Beyond the Diagnosis: Women's Experiences of Cardiotoxicity Secondary to Cancer Treatment

by

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Abstract

Background: While chemotherapy can be a life-saving measure for women with cancer, it can also cause serious side effects. Cardiotoxicity, a decline in cardiac function in the form of heart failure, is a rare adverse effect linked to specific anti-neoplastic therapies. A dual diagnosis of cancer and cardiotoxicity (heart failure) has serious implications for women who are living with two potentially life-threatening conditions. There is little research pertaining to the health needs of these women and the impacts they face in their daily lives.

Purpose: The goals of this study were to 1) explore women’s embodied experiences of developing cardiotoxicity related to anti-neoplastic therapy and 2) provide examples of how living with a dual diagnosis impacted their ability to participate in their daily social worlds.

Method: This descriptive qualitative study completed one-on-one semi structured interviews with women (n=7) who received a diagnosis of cardiotoxicity after receiving anti-neoplastic therapy for cancer treatment. The criteria for determining cardiotoxicity (or cancer therapy related cardiac dysfunction) was a left ventricular ejection fraction of absolute value less than 53% or a drop of 10% from baseline. Analysis was completed using Braun and Clark’s (2006) six phases of Thematic Analysis. This study drew from theoretical frameworks focused on the sociology of the body, specifically embodiment theories highlighting how women’s bodies are impacted during illness.

Findings: Women in this study were found to experience embodied trauma through feelings of self-blame, distrust, lack of being monitored and no end in sight to their cardiac issues stemming from cardiotoxicity due to anti-neoplastic therapy. The women in this study also encountered alterations to their daily social worlds with their diagnosis of cardiotoxicity including their roles within the family, careers and maintaining friendships.

Conclusion: This study highlights the importance of trauma informed, person-centred, embodied care for this cohort of women by all levels of healthcare providers. It also uncovers the need for long-term access to psychosocial services and improved secondary screening so that women who are at high risk of developing cardiotoxicity secondary to their cancer treatments do not get lost in the medical system after their cancer treatment.

Keywords: cancer, cardiotoxicity, qualitative descriptive, dual diagnosis, embodiment

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Dedication

I dedicate this study to all of the women who feel under-represented in research and in healthcare, especially in cardiac care. I feel extremely grateful to the participants in this study who have dedicated their time to telling me their stories. I hope this thesis helps you to know that you are not alone.

In these tumultuous times, when it is not always easy to identify as a woman in this world, your health, your opinion and your life matters. Your experiences are valid and I feel honoured to have created this study.

> “Healing is a small and ordinary and very burnt thing. And it’s one thing and one thing only: it’s doing what you have to do.”
>
> Cheryl Strayed (2015, p. 109)

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Chapter 1: Background

In Canada, it is estimated that approximately 2 out of 5 people will be diagnosed with cancer in their lifetime. Cancer is also the leading cause of death in Canada (Canadian Cancer Society, 2025a). In 2024, there were approximately 247,000 new cases projected and 81,000 deaths in Canada from cancer (Brenner et al., 2024). While there has been much research geared towards the physical alterations associated with cancer treatments, including hair loss (alopecia), pain, fatigue, skin and nail changes, there are other changes that may be more difficult to understand (Thomas & Oakly, 2021; Hughes et al., 2021; Mushani et al., 2024). One serious complication secondary to anti-neoplastic therapy that warrants further discussion is cardiotoxicity (Martel et al., 2017). Cardiotoxicity is the harmful effect that certain chemotherapy agents have on the heart muscle that can lead to changes in the heart structure or function and may lead to conditions such as heart failure or abnormal heart rhythms (Zamorano et al., 2016). The definition of cancer therapy related cardiac dysfunction (CTRCD) is a left ventricular ejection fraction of absolute value less than 53% or a drop of 10% from baseline (Perez et al., 2019). Although cardiotoxicity encompasses heart failure, coronary artery disease, arrythmias, thromboembolism, pericardial disease and hypertension (Monsuez et al., 2010), this study will focus on CTRCD in the form of heart failure. While both cancer and cardiotoxicity each impact women's bodies in different ways, a dual diagnosis has serious implications for women and their health.

Statement of the Problem

With advances in detection, treatments and technology, survival rates for women with certain types of cancer are improving (Canadian Cancer Society, 2025a). According to the Canadian Cancer Society (2025a), five-year net survival rates for all cancers combined are improving. In the early 1990's, net survival rate was approximately 55%, but is currently closer to 64%. One caveat is that with survival, there are potential long term side effects of cancer treatment, such as cardiotoxicity, warranting further exploration. How women embody these changes post-cancer treatment is also important. Surviving cancer and then facing a chronic, potentially limiting, chronic diagnosis like cardiotoxicity significantly impacts women's lives. This can include their relationships to their bodies, their social roles and social relationships. Nursing as a discipline is uniquely positioned to study these impacts and the complex transition between acuity and chronicity in persons living with multiple health issues. This is due to our work at the bedside, where our focus is on improving the lives of individuals facing health challenges and our work within the research realm with a focus on advancement of nursing practice.

In this thesis, I explored the embodied experiences of women diagnosed with cardiotoxicity after neoplastic therapy. Embodiment is the theory that the mind and body are not separate; rather, the way we think, feel and understand the world is shaped by how our bodies experience the world, which is basic to the experience of self-identity and mental health (Gibbs, 2017; Lundh & Foster, 2024). Essentially, "embodiment arises from the connection between body, emotions, brain and environment" (da Silveira Coêlho et al., 2023, p. 38; Marshall, 2016). More specifically, people understand the world through their bodies. In this study, the participants' embodied experiences of cancer shaped their embodied experiences of cardiotoxicity. While there were physical changes that occurred, including debilitating fatigue, shortness of breath and weight gain, etc., there were other ways in which their embodied experiences of cardiotoxicity manifested. This led to participants feeling re-traumatized in various ways which also deeply affected their everyday social worlds, including their relationships with others and with themselves.

While there is no singular way to experience cardiovascular disease (Guillemin, 2004), participants embodied their cardiotoxicity in markedly similar ways. A diagnosis of heart failure has been consistently characterized as altering women's concepts of self in ways that adversely affect their every day mental and physical wellbeing (Allen et al., 2009). By learning about the everyday experiences of those living with cardiovascular disease, we can come to better understand the ways in which they make meaning of this illness, themselves and their lives (Guillemin, 2004), and thus, provide better nursing interventions for them in the future.

For this study, I devised a descriptive qualitative design, theoretically merging multiple disciplinary perspectives synthesizing biomedicine, nursing and social theory.

The following research questions guided this study:

1. What are women's embodied experiences of developing cardiotoxicity related to anti-neoplastic therapy?
2. How does this dual diagnosis impact women's ability to participate in their daily social worlds?

Positionality and Assumptions

In the qualitative research process, it is important to think critically about my positioning as a researcher and reflect on how my personal beliefs, attitudes, and values may affect data collection and interpretation. This process is known as reflexivity (Polit & Beck, 2021). I identify as a cis-normative, White, able-bodied woman of European descent. I grew up on and currently live on Treaty One territory in Winnipeg, Manitoba, Canada. My grandparents settled as uninvited guests on Turtle Island post World War Two, and I personally have benefitted from living on this land.

As a nurse of ten years, my professional career and experiences with both cancer patients receiving surgical interventions and women with various cardiovascular conditions have provided me with many, valuable insights into the lives of these women experiencing acute illness. In this role I am also able to bear witness to the direct effects of nursing interventions on people's lives. I have comforted women in a post-operative setting who were grieving their former lives prior to cancer, and I have stood at the bedsides of people who just died after their hearts failed them. These life altering moments can turn into chronic health conditions which alter our bodies, our relationships and how we relate to the world. My experience as a nurse and my personal experience with illness have made me inherently empathetic to these experiences. I lost an immediate family member to cancer. This significantly impacted me, my two sisters and my mother, who I am very close to. I realize that people are more than their diagnoses and that we require a better understanding of how and why people make the decisions they do about their health, their embodied practices and the importance of understanding our bodies as both meaningful and relational. When someone is living with illness, they are re-learning how to relate to their body, their relationships with others may be impacted, and their social worlds may face new pressures.

In research, an assumption is essentially a basic principle that is believed to be true, even though there is no actual proof of its truth corroborating it (Polit & Beck, 2021). When conducting a research study, it is important to recognize the assumptions that we make that will impact our work. The main assumptions I made prior to conducting this research include:

1. **Women's embodied experiences of having a dual diagnosis of cancer and cardiotoxicity are complex and may be difficult to understand.** I believe that, in addition to the physical changes cancer survivors experience, there are far more complex forces at work beyond the individual level, especially when cardiotoxicity is also present. These broader societal factors deeply shape women's emotional and psychological experiences.
2. **Long-term survivors of cancer may be lacking holistic support post-treatment, beginning at the health provider level.** This assumption is based on my experience as a female bedside nurse, working in an acute care setting with patients impacted by these illnesses. In my experience, there are limited secondary screening supports to help detect complications related to cancer therapy. Many women are referred directly to their general practitioners after completing cancer treatment for long-term follow-up. This impacts their abilities to have a consistent plan of care and to engage in health practices aimed at detecting potential long-term health conditions resulting from cancer treatment.

Preliminary Work

In preparation for my thesis, I met with several nurses I knew who work in cardiovascular intensive care units to discuss the challenges women face in these settings. Through informal conversations, I learned that cardiotoxicity resulting from cancer treatment is a complication that often goes unnoticed, despite being something they encounter in practice. One of these discussions was with the Clinical Nurse Specialist for cardiovascular care at St. Boniface Hospital. These conversations sparked my interest in the topic of this study. My thesis committee is comprised of experts in biomedicine, sociology, and nursing. After my first meeting, I was able to gain a sense of the complexity and semantic density of research grounding the study of women after their cancer care. One of my committee members was able to link me to patient advocates for women living with cardiotoxicity after cancer therapy. I was able to meet with two women who were cancer survivors and diagnosed with cardiotoxic effects from anti-neoplastic therapy. They were able to provide me with the patient perspective and make recommendations regarding participant recruitment.

Organization of the Thesis

This thesis begins in chapter 2 with an examination of the current literature on cancer treatment and cardiotoxicity. I begin by framing the treatment for specific cancers including breast cancer, non-Hodgkin's and Hodgkin's Lymphoma, identifying anti-neoplastic therapy and other therapeutic modalities known to cause cardiotoxic effects. I expand this discussion by clinically defining cardiotoxicity and listing common symptoms and challenges associated with this diagnosis. I then shift from biomedical perspectives on cancer and cardiotoxicity to outline the social implications of this dual diagnosis. To do so, I begin by examining the literature that addresses the sociology of health and illness to examine discourses related to cancer and heart disease separately and then weave prominent themes together to identify how this dual diagnosis impacts women's bodies, their sociality, and their participation in their daily social worlds. Finally, I examine how risk is conceptualized in the context of cancer and cardiac disease the better to understand the physical, emotional, and social pressures women face when dealing with a dual diagnosis of cancer and cardiotoxicity.

To better understand the merging of nursing and sociological theory, chapter 3 discusses the theoretical frameworks used to guide this study. I make an argument that sociological theory, particularly literature focused on the sociology of the body and embodiment, can advance nursing research and the study of health and illness. To do so, I draw from prominent embodiment theories that help to contextualize the insidious nature of heart disease, uncover the embodiment of chronic illness, and examine the socially constructed nature of women's bodies.

Chapter 4 outlines the methodology used in this qualitative study. It begins with a discussion of the study's ontological and epistemological foundations and includes an overview of qualitative descriptive research. The chapter then describes the research setting, the research questions, the participant sample and sampling strategies, data collection and analysis procedures. I also address the ethics review process for this study and identify key methodological considerations related to reflexivity and rigor.

Chapters 5 and 6 present the findings from my study. Two major thematic areas emerged from the study data. The first theme focuses on how the diagnosis of cardiotoxicity represents a form of embodied trauma after cancer therapy. Women diagnosed with cardiotoxicity embody this experience in various ways. How they conceptualize their diagnosis has serious implications for how they engage the health system, their trust in providers, and their abilities in accepting living with a new chronic condition. The second theme highlights the concept of fluidity from a social perspective. The women in this study described a dynamic shift in their identity, relationships and social structures because of their dual diagnosis. I examine the complexity of the participant's social worlds and the significant impacts their diagnosis of cardiotoxicity has for their daily social lives and relationships.

Chapter 7 presents a discussion connecting the study's findings with relevant literature and theory, while addressing the research questions guiding this study. This chapter will also discuss the study's strengths and limitations, offer recommendations for knowledge translation, and outline practical applications of the findings to improve care for women living with this dual diagnosis.

Chapter 2: Review of the Literature

In Canada, cancer is the leading cause of death for women and cardiovascular disease as the second leading cause of death (Canadian Cancer Society, 2025a). Women are at the highest risk for breast cancer (26%), lung and bronchus cancers (14%), colorectal cancer (10%), uterine cancer (7 %) and non-Hodgkin lymphoma (4 %) (Canadian Cancer Society, 2025a). Some women undergoing cancer treatment may receive certain types of anti-neoplastic therapy that put them at risk of developing cancer therapy related cardiac dysfunction (Perez et al., 2019). This study will focus on cancer therapy related cardiac dysfunction in the form of cardiotoxicity presenting as heart failure. In many cases, these women have already completed their cancer treatment, and the diagnosis of cardiotoxicity may present as an acute event or lead to a chronic heart condition (i.e., heart failure).

In the first part of this literature review, I begin by exploring three forms of cancer identified by the women in this study: breast cancer, Hodgkin’s Lymphoma and non-Hodgkin’s Lymphoma. I link the pathophysiological implications of the disease progression, outline treatment options, and identify common types of anti-neoplastic therapies used to treat these conditions. I then define the clinical criteria for diagnosing cardiotoxicity and link this serious adverse effect to the pharmacological treatment of cancer. I identity key anti-neoplastic therapies that carry this risk, explore the rates of its occurrence, outline the literature related to prevention and early detection, and speak to women’s risk of developing this condition.

I then shift the focus of the literature review to examine literature specific to women, cancer, and cardiovascular disease. To promote this discussion, I access medical and sociological literature exploring how women embody illness and impacts related to the medicalization of women's bodies. I utilize the literature on sex-based differences in cardiac health to examine how the socially constructed nature of women's bodies poses challenges during illness.

The final section of the literature review combines these two areas to identify gaps within the study of women living with a dual diagnosis of cancer and cardiotoxicity.

Search Strategy

The data sources for this literature review include Cumulative Index to Nursing and Allied Health Literature (CINAHL), Medline (SCOPUS), PubMed, and the Discovery Tool on the University of Manitoba Libraries Website. Search for literature was limited to the past 10 years, although if deemed relevant and appropriate, some exceptions were made. Search terms used included the following: cardiac, cardiovascular, cardi*, cardiotoxicity, cardiovascular toxicity, cardi* toxicity, cardio toxicity, cardiac health, ca, cancer, breast cancer, non-Hodgkin's Lymphoma, Lymphoma, heart failure, systolic dysfunction, women, female, body image, body appearance, reflexive embodiment, embodiment and lived experience.

Part 1: Examining the Biomedical Link Between Cancer and Cardiotoxicity

Breast Cancer

Breast cancer is one of the most prevalent cancers in the world. In 2020 alone, 2.3 million women in the world diagnosed with breast cancer and over 685, 000 died from the disease (World Health Organization, 2023). This trend continues in Canada, as breast cancer ranked number one in incidence rates in 2022 with 28,600 new cases and is second for cancer related deaths for women (Government of Canada, 2023). Although survival rates for those diagnosed with breast cancer are high, with an average of 89% 5-year survival rate, the long-term effects of breast cancer treatments are wide-ranging (Government of Canada, 2023).

Breast cancer treatment is multi-factorial and depends on tumor load and molecular markers. The treatments for breast cancer can include surgery, chemotherapy, radiotherapy, endocrine therapy, targeted therapy and immunotherapy (Wang & Wu, 2023). For nonmetastatic breast cancers and depending on the type of breast cancer subtype, surgical options with or without radiation and with or without chemotherapy are the typical course of treatment in order to help eradicate the tumor(s) from the breast and lymph nodes if involved (Waks & Winer, 2019). For metastatic breast cancers, the goals of therapy are typically focussed on prolonging life and alleviating symptoms (Waks & Winer, 2019).

Surgery is one of the most used methods of breast cancer treatment (Kołodziejczyk & Pawłowski, 2019). Self-perceived body image is affected by the type of surgical intervention used by doctors in treatment of breast cancer (Teresa et al., 2014). Although a bilateral mastectomy is still a treatment option, it is more rarely used compared to 10-15 years ago. Current, common surgical procedures include breast-saving surgery, lumpectomy, unilateral mastectomy, or mastectomy with reconstruction (Kołodziejczyk & Pawłowski, 2019). Post-operative considerations for women include pain, scarring, surgical drains, swelling, and lymphedema (Kołodziejczyk & Pawłowski, 2019).

According to Waks and Winer (2019), even though there are both short and long-term risks associated with chemotherapy, it is considered an essential treatment for preventing breast cancer from reoccurring. One such regimen that has been shown to be an effective treatment for breast cancer is known as anthracycline-containing chemotherapy (Waks & Winer, 2019; Peto et al., 2012). Anthracyclines can be used singularly or in combination with other agents for breast cancer treatment (Lin & Lengacher, 2019; Gianni et al., 2009). The two most commonly used anthracyclines in breast cancer treatment include Doxorubicin and Epirubicin (Pareek et al., 2016). Doxorubicin (an anthracycline) is nick-named the "Red Devil" because of the bright red colour in the solution and the side effects it can cause, including nausea, vomiting myelosuppression and alopecia (Simmons, 2019; Canadian Pharmacists Association, 2005). One meta-analysis showed that women who enrolled in randomized control trials with anthracycline-containing chemotherapy for early breast cancer treatment had a one third reduction in 10-year breast cancer mortality compared to those receiving no chemotherapy (Waks & Winer, 2019; Peto et al., 2012).

A common chemotherapy regimen for breast cancer treatment is known as AC and contains the medications Anthracycline (Doxorubicin) and Cytoxan (cyclophosphamide) (Fujii et al., 2015). AC is typically used in first line treatment of breast cancer (Pacini et al., 2000). Another treatment known as AC-T, which contains Anthracycline and cyclophosphamide with the addition of docetaxel (Taxotere), is also an effective adjuvant therapy regimen for early-stage breast cancer (Fujii et al., 2015). AC treatment works by damaging cancer cells at varying stages of their growth (Living Beyond Breast Cancer, 2023). AC can be given after surgery as an adjuvant therapy or before surgery. The treatments are typically given intravenously on the same day, then followed by a period of rest for two to three weeks and are repeated four to six times (Living Beyond Breast Cancer, 2023).

Another common chemotherapy regimen for breast cancer is known as FEC, which includes Fluorouracil (F), Epirubicin (E), and Cyclophosphamide (C) (Pacini et al., 2000). FEC is used as a neo-adjuvant or adjuvant treatment for node-positive and high-risk node-negative early breast cancer (Cancer Care Ontario, 2023). There is also the option of FEC-D (Docetaxel), which is also used in the treatment of breast cancer. Trastuzumab may be added as well to the regimen in cases where HER-2 positive tumors are present (Cancer Care Ontario, 2023). FEC is administered every 21 days for 3 cycles (Cancer Care Ontario, 2023). Common side effects (>50% of people), include alopecia, nausea, fatigue, myelosuppression and ECG changes (Cancer Care Ontario, 2023).

Endocrine therapy, which is mainly used to target tumor growth caused by estrogen, is also considered an effective therapy for HR+/ERBB2- breast cancers (Waks & Winer, 2019). One meta-analysis showed that people who took tamoxifen for HR+ breast cancer had a 50% reduction in recurrence rate in the first 5 years post diagnosis compared to those that did not have endocrine therapy. Furthermore, it also found a significant protective effect by reducing breast cancer mortality by approximately 33% for the first 15 years after the start of treatment (Davies et al., 2011).

Monoclonal antibodies such as Trastuzumab, a type of human epidermal growth factor receptor (HER2) endocrine therapy, has also been found to be an effective treatment for breast cancer (Slamon et al., 2001).

Common side effects of chemotherapy include hair loss (alopecia), weight loss secondary to decreased appetite, nausea, vomiting, mouth sores, increased risk of developing infection and loss of energy and drowsiness. Beyond the physiological, clinical side effects of anti-neoplastic therapy for breast cancer, women can also experience emotional, cognitive and sexual challenges (Pounders & Mason, 2018; Davis et al., 2016; Kołodziejczyk & Pawłowski, 2019). While some side-effects of cancer treatment fade post-treatment, others may have a longer-term impact on women's health. This includes a complication known as cardiotoxicity. In Canada, it is estimated that approximately 8000 Canadian women exhibit clinical signs of cardiac dysfunction secondary to anti-neoplastic medications annually, including Doxorubicin and Tratuzumab, used in the treatment of breast cancer (Jassal, 2019; Fallah-Rad et al., 2011; Guglin et al., 2009).

Hodgkin and non-Hodgkin's Lymphoma

Hodgkin lymphoma is a type of cancer that forms in the lymph system which is part of the body's immune system (National Cancer Institute, 2024). Non-Hodgkin's lymphoma (NHL) is a "heterogeneous group of malignancies that arises from two distinct lymphocyte types, B or T lymphocytes, at various stages of differentiation" (Evens & Blum, 2015, p. 2; Swerdlow & Campo, 2008). Indolent lymphomas typically have good prognosis, measured in years, but can be difficult to treat (de Vos, 2006). More aggressive types of NHL are more receptive to conventional treatment but can be fatal without treatment. Hodgkin's lymphoma (HL) is typically associated with a good prognosis (de Vos, 2006).

