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Addressing Oncofertility Needs: Views of Female Cancer Patients in Fertility Preservation

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Addressing Oncofertility Needs: Views of Female Cancer Patients in Fertility Preservation

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A total of 41 questionnaires were returned from 64 respondents who consented to receive a questionnaire through the mail. Almost all valued the opportunity to receive consultation to address their fertility concerns and discuss fertility preservation options. Psychological stress, time pressure, and costs were identified as main factors affecting respondents' decision to proceed with in-vitro fertilization to cryopreserve oocytes or embryos. About one third indicated that the discussion of fertility matters was initiated by themselves, their friends, and families rather than their health care providers. The findings have identified several major barriers encountered by female cancer patients when seeking fertility preservation services.

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INTRODUCTION

The incidence of cancer is rising globally. Latest cancer statistics suggest that each year more than 790,000 and 84,000 women in the United States and Canada are diagnosed with cancer (American Cancer Society, 2011; Canadian Cancer Society's Steering Committee, 2011). On the other hand, cancer survival rates continue to grow due to early detection and advances in medical treatment. With the increasing number of young women being diagnosed with and surviving cancer, it is of utmost importance to understand the treatment impact and psychosocial implications of cancer on one's future. A substantial body of research literature has shown that fertility is a significant concern for many female cancer survivors (Klock, Zhang, & Kazer, 2010; Loscalzo & Clark, 2007; Partridge et al., 2004; Zebrack, Casillas, Nohr, Adams, & Zeltzer, 2004). Helping cancer patients to preserve the best possible quality of life, including the possibility for them to have children, is an important consideration for oncology health care providers when making plans for cancer treatment (Reis, Beji, & Coskun, 2010).

The prevalence of developing cancer treatment-related infertility issues depends on multiple factors, such as the type of cancer diagnosis, the type of surgery and cancer therapy, the age of the woman, and reproductive health history (Cruz, Presetes, Gimenes, & Fanelli, 2010; Kim, 2006). Unfortunately, not all cancer survivors will regain full fertility potential following cancer treatment. Some female cancer survivors experience reproductive difficulties due to diminished ovarian reserve and premature menopause (Gurgan, Salman, & Demiroglu, 2008; Hickey, Peate, Saunders, & Friedlander, 2009; Jeruss & Woodruff, 2009; Lee et al., 2006). Infertility could have devastating effects on the quality of life for young women, who have not yet started or completed their family at the time of cancer diagnosis. Existing empirical evidence suggests that cancer survivors who want to have children but are uncertain about their fertility status, or are confirmed to be infertile, have experienced more psychosocial and emotional distress and have more difficulties in adjusting to life after cancer than those who do not develop reproductive issues (Partridge et al., 2004; Patel et al., 2009; Thewes, Meiser, Rickard, & Friedlander, 2003; Zebrack et al., 2004).

The rapid growth of assisted reproductive technologies (ART) has increased the options for female cancer patients wanting to preserve fertility prior to commencing cancer therapy (Maltaris et al., 2007). Embryo cryopreservation is considered the gold standard for fertility preservation but requires the use of sperm for fertilization. Oocyte freezing, which does not require the use of sperm to create embryos, is a cryopreservation option for

single women who do not have a male partner, although this procedure is still considered experimental, and pregnancy rates are still low in comparison to embryo freezing (Lee et al., 2006; Practice Committee of the American Society for Reproductive Medicine, 2006). Ovarian tissue banking, and in-vitro maturation with oocyte and/or embryo freezing, are also considered experimental (Cruz et al., 2010; Oktay & Oktem, 2009). Harvesting oocytes from the ovaries for oocyte freezing and embryo freezing purposes requires the use of in-vitro fertilization (IVF), which is a time-sensitive procedure that must synchronize with the woman's menstrual cycle. There is often time pressure for cancer patients to make a cryopreservation decision as quickly as possible to minimize any possible delay in their cancer treatment.

Although there has been increasing research on the medical aspects of oncology fertility preservation (FP) in recent years, psychosocial-based research studies in this area are still in early development (see Tschudin & Bitzer, 2009, for review). At present, very limited data are available to understand the psychosocial aspects for cancer patients choosing to preserve fertility through ART (Klock et al., 2010). Furthermore, available research literature in this area is primarily derived from studies surveying cancer survivors. Many of them may not have been aware of the fertility risks associated with cancer therapy and may not have been referred to see a reproductive endocrinologist to discuss FP options. As a result, their views may not accurately reflect the perspectives of cancer patients who have received fertility consultation prior to commencing cancer treatment. Furthermore, little is known about how cancer patients weigh and balance their fertility concerns while battling with a life-threatening illness. The factors associated with and influencing the decision-making processes to proceed or not with cryopreservation are not well understood. Finally, limited data exist to document the systemic barriers encountered by Canadian patients when seeking FP services and resources.

