite substantial challenges, many women engage in adaptive coping strategies that support psychosocial wellbeing. Some draw on personal or cultural beliefs that emphasize resilience, faith, or acceptance in the face of uncertainty [72]. Others rely on problem-focused strategies, such as reorganizing routines, seeking reliable information, or building new support structures [73]. Meaning-making processes can be particularly important, enabling women to reinterpret distressing circumstances in ways that reinforce purpose, connection, or hope [74].

However, coping effectiveness varies, and some strategies may inadvertently intensify distress. Excessive vigilance, avoidance of clinical care, or overreliance on unverified information can increase anxiety or disrupt treatment [73]. Emotional coping strategies such as withdrawal or suppression may reduce immediate discomfort but limit access to support [75]. Understanding these diverse responses is essential for tailoring psychosocial interventions that strengthen adaptive coping while addressing behaviors that may compromise either emotional or physical health. Over time, the ability to integrate cancer, pregnancy, and infection-related challenges into a coherent narrative contributes significantly to long-term adjustment and wellbeing [76].

6. Coping, resilience, and protective factors

Coping and resilience influence how pregnant women with cancer respond to concerns about infection. Many rely on personal strengths, emotional regulation, and practical strategies to remain steady during periods of uncertainty. These adaptive processes support psychological functioning and help women maintain connection with others while continuing treatment. A summary of the main coping domains and protective influences is presented in **Table 3**, which outlines individual, relational, and contextual factors that contribute to resilience in this setting.

Protective factors emerge through the interaction of coping approaches, partner and family support, clear communication with clinicians, and access to community or cultural resources. When these elements are present, women are better able to maintain emotional balance and sustain a sense of control despite ongoing vulnerability. These influences shape the patterns of adjustment described in the following subsections [77].

Table 3. Coping strategies and protective factors supporting resilience in pregnant women with cancer.

Domain	Key elements	Underlying processes	Contribution to resilience
Individual coping strategies	Problem focused coping, emotion focused coping, reframing of uncertainty, mindful attention	Active information seeking, self-regulation, reinterpretation of stressors	Enhances sense of control, stabilizes mood, reduces fear driven decision making
Cognitive adaptation	Meaning making, acceptance, adjustment of expectations, threat appraisal	Integration of cancer, pregnancy, and infection concerns into a coherent narrative	Supports emotional balance, reduces rumination, promotes adaptive thinking
Partner and family support	Emotional reassurance, shared decision making, practical assistance	Relational closeness, collaborative problem solving	Reduces isolation, increases confidence, strengthens coping capacity
Professional support	Clear communication, consistent clinical guidance, psychosocial services	Improved understanding, trust in care, opportunities for emotional expression	Decreases uncertainty, supports treatment engagement, buffers distress
Community, cultural, and spiritual resources	Faith practices, cultural values, community networks	Use of shared meaning systems, collective support, identity affirmation	Enhances hope and stability, encourages adaptive interpretation of adversity
Protective outcomes	Emotional steadiness, sustained treatment participation, strengthened maternal identity	Consolidation of coping and support over time	Promotes long term adjustment and adaptive growth

6.1. Individual coping strategies and cognitive adaptation

Women employ a wide range of coping strategies as they navigate infection-related concerns during pregnancy affected by cancer. Some adopt problem-focused coping styles, which include gathering accurate information, implementing structured preventive measures, and planning for contingencies related to treatment or childcare [78]. These strategies may provide a sense of control and reduce uncertainty. Others rely on emotion-focused approaches, such as mindfulness, acceptance, distraction, or reframing distressing thoughts [79]. Such strategies may help regulate immediate emotional responses and decrease anxiety during moments of heightened vulnerability.

Cognitive adaptation plays an equally important role. Women often reinterpret the meaning of infection-related challenges in ways that reduce psychological burden, shifting their perspective from fear to cautious preparedness or from loss to pragmatic adjustment [80]. For some, the recognition that infection precautions protect both maternal and fetal health fosters a sense of purpose [81]. Others may benefit from affirming internal narratives that emphasize resilience and competence. These cognitive shifts can strengthen emotional regulation and facilitate more balanced responses to ongoing uncertainty [82].