When diagnosing a patient with lymphoma, it is imperative to "establish the precise histologic subtype, the sites and the extent of the disease, and the performance status of the patient" (de Vos, 2006, p. 205). Work-up for lymphoma typically includes Positron Emission Tomography (PET) with Computed Tomography (CT) scans (Gallamini & Juweid, 2021). Further workup can include blood tests, bone marrow aspirates, and lymph node biopsies (National Cancer Institute, 2024). It is imperative to be cognizant of the fact that a significant number of patients diagnosed with NHL are under the age of 40 years and treatment can lead to lifelong effects, including secondary cancers and cardiovascular complications (Gallamini & Juweid, 2021).

Hodgkin's lymphoma is the most common type of lymphoma diagnosed during pregnancy as its early peak ranges from teenagers through to 30 years old (Pereg et al., 2007). Receiving a cancer diagnosis during pregnancy puts both the mother and the infant at risk for complications. As some anti-neoplastic therapy may be associated with adverse fetal outcomes, treatment for NHL and HL can be extremely difficult (Pereg et al., 2007).

Much like breast cancer survivors, people who have survived HL and NHL experience both physical and psychosocial difficulties in terms of their cancer diagnosis and treatment (Oerlemans et al., 2011). One systematic review found that in terms of health-related quality of life, HL survivors experience the most issues in terms of their physicality, social and cognitive functioning, fatigue, overall health and financial concerns (Oerlemans et al., 2011). For NHL survivors, their main areas of concern in terms of health-related quality of life include physical function, loss of appetite, vitality and financial constraints (Oerlemans et al., 2011). In terms of survivorship care, the need for consensus regarding long-term cancer screening is imperative. There are also gaps in the monitoring and management of long-term psychosocial needs, including anxiety and depression, sleep disturbance, fatigue and local services available (Powis et al., 2025).

As with any treatment, there are risks. Late effects of treatment include infertility, loss of bone density, neuropathy and risk of a second cancer (National Cancer Institute, 2024). Among other side effects from chemotherapy, lymphoma patients are also found to have an increase of adverse health outcomes later in life including mortality from cardiovascular disease compared to the general population due to cardiotoxicity from treatment (Stone et al., 2019). This includes an increase in right ventricular and left ventricular dysfunction in patients who have received anthracyclines (Murbraech et al., 2016).

To treat Hodgkin's lymphoma, a combination of chemotherapy drugs known as ABVD are commonly used (El-Galaly et al., 2021). The four drugs include Anthracycline (doxorubicin), Bleomycin, Vinblastine and Dacarbazine. Radiation is used in combination with chemotherapy for treatment as is targeted therapy (Canadian Cancer Society, 2025b). Treatment for lymphomas and NHL include radiation, immunotherapy, targeted therapy, plasmapheresis, surgery and stem cell transplant (National Cancer Institute, 2024).

Cardiotoxicity

Cardiotoxicity (or cardiac toxicity) is an important side-effect of anti-neoplastic therapies targeted to help treat cancer (Shuel, 2024). There is no single definition of cardiotoxicity as it pertains to several cardiac diseases and conditions, however, the one, unifying characteristic is that there is a decline in cardiovascular function (Herrmann, 2020). The definition used for this study was devised by The American Society of Echocardiography (ASE) and the European Association of Cardiovascular Imaging (EACVI), who define cardiotoxicity as "a decrease in left ventricular ejection fraction (LVEF) of more than 10% to below the lower limit of normal, which is considered an LVEF of 53%, despite symptoms" (Perez et al., 2019, p. 1). Cardiovascular toxicities secondary to cancer therapy can be divided into five categories, including: "i) cardiac dysfunction: cardiomyopathy/heart failure ii) myocarditis iii) vascular toxicity iv) hypertension, and v) arrhythmias and QTc prolongation" (Herrmann et al., 2022, p. 282). Furthermore, acute cardiotoxicity is defined as "any evidence of cardiac injury occurring during and within 1 week of active cancer therapy" (Herrmann, 2020, p. 475). Chronic cardiotoxicity occurs post 1 week after active cancer therapy with either early or late onset (within or after 1 year of treatment) (Herrmann, 2020; Herrmann et al., 2014). Cardiac dysfunction has been linked to conventional cancer therapies such as anthracyclines as well as targeted therapies including HER2-inhibitors (trastuzumab), specific small molecule kinase inhibitors and certain proteasome inhibitors (Herrmann et al., 2022).

Cardiac dysfunction secondary to the cumulative dose of anthracyclines during breast cancer treatment is a well-documented side effect (Martel et al., 2017). It is generally understood that the main mechanism of action that explains why anthracyclines cause cardiotoxicity is due to the formation of free radicals (Yeh & Bickford, 2009). One meta-analysis noted that the use of anthracyclines in the treatment of breast cancer increased the risk of cardiotoxicity by 5.43 times, subclinical cardiotoxicity by 6.25 times, and risk of cardiac death by 4.94 times when compared to non-anthracycline therapy (Smith et al., 2010; Martel et al., 2017).

Similar to anthracyclines, Trastuzumab has also been shown to increase the risk of cardiotoxicity (Slamon et al., 2001). When Trastuzumab is given in conjunction with anthracyclines, the cardiotoxic side-effects, including a decrease in left ventricular ejection fraction and an increased risk of congestive heart failure, have been shown to be increased (Slamon et al., 2001; Martel et al., 2017). Of note is the fact that there may also be racial disparities with regards to the development of cardiotoxicity. One study demonstrated that the rate of cardiotoxicity secondary to breast cancer treatment for black women is concordant with receiving an incomplete dose of HER2-targeted therapy compared to white women (Litvak et al., 2018).

Rates of cardiotoxicity secondary to anti-neoplastic therapy are variable. One meta-analysis found that there is an incidence rate of 63.21 per 1000 person years of chemotherapy-rated cardiac dysfunction for cancer patients (Deng et al., 2024). A separate systematic review found cancer related cardiac dysfunction occurred in 9.3-43.8% of patients, with a pooled incidence rate of 21% (Oikonomou et al., 2019). Risks of cardiotoxicity are higher for people over 50 years of age and for women with breast cancer (Deng et al., 2024). However, cardiotoxicity risk is also high in patients with leukemia and lymphoma (Deng et al., 2024). For approximately 84% of patients who manifest Trastuzumab-related cardiotoxicity, LVEF typically improves when the medication is stopped and patients receive medical treatment (Ewer et al., 2005). In terms of Anthracycline-induced cardiotoxicity, outcomes are generally worse. One study showed an average of 38% of patients achieved LVEF recovery (Itzhaki Ben Zadok et al., 2025). However, a separate study found that 71% of patients who experienced Anthracycline-induced cardiotoxicity had a partial recovery of LVEF with heart failure therapy (Cardinale et al., 2015).

To help prevent cardiotoxicity, it is important to recognize elements for prevention and early detection. It is also important to ensure proper follow-up care and monitoring, especially for high-risk patients, as cardiotoxicity can emerge post-treatment (Lin & Lengacher, 2019). Family physicians are integral to recognizing the risks of cardiovascular complications from anti-neoplastic therapy, as these complications may take years to manifest (Shuel, 2024). People with pre-existing cardiovascular disease or impairment, including decreased left ventricular function or cardiomyopathy, are at higher risk for anthracycline induced cardiotoxicity (Pareek et al., 2016). Other risk factors for increased risk of anthracycline induced cardiotoxicity include age, diabetes mellitus, gender (female), increased body mass index (BMI), and cumulative anthracycline dose (Lin & Lengacher, 2019; Martel et al., 2017; Yeh & Bickford, 2009). It is also important to note that there is a high risk of women developing cardiotoxicity secondary to trastuzumab and anthracyclines for those that are in socioeconomically marginalized groups (Lu et al., 2022).

To detect cardiac dysfunction and cardiotoxicity, baseline measurements of cardiac function should be performed, followed by regular monitoring during and post treatment (Yeh & Bickford, 2009). This may take the form of echocardiography, magnetic resonance imaging (MRI), and multi-gated acquisition scan (MUGA) for LVEF assessment (Pareek et al., 2016; Yeh & Bickford, 2009). The most important diagnostic tool used to help in the detection of cardiac dysfunction for cancer patients is serial monitoring of left ventricular ejection fraction using non-invasive cardiac imaging (Jassal, 2019).

In terms of treatment for anthracycline and trastuzumab-induced cardiotoxicity, the goal is to help normalize left ventricular ejection fraction back to baseline. Some key recommendations from the Canadian Cardiovascular Society to help guide the care and management of patients with cardiovascular disease, or who are at risk of developing cardiotoxicity include: 1) routine evaluation of cardiovascular risk factors and treatment of cardiovascular disease before, during, and post-cancer treatment, 2) starting patients at risk for cardiotoxicity on an angiotensin-converting enzyme (ACE) inhibitor or angiotensin receptor blocker, and/or β-blocker, and/or statin, and 3) cancer patients who develop heart failure or an asymptomatic decline in LVEF (10% decrease in LVEF from baseline measures or LVEF of less than 53%) during or after treatment, management and investigations, follow current Canadian Cardiovascular Society heart failure guidelines (Canadian Cardiovascular Society, 2021; Virani et al., 2016). In terms of cardioprotective studies, the OVERCOME study showed that the combined treatment of enalapril and carvedilol may help prevent left ventricular dysfunction in patients with hemopathies treated with intensive chemotherapy (Bosch et al., 2013). Flaxseed supplementation is a non-pharmaceutical option for women that has been shown to significantly improve cardiometabolic risk factors including body weight, body mass index, lipid levels, blood pressure, glycemic measures, markers of inflammation, oxidative stress, and liver enzymes (Kunutsor et al., 2025).

Women are at higher risk of developing cardiotoxicity compared to men (Chen & Epstein, 2023). This may be attributed to several reasons including, but not limited to, treatment associated hormonal changes, cardiometabolic risk factors, and barriers to accessing cardiovascular care (Chen & Epstein, 2023). Age, particularly women over 50, has been found to be a risk factor in the development of cardiotoxicity (Clark et al., 2017). Although time between cancer treatment and cardiotoxicity diagnosis is variable, one study showed that the average time between breast cancer treatment and a diagnosis of cardiotoxicity following treatment was around 11.5 years (Puckett et al., 2021). Another study examining characteristics of women who develop cardiotoxicity post breast cancer anti-neoplastic therapy found that the average age of diagnosis of heart failure post treatment was 61 years (Abdel-Qadir et al., 2021), but this age is also variable.

The heart is considered the "core of life" and for women who experience a cardiac disturbance, this can be a frightening experience on many different levels (Moeini et al., 2012, p. 137). With heart disease there is a disturbance to the balance of a woman's life in both their internal and external environments. This includes the quality of one's life at the physical, psychological and social levels (Moeini et al., 2012). In the physical sense, for women with cardiovascular disease or heart failure, there are symptom-free days that alternate with days of intense emotional and physical fatigue (Code, 2024). Living with, and management of, cardiovascular disease is complex and involves "agency, encompassing acceptance of the condition, development of coping strategies, mastery of self-care, integration of the illness into daily life, and adaptation to necessary lifestyle changes" (Code, 2024, p. 478).

Part 2: Examining the Sociological Links between Cancer and Cardiotoxicity

Living with a Dual Diagnosis

Women living with cancer and cardiotoxicity constantly experience the transitory nature of risk. Lupton (2024) asserts that risk is not already a phenomenon that exists but a future event or "an unrealized potentiality" (p.9). Women who survive cancer are already facing the potential risk of reoccurrence of their disease. An additional diagnosis of cardiotoxicity shifts their care from an acute to a chronic focus. When examining what risk means with regards to health, it refers to the "probability that members of a category will develop or contract a disease" (Kavanagh & Broom, 1998, p. 437). Other categories of risk include environmental and lifestyle risk but one important category within health risk is referred to as 'embodied' or 'corporeal' risk, which is risk that is localized within the individual person (Kavanagh & Broom, 1998). When someone develops a corporeal risk characteristic (such as heart disease) within their own body it can also overlap other health risks including their lifestyle as well as their social and physical environments (Kavanagh & Broom, 1998).

Cancer and cardiac illness have overlapping types of risk. More specifically, women living with a dual diagnosis can become defined by what they do (lifestyle risks) or what is done to them (environmental risks) (Kavenagh & Broom, 1998). Embodied risks are defined as being located within the body of a person (Kavenagh & Broom, 1998). Women with this dual diagnosis carry an embodied risk of future illness that can arise from a return of their cancer or from a severe, life-threatening cardiac event, as both events occur within the body itself. This embodiment of illness is why it is important to understand how women's bodies are viewed in society.

The Medicalization of Women's Bodies

Societal views of women's bodies are complex. According to Chrisler (2011), women's bodies, including natural parts of life such as aging, fat, menopause and menstruation, are often stigmatized and subject to ridicule in society. While these societal views of women's bodies exist, nurses can recognize the importance these views have in the care women from a medical viewpoint. This includes the medicalization of women's bodies and the impact it has on their experiences in the healthcare system (McHugh & Chrisler, 2015). For women with a dual diagnosis of cancer and cardiotoxicity, there are many different forces at play that can shape women’s experiences, including the care they receive along the way.

The term ‘medicalization’ is multidimensional (McHugh & Chrisler, 2015). Medicalization is defined as “the tendency to understand aspects of life as medical issues requiring intervention and control on the part of medicine” (Segall & Fries, 2011, p. 274). Instead of the current health care system in Canada focusing on the promotion of wellness, the emphasis is more reactionary when a person becomes ill (Segall, & Fries, 2011). In the biomedical approach to medicalization of women’s bodies, women’s bodies are viewed in the context of illness and not health (McHugh & Chrisler, 2015). This means that instead of women being viewed based on a biopsychological model of health that takes into account the contextual factors in the lives of women, for example, their socioeconomic status and psychological wellbeing, their bodies are reduced to things that need treatment. Within our current Western biomedical system, there is a tendency to view the body as a machine and for treatment to consist of fixing the problem by exerting control over the cause of the medical issue (such as through treatment with medication) or removal of the issue all together through surgical intervention (Segall, & Fries, 2011). However, by reducing the body to an object that needs treatment, we are failing to recognize the social complexities that come into play and how illness is embodied, especially with chronic diseases (Segall & Fries, 2011).

Kohler Riessman (1993), postulate that women’s bodies themselves have become medicalized, as there is a push to exert control over them. Medical knowledge itself is socially constructed and based upon cultural ideas about the body, illness and healing (Segall & Fries, 2011). The medicalization of the body is a socially and culturally negotiated process (Fries, 2020). This means that there are differing sociological and gendered implications for cancer and heart disease. Identifying these differences is important for understanding the potential impacts on women’s bodies, their access to health services, and the cultural systems that have the potential to impact them in various ways. To examine these differences, I bring forward a discussion pertaining to the female embodiment of illness by discussing sex-based disparities in cardiovascular health and the studied relationships between chronic illness and body image in women. To examine these differences, I engage a discussion related to the female embodiment of illness, exploring sex-based differences in health and the impacts of chronic health conditions on women’s bodies and their perceptions of their body image.

Female Embodiment of Illness

There is an interesting dichotomy that exists when understanding what a body means to an individual. De Vignemont (2011), posits that while certain parts of the body, such as one’s internal organs, are part of our own body, we are not always aware of their presence as we cannot see and feel them continuously. On the other hand, external parts of the body have more of a feeling of belonging (or ownership) for people, as they are visual reminders of our sense of self (de Vignemont, 2011). Embodiment is the way in which a person’s body, mind and bodily interactions shape their experience of the world (Gibbs, 2017). While one’s heart and breasts are all parts of a woman’s body, the way that they are embodied by a woman may be different due to the way women process the meaning of these parts of the body and also the locations of these parts themselves. For example, while breasts are an external marker of femininity and womanhood to some (Sulik, 2011; Pounders & Mason, 2018), the heart is viewed differently. According to Biordi et al. (2014), in some cultures, the heart is viewed as the centre of one’s emotions including love and hate and even has ties to one’s soul. When there is a cardiac injury that occurs, there is a shift that happens in people as they view their heart as no longer whole, but damaged. There is even a term known as "cardiac cripple" which refers to "their fear of death from exercise or normal activity" (Biordi et al., 2014, p. 163). How people view their body and its functionality when they suffer from a chronic illness, such as cardiac illness secondary to cardiotoxicity, is imperative to understand as it also effects how they move through the world and how they cope with their new way of life (Biordi et al., 2014). For example, people who attended cardiac rehabilitation post cardiac event often experienced shame and embarrassment with regards to their 'new symptoms'. Men were embarrassed by how their bodies were limited by their illness, while women felt shame given how they were letting others down as a result of the limitations of what their body could do (Evans & Crust, 2015). For women with cancer, there is also a shift in thinking that occurs in their everyday experiences and how they position themselves in the world. This also applies to how women move through space, as how they embody illness affects how they view their own body, their relationships and interactions with others, and how they create and own their illness narrative (Heavey, 2018). Their sense of embodiment is altered as fear and distrust of their body is a new reality that they face due to changes associated with their illness (Holmberg, 2014). There is an uncertainty in how they are embodying femininity, gender markers and their very identity as a woman (Pounders & Mason, 2018).

Sex-Based Differences in Cardiac Health

Cardiovascular disease is the second leading cause of death (18%), secondary to cancer (26%), among Canadians (Statistics Canada, 2025). There has been much research geared toward cardiovascular disease, but it is important to note that there are important, gendered differences concerning how women and men experience cardiac illness. Both men and women who have hypertension, diabetes and hyperlipidemia have increased risk factors for coronary artery disease but there are factors that pertain to women that specifically increase their risk of cardiac illness (Villablanca, 1996). Pregnancy, menopause, hormones and psychological factors may all play a role in women's risk of coronary artery disease (Villablanca, 1996; Khamis et al., 2016). For women with heart failure, they must also develop a new concept of themselves while enduring physical and emotional alterations that affect how they live their everyday lives (Allen et al., 2009). For example, there are societal and cultural expectations for women to be nurturing caregivers but due to their chronic illness and symptoms associated with it, the inability to fulfil this role can be difficult for women to accept (Allen et al., 2009). These situations can lead to increased emotional burdens and altered perceptions of oneself (Allen et al., 2009).

Cardiovascular disease continues to be "one of the greatest noncommunicable health threats to women today..." as "women are under-researched, under-recognized, under-diagnosed, under-treated and under-supported…" (Norris et al., 2020, p. 14).

Body Image and Illness

Women are complex beings who bring their embodied meanings, established through both physical and social worlds, into their healthcare experiences, which can conflict with typical biomedical approaches in Western society (Lende & Lachiondo, 2009). For example, for women with breast cancer, the embodied meaning behind a breast is not merely an external object to be medicalized by health care professionals, it is a part of a woman's corporeal identity as a woman (Griffiths et al., 2010). Body image disturbance related to diagnosis and treatment is a reality faced by this cohort of women (Przezdziecki et al., 2013; Pounders & Mason, 2018). Women can experience long-term effects after breast cancer treatment including decreased (or loss of) sensation in the breast and loss of sexual pleasure derived from the breast (Thomas-MacLean, 2005). For women who decide to wear a prothesis there are social and physical considerations at play as women are conforming to ideals of what women's bodies should look like, while avoiding stigmatization but often at the cost of physical comfort (Thomas-MacLean, 2005). This altered perception of the body may not diminish with the passage of time and may also be linked to disturbances in embodiment including psychological distress, social functioning, relationships, sexuality and overall wellbeing (Przezdziecki et al., 2013). For younger women in particular, body image disturbances are tied to distress in sexual functioning and issues with intimacy (Paterson et al., 2016). However, self-reported body (or physical) image is a significant concern for women of all ages with regards to breast cancer treatment (Davis et al., 2016; Przezdziecki et al., 2013; Pounders & Mason, 2018).

While the survival rates for women with cancer have increased, the caveat with survivorship includes the risk of long-term effects of cancer and treatment (Proietti et al., 2021). Although the side effects from chemotherapy are variegated and significant, the physical changes to one's appearance have been identified as some of the most distressing aspects of treatment (Proietti et al., 2021). These include scarring, disfigurement from surgical procedures, hair loss, skin changes, and weight loss and/or gain (Thomas & Oakly, 2021; Hughes et al., 2021; Mushani et al., 2024; Proietti et al., 2021). For women, being conventionally attractive means having 'conventionally attractive hair' which in turn helps give women a sense of power (Weitz, 2003). Although power obtained through hair (and conventional attractiveness) may be fleeting, limiting and fragile, it is power nonetheless (Weitz, 2003).

On the other end of the spectrum, one study found that the women who did not lose hair secondary to chemotherapy also reported traumatic experiences as they "failed to conform to the stereotypical bald cancer patient" and therefore received less sympathy and support from people

(Trusson & Pilnick, 2017, p. 16; Harcourt & Frith, 2008). According to Wilson (2022), there are socially constructed personas that are associated with cancer, particularly breast cancer, which go beyond the biology of the illness.

The social construction of women's bodies encompasses both cultural and scientific concepts about how women's bodies develop and are accepted on a societal level (Weitz, 2003). Something as fundamental to women's roles, such as being a mother, is also affected by cancer (Spiropoulos et al., 2023). Some women may not be able to have children due to cancer treatments. If women are mothers, fundamental parts of motherhood, such as breastfeeding or being physically limited attending to their child, may also be affected by cancer (Spiropoulos et al., 2023). The stress caused by difficultly maintaining societal roles due to illness is referred to as an element of role strain (Spiropoulos et al., 2023; Goode, 1960).

Gaps in Literature

There are several studies examining how women embody cancer. These studies range from embodiment at the screening stage of breast cancer, including how women view their 'at risk' breast as an external piece of themselves that is subjected to medical surveillance (Griffiths et al., 2010). There are also studies that examine how different groups embody breast cancer. African American women embody breast cancer screening through various lenses that include meanings of the breast from childhood (i.e., the belief that God would protect them from cancer) and their community concerning sexuality and social relationships in relation to a biomedical view of the breast (Lende & Lachiondo, 2009). For young women diagnosed with breast cancer, their embodied meanings of their breast were connected to their physical body as well as the social and relational forces that shaped their social worlds, including social power, gender discourses and relational connections (Trachtenberg et al., 2019). Finally, for long-term breast cancer survivors, there are also physical embodiments of their breast including the feeling of it (i.e. the sensation of the breast and the loss of it), how they manage the appearances of the loss of breast and the never-ending treatments associated with survivorship (Thomas-MacLean, 2005; Williams & Jeanetta, 2016; Chiaranai et al., 2022). There are also studies examining how cancer results in a loss or threat to embodied meanings of femininity (Parton et al., 2016). This includes viewing oneself as unattractive and an accompanying loss of embodied sexuality (Parton et al., 2016). While there are outward changes that occur for women with cancer, there are other changes in relation to the body that also occur (Trachtenberg et al., 2019). As embodiment goes beyond the physical body and encompasses how the body and mind shape how we experience the world (Gibbs, 2017; Lundh & Foster, 2024), these changes can encompass a woman's connection to their body, their social power, their gender identities, relational connections and alterations in priorities (Trachtenberg et al., 2019).

In contrast, there are areas within the literature where there are clear gaps pertaining to women experiencing cardiotoxicity. There is extensive literature in terms of gendered differences in how men and women experience coronary heart disease and risk factors (Khamis et al., 2016), but from a sociological perspective, there is very little, relevant information about how women embody cardiac illness. One of the most insightful studies that depicted women's embodiment of cardiac disease used participant drawings to help researchers understand the bodily experiences of women with heart disease (Guillemin, 2004). The women viewed heart disease in three ways: the heart at the centre of their being, the heart in the lived body and finally, heart disease as a social illness (Guillemin, 2004). While this is an excellent starting point, further insight into embodiment and cardiac illness is scarce.

As cardiac illness is often invisible, the struggles of how women embody this type of illness are not well explored in comparison with how women embody cancer. While cancer affects elements of the fundamentals pertaining to what it means to be a woman in a physical and emotional sense, the heart is not sex specific, as everyone has a heart. While there is research about how women approach and experience certain aspects of cardiac illness, such as seeking treatment for a myocardial infarction, gendered differences in coronary artery disease or gender masculinities prevalent in attendance of cardiac rehabilitation, etc., how women actually embody a dual diagnosis of cardiotoxicity and cancer and how to help women cope with the continuation of these dual illnesses, is an unexplored area.

Chapter Summary

The biomedical links between cancer and cardiotoxicity have been well established. Specific anti-neoplastic agents have been shown to increase the risks of cardiotoxicity and the physical impacts on women can be detrimental to their wellbeing. However, there are complex forces at play when it comes to establishing the emotional and social impacts of how illness affects women. There is a clear gap in terms of the sociological links between cancer and cardiotoxicity in terms of how women embody this dual diagnosis and how it impacts their everyday lives, which warrants further investigation. This study attempts to close this gap in terms of exploring women's relationships with embodiment and cardiotoxicity. It also answers the question regarding how this dual diagnosis impacts their daily social worlds. The next chapter will elucidate the theoretical concepts that guided this study.

Chapter 3: Theoretical Concepts

Embodying Nursing Research and Practice

Nursing research serves a dual purpose: to improve the quality of life for individuals facing health challenges and to advance nursing practice (Loiselle & Profetto-McGrath, 2011). Examining nursing issues from cross-disciplinary perspectives enriches the study of health by offering multiple understandings of complex phenomena. The academic discipline of sociology offers valuable tools and perspectives to deepen understandings of health, illness, and nursing practice. This includes looking beyond an individual level of 'action-based' health and instead viewing the world through a more interpretive lens of holistic care on a societal level (Allen, 2001). While nursing research is often based on a pragmatic approach, sociological research offers rich theoretical perspectives to deepen understanding (Allen, 2001). To effectively integrate sociology into nursing, it is essential to challenge existing assumptions and adopt a more well-rounded approach to care—one that situates nursing practice within its broader social and political context while utilizing the nurse's insider knowledge of medicine (Allen, 2001). In this chapter, I theorize the embodiment of illness from various perspectives to better understand the lived experiences of women living with cardiotoxicity after cancer therapy.

This theorizing begins with an examination of key perspectives on the embodied nature of illness. I start by outlining Drew Leder's (1990) theory of the absent body to illustrate the subtle and often hidden nature of both cancer and heart disease. I then draw on Nick Crossley's (2006) concept of reflective embodiment to explore how women perceive, experience, and make sense of their bodies during cancer and following a heart disease diagnosis. To further consider women's bodily vulnerability during illness, I engage with Elizabeth Grosz's (1994) work focused on volatile bodies, which highlights how women's bodies are shaped by cultural and social forces. Finally, I introduce Hedva's (2022) emerging "Sick Woman Theory," which addresses the invisibility of women's embodied experiences within the medical system.

Theorizing the Embodiment of Illness

Drew Leder (1990), postulates that "while our body is the most abiding and inescapable presence in our lives, it is also essentially characterized by absence" (p.1). The body is experienced from both third person and first person perspectives that include the mental, physical and spiritual components of the world (Leder, 1990). According to Leder (1990), the body is in a corporeally absent state until it is brought into consciousness by physiological or sociological forces. These forces include illness.

The term 'illness' is multifaceted. Illness can be a mechanism that brings the body into one's consciousness and in some cases objectifies the body to others (Carel, 2018). In the case of cancer, bodily changes are often visible. For example, lumpectomies, mastectomies, tumor removal and chemotherapy can cause alterations or change the body. They become visible external markers of illness. Cardiac impairment, on the other hand, is often hidden and only visible when it impairs a woman's ability to participate in their daily social worlds. As these two illnesses have different external markers, one often visible, one hidden, how women embody these illnesses may be different but there may be some overlap. For people with cardiovascular disease, there is a restructuring that occurs in people's lives as they must now navigate the aftermath of their diagnosis (Wheatley, 2006). This is also true for women with cancer as they may experience an ongoing loss of control over their life and body (Thomas-MacLean, 2005). This transcends physical needs and spills over into social relationships, including how others see people with cardiac illness and cancer versus how people see themselves. As people with cardiac illness often do not necessarily look stereotypically ill, there can be a differences between how people are treated, especially apathetically, post diagnosis and how they themselves experience their new reality (Wheatley, 2006) while women with cancer may have a different experience.

Reflexive Embodiment

Reflexive embodiment is defined as “the capacity and tendency to perceive, emote about, reflect and act upon one’s own body; to practices of body modification and maintenance; and to body image” (Crossley, 2006, p. 1). Furthermore, Crossley explains that “reflexivity entails that the object and subject of a perception, thought, feeling, desire or action are the same” (2006, p. 1). For example, when we look in the mirror, we are both a subject who sees someone in the mirror and an object that is seen (p. 1). According to Crossley (2006), our bodies are not just a passive biological organism but also guide us through the social world as active participants and social agents.

Society is not independent from the body: it interacts with biological and psychological structures to shape all manner of systems within the social world including culture and nature (Crossley, 2006; Casey, 1998). It is important to note that bodily impairments also cause social and relational challenges. Health, then, is not just about how the body is impacted, it is a recognition that our bodies are also vehicles to accessing and participating in our social worlds. We are our bodies (being) but can also perceive them as objects (having) and in the context of illness we can have them taken away from us (alienated) (p. 2). Therefore, views of health in women with a dual diagnosis of cancer and cardiotoxicity require a theoretical reflection capable of understanding that biological, psychological, and social structures are each interacting and sometimes conflicting with each other as women seek to understand and regain their health (Crossley, 2006).

Reflexivity can also be framed as a collective endeavour. Crossley (2006) asserts that forces in society, including practices and relations, help shape individuals and who they become. This can also mean one choosing to construct one’s own subjective self through reflexive embodiment: “Through social interactions, relations and groups are a source of rules, norms and mechanisms of control, they equally constitute a context wherein we develop the capacity to make decisions and act upon them, including decisions which deviate from social norms and resist social pressures” (Crossley, 2006, p. 4). An example of this emerges for women with breast cancer who choose not to conform to conventional ‘breast cancer survivorship’ activities, including areolar tattoos post non-nipple sparing mastectomies (Klein, 2018). By forgoing traditional reconstruction of a conventional breast, “the adoption of individual and body-based practices can be used to disrupt regulatory narratives and practices of reconstruction where beautification practices are used to challenge a patriarchal conception of health and wellbeing and where neoliberal logics are used to make visible new bodies” (Klein, 2018, p. 32).

Although there has been no research on the duality of cancer and cardiotoxicity in terms of reflexive embodiment, pertinent past research has been done exploring complex relationships with one’s body, including how trans and gay people embody masculinity and the societal and cultural pressures associated with it (Aboim & Vasconcelos, 2022; Duncan, 2010), as well as how people embody obesity (Williams & Annandale, 2020; Kline, 2015). Crossley provides examples of how his theory of reflexive embodiment can be utilized to study the body and health. Crossley applies his theory to the study of obesity, specifically. Crossley believes that there are external, societal explanations, that are shaped by the wider culture that have contributed to an increase in rates of obesity and even how people view their bodies: “Reflexive embodiment is not only shaped by the ideals, norms and practices of wider society but also by the variability of the material body itself" (Crossley, 2006, p. 78). Freund (2011), used the term 'midbodies' to understand how something like a societal stigma concerning obesity can make someone feel a certain way about their own body (Williams, & Annandale, 2020). This can also apply to stigmas associated with cancer, especially pink ribbon culture in terms of breast cancer, and gendered stereotypes in terms of women and cardiovascular disease. In this study, we are looking beyond the singular impacts of cancer and cardiotoxicity and instead, are examining women's bodies in terms of representation in the social bodies which is reflected in the research questions. This includes exploring women's experiences having a dual diagnosis, their relationships to their own bodies and how this has impacted their lives in the society and culture we live in.

Women's Bodies and Illness

When studying illness, it is important to recognize that there are other theoretical positions that centre around women's bodies as both vulnerable and political. While this study used reflexive embodiment to formulate the research questions, it became apparent in the data analysis process that the way women were embodying illness was not reflected clearly enough in reflexive embodiment alone. As the women spoke about issues such as their symptoms of cardiotoxicity being attributed to gendered illnesses such as menopause and how various gendered roles were impacted in their daily lives by their cardiotoxicity diagnosis, it was important to find theories that better explored these issues from a woman's perspective to formulate data analysis. The first theory that was introduced in addition to reflexive embodiment was Elizabeth Grosz's Volatile Bodies Theory.

Elizabeth Grosz (1994) posits that women's bodies are volatile; they are not unchanging, stable biological objects. According to Grosz (1994), the body and mind, which are not separate but as one, are not just driven by biology, they are actively shaped by culture and society. As Grosz states:

> "The body has thus far remained colonized through the discursive practices of the natural sciences, particularly the discourses of biology and medicine. It has generally remained mired in presumptions regarding its naturalness, its fundamentally biological and precultural status, its immunity to cultural, social and historical factors, its brute status as given unchangeable inert and passive, manipulatable under scientifically regulated conditions" (Grosz, 1994, p. 5).

This is pertinent because traditional medical views of women's bodies have been politized and seen as a source of control (Gannon, 1998). Conditions that are specific to women, such as menopause, are considered an invisible illness and are viewed through a biomedical lens (Gannon, 1998). The colonization of women's bodies quiets the actual voices of women's experiences and instead speaks for them in the context of serving patriarchal values (Gannon, 1998). This view of women's bodies as colonized affects women when their experiences are minimized. For example, in terms of cardiac illness, a non-gender specific condition, women's symptoms are under-represented, under-treated and under-researched compared to those of men, which can cost women their lives (Mikhail, 2005).

While Volatile Bodies theory was useful, it did not fully capture the experiences of the women in this study upon analysis. Sick Woman Theory (Hedva, 2022), which is also a feminist embodiment theory, had the added element of exploring a woman's embodied experience from a chronic health perspective in a society where women's bodies are heavily politicised. These important positions, which is pertinent for data analysis in this study which is why it was also selected for this study. Hedva (2022) also has similar views on how a woman's body is viewed as

Grosz (1994). Her Sick Woman Theory "redefines existence in a body as something that is primarily and always vulnerable..." (p. 6). Illness also cannot not be reduced to a simple biological dysfunction because it is not stagnant and unchanging, but rather volatile and unpredictable. For example, two women may be diagnosed with breast cancer, but their experiences may be completely different. One woman may require a lumpectomy, no chemotherapy and go on to live another 30 years with no further issues. Yet another woman may require a mastectomy, chemotherapy and radiation. She may experience side effects from chemotherapy including hair loss, skin changes and weight loss. She may lose her job because she does not have enough sick time. She may also lose her partner because they do not want to help support her through her illness. She may also go on to develop cardiotoxicity secondary to her chemotherapy treatment 10 years later. When one is ill with cancer, this is an extremely unpredictable state to be in. Women do not know whether they will live or die, how their body will heal physically and to what extent. With illness, there can be alterations to one's body physically but also alterations to how one experiences the world in one's altered body.

In terms of chronic illness, Hedva (2022), explains how life is forever altered. There is no cure, instead, life is reduced to a relentless battle of energy and trying to live (Hedva, 2022). Women's bodies are not viewed the same as men's bodies and this becomes even more disparaging when it comes to illness. There is a cost to women for 'not being seen' (Hedva, 2022). This includes having to wait longer to see a medical professional or living with pain that is diminished (Hedva, 2022). For women living with a dual diagnosis of cancer and cardiotoxicity, they are catapulted into a world of chronic illness. For example, while both men and women have similar symptoms of heart failure including fatigue, shortness of breath, cough, edema and depression, women receive suboptimal care for heart failure in comparison to men (Roberts Davis et al., 2024; Lala et al., 2022).

Whether it is physical or psychological illness, women's bodies should be recognized for their vulnerability. According to Hedva (2022), a sick body is not something to be "fixed." Rather, it should be recognized and honored as part of a woman's lived experience. The problem lies not within the body but within the institutional definitions of health and the challenges that women have when engaging with systems to maintain their health (Hedva, 2022).

Chapter Summary

Nursing knowledge is drawn from many different disciplines including philosophy, psychology, medicine, as well as sociology (McEwen & Wills, 2014). For this study, to gain a holistic understanding of the experiences of the participants living with a dual diagnosis of cardiotoxicity and cancer, it was important to combine different disciplinary perspectives to better understand what women are going through in their daily lives. While nursing knowledge focuses more on the biomedical level of 'action-based' health in a physical sense, the combination of sociological theories offered a lens that goes beyond the individual and examines how the participants are impacted by forces on a societal level in their altered bodies. The combination of women sharing their individual experiences and using sociological theories such as reflexive embodiment, volatile bodies, and sick women theory, helped to create a theoretical lens that looked beyond just the physical nature of illness. They added knowledge to this study that there are strong forces at play that affect the health of women beyond just the biomedical level of health. There are societal and political elements that impact the experiences of women who have a body and this is heightened when they are ill. These theories, in combination with each other, helped to gain a broader understanding of embodiment, including from a feminist perspective. The use of these theories helped to strengthen the study of cardiotoxicity and cancer by creating an understanding of the embodiment of dual diagnosis and how it impacts the daily social worlds of women. The following chapter will explore the methodology used in this study.

Chapter 4: Methods

This chapter will elucidate the methodology used for this research study. The goals of this study are to: 1) explore women's embodied experiences of developing cardiotoxicity related to anti-neoplastic therapy and 2) provide examples of how living with a dual diagnosis impacts women's ability to participate in their daily social worlds. The research questions for this study include:

1) What are women's embodied experiences of developing cardiotoxicity related to anti-neoplastic therapy?
2) How does this dual diagnosis impact women's ability to participate in their daily social worlds?

Methodological Considerations

A qualitative descriptive approach (QD) was utilized to help provide insight into how women who develop cardiotoxicity secondary to cancer therapy view their health. QD is defined as "discovering the who, what, and where of events or experiences and on gaining insights from informants regarding a poorly understood phenomenon" (Kim et al., 2017, p. 23). QD studies are relevant to health research wherein patient's perspectives and experiences are paramount (Neergaard et al., 2009), which was important for this study. A QD approach was chosen for this study as the aim was to provide insight into this topic due to the limited qualitative research on this subject. It is also appropriate for beginner researchers wishing to gain insight into understanding participant's experiences while synthesizing and interpreting qualitative data (Hall & Liebenberg, 2024).

There are five main tenets of QD studies according to Colorafi and Evans (2016). These features include: 1) a wide range of theoretical approaches from different disciplines; 2) the use of any purposive sampling technique to allow for maximum variances; 3) the use of minimally structured interviews to allow participants to help lead the direction of the interview; 4) content analysis as a data analysis technique; and 5) a description and summary of the data that is consistent with the original data (Neergaard et al., 2009; Sandelowski, 2000; Sandelowski, 2010). This study utilized all five tenets of the QD design. The study used a combination of nursing and sociological perspectives; participants were recruited using purposive sampling and the interviews were semi-structured to allow for the participants to lead the discussions. Finally, thematic analysis is commonly used for QD studies (Kim et al., 2017). Thematic analysis, specifically Braun and Clark's (2006) six phases of thematic analysis strategy was utilized for this study.

QD and the use of embodiment theory align well. Embodiment examines the way people experience the world through their bodies (Gibbs, 2017). This includes their emotions, sensations, and the social meanings attached to the body which help define our perspectives on the world (Lundh & Foster, 2024). This makes the first-person accounts of participants crucial to data analysis using their own words in QD (Kim et al., 2017). Themes for this study were generated in light of theoretical principles while staying true to participants' words in order to stay as close to the data as possible. This study is aimed at learning about the participants' experiences as they themselves live it in their own social worlds.

Embodiment also addresses the way people experience the world based on social environments, cultural norms, relationships and physical settings (da Silveira Coêlho et al., 2023). This study produced rich details from participants about how they experience the world given what their body is doing, feeling and enduring through illness and how this deeply affected their social worlds. The consequences of living with chronic fatigue are some of the main examples of the physical experiences of the women in this study which affected how the women could participate in their daily social worlds. QD has the flexibility required to explore physical, sensory and emotional experiences while still using "hues, tones and textures" from approaches such as phenomenology and/or grounded theory (Sandelowski, 2000, p. 337). Finally, in QD, theory does not have to drive analysis (Kim et al., 2017), however, embodiment helped to inform the interview questions, organized the data that was produced and focused attention on the experiences of the participants' bodies and how they affected their lives in various ways. By utilizing a QD design, this study can take a theoretical concept, embodiment, and analyse the data produced in a way that is grounded and accessible while still being meaningful.

Qualitative research is associated with constructivist inquiry (Polit & Beck, 2021). According to Polit and Beck (2021), "constructivist studies are thus focused on understanding the human experience as it is lived, usually through the collection and analysis of qualitative materials that are narrative and subjective" (p. 10). QD studies are also well aligned with a constructivist approach that utilizes interpretive methods acknowledging that reality is not linear and may exist in multiple contexts with various ways of knowing that are subjective and unique to the individual. Constructivist researchers also understand that the human experience is both dynamic and holistic and attempt to capture this reality in their work (Polit & Beck, 2021).

Setting and Sample

Purposive sampling was used to recruit women diagnosed with cancer and cardiotoxicity secondary to antineoplastic therapy (Neergaard et al., 2009; Sandelowski, 2010). The inclusion and exclusion criteria for this study are enumerated and explained below:

Inclusion criteria included:

1. Participants must be over the age of 18

2. Participants must have a dual diagnosis of cancer and cardiotoxicity from anti-neoplastic therapy. This will include a decrease in left ventricular ejection fraction of more than 10% below the lower limit of normal.
3. Participants need to be English speaking for the interviews
4. Participants must engage in the process of informed consent
5. Participants must reside in Canada
6. Participants must consent to having their interview recorded
7. Participants must identify as women

A total of seven women were recruited for the study. The demographic data for each participant is presented in Table 1 and the abbreviated sample characteristics in Table 2. Participants were provided with an honorarium of $50.00 via e-transfer for their time. This was paid to each participant prior to their interview after consent was signed and prior to the interview starting.

For qualitative studies, sample sizes are typically smaller compared to quantitative studies. Unlike quantitative studies, qualitative studies use data saturation as an indicator to help dictate the number of participants needed for a study (Polit & Beck, 2021). In the context of this study, I had originally aimed to have 8-10 participants. However, challenges with recruitment resulted in a total of seven participants. As data analysis was concurrent with data collection, by the sixth participant there were no new themes emerging from the data. In discussion with my advisor, we concluded that data saturation was reached by the seventh participant. This was interesting because the sensitivity of a subject has been known to affect sample size (Polit & Beck, 2021). More specifically, deeply personal topics such as living with cancer and cardiotoxicity are commonly known to require more interviews because it may take participants more time to disclose their personal experiences. However, in the context of this work, the participants quickly disclosed their experiences, engaged in complex emotional accounts of their diagnosis of cardiotoxicity, and demonstrated trust with the interviewer. This may have been due to recruiting participants from a national support group for women living with cardiotoxicity due to cancer therapy. Participation in this group may have made them more open to disclose their experiences.

Recruitment

In qualitative studies, the goal of the study is to help uncover meaning and is accepting of the fact that more than one truth may be attributed to one's reality (Polit & Beck, 2021). Ethics approval for this study was obtained January 30, 2025 through the University of Manitoba Fort Garry Research Ethics Board (REB1). One amendment was made to broaden the initial study recruitment. Initially, only participants who had a history of breast cancer and cardiotoxicity in Manitoba were considered for the study. However, due to low recruitment, the recruitment criteria were broadened to include women with all types of cancer across Canada. The amendment was granted approval from ethics.

Participants meeting eligibility were recruited via the Facebook group Canadian Women with Medical Heart Issues. The administrator of the group, Jackie Ratz, provided permission to recruit through this private group. The recruitment poster was posted three times by the administrator of the group (see Appendix A). When only seven participants were recruited for the study, the poster was posted a fourth and final time. Ms. Ratz was also contact by the primary investigator (PI) and asked to direct interested participants to the recruitment poster.