6.2. Role of information, communication, and health literacy

Clear and consistent information from health professionals is a powerful

protective factor. When women receive coherent explanations about infection risk, treatment implications, and preventive strategies, they often feel better equipped to manage their circumstances [83]. Good communication reduces ambiguity, allows women to ask questions, and strengthens collaborative decision-making. These elements can transform fear into informed caution and foster trust in the care process [84]. Conversely, inconsistent or unclear messaging may undermine coping and heighten emotional distress [85].

Health literacy also influences resilience. Women who understand medical information, feel confident navigating healthcare systems, and can evaluate the credibility of information sources may be more effective in managing infection concerns [86]. Higher health literacy may support healthier behavioral responses, such as attending essential appointments despite fear of exposure, or distinguishing between symptoms that require urgent evaluation and those that do not. When clinicians tailor communication to the patient's level of understanding, they enhance the capacity for adaptive coping and support more meaningful patient involvement [87].

6.3. Social support as an emotional and practical resource

Support from partners, family members, and close friends remains one of the strongest buffers against distress. Emotional support can be expressed through reassurance, presence, and empathy, helping women feel understood and less isolated as they encounter infection-related challenges [88]. Practical support, such as assistance with childcare, transportation, or household responsibilities, can ease the burden of preventive measures and treatment demands [89]. Together, these forms of support promote a sense of stability in an otherwise unpredictable environment [90].

Social support also enhances resilience by facilitating communication and shared problem-solving [91]. Partners and family members who actively participate in infection prevention strategies may help women feel safer and more confident in their actions. Supportive relationships encourage more open expression of fears and uncertainties, enabling women to process their emotions rather than internalize them [92]. When social networks remain available, whether in person or through remote means, they strengthen adaptive coping and reduce the emotional strain associated with sustained caution or isolation [93].

6.4. Community, professional, and cultural resources

Community and professional resources offer additional layers of resilience. Psychosocial services, including counseling, support groups, and psychoeducation, provide structured opportunities for reflection and emotional regulation. These services help women normalize their reactions, explore coping strategies, and integrate cancer and pregnancy-related challenges into a coherent narrative [94,95]. Even when delivered remotely, psychological support can create a stable space for expressing concerns that might be difficult to share with family members [94].

Cultural and spiritual resources may also support coping. For some women, cultural beliefs about motherhood, illness, or communal responsibility provide

frameworks for understanding and managing adversity [96]. Spiritual or religious practices may offer comfort, enhance a sense of meaning, or promote acceptance during periods of uncertainty. Community organizations, faith groups, and cultural networks often play vital roles in maintaining social connection, providing practical support, or reinforcing values that sustain emotional strength [97].

6.5. Adaptive growth, meaning making, and long-term adjustment

Although infectious disease risk introduces substantial distress, many women demonstrate adaptive growth as they navigate these challenges. Meaning-making processes allow women to integrate difficult experiences into their personal narratives in ways that reinforce resilience or affirm their emerging identities as mothers and survivors [98]. Some derive strength from recognizing their capacity to manage complex demands, while others find renewed appreciation for relationships, health, or community. These experiences can deepen emotional maturity and foster positive transformation even in difficult circumstances.

Over time, adaptive growth contributes to long-term adjustment. Women who successfully integrate their experiences may enter postpartum and survivorship periods with a strengthened sense of competence and clarity about personal priorities. Continued support from clinicians, family, and psychosocial services enhances these outcomes by reinforcing adaptive patterns and addressing ongoing vulnerabilities [99]. Understanding these processes is essential for developing interventions that not only reduce distress but also promote resilience and well-being throughout cancer-affected pregnancy [100].

7. Clinical implications for psycho-oncology practice

The complex interaction between infectious disease risk, cancer treatment, and pregnancy underscores the need for an integrated clinical approach that recognizes both medical and psychological dimensions of care. Psycho-oncology practice plays a central role in supporting women as they navigate uncertainty, interpret clinical information, and maintain emotional steadiness. Clinicians must remain alert to the ways in which infection related concerns influence anxiety, depressive symptoms, social withdrawal, and family strain. Proactive screening for psychological distress is essential, as many women may not spontaneously disclose fears related to infection or its impact on treatment and fetal wellbeing.