There were two ways that participants could connect with the PI of the study. The first was using a QR code on the recruitment poster that took them directly to the consent form. They could also email the PI directly. To sign the consent form (see Appendix B), the participant accessed a link on the email that took them directly to Qualtrics containing the consent form. They went through the consent form and were provided with three options at the end of the page:

1. Yes, I would like to participate in the study. If this option was chosen, they were redirected to a page where it stated "thank you for agreeing to participate. Please enter your first and last name and email address".

2. I would like more information regarding the study. With this option, participants were redirected to a page where they could enter their email address and first and last name. The lead researcher then contacted them directly, providing more information and clarity where it was needed.

3. No, I do not wish to participate in the study, please exit me from this web page.

All participants were sent the recruitment letter to confirm eligibility (see Appendix C). Once consent was obtained, participants were scheduled for an interview with the PI. All participants were also emailed a copy of the consent form for their own personal records.

Data Collection

Demographic Data

Demographic data was collected to help inform researchers of this study of participants' experiences, background and ultimately, assist in data analysis. Please see the demographic questionnaire (see Appendix D). The demographic questions were asked at the end of each interview by the PI and participants had the opportunity to decline to answer questions they were not comfortable with. Demographic questions asked for the study have been adapted from and align with The University of Manitoba Guidelines for Demographic Questions (University of Manitoba, 2022). Demographic questions included relationship status, age, race, ethnicity, sexual orientation, income, and if a participant identifies as a person with disabilities.

Table 1

Demographic Data from Participants

Pseudonym	Age	Indigeneity	Identify as a Minority	Identify as a Person with a Disability	Sexual Orientation	Gender Identity	Relationship status	Affected ability to work	Income
Participant 1	53	No	No	No	Heterosexual	Female	Married	yes	47,001 to 100,00
Participant 2	73	No	Yes- Southeast Asian	No	-	Female	Divorced/single	Retired	47,001 to 100,00
Participant 3	50	Yes- Okanagan Nation	Yes- Indigenous	No	Heterosexual	Female	Married	Yes	Over 100,000
Participant 4	65	No	No	No	Heterosexual	Female	Married	Yes	Prefer not to say
Participant 5	58	No	No	No	Heterosexual	Woman	Married	Yes	0 to 47,000
Participant 6	63	No	No	Yes	Heterosexual	Female	Single	Yes	Over 100,000
Participant 7	55	No	No	Yes	Straight/ Heterosexual	Prefer not to say	Single	Yes	47,001 to 100,000

Table 2

Abbreviated Sample Characteristics

Participant	Type of Cancer	Age of Cancer Diagnosis	Age of Cardiotoxicity Diagnosis	Type of Cardiotoxicity	Type of Intervention Disclosed by Participant	Years Between Cancer and Cardiac Diagnosis
001	Hodgkin's Lymphoma	27	51	Heart Failure	Valve Replacement Internal Pacemaker	24
002	Breast Cancer	52	71	Heart Failure	-	19
003	non-Hodgkin's Lymphoma	22	49	Heart failure Cardiomyopathy	-	27
004	Breast Cancer	36	58	Heart Failure	-	22
005	Hodgkin's Lymphoma	19	53	Heart Failure	Internal Pacemaker	34
006	Breast Cancer	59	60	Heart Failure	-	1
007	Breast Cancer	44	47	Heart Failure	Internal Defibrillator	3

Semi-Structured Interviews

Semi-structured interviews were utilized for this study, which is consistent with typical data collection techniques for qualitative descriptive studies (Neergaard et al., 2009). By using semi-structured interviews, participants were also made able to help guide the discussion in the direction that aligns with their experience (Polit & Beck, 2021). Semi-structured interviews also helped to ensure that the participants could exercise control over how much, or little, they wished to disclose with probes from the researcher as appropriate (Polit & Beck, 2021. An interview guide was created (Appendix E).

Participant interviews were held via UmZoom video conferencing at and on the participant's preferred time and date of meeting. The interviews were typically around one hour long. The shortest interview was 50 minutes while the longest was 1 hour and 27 minutes. In total all seven interviews yielded 147 pages of transcripts. Dr. Kramer was present for the first participant interview with the PI. All other remaining participants' interviews were conducted by the PI alone.

Field and Reflexive Notes

Field notes are an important part of the qualitative research process. Field notes are typically written as a way for researchers to reflect on the information collected and make sense of the data (Polit & Beck, 2021). Field and reflexive notes were taken at the conclusion of each interview with participants and uploaded to OneDrive by the PI. Personal and reflective notes also helped to maintain reflexivity and unveil assumptions throughout the data analysis process, which is one of the main benefits (Polit and Beck, 2021). Dr. Kramer also had access to these notes and could help guide the PI to reflect further or ask further questions if necessary.

Data Interpretation

In terms of analysis, qualitative descriptive studies stay as close to the data as possible (Sandelowski, 2000). This leads to a rich, straightforward description of an event or experience. In other words, it stays close to or uses language that is similar to the participant's own language (Neergaard et al., 2009). Sandelowski (2000), describes qualitative studies as data driven in terms of the analytic process wherein coding and themes are generated from the data itself. Therefore, in terms of qualitative descriptive studies, the data collection and analysis process is simultaneous and produces data that is a, "…. descriptive summary of an event, organized in a way that best contains the data collected and that will be the most relevant to the audience for whom it was written" (Sandelowski, 2000, p. 339).

Coding

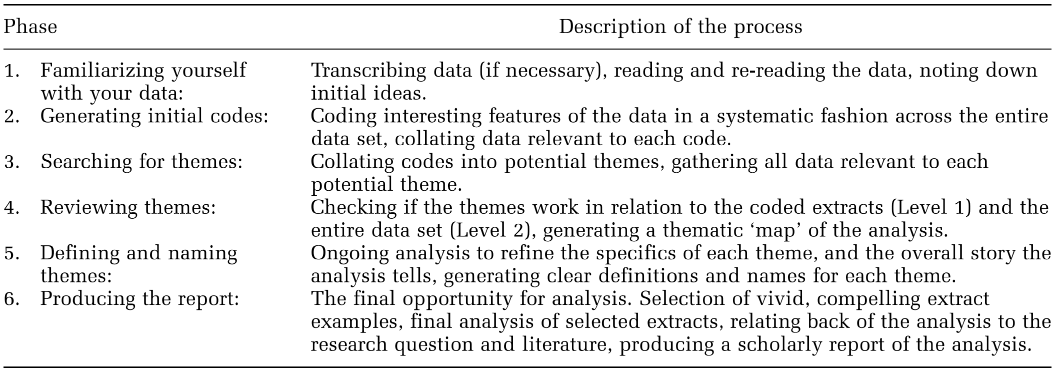
The coding process begins with first transcribing data verbatim in order to ensure accuracy of the data (Polit & Beck, 2021). Transcript Heroes is an approved provider of transcription services by the University of Manitoba. A secure upload of each interview was obtained to send to Transcript Heroes. The PI verified the accuracy of the transcripts by listening to the recordings and comparing them to the transcripts. All transcripts were then de-identified once complete, uploaded to the UM student account OneDrive, as it provided two-factor authentication, and all recordings were then deleted.

Once the transcripts were complete, the PI utilized inductive coding to see where the data itself led. As data is typically explorative, thematic analysis was used to gain insight and rich understandings from the interviews. According to Braun and Clarke (2006), when determining the type of analysis a researcher wants to conduct, in this case a rich, inductive thematic analysis, it is important to ensure the themes are identified, coded and analysed accurately to reflect the content of the entire data set to encapsulate the participants' experience. The thematic analysis was done at the latent level, meaning that underlying ideas, assumptions and conceptualizations were identified (Braun & Clarke, 2006). All codes were organized in one master code chart. Themes and subthemes were then added into the code chart and narrowed down. The PI shared this master code chart with Dr. Kramer. As this research study is focused on larger themes in terms of a sociocultural context that are deduced from individual accounts of participants, a constructivist approach was utilized.

For this study, the Braun and Clarke (2006), six phase approach was used for the analysis process. The first two steps consist of familiarizing oneself with the data through immersion, then generating the initial codes from said data. Steps three and four entail searching for themes and then reviewing them. Finally, defining and naming the themes and producing the report are the final two steps in the analysis process. Important questions considered while finishing the analysis phase, according to Braun and Clarke (2006), included: "'What does this theme mean?' 'What are the underlying assumptions underpinning it?' What are the implications of the theme?' and 'What is the overall story the themes tell?'", etc. (p. 94).

Figure 1

Braun and Clark's (2006) Phases of Thematic Analysis



Phase	Description of the process
1. Familiarizing yourself with your data:	Transcribing data (if necessary), reading and re-reading the data, noting down initial ideas.
2. Generating initial codes:	Coding interesting features of the data in a systematic fashion across the entire data set, collating data relevant to each code.
3. Searching for themes:	Collating codes into potential themes, gathering all data relevant to each potential theme.
4. Reviewing themes:	Checking if the themes work in relation to the coded extracts (Level 1) and the entire data set (Level 2), generating a thematic 'map' of the analysis.
5. Defining and naming themes:	Ongoing analysis to refine the specifics of each theme, and the overall story the analysis tells, generating clear definitions and names for each theme.
6. Producing the report:	The final opportunity for analysis. Selection of vivid, compelling extract examples, final analysis of selected extracts, relating back of the analysis to the research question and literature, producing a scholarly report of the analysis.

Note. Figure 1 depicts the phases of thematic analysis with descriptions of each process (Braun & Clarke, 2006, p. 87).

Rigor and Reflexivity

While quantitative researchers typically use reliability and validity to assess the rigor of a study, Polit and Beck (2017), highlight how trustworthiness parallels reliability and validity in qualitative studies (Lincoln & Guba, 1985). There are five areas that embody trustworthiness including credibility, dependability, confirmability, transferability and authenticity (Guba & Lincoln, 1994; Lincoln & Guba, 1985).

Credibility

In qualitative studies, credibility is the "confidence in the truth of the data and interpretations of them" (Polit & Beck, 2021, p. 569). There are two important aspects of credibility that Lincoln and Guba (1985) highlight, including carrying out the study in a way that is accurate that helps to enhance the believability of the research findings while also taking steps to demonstrate credibility in the research data (Polit & Beck, 2021). For this study, researchers maintained credibility by coding data that is close to the participant's own words, which is consistent for qualitative descriptive studies (Neergaard et al., 2009). Field and reflexive notes were also be kept by the researcher.

Dependability

Dependability is the "stability or reliability of data over time and conditions" and ponders whether the data is replicable (Polit & Beck, 2021, p. 569). For this study, researchers maintained dependability by keeping track of participant's transcripts, data, coding, field and reflective notes, and all documents used in the study.

Confirmability

Confirmability is also commonly referred to as and is defined as, "the potential for congruence between two or more independent people about the data's accuracy, relevance or meaning" (Polit & Beck, 2021, p. 570). Polit and Beck (2021) posit that this is extremely important as the data should reflect the participant's voice and not the researcher's personal bias. In order to ensure confirmability, researchers in this study kept detailed field notes and reflective notes to ensure that bias was accounted for. Coding was conducted by the PI but reviewed by the primary advisor to help ensure multiple view-points were considered. Finally, the interviewer strived to ask questions that were semi-structured to help ensure that participants could lead the discussion where they chose while the interviewer asked for clarification along the way if necessary.

Transferability

Transferability is defined by Polit and Beck, as "the potential for extrapolation i.e., the extent to which findings can be transferred to or have applicability in other settings or groups" (2012, p. 570). For this study, researchers ensured transferability by tracking participants' demographic information. For example, this included level of income and their ethnographical identities (see Appendix D). This helped to ensure that the study is applicable to a variety of different people from various backgrounds and not just one specific group of participants.

Authenticity

Authenticity is "the extent to which researchers fairly and faithfully show a range of realities" (Polit & Beck, 2021, p. 570). To maintain authenticity in this research study, the researchers stayed as close to the participants' own words from their interviews as possible using quotes and in vivo coding during the data analysis stage, which is standard for qualitative descriptive studies (Neergaard et al., 2009). Each participant was emailed their individual copy of their transcript. They viewed the transcript and removed any information that they wished to be redacted. Going forward, they will also be provided with any direct quotes that may be used in the publications for approval. This approach will help ensure that the participants' lives are accurately portrayed, which is important in maintaining authenticity (Polit & Beck, 2021).

Ethical Considerations

Prior to the commencement of this study, researchers obtained approval from the University of Manitoba Ethics Board (REB1). REB ID: HE2024-0328. Participants received full disclosure of the study prior to signing a consent form following a presentation of the study by the PI. It is important to note that the participants were made aware multiple times that consent may be revoked at any time throughout the study by the participants.

Measures to protect the anonymity of participants were imperative and included not using participants' names on reports or notes. A promise of confidentiality was made and carried out by assigning identification numbers to participants, restricting access to data to only those on a need-to-know basis including the PI and Dr. Kramer, using encrypted computer files and having all research personnel involved in the study sign confidentiality agreements. All documents were kept on OneDrive, which required two-factor authentication for access. The Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans (Canadian Institute of Health Research, Natural Sciences and Engineering Research Council of Canada, & Social Sciences and Humanities Research Council of Canada, 2018), was the guiding literature used to ensure protection of participants in this study. This included ensuring respect for persons, concern for welfare, and justice for participants (Canadian Institute of Health Research, Natural Sciences and Engineering Research Council of Canada, & Social Sciences and Humanities Research Council of Canada, 2018). Participants were offered access to resources at the end of each interview and again in the follow-up email (see Appendix F). Participants were also sent copies of their transcript from the interview and redacted information they did not want shared. This ensured that the participants had control over their own data.

Chapter Summary

The qualitative descriptive methodology and design for this study have been outlined. The qualitative descriptive approach was vital to exploring the themes of this study as there is a gap in research concerning this dual diagnosis. The methods used for this study were selected to best answer the research questions. This chapter describes the study setting, the use of purposive sampling, inclusion and exclusion criteria, and recruitment through the Facebook group Canadian Women with Medical Heart Issues. Data collection methods including demographic data, the use of reflexive fields notes, and semi-structured interviews were also outlined. Justification and use of Braun and Clark’s six phases of thematic analysis was explained. Finally, rigor and reflexivity, including how trustworthiness was maintained, along with ethical considerations for the study, were described. The following chapter will discuss the first theme found in this study known as re-traumatization.

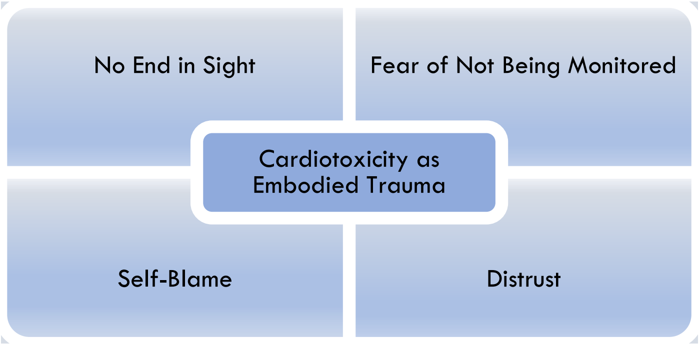
Chapter 5: Cardiotoxicity as Embodied Trauma

Trauma is conceptualized as "any disturbing experience that results in fear, helplessness, dissociation, confusion, or other disruptive feelings intense enough to have a long-lasting negative effect on a person's attitudes, behavior, and other aspects of functioning" (American Psychiatric Association, n.d.). The participants in this study went from being healthy women, some expectant or new mothers, to cancer patients. Their lives were forever altered by the diagnosis and in treatments that ensued. Long term survivorship of cancer involves stressors that are aligned with the uncertainty that cancer causes and the potential of reoccurrence (Guan et al., 2021). However, these participants faced not only the potential reoccurrence of their cancer but also a new diagnosis of cardiotoxicity resulting from the anti-neoplastic therapy used to save them.

Participants revealed how traumatic stress was held in their bodies from their cancer diagnosis and described challenges with reconnecting to the physical sensations, emotions, and safety of being in their bodies. Their diagnosis of cardiotoxicity emerged as a form of re-traumatization coloured, intensified, amplified, and shaped by their experiences and reactions to their new diagnosis (Danieli, 2010). They were forced to engage in a form of "bodily remembering" of symptoms such as pain, shortness of breath, exercise intolerance and fatigue. Through this process of living with emerging symptoms and eventually a new diagnosis, they had to reconcile previous experiences of surviving cancer, while recognizing, understanding, and negotiating a new diagnosis. Through this process, participants displayed a recognition that their bodies were changing in complex ways, within a health care system that had the capacity to support or discount them.

Four major themes illustrated how participants embodied the re-traumatization of being diagnosed with cardiotoxicity (Figure 1). The first theme examines participants' embodied experiences of living with a chronic heart condition after surviving cancer, which they described as feeling as though there was no end in sight. The second theme explores how participants embodied new symptoms alongside feelings of fear and uncertainty related to their diagnosis. While some bodily symptoms were noticeable, others were not, leading to a sense of distrust in their ability to recognize serious health complications. The third theme identifies how participants began to blame themselves for not trusting their bodies and their recognition of symptoms earlier. Finally, the fourth theme describes participants' experiences of sensing that something was wrong but encountering complicated interactions within the health care system that led them to doubt their bodily knowledge. These experiences contributed to feelings of being unsafe within the health care system and unable to effectively advocate for themselves as they noticed changes in their bodies.

Figure 2: Subthemes Related to Re-traumatization



Note. "Cardiotoxicity as Re-traumatization" created using data from theme 1.

Subtheme 1: No End in Sight

Participants were clear that the goal during their cancer therapy was to complete treatment and then continue to build their lives. One participant asserted that while receiving her cancer diagnosis, she was able to make tentative plans about how she thought her cancer journey would unfold. She didn't realize that there would be other chapters unfolding and had no idea how treatment would affect her body: *“I had no awareness of cardiotoxicity and oncology medications. I wasn’t aware of it at all”* (007). The diagnosis of cardiotoxicity was not seen as a separate or new diagnosis but a prolongation of their cancer experience. Furthermore, even though they recognized that the risk of cancer reoccurrence was always a possibility, the chronic nature of heart disease become more apparent. When the participants did get diagnosed with cardiotoxicity, there was a general, overwhelming sense of fear of the unknown and the heavy burden of being diagnosed with a chronic condition. As participant 7 described:

> *“Breast cancer isn't curable but they can certainly, for the most part it seems, obliterate it. But once those heart muscles are stretched out, there's no fixing them. Done is done and there's no getting in the toothpaste back in the tube, I guess”* (007).

This quote contrasts cancer, described as something that can be “obliterated”, with cardiotoxicity, which is experienced as irreversible bodily damage. The metaphor of “no getting the toothpaste back in the tube” reflects an embodied awareness that the heart has been fundamentally changed and cannot return to its prior state. From an embodiment perspective, this signals a shift from viewing the body as resilient and repairable to experiencing it as fragile, finite, and irrevocably altered.

The uncertainty of their new diagnosis led a 49-year-old participant to engage in end-of-life planning. She had just received a diagnosis of heart failure and described the physical and emotional adjustments that accompanied having a new chronic health diagnosis. She was immediately placed back into a sick role. The possibility of her heart failing her and resulting in death was a very real possibility according to the participant. Other participants spoke to the abrupt assessment of their mortality by health care professionals only to be left to deal with the complex burdens of their diagnosis:

"The first cardiologist, I'm telling you, he hit me in the face, [he said] you have two years and then you die and you got to do this, this, this. You have any questions? Then ten minutes later, you're out of the office" (005).

Another participant described being seen by a cardiologist and was informed that she was already in "extreme severe heart failure". Treatment included being started on a plethora of new medications for heart failure, while previously being on little to no medication. Participants had to immediately embody new routines, which involved taking medications and adjusting to their effects. This experience was echoed by several participants as they adjusted to life-long medications for their heart. Even the act of taking medications into their bodies again was reminiscent of the trauma they experienced with cancer. While medications saved them from cancer, they also led them to experience traumatic side effects, including cardiotoxicity. One participant described how she did not realize at first that she would be on cardiac medications for life:

""Oh, you will have to take pills the rest of your life. We will have to see you very, very often until the end, and we will see after that how you react with those pills because there is different pills." At that time, I did not get really what he meant by that" (005).

This feeling of "no end in sight" to their diagnosis of heart failure was compounded by the fact that some participants required a permanent physical solution in the forms of a pacemaker. In these cases, some of the participants were told that the medications alone would not be enough to treat their heart failure and would need a permanent pacemaker inserted as well to help improve their heart function. The participant's had to embody the knowledge that their own heart was no longer enough, they needed a device that would ensure that they would stay alive. The pacemaker was just under their skin and their scar was a permanent reminder of its presence. One participant equated the pacemaker to getting new tires put on a car but did not understand fully how much it would affect her life. Not only did she have to get used to having the pacemaker in her body, but she also had to deal with it malfunctioning, causing bradycardia and hypotension: *"... I thought I was going backwards, and it was, but then I realized, oh, it's because my pacemaker is not working how it's supposed to"* (001).

Participants hoped to go back to their normal routines after their diagnosis of cardiotoxicity but quickly realized that their bodies had changed: *"...you're just sort of expected to go back to your life and go back to everything as normal but nothing's normal"* (007). Participants came to re-understand their bodies through the embodied experience of chronicity.

Subtheme 2: Fear of Not Being Monitored

Re-traumatization of participants through their cardiac diagnosis led to deep-seated feelings of no longer trusting their bodies and feeling unsafe. Participants experienced a lack of follow up care after their cancer treatment. While they may have been told about the risks for cardiotoxicity during their anti-neoplastic therapy, few were scheduled for screening or follow up for long-term side effects associated with their cancer therapy.

One participant, despite being scheduled for an initial heart function test post-chemotherapy and engaging in regular checkups, ended up hospitalized for heart failure. The cardiologist indicated during her admission that she had been experiencing physical symptoms of heart failure for two to three years- all of these signs were missed by her primary care physician.

This gap in screening caused participants to feel fearful that no one was looking out for their health and that even though they recognized their bodily sensations, they didn't trust the medical system to acknowledge the changes in their health. Given the complexities of their new cardiac diagnosis, they became increasingly fearful and anxious that their health would not be monitored, and their conditions could worsen from neglect. Participant 5 described how her blood pressure medications resulted in a persistently low and life-threatening blood pressure: *“I change[d] maybe three times different medication[s] because the [blood] pressure was 60/40*(005)*”*. The uncertainty of her new, chronic diagnoses paired with the physical symptoms she was having from hypotension and the medication adjustments her doctor was making led participant 5 to feel fearful for her life. Her heart was no longer functioning in a way that it was supposed to and this created an embodied sense of vulnerability.

Participants also described how the lack of monitoring made their family members also feel fearful as they learned to cope with the changes in their loved one's lives. Participant 4 detailed her experience coming home from the hospital and her family feeling like she was a “ticking time bomb” as she could die at any moment. Referring to her heart as a bomb signifies the unpredictability that she felt and the fact that she believed that her heart could give out at any moment. She was no longer safe on her own with her damaged heart, she needed outside intervention to monitor her. *“And my husband would take me and walk with me, and we were going for walks and stuff like that because they were afraid as was I”* (004). To these participants their hearts could no longer be trusted by them or their family members.

Participants described the frantic nature of being treated for their heart disease once it was formally diagnosed. This was typically in acute care settings and heart function clinics. In these clinical areas participants were heavily monitored and assessed. This gave them comfort as they negotiated their complicated new diagnosis. On discharge, they were impacted by the removal of their monitoring equipment and schedules. They could no longer see their heart rates or have a nurse or doctor interpret their blood pressures which were taken frequently in the hospital. When the participants went home, they felt vulnerable and fearful of returning to these unmonitored environments. They could no longer see their hearts rates, their oxygen saturations or their blood pressures on screen. They also did not have the comfort of having a nurse and doctor in their presence at all times. One participant described the stress of going from being monitored 24/7 and being discharged home: *"So, it was stressful to come out of the hospital with this brand-new identity and that I was carrying and this condition I needed to manage"* (003). While it was important for her to track her vital signs at home to the best of her ability, her sense of lack of monitoring went beyond the physical numbers on a screen. To participant 3, her sense of self was altered when she was given the diagnosis of heart failure as she described it as a 'new identity'. The cardiac diagnosis did not just affect one part of her life, rather, it changed her as a person. She was 'carrying' a new condition with her everywhere she went. Her fear of not being monitored was not just in the physical sense, it was in the embodied sense of self as she no longer knew who she was with this new diagnosis. Participant 7 also had similar views of how this diagnosis altered her sense of self and how the physical numbers were difficult to comprehend:

> *"And what does it mean to have an ejection fraction of 13% when you're discharged from the hospital? And to have basically been on death's door like that? And what is my quality of life and what can I do?"* (007).

Most significantly, once the acute cardiac event leading to hospitalization was over participants had to figure out how to stay well. This fear of death was looming as was this new embodied sense of self. Their cardiac diagnosis was now apart of them but they did not fully understand the scope of it. These embodied feelings of lack of monitoring lead participants to recreate similar feelings from cancer that caused trauma including vulnerability and lack of control.

Subtheme 3: Self-Blame

Participants experienced their diagnosis of cardiotoxicity not as a detached medical condition, but as something lived through as a body, shaping their identity, emotion and self-understanding. As one participant described her feelings during her earlier cancer diagnosis: *"I felt my body had failed, I had failed and I kept thinking it is something I did or didn't do"* (004) and then related these same feelings to her diagnosis of cardiotoxicity *"And I felt sorry for my heart to be honest, I let it down. I felt sorry for my heart, it was pumping away there"* (004). In this instance the participant collapses the distinction between self and body. Rather than viewing the body as an object that malfunctioned, she experiences bodily failure as personal failure. This demonstrates an embodied sense of self in which the body is integral to identity. She internalizes her responsibility as "something I did or didn't do." This shows how embodied experiences carry moral and emotional meanings, not just physical symptoms. Furthermore, she deepens her embodied experience by relating to her heart as not merely an organ but a companion within the self, one that worked faithfully and was betrayed. This demonstrates how awareness of internal bodily processes are usually taken for granted. Cardiotoxicity is lived as a felt, emotional and moral experience of the body, where selfhood, responsibility and bodily function are inseparable.

Participants felt the changes in their bodies. They experienced shortness of breath and extreme fatigue. Some were unable to walk for periods of time to their appointments or to cook meals. These changes became magnified through diagnostic tests. However, complex clinical findings, such as a decreased ejection fraction, were new to participants. They were placed in situations where receiving a clinical diagnosis further internalized their distress. For example, one participant described being told she had a low ejection fraction:

"There wasn't a recognition that, about how distressing this would be. And then I – she told me my ejection fraction, and I didn't know what it meant" (006).

Another participant attributed her weight gain to menopause even though her ejection fraction had declined to the lowest end of normal which was later discovered as the reason for her weight gain. One participant described feeling completely exhausted at the end of each day. This feeling of exhaustion was common amongst the participants. However, instead of recognizing that there may be a deeper issue, another participant attributed these symptoms to menopause. *"And I was attributing that to my age, right. To my age and I'm menopausal and all that. All that stuff that comes up that's what I was attributing it to and it wasn't, it was my heart"* (004).

The belief that a serious cardiovascular condition could be attributed to menopause means that there is an embodied gender component as to how women were understanding what was happening to them. Their hearts were failing them and they were finding it difficult to carry out activities of daily living but instead of understanding that something more insidious was behind these symptoms, they blamed themselves, their hormones alterations, and being of a certain age when menopause begins to manifest.

While many of the participants found work difficult, instead of piecing together the possibility that there could be a more serious issue at hand, their health care providers believed it was just the stress of their job, or the fact that they were working mothers:

"...In my role at the time of working in a housing organization and social services, people always saw me as well, you're in a social service role, no wonder you're tired and burned out. Well, you can be tired and burned out and also have cardiovascular issues" (007).

Another participant also attributed her cardiotoxicity symptoms to work and life stressors of being a grandparent:

"But I didn't know that's what was wrong. I thought it was stress. I thought it was perimenopause. I thought it was being a 49-year-old woman still working full time with a 15-year-old kid and a grandson. I really did think that it was mostly stress driven" (003).

The most significant impact of self-blame is that it creates an illusion of personal agency, even when logically untrue. The women in the study were diagnosed with complex structural heart issues but still blamed themselves their unknowing, daily practices, and inability to advocate for their health. They felt that if they only had more knowledge, they would have been able to present the progression of the complex cardiac symptoms they were experiencing. he complex nature of a diagnosis of cardiotoxicity and the multiple ways it can present also impacted participant's feeling that they were at fault for missing their diagnosis.

Subtheme 4: Distrust

Trauma can be multifaceted. For the participants in this study, they experienced an extremely traumatic event with their cancer diagnosis and went on to develop cardiotoxicity (typically) later in life. When the women were diagnosed with heart failure, it was by a healthcare provider, but their symptoms were typically advanced. They were having extreme episodes of fatigue, shortness of breath, swelling, and weight gain. Many of the women had tried to seek help earlier and were told that there was nothing to worry about or when they did seek help, they felt shamed for not seeking help earlier or recognizing something was wrong. They were made to feel as though their experiences with their body were not something that was important. While something like a lump in the breast can be felt in terms of cancer, the effects of cardiotoxicity that the participants experienced could be easier to ignore or attributed to something else from an outside perspective because the symptoms were mostly subjective.

One participant experienced distrust from her doctor when she was accused by her cardiologist of ignoring her symptoms to the point where her ejection fraction was only 8% when she presented to hospital:

"Numerous times I was told, well, I had one notable cardiologist say to me, tell me how reckless I was to have ignored all of my own symptoms that my legs must have been, my ankles must have been hugely swollen. I said I had no swelling in my legs. I had no swelling in my fingers. I had swelling in my abdomen but nobody checks the abdomen. I had back pain. I complained about the back pain and that was dismissed time and time again" (007).

This sense of not being believed caused the participant to not only experience distrust with her healthcare provider, it also caused her to have an embodied sense of distrust as well. While she had tried to seek help earlier, even though her symptoms were atypical, she knew something was wrong but was made to feel like her experience was not valid. She was told how her symptoms must have manifested instead of being believed as to how they actually presented. Her being 'dismissed time and time again' highlights how this was not just a singular experience, it was an occurrence that happened multiple times that resulted in deep rooted feelings of distrust within her.

Trauma can generate feelings of distrust in numerous ways, including through betrayal and harm by people they thought they could trust, experiencing a lack of safety, alternations in thought patterns, hypervigilance and fear, and finally, a distorted way of processing information (Center for Substance Abuse Treatment & Center for Substance Abuse Treatment, 2014). The participants were deeply traumatized by their cancer experiences. One participant was almost taken to court by her doctors because they wanted her to deliver her baby earlier than she wanted to due to the risks of her cancer to the baby. When she told them she wanted to wait until the baby's lungs had developed before delivering, they felt that she was an unfit mother for deciding to wait. As an Indigenous woman, she described multiple traumatic experiences with the healthcare system where they believed that she was drug seeking when experiencing major medical issues and disregarding her symptoms and wishes:

"And if you presented numerous times as a mother in emergency with these different complaints, that some of the time, even in my hometown, probably worse in my hometown, they assumed that I was an IV drug user because I was underweight, and I was Indigenous, and I was not healing, and I was unable to breastfeed my baby. So, I would get re-traumatized every single time I needed help" (003).

Distrust can be multifactorial as there are many elements at play as to why participant 3 experienced distrust later in her cardiotoxicity diagnosis. As a cancer survivor and new mother, she experienced health challenges but as a member of a vulnerable population as well as a woman, there were many reasons the participant had an embodied sense of distrust going forward with healthcare providers. She did not fit into the typical mold of a what a new mother looks like. This manifested again in her experience with cardiotoxicity as she became reliant on her healthcare providers to help navigate a newly diagnosed chronic condition but struggled with the trauma she experienced in the past from them.

Many of the participants in this study experienced re-traumatization through lack of communication from healthcare providers. One participant was one day away from having her mastectomy surgery when she went in for an appointment with her oncologist, who did not know she was going to have surgery the next day. It was on this day when she found out her heart was not functioning properly. Leading up to this appointment, the participant described extreme fatigue, to the point where she could barely walk to her car after appointments and receiving the response "everybody's different" repeatedly when she tried to tell healthcare providers about her symptoms. Her physical experience was not validated until it became impossible to ignore and she was one day away from surgery when she found out that she had passed the pre-operative screening, but no one had looked at the result of her heart test which she had failed:

"She (her oncologist), was horrified that I had passed my, well, I shouldn't say, her facial expression was that she was shocked that I had passed my pre-op. And she said I should talk to my surgeon about it. So I went over to the surgeons and said, "I can't have the surgery." And then I went to my friends and cried and cried." (006).

Other participants felt that they were not believed by their doctors which lead to embodied feelings of betrayal and lack of safety. This was also attributed to gender in some cases. Some of the participants described having physical symptoms of cardiotoxicity in the form of heart failure, including weight gain due to their poor heart function, however, some healthcare professionals were attributing it to their age and life stage. Participant 4 explained how she went into to see her doctor about her weight gain and shortness of breath, which was to the extent that she was having difficulty even standing or walking to the kitchen, and her doctor explained that she just needed to lose weight. Her doctor would not take her symptoms seriously after repeated appointments:

"... there was another doctor in that clinic, at [redacted] *Clinic and I went to him expressing these problems. Him having my chart in hand said – was pooh-poohing it. He was talking about weight and that yes, I've gained weight, well no kidding. And it wasn't until – I pushed and pushed (that she got help)"* (004).

In fact, when she was finally diagnosed with heart failure, her cardiologist believed she was having the symptoms of heart failure for years, but it wasn't picked up on. Participant 4 attributes this partly to the fact of her gender. *"...women present totally different than men with heart (conditions), totally different"* (005). Participant 3 also spoke about how she was a 49-year-old woman, having extremely intense physical symptoms and believing it was perimenopause instead. In actuality, she was in advanced heart failure:

> *"And even if you google the symptoms that I had, the first thing that comes up has nothing to do with your heart. It's all about do you have anxiety. Are you depressed? Do you have menopause? They want to label it with this more emotional piece, whereas I was actually, now that I think about it, experiencing some pretty hardcore physical things. Like I couldn't go up our stairs without being short of breath"* (003).

She never thought her symptoms were cardiac related until she ended up being hospitalized. At that point she thought that her body had had enough. She spoke about how her cardiotoxicity coincided with reproductive issues she was having as well, but this was never recognized:

> *"And that's eventually when I went in, and they diagnosed it as the heart failure, the trouble I was having with my reproductive stuff as a 49-year-old women started to get worse too. And I think my body was just really bottoming out when it came to like, OK, for the last 27 years, my body compensated for this weakened heart condition, which never presented"* (003).

While the participants knew something was wrong with their bodies and their symptoms were not normal, they were told that there wasn't anything wrong. They had symptoms for years until they could no longer be ignored. While the women knew the symptoms they were having were not normal, they placed their trust in healthcare providers that did not validate their experiences. Because of this, the participants not only developed distrust their healthcare providers, they began to distrust themselves and how their body felt. Also, their cardiac issues were made into a gendered issue when their symptoms were attributed to menopause. Even though much of the suffering with cardiotoxicity and menopause is invisible, there are prominent differences in symptoms. While the women were at the age when menopause begins, that was not the issue at hand. Their hearts were not providing them with the blood flow it needed to perfuse their bodies and participate in their daily lives. This led to women to have further progressed symptoms and an embodied sense of distrust with their healthcare providers.

Combating Re-traumatization

For the participants in this study, their lives were altered by their cancer diagnosis. However, when the participants received their diagnosis of cardiotoxicity, they also experienced an upheaval of their lives. Participant 2 spoke about the fear associated with a diagnosis of cardiotoxicity in the form of heart failure and feeling alone in her diagnosis:

“I’ll tell you when I wished I would have had some mental health support, is after the heart failure, because, in a way, the heart failure was scarier than the cancer, because I didn’t know anybody that had heart failure that I could talk to about it” (002).

To help mitigate the effects of re-traumatization, including the fear of being unmonitored, feelings of distrust, self-blame and the uncertainty of not knowing when or if their symptoms would improve, many participants sought out mental health supports. Participant 6 referred to therapy as the *“best investment I ever did in my life”*. However, often these supports were very limited or not pertinent to what the women were going through. Participants had to pay for these services out of pocket which may not be realistic for many people with this dual diagnosis as people’s ability to work can be affected and therefore health benefits may also be difficult to access.

"Yeah, definitely I wouldn't have got through this without my therapist, and that's only available to me, well, it was available to me, because I have money to pay for it" (006).

While psychosocial supports were identified as important for the participants in this study, a common thread throughout each interview was how truly limited mental health supports are for this cohort of women. Many of the participants spoke at length about how they did not know anyone else with this dual diagnosis, how they were left unfulfilled when trying to access research studies and even had difficulty finding google results for women with their condition. *"Again, though the support system for women with heart issues sucks. It sucks. And I just feel with heart issues with women are really underrepresented, understudied, under-researched and underfunded, you know"* (004).

Chapter Summary

Re-traumatization from cardiotoxicity secondary to anti-neoplastic treatment for cancer is an experience shared by each participant in this study. All the participant's had physical manifestations of heart failure including chest pain, fatigue, dyspnea, exercise intolerance, etc. and these physical symptoms manifested had embodied meanings attached to cancer and resulted in re-traumatization. The participant's bodies remembered cancer, either through the physical symptoms they had and the alterations caused by taking medications and/or having treatments, surgeries and procedures. Their bodies could sense something was wrong but they did not have the knowledge or capacity to understand what was going on. When they did receive their cardiotoxicity diagnosis they were left feeling like there was no end to their diagnosis, the fear of not being monitored in various ways under the surveillance of healthcare professionals upon hospital discharge, self-blame for not recognising/understanding their symptoms of cardiotoxicity sooner and distrust of healthcare professionals they thought they could rely on when they did have symptoms that caused their bodies to fail them. The participants had bodily cues as to what was happening but had the embodied trauma from cancer that in turn, caused them to have the embodied experience of cardiotoxicity through re-traumatization. They were no longer healthy women, they became patients once again. Psychosocial supports and trauma informed care are two areas where participants felt that improvement is needed going forward to help mitigate these feelings of re-traumatization.

Chapter 6: Fluidity and Everyday Social Roles Impacted by Cardiotoxicity

The effects of cardiotoxicity on the everyday lives of participants and their ability to participate in their daily social worlds is multifaceted. In this study, the concept of fluidity is conceptualized by a shift from feeling bodily harmony to feelings of instability or disruption. More specifically, fluidity describes bodily experiences that are dynamic rather than fixed, multiple rather than unified and shaped by external and internal influences (Grosz, 1994). In short, the body is no longer a stable and predictable organism. Fluidity highlights how the participants’ experiences with a dual diagnosis of cancer and heart disease were not fixed, singular, or confined to one part of life. Instead, their illness created ongoing, shifting disruptions that moved across multiple domains of their everyday existence. Rather than living with a stable, predictable sense of self and bodily capability, participants experienced their bodies as changeable and unreliable altering how they enacted their roles, fulfilled responsibilities, and maintained relationships. They no longer had the same physical stamina to perform

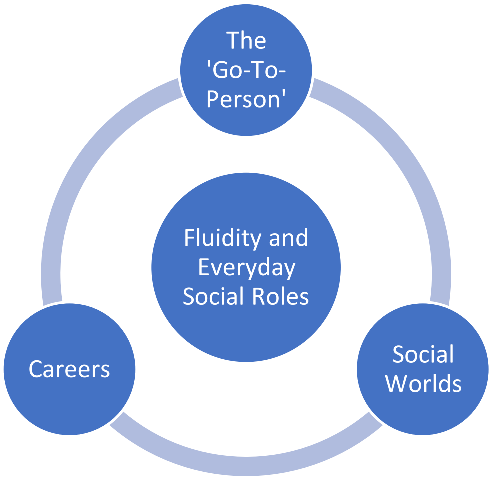
In terms of embodiment, the experience of cardiotoxicity from anti-neoplastic therapy is not just a physical complication from treatment, it manifests as a lived, social experience that reshapes and alters everyday roles and identities for the participants in this study. While the body and the mind are not separated in embodiment, the mind and body are also not separate from the social world (Lundh & Foster, 2024). For the participants in this study, their illness does not just manifest in one area of their life, it is a lived experience within their daily social worlds and the roles that they adopt.

In the first subtheme, the “Go-to-Person”, I examine participants accounts of their family roles. In terms of family life, fluidity is evident in how their physical capacities fluctuated, making even routine bodily tasks like shopping, cooking, and caregiving, unpredictable. Because they were central to the functioning of their families, these changes created ripple effects that reshaped relational dynamics and household routines. Their identities as caregivers and supporters were no longer steady; instead, they had to continuously renegotiate what they could and could not do.

In the second subtheme, participants speak to the impacts of their dual diagnosis on their careers. Fluidity also appears in how their working lives were disrupted. Their ability to maintain the same pace, concentration, and stamina at work was no longer consistent, affecting their professional identities and financial stability. They no longer had the physical or cognitive endurance to maintain the same work pace they did prior to their cardiac diagnosis. Work, once a stable part of life, became another area marked by changing limitations and shifting expectations.

Finally, fluidity shaped their social worlds. Activities that once anchored their sense of self such as friendships, leisure, and travel became difficult to sustain. Participants experienced social withdrawal or isolation, not because of a single event but because their changing bodily capacity continuously restricted how they engaged with others and the world.

Figure 3: Subthemes Related to Fluidity and Social Roles



Note. "Cardiotoxicity Fluidity and Everyday Social Lives Impacted by Cardiotoxicity" created using data from theme 2.

Subtheme 1: The 'Go-To-Person': Cardiotoxicity's Impact on Caring for the Family

One of the areas where participants were impacted by having a dual diagnosis of cardiotoxicity and cancer secondary to anti-neoplastic therapy is in their daily social roles. The participants spoke about how they were used to being the caregivers and the 'go-to person' for their family and when they became ill, these roles were altered. Their roles were no longer fixed, rather, they had to demonstrate fluidity.

One of the largest learning curves for the participants in this study was how they had to learn to rely on others and unload some of the burden that they carried, especially in their day-to-day life. This included something as seemingly simple as cleaning and especially preparing food. However, participants spoke about how this task was one of the most difficult things for them. With the reduced physical and emotional capacity to be the main provider in a previously established embodied caregiver role, the participants had to learn to shift dependence on to other people. Ostensibly simple tasks like food shopping were arduous for the participants as many no longer had the capacity to provide meals for themselves and others:

"Like having to talk with my husband about like, hey, for the last 20 years I've done all of the work around meal planning and feeding our family, and all of that. I need help. And he didn't realize or have any scope of understanding how much work that actually was till he had to do it" (003).

Participant 3 also spoke about how the food she used to prepare for her and her family was "toxic" and she would cry in the grocery store from the emotional weight of the situation. Another participant spoke about how she would have loved having a meals on wheels subscription as this act became difficult due to the mental load she was carrying mixed with the fatigue she was experiencing. The women had to find ways to help cope with the everyday difficulties they were experiencing. This required adaptation or the relinquishing of the task.