Effective communication is a foundation of supportive care. Clear and consistent explanations about infection risk, treatment expectations, and preventive measures can reduce confusion and promote more balanced appraisal of vulnerability. Psycho-oncology clinicians can assist women in processing complex medical information, clarifying misconceptions, and developing realistic coping plans. This guidance helps patients distinguish between routine symptoms and situations that require urgent attention, thereby reducing unnecessary fear and strengthening trust in the care team.

Supportive interventions should also reinforce coping and resilience. Psycho-oncology professionals can help women identify adaptive strategies, reframe distressing interpretations, and build routines that protect emotional stability.

Encouraging the use of personal strengths, cultural values, and sources of meaning can promote a sense of agency and reduce emotional overload. Clinicians can also facilitate discussion of how infection precautions reshape family routines, maternal identity, and relationship dynamics, providing space for women to express concerns and strengthen interpersonal connection.

Collaborative models of care enhance these efforts. Close coordination among oncology, obstetrics, mental health, and social care teams ensures that women receive comprehensive support that addresses both clinical and psychosocial needs. Guidance regarding restricted hospital policies, childcare planning, or transportation arrangements can ease practical strain. Telehealth and digital communication tools extend the reach of support when in person visits are limited, though clinicians must recognize barriers related to privacy, digital access, or cultural preferences.

Despite growing attention to the psychosocial needs of pregnant women with cancer, important gaps remain. Research on infection related distress in this population is limited, and most available evidence is drawn from small qualitative studies or extrapolated from non-pregnant cancer cohorts. Little is known about how infection related concerns evolve across trimesters, how they influence treatment adherence, or how women from different cultural or socioeconomic backgrounds interpret and manage these risks. There is also a lack of validated assessment tools designed specifically for infection related anxiety during cancer affected pregnancy, and few interventions have been evaluated for their effectiveness in this context. These gaps highlight the need for longitudinal research, culturally inclusive studies, and targeted psychosocial interventions that reflect the lived experiences of this unique group.

Psycho-oncology practice should recognize opportunities for adaptive growth. Many women demonstrate considerable strength as they balance the demands of pregnancy and cancer treatment. Clinicians can support this resilience by acknowledging adaptive responses, validating women's efforts, and reinforcing moments of stability or progress. By integrating clear medical guidance with thoughtful psychological care, practitioners help create an environment in which women feel informed, supported, and capable of managing the uncertainty that infection risk introduces during cancer affected pregnancy.

8. Conclusion

Pregnant women with cancer face a distinctive constellation of clinical and psychosocial challenges that become more complex when concerns about infection are present. The interaction of pregnancy related immune changes, cancer treatment, and intensive clinical exposure creates a sense of vulnerability that extends beyond medical risk and shapes emotional and relational experience. Women must negotiate uncertainty, interpret ambiguous symptoms, and manage preventive behaviors while sustaining their roles within families and communities. These combined pressures influence anxiety, mood, social connection, and overall wellbeing.

The evidence reviewed across this manuscript illustrates that infection related concerns are not isolated stressors but part of a wider network of influences on psychological adjustment. Subjective interpretation of risk, quality of

communication with clinicians, strength of social support, and availability of professional and community resources all contribute to the emotional landscape of cancer affected pregnancy. Coping strategies and resilience processes offer important pathways for adaptation, and many women demonstrate considerable strength and flexibility as they navigate these demands. At the same time, the review highlights significant gaps in knowledge regarding infection related distress, cultural variation in experience, and the effectiveness of targeted interventions.

Addressing these challenges requires coordinated clinical engagement across oncology, obstetrics, mental health, and social care. Clear communication, early identification of distress, and sustained psychosocial support are essential for helping women manage uncertainty and maintain emotional steadiness. Interventions that build coping capacity and strengthen family and community resources can reduce distress and promote adaptive growth. Future research must develop a more detailed understanding of how infection concerns evolve over time and how tailored psychosocial strategies can best support women during pregnancy and treatment.

The available evidence emphasizes the need for an integrated approach that recognizes the close relationship between medical vulnerability and psychosocial wellbeing. By responding to both dimensions of care, clinicians can help ensure that pregnant women with cancer feel supported, informed, and resilient as they navigate the complex experience of treatment within an environment shaped by infection related risk.

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