Another role in the everyday lives of the participants that was deeply impacted by the dual diagnosis was that of the main support person in the family. The role of the everyday ‘go-to-person' was something that became difficult for the women due to their illness being at the forefront of their lives. Participant 1 explained how they were always the person who made sure that her children always got to soccer practice or basketball and how she did not carve out the time for herself. Another participant described how she was the person her daughters would text when they needed help with daily life problems, not her husband:

“I carry that load, and I carry the load of making sure that our family is socially connected and physically looked after and mentally balanced and emotionally regulated. That’s not how society works that men are often the drivers for that” (003).

Participant 7 also detailed her experience being the primary, live-in, caregiver for her 94-year-old mother. However, even though she is in a caregiver role, people assume she is doing well but that is not the reality of the situation. She refers to her cardiotoxicity in the form of heart failure as a hidden disability:

“I know that it's hard for people to wrap their head around the idea that I have limitations now…I live with my 94-year-old mother. I'm sort of a live-in caregiver there. I just don't have the energy for a lot of things. My gas tank is empty early in the day. And people don't always, you know, I guess it's a bit of a hidden disability” (007).

Being the go-to-person of the family also included helping to babysit grandchildren in the everyday lives of the participants in this study. While their children were older, they were still one of the main caregivers for their grandchildren. Obtaining reliable childcare can be difficult so having these participants being able to babysit was pivotal. However, due to the physical limitations caused by their cardiotoxicity diagnosis, the participants struggled to fulfil this role. For participant 4, this entailed learning to say no and knowing her limits with her grandchildren:

"You know, they're always trying to please everybody else. My kids are older now and I have grandchildren and I want to do and be everything for them and I have to learn to say no and listening to me and what I need is really important" (004).

The participants described the sadness for all people involved in this situation as they felt like they were missing out on important time and experiences with their grandchildren. Participant 2 detailed how she would help her daughter care for her child almost every day from when she was a baby. When she was a toddler, she would care for her granddaughter three times a week but with her heart failure diagnosis, she was no longer able to care for her granddaughter at all. The embodiment of caregiving and emotional availability for others is tied to femininity in our social roles and when participant 2 was no longer to perform these roles due to her physical symptoms, mainly fatigue, she was left feeling heartbroken that she was unable to fulfil her role of the grandmother in the same capacity she used to:

"Well I really missed her. So my daughter would try to bring her over, but at first, honest to God, after 20 minutes, I said, "You have to go," because it's just, it's just too much. So I really felt sad, and of course, she'd cry, "I want grandma," so we'd do Zoom calls, right. But it wasn't, wasn't the same…" (002).

The participants were required to adapt to not being the go-to-person in the family for childcare. While this embodied idea of the feminine caregiver and matriarch, participants had to learn to resist the urge to embody deviation of these norms. This meant that the participants had to create boundaries and not push through their limitations. This was not an easy learning curve, but necessary:

"But it's been a learning curve to tell people when I'm not and to be open about it and to turn friend invitations down, to realize my limits with my grandson and my youngest daughter and realize that sometimes I do have to miss things" (003).

Subtheme 2: Work Interrupted: The Cost of Cardiotoxicity on Women's Careers

Work was a common topic of discussion for the participants in this study. Participants found themselves struggling with work at various points in their lives due to this dual diagnosis. Some participants were diagnosed with cancer at start of their careers and many of them were diagnosed with cardiotoxicity in their prime years for earning potential prior to retirement. Many of the women needed to take medical leave due to their illness because of the physical and mental exhaustion their careers were causing. Participant 1, who taught laboratory simulations at a college, took time before and after her cardiac surgery for a heart valve replacement to prepare herself mentally and physically for the surgery which resulted in an extended period off work: *"Knowing that it was a big surgery, knowing that there's a real risk of complications, the risk was low I guess, for serious complications. But I guess the not knowing how I was going to recover, or if I was going to recover too. It's just all the what ifs, again, my worst-case scenario approach coming back in. So yeah, I did find the mental part of it was almost as challenging as the physical part of it"* (001).

Another participant, who owns a gardening company, explained the how she would be vomiting into a bucket at work as she was unable to physically keep up with the demands of the job because her heart failure was so far advanced but her doctor would not believe her that something was wrong. *"I could hardly lift plants and pots and stuff and the last time we went I* *was sitting there vomiting into a bucket as she (her partner) worked"* (004). As one of the owners of the company, this greatly impacted her productivity, earning potential and her business overall.

Participant 6 spoke openly about her experience facing illness in academia and the massive impact the dual diagnosis had on her career. Participant 6 was unique in the sense that her cardiotoxicity diagnosis came extremely soon after her cancer treatments while the other participants had many years lapse between their cancer and cardiotoxicity complications. As a professor, she was career focused and with the dual diagnosis she was given, her ability to work vanished. Between the side effects of the cancer treatments and the impact cardiotoxicity has had on her physical stamina, she opened up about how different her career looks now. She is no longer able to work fulltime and teach the same number of courses she used to. This also caused alterations in an embodied sense of self-worth, especially for participant 7 who prided herself on her career in academia:

> *"And so it's just like, it's been like developing a kind of a conditioning of my brain and my body to be able to do it....And so my standards are much lower for myself and I'm not the award-winning teacher that I was. And, yeah, that's just the way it is"* (006).

Many participants spoke about how they are no longer able to work as they once were able to. They have had to decrease their hours which also impacts their earning potential, potential for career advancement and retirement. Even though one participant was told that they would be 'fine' by their doctor after being discharged from hospital with a heart failure exacerbation because they had a 'desk job, she still struggled. This led to embodied tension and manifestations of shame for participant 7 as she no longer had the same capacity to work but was told by her doctor that she should be fine when they were not:

"I no longer work the way I used to work. I no longer earn what I used to earn. I no longer have the friends that I used to have. I no longer have the energy that I used to have" (007).

Participant 3 had a similar situation with having to decrease her work hours due to the physical limitations of her chronic condition. For her, it was also about getting people to understand that she does not have the capacity to work as much as she used to in her day-to-day life:

"And I do find that I still have to spend a lot of time trying to get people to understand that I'm not the person I was before. I can't work five days a week anymore. I only work four. And by the time Thursday rolls around, even if it's been a fairly quiet week at work, I'm tired" (003).

Some participants decided to retire early due to their illness, which was also a very difficult decision to make. Participant 6 felt she had to work harder than a lot of other people at her job because she had to prove herself as she had to leave work for medical appointments. Part of her embodied sense of self-worth was tied to her career. With her cancer diagnosis she felt a need to prove to herself and her colleagues that she was fine but with the increasing physical limitations that her symptoms of cardiotoxicity were creating she was experiencing an embodied tension between her bodily capacity to work and the reality of her capacity to work. Her role as a working women became difficult to maintain. Even though it was her choice to retire early, she loved her job and she did not want to stop working. The choice was made for her however, when work became too difficult for her:

"Another side effect is that I choose to quit working two years earlier. I am happy because financially I was able to do it. But still I loved my job. I loved doing – working was not

painful for me. So, that was a big side effect because you have to quit something that you love" (006).

Subtheme 3: The Invisible Loss: How Cardiotoxicity Reshapes Women's Bodily Engagement with their Social Worlds

Throughout the interviews with the participants in this study, it became apparent that the dual diagnosis of cancer and cardiotoxicity had an enormous impact on their 'social self' in the everyday lives of the participants. While familial relationships and work life altered, things like how participants spent their time socially was also changed. The participants spoke about how they had altered friendships, experienced social isolation and were restricted in the activities that they loved doing, especially travel, with their diagnosis of cardiotoxicity. While the participants appeared fine on the outside from their cancer recovery, there was an embodied tension occurring with their diagnosis of cardiotoxicity as they no longer had the capacity to participate socially as they used to. This also led to an embodied loss of belonging.

Friendships were a topic that was brought up by numerous participants when asked about what has changed for them in terms of their cardiotoxicity diagnosis and their ability to participate in their daily social worlds. Participants described finding it difficult to maintain friendships as they found it arduous to have the physical and cognitive strength to do activities with friends for extended periods. For participant 6, this manifested as a hyper-awareness of her bodily limitations in public which in turn restricted what she can do now for social activities. This caused a loss of an embodied sense of social participation. For example:

"When there's a lot of people or a big crowd, it's just way too much for my brain, it's exhausting. So I can't go to these activities. And so basically, I don't do any social things at night that are, almost none. I go to my neighbourhood book club in the evenings still, but I never,

almost never read the books, but anyway, I still go to the book club. So the relationships, I think I haven't had the loss of friendships that some people experience, that hasn't – I mean there's some, but the ones that are meaningful, I haven't lost meaningful relationships" (006).

Conversely, some participants did describe losing friendships because of their diagnosis. Participant 7 detailed losing parts of her support system with both her cancer and cardiac diagnosis. For participant 7, she became socially withdrawn and her embodied sense of belonging fell away as she continued to experience symptoms of cardiotoxicity while making the decision to move provinces. This was heightened when she moved provinces:

"And I found a lot of my support system fell away from me with the cancer diagnosis. A lot of female friends fell away. And then when I moved back to [redacted] *[home province] it was kind of a fresh, you know, I had family here but I didn't have friends here. So I didn't have much of a support system here at all. So that was really, really hard"* (007).

While participants had altered friendships with their cardiotoxicity diagnosis, they also experienced social isolation in their lives as they described feeling alone with this new way of life. While the cancer diagnosis was lifechanging, to the participants, the cardiac diagnosis was life altering as well. Some felt the cardiac diagnosis was worse compared to the cancer diagnosis in ways: *"...the heart failure was scarier than the cancer, because I didn't know anybody that had heart failure that I could talk to about it"* (002). Most of the women shared that they felt alone in their cardiac diagnosis secondary to cancer treatment. They had never heard the term "cardiotoxicity", were so overwhelmed with their cancer treatment, or had many years lapse between their cancer that cardiotoxicity was not on their radar. The re-traumatization of their heart failure diagnosis, the need for peer support and not feeling alone in what they were experiencing were the main reasons all seven the women joined the Facebook group Canadian

Women with Medical Heart Issues Secondary to Cancer Treatment. There were very few resources for them to access to gain an understanding of their diagnosis and none of the women knew anyone going through the same situation as them until they had the support of the Facebook group:

“.....I felt so alone. I was already feeling alone because I’m so young, and all of the resources, even just in person in the city, I had to go to like cardiac rehab, I was 15 to 20 years younger than everyone else in it.” (003).

Another area where the participants lives were altered in terms of their ‘social self’ and their ability to participate in their social world was their ability to travel. Many participants spoke about their love of travel, whether to visit family and friends, or just experience new places. However, with their cardiac diagnosis, travel became restricted due to insurance purposes, medication adjustments and physical limitations. Participant 2 explained how she would travel almost every year to Malaysia and Australia to visit family and friends, but this was no longer an option when she was diagnosed with her cardiac condition:

“Well, I couldn’t (go), because I wasn’t stable. And actually I was going to go this March, but they changed my medication. And the way that the rules are, even if they decrease your medication, you’re not considered stable. It has to be the same medication for six months” (002).

Participant 5 retired when she was diagnosed with cardiotoxicity, however, even with the means to travel, she was unable to. *“I was not able to travel anymore. So, I took my pension. I had the opportunity to travel, but no travel because can go nowhere with this situation”* (005). Participants spoke about how one of the things they look forward to the most when their cardiac condition is more stable, is the ability to travel because in their eyes, life is too short:

"So, we did travel lately a lot because I said I'm not waiting anymore. Let's do it now. So, this is what I was saying to you I'm going to London next Tuesday. I don't wait anymore. It's now. This is another thing that change your life. You say, you know, we'll wait a little bit. No, I don't wait no more because you don't know what you don't know. And for sure not going crazy, but don't wait in 10 years to do what you want to achieve right now because you don't know" (005).

Chapter Summary

The participants experienced alterations to their social worlds in various ways with their diagnosis of cardiotoxicity and cancer. They have had to be fluid with how they have altered the roles within their family, how they maintain their friendships and relationships with the various people in their lives, how they work and the ways they choose to spend their spare time. The participant's cardiotoxicity became embodied when the physical effects of their illness, the shortness of breath, fatigue, and reduced capacity for exercise, affected how they moved through the world thus making it difficult to carry out their social roles in the world. They could no longer be the caregivers for their family (or the 'go-to-person'), they could no longer work the way they once were able to, and they had difficulties maintaining friendships, due to their decreased physical and emotional capacity. Their illness was not just a physical experience, it was embodied through their daily practices, relationships and roles often creating tension and desinence as their actual physical abilities were at odds with their previously established roles and relationships. While each participant had a different way of coping with their newly diagnosed chronic illness, they have learned to adapt as the lives of participants are not stagnant and fixed, but fluid and changing as are their bodies.

Chapter 7: Discussion and Conclusions

This chapter will explore the findings of this research study in relation to relevant literature on how women embody a dual diagnosis of cancer and cardiotoxicity and the effects it has on their everyday lives. To gain a deeper understanding of the findings, theoretical frameworks focused on sociology of the body, specifically embodiment, were utilized to inform the analysis, the discussion, and research findings. Each research question will be answered using literature to strengthen the discussion. Strengths and limitations of the study will be discussed in this chapter. Finally, this chapter will explore how the findings of the study relate to nursing, the implications of the study, and how knowledge translation can be utilized in the future.

Research Question 1: What are women’s embodied experiences of developing cardiotoxicity related to anti-neoplastic therapy?

For women living with cancer and cardiotoxicity caused by anti-cancer treatments, there is no single way to describe their experiences. Many complex factors shape how they understand their diagnoses and how these illnesses are felt and lived within their bodies. The dual diagnosis influences not only their physical health, but also their psychological well-being and everyday relationships. Most importantly, it profoundly shapes how they relate to themselves.

This study offers an initial step toward understanding the experiences of these women. To address this research question, I will examine how trauma and re-traumatization impacts women's embodied experiences of cardiotoxicity. To do so, I draw on relevant literature to support my analysis and engage in a theoretical discussion of women's bodies in the relation to the study’s findings. I then consider how structural factors related to the diagnosis and treatment of cardiotoxicity influence women’s bodies and their decision-making regarding care.

Trauma

There have been numerous studies that provide compelling data that trauma, depression, anxiety and stress, are associated with worse outcomes for people who suffer from heart disease (Alosaimi & Hawa, 2009; Kjærgaard et al., 2014). According to Lorem et al. (2023), "experiencing both anxiety and depressive symptoms does not automatically mean that a person is suffering from a mood disorder" (p. 2). These symptoms can be attributed to trauma and post-traumatic stress disorder (PTSD). Interestingly, PTSD has a "bidirectional relationship with cardiovascular disease" (Lorem et al., 2023, p. 2). PTSD has been found to occur more frequently with people with heart disease and for those who have experienced a traumatic event in their lifetime (Lorem et al., 2023). PTSD is also a risk factor for cardiovascular disease, which can be attributed to stress responses and alterations in behaviours and lifestyle (Edmondson & von Känel, 2017).

Paradoxically, one study found that in-hospital mortality rates were lower for patients with ST elevated myocardial infarctions with a co-diagnosis of depression and/or anxiety. However, this "depression paradox" is attributed to underdiagnosed mental health issues among this population (Pino et al., 2018). Similarly, one study by Vin-Raviv et al. (2015), found that less in-hospital breast cancer patients had a diagnosis of anxiety and depression compared to people without breast cancer. However, this paradox was similarly explained by the underdiagnosing mental health problems among hospitalized breast cancer patients (Vin-Raviv et al., 2015; Pino et al., 2018). In terms of this study, the under reported mental health problems concerning patients hospitalized with cardiac disease makes sense as the mental health resources for participants for cardiac disease was reported to be extremely limited. This was one of the main reasons why the women felt socially isolated and contributed to their experiences of re-traumatization.

While studies concerning women’s experiences of cardiotoxicity secondary to anti-neoplastic therapy are limited, there are studies that examine women’s experiences of living with heart failure. Women with a heart failure diagnosis have reported feeling a “new self-concept" and reported that ‘being ill’ was their new way of life (Allen et al., 2009, p. 98). The participants in this study have been impacted physically by their dual diagnosis. They have experienced cancer, which has altered their body in numerous ways including how they look in terms of their outward appearance, how they feel about their bodies psychologically and how they experience their bodies. This is also consistent with how they have experienced cardiotoxicity. The participants in this study were healthy until their cancer diagnosis, wherein their health was brought to the forefront of their lives, occupying their attention (consciousness). Some of the participants were pregnant for the first time or were new mothers when they received their cancer diagnosis. One participant was a first-year university student, some were raising children, while other participants were becoming established in their careers. The participants went from being ‘healthy women’ to cancer patients. This trajectory of normalcy is consistent with the participants prior to their cardiotoxicity diagnosis as well.

According to Rhodes and Bowles (2002), every aspect of a woman’s life is affected by heart failure. Heart failure has been notably described as having a broken heart (Allen et al., 2009). This is consistent with the findings in this study and the participants gaining a new identity post cardiotoxicity diagnosis. The concept of being ill as a new way of living lends itself into the experience of learning to live with a chronic condition. This includes making changes to activities of daily living and managing symptoms such as shortness of breath and fatigue (Allen et al., 2009). However, as the participants in this study struggled with the re-traumatization aspect of the effects of cardiotoxicity, this could also be described as having an external locus of control, especially at the beginning of their diagnosis, can lead to negative experiences. Locus of control is "the degree of influence that individuals perceive they have over their health" (Checa et al., 2020, p. 13). This could be interpreted as not feeling in control of the disease, especially at the beginning of their diagnosis and lack of empowerment from health professionals (Checa et al., 2020). Issues with follow-up care after diagnosis of heart failure with primary care services is another issue that typically results in hospital re-admissions. This is compounded by the fact that there are limited peer and support resources available to women with heart failure (Checa et al., 2020).

Re-Traumatization

In Crossley's (2006) theory of reflexive embodiment, the body is viewed as an active participant in the social world. This includes the subjective experience of being embodied, meaning the way we move through the world and how we think about our body, especially when ill (Crossley, 2006). According to Crossley (2006), we do not merely live in our bodies, we monitor, reflect and manage them. For the participants in this study, their bodies are constantly in a state of change. They are re-traumatized by their cardiac diagnosis because cardiotoxicity offers no clear endpoint. They live with ongoing fears of being unmonitored, feelings of self-blame, and a sense of distrust toward their own bodies. Their bodies no longer feel 'normal'; they are now viewed—and must view themselves—as requiring constant monitoring because their hearts can no longer be trusted. Furthermore, their condition has no cure, and can only managed through external interventions such as medications, implanted defibrillators or pacemakers, surgery, dietary changes, and increased physical activity. These external interventions create profound internal impacts. An invisible struggle unfolds as their relationship with their bodies is fundamentally altered. Although their cancer may be in remission, their cardiotoxicity remains a constant, traumatic presence.

Previous research has shown that the effects of trauma on health is vast. The experience of cancer itself qualifies as a traumatic event and may lead to post-traumatic stress syndrome (Rustad et al., 2012). According to the American Psychiatric Association (2022), "the essential feature of posttraumatic stress disorder (PTSD) is the development of characteristic symptoms following exposure to one or more traumatic events. The clinical presentation of PTSD varies. In some individuals, fear-based reexperiencing, emotional, and behavioral symptoms may predominate. In others, anhedonic or dysphoric mood states and negative cognitions may be most prominent. Finally, some individuals exhibit combinations of these symptom patterns" (n.d.). There is an increased incidence in symptoms of post-traumatic stress symptoms among cancer patients and survivors relative to the general population (Rustad et al., 2012). In turn, stressful life experiences are related to decreased cancer survival and increased rates of mortality (Chida et al., 2008). The participants in this study have experienced trauma with their cancer diagnosis on multiple levels. There is the uncertainty pertaining to their survival, and there is also the uncertainty and fear of how this diagnosis will affect the lives of the people around them. "Cancer represents an existential threat" (Cordova et al., 2017, p. 334). This is because cancer challenges one's identity and their sense of control in life.

There has been research conducted on those with a history of trauma and how it affects one's journey with cancer in terms of seeking and receiving care (Marshall et al., 2023). The entire experience of cancer itself, from diagnosis to treatment, can lead to trauma and may require an increase in support. However, trauma experienced from healthcare can occur at any point even prior to treatment and during non-cancer related care activities (Davidson et al., 2023). Typically, in this study, the participants noticed something was wrong with their bodies when they began experiencing symptoms such as fatigue, shortness of breath on exertion, and weight gain. These symptoms brought the participant’s bodies to the forefront of their consciousness again as these symptoms caused a disruption in their ability to participate in their daily social worlds. Crossley’s posits that this is ‘episodic’ as these changes may be gradual (Crossley, 2006). This is consistent with the fact that some participants in the study lived with symptoms of cardiotoxicity for years prior to being diagnosed. While these symptoms existed at length, they were brought in and out of their consciousness until they ended up in the emergency room, or in one case, one day away from life-altering surgery, prior to being diagnosed. Once they received their diagnosis of cardiotoxicity, typically in the form of heart failure, they became acutely aware of their bodies and the uncertainty that this illness caused for them. This required lifestyle changes, such as diet and exercise, taking daily medications, surgical intervention, such as valve replacements, and/or lifelong implanted devices such as pacemakers and internal defibrators. In addition to all the lifestyle changes, there was the need to continually follow up with healthcare providers to ensure their condition was not worsening. This heightened awareness of the body aligns well with the participants being in a reflexive state. They are trying to navigate their bodies in this new way of life as they now have experienced multiple life altering diagnoses. This ‘medical surveillance’, or at times lack of surveillance following their diagnosis, according to the participants in this study, is consistent with how women experience their bodies. The participants are expected to live with this new identity even though the ongoing self-monitoring and management can lead to re-traumatization.

For people with cancer, when care needs are not met, overall life satisfaction may suffer as a consequence (Mitchell et al., 2025). Even for cancer survivors, the years of surveillance including follow-up appointments, scans, and screenings can also be re-traumatizing (Fulton et al., 2024). According to Fulton et al. (2024), "cancer patients may be vulnerable to traumatization or re-traumatization due to the numerous medical exams and recounts of their medical history" (p. 1078). A patient's willingness to participate in screening, treatment and follow-up care may also be compromised by re-traumatization (Davidson et al., 2023; Cordova et al., 2017; Hanna et al., 2020; Regal et al., 2020). In turn, this may lead to increased risk of future cancer, a decrease in early detection and worse treatment outcomes (Rustad et al., 2012). For the participants in this study, the trauma associated with the cancer diagnosis was a cause of the re-traumatization effects experienced through their cardiotoxicity diagnosis. This may have inadvertently affected their cardiotoxicity diagnosis as they may have been diagnosed sooner if they had not felt the effects of trauma from cancer.

Experiencing post-traumatic stress symptoms in the context of cancer can involve altered interpretations of events. These may include an inability to recall aspects of cancer treatment, self-blame for the diagnosis, a loss of interest in activities that were previously enjoyable, and changes in life goals and priorities (Cordova et al., 2017). For participants in this study, re-traumatization related to cardiotoxicity occurred through fears of inadequate monitoring following hospital discharge, self-blame for not recognizing symptoms sooner, uncertainty about whether or when their symptoms would improve, and social isolation resulting from feelings of alienation.

Trauma can occur at any age and at any time in a person's developmental stage. Trauma can also often occur outside of expected life stages, such as unexpected events (Center for

Substance Abuse Treatment, 2014), such as cancer. Re-traumatization can occur when a person feels as though they are undergoing another trauma. "Unfortunately, treatment settings and clinicians can create retraumatizing experiences, often without being aware of it, and sometimes clients themselves are not consciously aware that a clinical situation has actually triggered a traumatic stress reaction" (Center for Substance Abuse Treatment, 2014, P. 45). Many of the participants felt discredited by healthcare providers leading to re-traumatization. For the participants in this study re-traumatization occurred in numerous ways including but not limited to: 1) failing to provide a sense of safety and trust, 2) limiting the client in terms of knowledge about the treatment plan and process, 3) discrediting the client in terms of what they are experiencing (Center for Substance Abuse Treatment, 2014).

Theorizing Women's Bodies: Cancer and Cardiotoxicity

In Volatile Bodies Theory, Grosz (1994), a feminist theorist who writes on women's bodies, posits that our bodies are active and volatile. According to Grosz (1994), our bodies are socially, politically and sexually constructed within the world we live in and are constantly unstable. Consistent with reflexive embodiment, with the cancer treatments that the participants had, their bodies were 're-shaped' by treatment. The anti-neoplastic therapy entered their body and transformed it. Chemotherapy, while life-saving, makes the body ill in different, uncontrollable ways. While the goal is for the body to heal from the cancer, it is being damaged. For the participants in this study, it was the women's hearts that were affected. This is consistent with Grosz's idea that the body is not a stagnant, rather, it is in a state of flux and is volatile through the interventions to help heal it. It is also a site of medical control. The participants did consent to have chemotherapy but the idea of acceptable risk and how it is 'saved' can have different internalized meanings to people. While the participants were told that their best chance of survival from cancer was with anti-neoplastic therapy, many of the participants did not remember being told the risk of damage to their heart. The participants spoke about how they took medications daily, had surgical intervention for failing heart valves, and required internal permanent pacemakers and/or defibrators placed in their chest to ensure that their hearts would continue to beat.

The participants adapted to this 'new identity' they were given and learned to live with these changes which is consistent with reflexive embodiment. They went from healthy women to cancer survivors. They recognized that remission from their cancer was not an end point, rather, it was a volatile and unpredictable state. Participants spoke about the fear they experienced with even minor health concerns. There was an ever-present fear that their cancer would return.

Self-Blame and Chronic Illness

This study found that participants frequently blamed themselves for not recognizing changes to their cardiac health. Research that examines the relationship with self-blame and cardiac conditions are limited. One systematic review found that there were low levels of self-blame when it came to developing conditions such cancer (Callebaut et al., 2017). However, when self-blame does occur, it is associated with high levels of emotional distress which may require improved access to psychosocial support (Callebaut et al., 2017). Self-blame is related to poor adjustment and psychological distress at the time of diagnosis for breast cancer as well as various points throughout follow-up post-diagnosis (Bennett et al., 2005; Harry et al., 2015). For people with cardiovascular disease who attended cardiac rehabilitation, those who attributed self-blame to previous behaviours reported more depressive symptoms at the end of cardiac rehabilitation, while those who characterised their self-blame as a flaw in their character, reported more cardiac symptoms 18 months post cardiac rehabilitation (Harry et al., 2015). This suggests that self-blame is aversive to health outcomes and healthcare providers should identify and intervene when people are engaging in self-blame (Callebaut et al., 2017; Harry et al., 2015).

Fear of not being monitored post cardiotoxicity diagnosis was a reality faced by the participants in this study. Many of the participants were admitted to hospital due to the severity of their cardiotoxicity in the form of heart failure and others were followed intermittently by either their general practitioner or a cardiac specialist following their diagnosis. One aspect of the re-traumatization that the participants experienced was the fear associated with lack of monitoring. The term “post-hospital syndrome” has been used to describe this crucial 30-day period post hospital discharge wherein the person experiences psychological and physiological stress lingering from the original acute illness (Krumholz, 2013). This readmission risk typically stabilizes around seven weeks (Dreyer et al., 2017). Treatment for heart failure is one of the most common causes for hospital re-admission (Krumholz, 2013), as nearly one in five patients admitted for heart failure are readmitted to hospital within 30 days of discharge (Khera et al., 2018). To help prevent hospital readmission and properly prepare patients for discharge, it has been found to be invaluable to create personalized care plans for outpatient follow-up. “The success or failure of a patient's recovery depends on both the follow-up plan and the effectiveness with which this plan has been communicated and codeveloped.” (Caraballo et al., 2019, p. 898). People diagnosed with heart failure who are followed by both a specialist and their family physician, have significantly better survival rates compared to people followed by a family physician alone (Ezekowitz, 2005).

Research Question Two: How does this dual diagnosis impact women’s ability to participate in their daily social worlds?

Women living with chronic health conditions have been widely examined in the literature (Asbring, 2001). Chronically ill women face a range of social consequences, including changes in identity, challenges related to employment, financial strain such as unemployment, and social and relational difficulties (Asbring, 2001). The findings of this study reveal many areas of overlap with this literature. However, research specifically examining women living with cardiotoxicity remains limited. Women living with heart disease are not affected in only one area of their lives; rather, it is a multifaceted experience that affects women both physically and psychosocially (Rhodes & Bowles, 2002).

One key aspect of Crossley's (2006) theory that aligns with the findings of this study is the recognition that bodily impairments generate social and relational challenges. Crossley (2006) also emphasizes how social norms shape the ways individuals experience their own bodies. Health, therefore, is not solely about bodily function, but about the body as a means of accessing and participating in social life. The participants in this study are not passive recipients of cancer and cardiotoxicity. Their dual diagnosis is not simply something that happens to them or affects only their physical bodies. Instead, it shapes how they embody their experiences and, in turn, how they move through the social world. This embodiment influences everyday practices, including what they eat, career participation, and their presence within family and social roles. Many participants described having to significantly alter how they eat and prepare food. Some also spoke about visible bodily changes, including scars from mastectomies, pacemakers, and surgical procedures. All participants acknowledged the profound impact of these diagnoses on their relationships, describing lost friendships, feelings of isolation, fears of frightening their children and partners, and strained or fractured intimate relationships.

While Crossley's (2006) work provides a valuable framework, it is also important to consider how a feminist perspective further illuminates the ways women's daily social worlds are shaped by a dual diagnosis of cancer and cardiotoxicity. Sick Woman Theory posits that the world itself contributes to making and keeping individuals ill (Hedva, 2022). From this perspective, the body carries the traumas of the social structures in which it exists, including those of a patriarchal society (Hedva, 2022). Although women are told—and expected—to undergo cancer treatment in order to survive, the treatments themselves often produce long-term illness. Beyond well-documented side effects such as hair loss, weight changes, fatigue, and nausea, cancer treatments can also result in more insidious and enduring effects, including cardiotoxicity. While many acute side effects resolve following the completion of treatment, damage to the heart often persists. Women are thus required to adapt to a new chronic condition, and although cardiac function may improve for some, this outcome is not guaranteed.

Despite widespread knowledge of common cancer-related side effects, research on cardiotoxicity remains comparatively limited. Many participants in this study reported that they were unfamiliar with the concept of cardiotoxicity prior to their diagnosis. When they attempted to connect with other women who shared similar experiences, they often felt isolated and unsupported. As Hedva (2022) suggests, this reflects a broader gap in addressing the gendered chronic care needs of women.

Sick Woman Theory characterizes chronic illness as "a relentless rationing of energy," with significant physical costs associated with carrying out everyday activities (Hedva, 2022, p. 2). Illness, according to Hedva (2022), is not merely a biological process but is shaped by social, political, and cultural forces. From this perspective, illness is not a personal failure but a systemic one. Women are expected to undergo chemotherapy to preserve their lives, yet the very treatments that save them may also cause long-term harm and disrupt their lives in profound ways. Hedva (2022) further argues that women's symptoms are often not recognized or taken as seriously as those of men. In the context of this study, this meant that participants' symptoms of cardiotoxicity were frequently dismissed by healthcare professionals until they reached a critical stage. Many participants described presenting to emergency departments with symptoms of acute heart failure before receiving an explanation for what was occurring. Others recalled being briefly informed of cardiotoxic risks associated with chemotherapy but without fully understanding their implications. Some participants were told their symptoms were attributable to menopause, while others had their concerns minimized by healthcare providers. It was only when symptoms became severe and difficult to ignore that their experiences were legitimized and ultimately identified as cardiotoxicity.

Illness and Work

One of the most significant ways in which women in this study, who were living with a dual diagnosis of cancer and cardiotoxicity, were impacted in their daily social lives was in their ability to manage their careers. Physical limitations, particularly fatigue, played a major role in limiting women's capacity to work as they had prior to experiencing symptoms of cardiotoxicity. Adverse symptoms and chronic illness can significantly affect a woman's ability to work (Gjellestad et al., 2023). As Vickers (2001) notes, "having any chronic illness presents problems for anyone trying to work, as chronic illness does not follow the predictable route of warning signs, illness, recuperation and recovery" (p. 65). This is especially true for women living with chronic conditions, as there is often no clear endpoint to their illness trajectory.

In addition to hormonal changes and reproductive-related conditions, chronic illness and complex disorders have been shown to affect women's work ability (Gjellestad et al., 2023).

However, gaps remain in the literature regarding the specific impacts of chronic pain and fatigue on women's working lives (Gjellestad et al., 2023). Prior to a cancer diagnosis, women have described work as time-consuming, yet also as an important source of social connection, self-meaning, and self-worth (Gershfeld-Litvin et al., 2025). Following a cancer diagnosis and during the return-to-work process, these perceptions often shift. Work becomes more difficult to balance due to ongoing follow-up appointments, changing employer expectations, and the need to renegotiate work–life balance (Gershfeld-Litvin et al., 2025). For women living with an invisible illness, there is often a fear that colleagues will assume they are well based on outward appearances. This assumption overlooks the realities of chronic illness and reflects a broader lack of understanding of what women with chronic health conditions are truly experiencing (Vickers, 2001).

For women living with chronic health conditions, including heart failure, one of the most challenging aspects of daily life is learning to cope with persistent fatigue and a loss of control over physical symptoms (Rhodes & Bowles, 2002). Feelings of depression, sadness, and loneliness are common among women with heart failure, particularly as physical limitations—especially low energy—may prevent them from fulfilling caregiving roles (Rhodes & Bowles, 2002; Checa et al., 2020). Fatigue is also identified as one of the most common and distressing symptoms experienced by individuals living with heart failure (Hägglund et al., 2008).

The Role of an Ill Woman

There has been research that examines the risk of traditional gender and roles and the impact it has on women's health in terms of cardiovascular disease and women's health. Grosz's (1994) theory aligns well with the findings of this study is in terms of women's experiences with gender. The types of cancer treatments available for women, especially for breast cancer including anthracyclines and HER2-inhibitors (trastuzumab), put women at higher risk for cardiotoxicity (Herrmann et al., 2022). This is consistent with Grosz's (1994) belief illness is medicalized in terms of gender. In this case, there is a gendered cost to survival of cancer. There is also the fact that for many of the participants, their cancer treatments induced early menopause. This was counteracted with hormone therapy but is a uniquely female side effect as men do not experience menopause. This impacted their bodies in numerus ways both physically and cognitively (brain fog). This gendered difference affected how participants experienced their illness, how they were diagnosed, and how they are treated. Medical professionals commonly believe that participant's weight gain, fatigue and general malaise were due to other factors, even though their symptoms of cardiotoxicity progressed to impact their daily lives, careers, and relationships with others.

Relationships and Illness

Psychosocial factors including social support and social isolation have been found to be causal risk factors for both cancer and cardiovascular disease (Pikhart & Pikhartova, 2015). For people with chronic medical conditions, feelings of social isolation, loneliness and disruptions in friendships are prevalent (Moensted et al., 2023). Bury (1982), wrote about having a chronic illness as a 'biological disruption'. Within this disruption, there are changes taking place at a physical level, a social level and within ones perceived sense of self. There is a disconnection between a person's past healthy self and the current self that is ill (Bury, 1982). There is a shift that occurs when one is diagnosed with a chronic disease as there are pressures to maintain social norms concerning the appearance of having a healthy body, friendship and socialization (Moensted et al., 2023). There is a struggle that exists for people with chronic medical conditions because want to be seen as their 'authentic self' with the complexities of their illness, however, they also hide parts of themselves due to feelings of rejection, disappointment and loss of dignity (Moensted et al., 2023; Iovino et al., 2023). There is also a lack of understanding as to what people with chronic health conditions are going through (Iovino et al., 2023). Social support, especially in the form of support groups, help provide a sense of empathy and understanding for others going through a similar journey. They can also be valuable in offering practical advice and shared experiences for complex situations (Borkowski & Borkowska, 2024). The participants in this study felt isolated in their daily social world with their dual diagnosis. While they sought support from peer groups, they spoke about how they did not know other people with the same diagnosis as them. This was the reason why many of them turned to Facebook to find connection with others having the experiences as them.

Study Strengths

This study is the first to explore women's embodied experiences of living with a dual diagnosis of cancer and cardiotoxicity caused by anti-neoplastic therapy. Although conducted in Canada, the findings are relevant to other countries with similar demographic characteristics. While quantitative research exists on women with cancer and cardiovascular disease, this study provides unique insight into the everyday challenges faced by women living with both conditions and highlights how healthcare providers can better support them. Despite having only seven participants, the data was rich and offered detailed accounts of navigating this dual diagnosis. The study is also distinctive in its integration of nursing practice and sociological theory, allowing for a more holistic and nuanced analysis.

Using a qualitative approach enabled participants to guide the interviews in ways that reflected their lived experiences and embodied realities. Demographic questions were posed in an open manner, allowing participants to self-describe and elaborate when they felt it was important. Data analysis relied on inductive coding techniques, ensuring the interpretation remained grounded in participants' own words and perspectives. Conducting one-on-one virtual interviews made it possible to include women from across Canada, generating insights that reflect experiences from multiple regions rather than a single province. This format also provided flexibility and convenience for participants, allowing them to take part from their own homes and at times that fit their schedules.

Study Limitations

One of the primary limitations of this study is related to the lack of diversity among participants. While the study included one participant who identified as Indigenous, one who identified as Asian, and another who identified as disabled, a larger number of participants from these groups would have strengthened the diversity and depth of perspectives. Including women from a broader range of socioeconomic backgrounds—particularly those with lower incomes—would also have enhanced understanding of how financial and social circumstances shape experiences of cardiotoxicity secondary to cancer. Although the study recruited participants from across Canada, conducting interviews virtually may have limited the researcher's ability to observe subtle nonverbal cues or contextual nuances that could have been captured in an in-person, home-based setting.

Another major limitation involved the recruitment method. Participants were recruited through the Facebook group *Canadian Women with Medical Heart Issues*, which restricted the sample to women who were members of this online community. Women without access to Facebook, or who were unaware of this specific group, were excluded despite the potential value of their experiences—particularly those who lack peer support or the technology needed to engage in online spaces. Future research would benefit from recruiting through clinical settings where women are treated for cardiotoxicity related to anti-neoplastic therapy, as this approach would reach a broader and more representative population.

Implications for Nursing

This study provides insight into the social worlds and embodied experiences of women living with a dual diagnosis of cancer and cardiotoxicity. It highlights how physical symptoms, such as fatigue and shortness of breath, along with the emotional burden of chronic illness, shape how these participants move through their social worlds. The findings also demonstrate how feelings of re-traumatization related to the cardiac diagnosis are rooted in the initial cancer diagnosis. These experiences further alter embodiment in relation to the roles women occupy in their everyday lives and their relationships within the social world.

While each participant's experience was unique, consistent themes emerged across the data, suggesting important implications for future nursing practice. Moving forward, it is essential to apply these findings across the diverse roles of nurses in order to improve the quality of life for women living with this dual diagnosis. The following section will address the implications of this study's findings for nursing practice and nursing education.

Nursing Practice

The study showed that participants felt their cancer treatment was treated as the endpoint of their medical care and follow-up. Although many were informed about the potential cardiotoxic effects of anti-neoplastic therapy, they did not routinely access secondary screening services. Participants described feeling lost within the complexity of the health care system and typically re-engaged with care only when their conditions had progressed to tertiary stages. Registered Nurses are well positioned to help close these gaps, including Nurse Practitioners who can provide cardiac screening and follow-up for women at risk of long-term effects from anti-neoplastic therapy. The study also highlighted the need for sustained mental health support. Registered Nurses can play a key advocacy role after cancer treatment by helping patients access clinical care, education, and emotional or mental health resources.

While organizations such as CancerCare Manitoba offer after-care programs, it remains essential to connect patients with community-based services that support ongoing health maintenance and long-term monitoring for treatment-related complications. The findings also underscore the importance of integrating embodied education approaches in clinical practice as this dual diagnosis is multifaceted.

Nursing Education

Nurses can also apply these study findings in their role as educators. The women in this study experienced significant trauma throughout their cancer and cardiac journeys, and it is essential for healthcare providers to recognize this and offer care that is trauma-informed, empathetic, and grounded in open, therapeutic communication. Trauma-informed strategies include creating a sense of safety, fostering collaboration, providing consistent support, and avoiding practices that may trigger re-traumatization (Center for Substance Abuse Treatment, 2014).

At the university level, nursing students would benefit from learning trauma-informed care principles through coursework, and this training could extend across disciplines since all healthcare providers should be equipped with these approaches. This could also be expanded into learning about how women embody illness. Ongoing education, such as annual e-modules on trauma-informed care, may further strengthen nurses' skills. Additionally, provincial regulatory bodies such as the College of Registered Nurses of Manitoba, which requires nurses to complete yearly jurisprudence modules, could consider dedicating one year's module to the embodiment of illness and trauma-informed care to enhance knowledge and practice across the profession.

Future Research

Going forward, it is important to continue to do research with this cohort of women as it has already been established that there is a lack of qualitative research in this area. Future research needs to gain a broad understanding of the needs of these women from more diverse backgrounds both culturally and socioeconomically. Also, the participants in this study were recruited from a support group for women with medical heart issues stemming from cancer therapy. It would be beneficial to research women who have had no access to support groups and learn about their experiences by recruiting through a cardiac clinic instead. Furthermore, it would be beneficial to research secondary screening programs to aid with early detection of complications, such as cardiotoxicity, after cancer therapy.

Formal Recommendations

The participants in the study provided rich understandings of their embodied experiences of living with a dual diagnosis of cancer and cardiotoxicity. From the data analysis, it become clear that the participants had gaps in care in numerous ways that nursing interventions could help close. Due to the emotional burden that participants face with their cardiotoxicity diagnosis and the re-traumatization that occurs, it is imperative for these women to have access to ongoing psychosocial support. Participants spoke about how they felt alone in their grief of being diagnosed with cardiotoxicity and improved psychosocial supports could help them to better manage the heavy emotional trauma women go through upon receiving this life altering diagnosis. Also, by having improved screening for women at high risk for developing cardiotoxicity secondary to anti-neoplastic therapy, symptoms of heart failure may be recognized sooner and possibly treated sooner as well.

Finally, the participants in this study demonstrated the complexities of embodying a dual diagnosis of cancer and cardiotoxicity in different ways. For example, while most of the women felt well supported throughout their cancer diagnosis, the women had the opposite experience with their cardiotoxicity diagnosis. Their cancer could be felt and seen in the form of a lump for example, but the effects of their cardiotoxicity were not as visible. The experience was more subjective by the participants. By providing healthcare providers education on what embodiment means and how it can vary, healthcare providers can learn to look beyond the view of illness as a singular experience and instead better understand the complexities that illness can produce in terms of the individual person, especially for women. This could help ensure that patients receive empathetic, holistic and compassionate care at a difficult time in their lives.

Formal recommendations for stemming from the data in this study going forward include:

1) Provide women who are at high risk for cardiotoxicity secondary to their cancer treatment the option for access to long-term psychosocial services including mental health care.
2) Provide women who are at high risk for cardiotoxicity secondary to their cancer treatment improved secondary screening. For example, the option to be followed by a Nurse Practitioner who specializes in cardiovascular care for yearly monitoring or to create registered nurse based interventions or support groups capable of referring women to this type of care.
3) Education for healthcare providers on embodiment of illness in the context of cancer treatment and its side effects such as cardiotoxicity.

Knowledge Translation Plan

To effectively disseminate research findings, it is essential to develop a clear plan that enables others to access and learn from the study (Polit & Beck, 2021). Study participants will have the option to receive the study results once they become available. In the weeks following this thesis defence and upon completion of the required revisions from my committee, the thesis will be submitted to the University of Manitoba's institutional repository, MSpace. MSpace is an institution-wide, open-access database that houses scholarly work produced by University of Manitoba students and is accessible to all University of Manitoba faculty and students (University of Manitoba, n.d.).

I plan to publish two manuscripts based on the findings chapters of this thesis. The first manuscript will be submitted for review to the *Canadian Journal of Cardiovascular Nursing* (CJCN) and will focus on cardiotoxicity as a side effect of anti-neoplastic therapy, with particular attention to women's experiences of this diagnosis. This manuscript will also offer recommendations for nursing practice within cardiovascular care contexts. The second manuscript will be submitted to *Sociology of Health & Illness*. This article will introduce the phenomenon of cardiotoxicity following cancer treatment and examine themes of traumatization and fluidity in relation to the study's findings.

There are also opportunities to disseminate the research findings through presentations at the Helen Glass Research Symposium in 2026, Nursing Grand Rounds, the Association of Regulated Nurses of Manitoba's Talk Tuesday series, and the annual Canadian Cardiovascular Congress (CCC).

Thesis Conclusion

This study explored the embodied experiences of women living with cardiotoxicity secondary to anti-neoplastic therapy and examined how this diagnosis shapes their everyday lives. The seven women who participated in the study each brought unique experiences; however, shared themes emerged across their narratives. Although there has been a notable gap in research addressing the lived experiences of women with this dual diagnosis, this study contributes to filling that gap by offering deeper insight into their lives.

While these women have experienced re-traumatization and have been profoundly affected by living with a dual diagnosis across multiple aspects of their lives, it is important to recognize that they are not defined solely by their illness. They are mothers, daughters, grandmothers, aunts, caregivers, partners, friends, and more. They care for family and friends, participate in the workforce, and travel. Although their lives have been altered by the effects of illness, they continue to move forward.

By gaining a deeper understanding of these women’s experiences, healthcare providers can better support them through their journeys and deliver empathetic, trauma-informed care.

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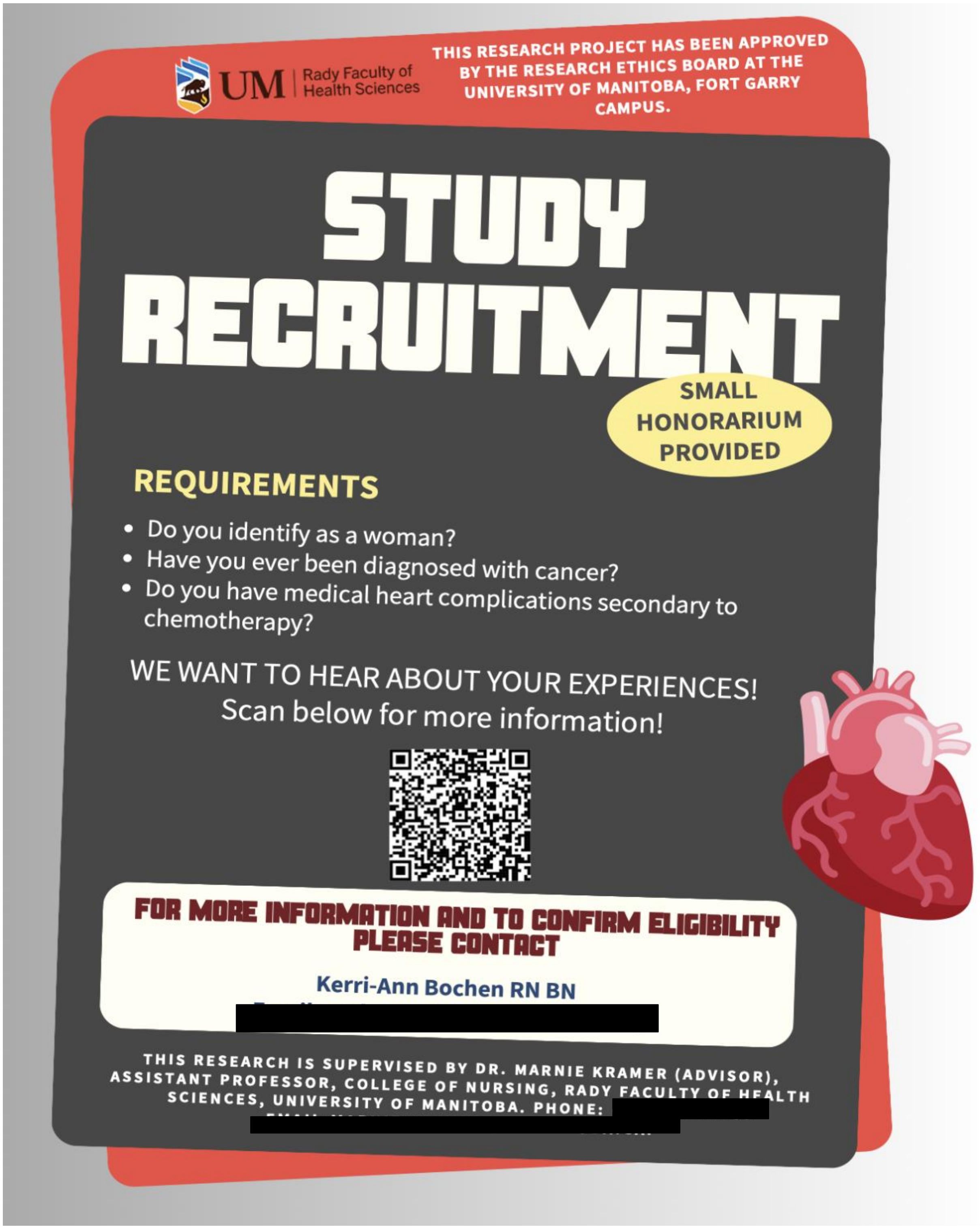
Appendix A: Recruitment Poster



UM | Rady Faculty of Health Sciences

THIS RESEARCH PROJECT HAS BEEN APPROVED BY THE RESEARCH ETHICS BOARD AT THE UNIVERSITY OF MANITOBA, FORT GARRY CAMPUS.

STUDY RECRUITMENT

SMALL HONORARIUM PROVIDED

REQUIREMENTS

- Do you identify as a woman?
- Have you ever been diagnosed with cancer?
- Do you have medical heart complications secondary to chemotherapy?

WE WANT TO HEAR ABOUT YOUR EXPERIENCES!
Scan below for more information!

FOR MORE INFORMATION AND TO CONFIRM ELIGIBILITY PLEASE CONTACT

Kerri-Ann Bochen RN BN
[redacted]

THIS RESEARCH IS SUPERVISED BY DR. MARNIE KRAMER (ADVISOR), ASSISTANT PROFESSOR, COLLEGE OF NURSING, RADY FACULTY OF HEALTH SCIENCES, UNIVERSITY OF MANITOBA. PHONE: [redacted]
[redacted]

Appendix B: Consent Form

College of Nursing
Helen Glass Centre for Nursing
89 Curry Place
University of Manitoba
Winnipeg, MB R3T 2N2 Canada
nursing@umanitoba.ca
T: (204) 474-7452
F: (204) 474-7692

Research Project Title: Beyond the Diagnosis: Women's Experiences of Cardiotoxicity Secondary to Cancer Treatment

Principal Investigator:
Kerri-Ann Bochen
Master's Student
College of Nursing
Rady Faculty of Health Sciences
University of Manitoba
[redacted]

Dr. Marnie Kramer **(Advisor)**
Assistant Professor
College of Nursing
Rady Faculty of Health Sciences
University of Manitoba
[redacted]

Committee Members:
Dr. Christopher Fries, Associate Professor, Faculty of Arts, University of Manitoba
Dr. Genevieve Thompson, Associate Professor, College of Nursing, University of Manitoba
Dr. Davinder Jassal, Professor in the Department of Internal Medicine

This consent form, a copy of which will be left with you for your records and reference, is only part of the process of informed consent. It should give you the basic idea of what the research is about and what your participation will involve. If you would like more detail about something mentioned here, or information not included here, you should feel free to ask. Please take the time to read this carefully and to understand any accompanying information.

Purpose of the Study

You are invited to participate in this research study about understanding the experiences of women who develop cardiac complications from cancer therapy. We would like to understand your direct experiences of developing cardiotoxicity secondary to cancer treatment and to explore how this diagnosis has impacted your daily life.

Study Procedures

We would like your permission to complete a one-hour in-depth interview. During this interview we will invite you to share your experiences of developing complications from cancer therapy and will ask questions about how this has impacted your views on health and your daily life. This interview can be over a virtual platform (University of Manitoba Licensed Zoom Account) or in-person (at a location of your choice) depending on your availability. The interviews will be recorded and the conversation transcribed. There will also be a short demographic form to fill out during the time of interview.

Benefits of Participating in the Study

Your participation is important to us and will help us to better understand how to support women who are living with cardiac complications from cancer therapy. Results from this study will be utilized to develop direct supports.

Risks of Participation

You will be asked about your experiences of cancer which may be distressing. For some participants, this may be difficult given your experiences and the impact of complications resulting from therapy in your daily lives. A list of counselling services will be provided to you by the research team.

Confidentiality

All the information you provide as a participant in this study is confidential which means the research team must keep it safe. We will do our best, however, it is not possible to guarantee absolute confidentiality. We will only share your personal information if required (court order or law). We/my advisor have/has professional obligations to report information to appropriate authorities. Examples of when information is required to be disclosed includes expression of suicidal ideas or the presence of an infectious disease.

The in-depth interview will be audio-recorded (or video recoded using UmZoom if preferable). All audio-recordings will be transcribed by a professional transcription company who has signed a confidentiality agreement. Your data will be coded by the PI and Dr. Kramer, meaning that your name or any other data that may identify you will be removed from the transcripts. Demographic data, included in the interview, will be audio-recoded and the answers recorded electronically by the PI. The demographic data form will be stored on the University of Manitoba's secure password protected server. Only the PI and Dr. Kramer will have access to this password.

The PI will keep the file with your name, contact information, and code separate from the research information you share with the rest of the research team. When we share the results of this study, we will combine everybody's responses. We may use some of your information through quote. The quotes will not include your name or any other identifying information.

All data will be stored on a password protected server by the University of Manitoba. Participants within the study will not be known to any members of your treatment team. All recordings will be destroyed after the recordings are double checked from the transcriptions by the PI. They will be destroyed by September 2025. Participants will have the opportunity to view their own transcripts if they are interested. All remaining data and transcripts will be destroyed three years from the study date (September 2028).

Your research information may be shared outside of the University of Manitoba with researchers, other organizations, and-or made publicly available. The information is being shared for further analysis as part of the research study, and/or because it is required by a funder or journal. It will not include your name or any information that could identify you.
The recording transcript will be sent to you via email. You will have until **May 1st, 2025** to review and edit the recordings. If the researcher does not hear from you by this date, we will assume you are permitting all information to be used in the study.

Renumeration for Participation
Participants will be forwarded a $50.00 honorarium in the form of an e-transfer directly to their email in appreciation for your time. Please note that we will keep a copy of the sent email for our records. You will receive the honorarium via email once consent is obtained.

Conflicts of Interest
Dr. Davinder Jassal, a committee member involved with the research study, may be involved in your care as he is a cardiologist that typically works with cancer patients. To help prevent this relationship from affecting your decision to participate, the following steps have been taken:

2) All data visible to Dr. Jassal will be anonymized. He will not know the names or any other identifying information of the participants in the study.
2) Recruitment will be done independently of Dr. Jassal's cardiology clinic.

Withdrawing from the Research
Your participation in this study is completely voluntary. You can choose to do only the activities and/or answer only the questions that you are comfortable with. You may withdraw from the study for any reason. You do not have to explain why. You will not be penalized in any way. You will keep your honorarium. Should you withdraw part way through the study, all your information will be destroyed unless you have consented to allowing us to keep it. You may stop the interview at any time. The last date of withdrawal from the study is **August 1st, 2025**. After this date. We will start to analyze the information so it may not be possible to withdraw your information. To withdraw please contact Kerri-Ann Bochen at [redacted] [redacted] Dr. Marnie Kramer at [redacted] [redacted]

Debriefing of the Study and Dissemination of Research Results
The study results will be shared through: 1) the publication of a master's thesis; 2) journal publications and presentation in relevant academic fields; 3) a summarized report of the study results to be sent to interested participants.

Questions or Concerns

Designated University of Manitoba personnel may check that this study is begin done safely and properly. To do this, they may visit the study site or review the records. We will tell you if someone outside the research team will be there while you are participating. If this makes you uncomfortable, please tell a member of the research team, who will ask the personnel to return at another time.

This research has been approved by the Research Ethics Board at the University of Manitoba, Fort Garry campus. However, this does not mean that participation is risk-free. If you have any question, concerns or complaints about this project, you may contact any of the above-named persons or the Human Ethics Officer at 204-474-7122 or humanethics@umanitoba.ca. A copy of this consent form may be printed for you to keep for your records and reference.

Consent

By agreeing to be a part of this study, I agree that:

- I have read the above information or had it read to me.
- I have had the opportunity to ask and have answered all of my questions.
- I understand what is being asked of me.
- I will be taking part in a research study.
- I may freely stop or leave the research study activities at any time.
- My information may be shared outside the University of Manitoba.
- I do not waive my legal rights by participating in the study.
- I agree to be audio (and/or video) recorded in this study.

Notice Regarding Collection, Use, and Disclosure of Personal Information

Your personal information is being collected under the authority of the University of Manitoba Act. The University of Manitoba is committed to preserving your right to privacy. The information you provide will be used by the University to support our research. Your personal information will not be used or disclosed for other purposes, unless permitted by the Freedom of Information and Protection of Privacy Act or The Personal Health Information Act. If you have any questions about the collection of personal information: Ph: 204-474-9462 or email: fippa@umanitoba.ca.

Thank you for your time and for agreeing to be a part of this study.

Appendix C: Recruitment Letter

University of Manitoba | Rady Faculty of Health Sciences

College of Nursing
Helen Glass Centre for Nursing
89 Curry Place
University of Manitoba
Winnipeg, MB R3T 2N2 Canada
nursing@umanitoba.ca
T: (204) 474-7452
F: (204) 474-7692

Research Project Title: Beyond the Diagnosis: Women's Experiences of Cardiotoxicity Secondary to Cancer Treatment

We invite you to participate in a research study focused on understanding the experiences of women who develop cardiac complications from cancer therapy. We would like to understand your direct experiences of developing medical heart issues secondary to cancer treatment and to explore how this diagnosis has impacted your daily life.

The purpose of this study is to learn how to help women with regards to developing medical heart complications secondary to cancer treatment in order to help maintain optimal health. By learning about women's experiences and their relationships with their body we as researchers can learn how this illness impacts daily life so we can better support women in Canada.

Inclusion criteria includes:
1. Participants must be over the age of 18
2. Participants must have a dual diagnosis of cancer and cardiotoxicity from anti-neoplastic therapy. This will include a decrease in left ventricular ejection fraction of more than 10% below the lower limit of normal.
3. Participants will need to be English speaking for the interviews
4. Participants must engage in the process of informed consent
5. Participants must reside in Canada
6. Participants must consent to having their interview recorded
7. Participants must identify as a woman

We will ask you to participate in a one-hour interview which you can choose to complete in person or via a virtual UofM Zoom Platform. We will schedule this interview at a time that works best for you. There will also be a demographic questionnaire completed at the time of the interview. Participants will be given a $50.00 honorarium for their participation.

This research project has been approved by the Research Ethics Board at the University of Manitoba, Fort Garry Campus. If you have any questions or concerns about the conduct of this study, you can contact the Human Research Ethics Coordinator at humanethics@umanitoba.ca.

If you have any questions about the study itself, please contact Kerri-Ann Bochen at
[redacted]

We thank you in advance to contributing to our study.

Best wishes,

Kerri-Ann Bochen (she/her)
Master's of Nursing Student
College of Nursing
Rady Faculty of Health Sciences
University of Manitoba

Dr. Marnie Kramer (Advisor)
Assistant Professor
College of Nursing
Rady Faculty of Health Sciences
University of Manitoba
[redacted]

Appendix D: Demographic Questionnaire

The following is the demographic questionnaire asked at the end of each interview. Participants were informed by the researcher that they may not answer questions if they are not comfortable doing so. The questions below are adapted from the University of Manitoba's demographic question guidelines.

Demographic Questions:

1. What is your age in years?
    a. ______________
    b. Prefer not to say
2. Are you Indigenous?
    a. If yes, which group(s) do you belong to? __________________________________
    b. No
    c. Prefer not to say
3. Do you identify as a visible minority? ____
    a. If yes, what race/ethnicity do you identify as? ______________________________
    b. No
    c. Prefer not to say
4. Do you identify as a person with a disability?
    a. Yes
    b. No
    c. Prefer not to say
5. How would you describe your sexual orientation? _________________________________
    a. Prefer not to say

6. What is your gender identity? ____
    a. Prefer not to say
7. How would you describe your relationship status? _______________________________
    a. Prefer not to say
8. Has your diagnosis of cardiotoxicity impacted your ability to work?
    a. Yes
    b. No
    c. Prefer not to say
9. Please specify your income bracket (please circle one response)
    a. $0 - $47,000
    b. $47,001 – 100,000
    c. Over $100,000
    d. Prefer not to say

Appendix E: Semi-Structured Interview Guide

Research Project Title: Beyond the Diagnosis: Women's Experiences of Cardiotoxicity Secondary to Cancer Treatment

Sample Interview Guide:

Thank you for agreeing to be a part of our discussion today, your willingness to participate is greatly appreciated.

(Introduce self)

Offer refreshments (if in person) and outline that the conversation will be around 1 hour.

Introduction: Setting the Stage
The goal of today's interview is to help gain a deeper understanding of your experience of developing cardiotoxicity secondary to cancer treatment and how it has impacted your life in various ways.

Throughout the interview, the interviewer may use additional prompts such as:

- *Can you please give an example about what you mean?*
- *Please describe what you mean,*
- *Please explain this further.*
- *Is there any more information you would like to add?*

Before we begin, I wanted to let you know that this is intended to be a safe space, meaning a space to freely share your thoughts and experiences without judgement. As outlined in the consent form, this interview will be recorded and transcribed but identifying information will be left out. You will also have the opportunity to view and edit the transcript of your interview.

Are there any further questions you have before we begin? Also, please note, that you do not have to answer any questions you are not comfortable with.

Now we will move into the interview questions.

Questions

1) Can you tell me about your cancer diagnosis? What lead to it?

2) Here is a copy of the New York Heart Association's (NYHA) Functional Classification of Heart Failure. Can you please tell me which stage you feel you at are at currently?

    a. How your diagnosis of cardiotoxicity has impacted your everyday life?

3) Describe any changes to your body resulting from this diagnosis.

a. Has this diagnosis changed your relationships with other people? Or your ability to socialize or work?

To finish, I will now read out the demographic questionnaire. Please once again note that you do not have to answer questions you are not comfortable with.
(Read demographic questionnaire to the participants.)

Do you have any further questions or comments before we conclude the interview?

Thank you very much for your time for the last hour. It is greatly appreciated.

Appendix F: Resources for Participants

The Canadian Cancer Society
Cancer Information Helpline
Help answer questions about:

- cancer treatments and side effects
- clinical trials
- coping with cancer
- emotional support services
- prevention
- help in the community
- complementary therapies

Can also help direct resources for each province
Available by phone toll free at 1-888-939-3333
Live chat
Email: info@cancer.ca

Canadian Cancer Survivor Network
Conducts educational activities for cancer patients, caregivers, and survivors on the physical and financial impacts, and other relevant topics, associated with managing cancer.

Promotes health by providing individuals living with and survivors of cancer, and their caregivers, with access to related counselling, information, or support group programs.

Phone: 613-898-1871
Email: info@survivornet.ca
Website: www.survivornet.ca

*specific provincial recourses can be offered upon request

Resources for Participants in Manitoba

Patient & Family Support Services
(through Cancer Care MB)
675 McDermot Avenue
Phone: (204) 787-2109
Toll-Free 1-866-561-1026
Monday – Friday, 8:00 a.m. to 4:30 p.m.
pfssinquiry@cancercare.mb.ca

Examples of support groups currently offered through Patient and Family Support Services include:

- Cancer Support Groups
- Narrative Support Group "Who Am I Now?"

- Remembering Bereavement Support Group
- Women with Metastatic Breast Cancer
- Women with Primary Breast Cancer
- Young Adult Cancer Support (18 - 35)
- Younger Women with Breast Cancer
- Cancer Chat Canada Online Support Group

Psychosocial Oncology, which is part of Patient and Family Support Services, is made up of social workers, psychologists, psychiatrists, and other healthcare professionals.
Services are offered at no cost and are part of the care provided to you and your loved ones at Cancer Care Manitoba.

- **In Winnipeg, the staff is located at the McDermot and St. Boniface sites.**
  To make an appointment, please call: (**204) 787-2109 or toll-free 1-866-561-1026**

Peer Support Services

Canadian Cancer Society offers an online peer support community CancerConnection.ca
For more resources from CCS, please call 1-888-939-3333 or visit: https://cancer.ca/en/living-with-cancer/how-we-can-help.

You can also contact the Breast & Gyne Cancer Centre of Hope Peer Support Program at (**204) 787-2970 or toll-free 1-866-561-1026.**

Crisis Support Services

The Mental Health Crisis Response Centre (CRC) is a central point of access available for adults experiencing a mental health crisis. The centre is open 24 hours a day, 7 days a week. The CRC is specifically designed to help those individuals experiencing:

- Personal distress and the risk of potential harm associated with an immediate crisis, including suicidal behaviour
- Sign and symptoms of a condition requiring urgent mental health assessment and treatment
- Intense emotional trauma where assessment, crisis intervention and linkage to other services can occur
- An immediate risk after hours when the ongoing mental health service provider is not available

Address: 817 Bannatyne Avenue, Winnipeg MB R3E 0W2
Crisis Services Phone Number: **(204) 940-1781**
Family Peer Support: **(204) 940-2376**