This retrospective study aimed at surveying the views of female cancer survivors who had sought FP consultation prior to commencing cancer treatment. Data were collected through a self-administrated questionnaire at a large hospital-based university-affiliated IVF clinic in a Canadian metropolitan city.

METHOD

For the purpose of this study, a 21-item questionnaire was developed by the research team with representation from medicine, nursing, and social work. The questionnaire included questions such as demographics, cancer history and treatment, general health status, knowledge about FP, discussion with referring physician about fertility concerns, service experience at the IVF clinic, and FP decision. The questionnaire also included five open-ended

questions to allow respondents to further elaborate on their perspectives in the following areas: (1) how did their oncology health care providers address their fertility concerns at the time of cancer diagnosis, (2) thoughts and expectations on FP options prior to seeing a fertility specialist, (3) reasons for proceeding or not with FP through IVF, (4) views of barriers encountered by Canadian cancer patients seeking FP information and services, and (5) recommendations to health care providers in addressing the service gaps.

Approval was obtained from the institutional research ethics board to conduct the study. During a 4-year timeframe, from January 2005 to December 2008, a total of 104 female cancer patients were referred to the IVF clinic for FP consultation. All respondents were contacted by phone by one of the coauthors or a clinic nurse to invite them to participate. No phone message was left with any third party for confidentiality purposes. Twenty-one respondents had outdated telephone contact numbers, 12 were not reachable despite multiple attempts, and one had passed away. Of the 70 respondents who were successfully reached, 64 consented to receive a mailed research package that contained a cover letter, a consent form, a questionnaire, and a return envelope. A follow-up research package was mailed 6 weeks later to nonrespondents. A total of 41 questionnaires were returned for a response rate of 58.6% (41/70).

All respondents wrote comments to one or more open-ended questions. The total word count of the descriptive data was 6,478, with an average of 158 words per returned questionnaire. Two coauthors (SY, MM) independently analyzed and coded the descriptive data to identify emerging categories using 'constant comparative methods' (Strauss, 1998). The initial codes were compared until more than 85% interrater reliability was reached. Axial coding was then conducted to link categories into themes to bring the data together in an organizing scheme (Charmaz, 2006). Extracts from the written comments are used to illustrate the major themes arising from this analysis. Descriptive statistics, where applicable, were reported together with the themes.

RESULTS

Demographics and Emerging Themes

Table 1 summarizes the demographics of the survey respondents. The five main themes and eight subthemes identified through qualitative data analysis of the descriptive comments are listed in Table 2. The vast majority had breast cancer (75.6%). The remaining had ovarian cancer (4.9%), lymphoma (4.9%), brain cancer (4.9%), and other cancer types such as Hodgkin's, carcinoma, and leukemia (9.6%).

By the time of the survey, 43.9% of the respondents indicated that they were in very good health, 46.3% were in good health, and only 9.8%

TABLE 1 Demographics of the Respondents at the Time of Cancer Diagnosis ($N = 41$)

	<i>n</i> (%)
Age grouping ($M = 33.1$, $SD = 4.7$, range 24–42)	
Between age 21 to 25 years	2 (4.9%)
Between age 26 to 30 years	10 (24.4%)
Between age 31 to 35 years	14 (34.1%)
Between age 36 to 40 years	14 (34.1%)
Between age 41 to 45 years	1 (2.4%)
Total	41 (100%)
Relationship status	
Single	11 (26.8%)
Married or partnered	30 (73.2%)
Total	41 (100%)
Maternity status	
No children	37 (90.2%)
Had one child	4 (9.8%)
Total	100%

were not good in health. No respondents reported any recurrence of cancer. Three respondents noted that they were able to conceive naturally post cancer treatment whereas two were in the process of trying to conceive naturally. One respondent noted that she conceived successfully using her cryopreserved embryos. Another respondent was in the process of initiating a frozen embryo cycle using a gestational carrier.

TABLE 2 Main Themes and Subthemes Identified in the Descriptive Comments

Emotional stress of dealing with double jeopardy
Fertility as a vital concern for cancer survivors
Reasons for seeking fertility preservation consultation
Knowing the options
Making an informed decision
Fertility preservation decision
Reasons for proceeding
Hope to be a mother
Avoid future regrets
Reasons for not proceeding
Concerns about delaying cancer treatment
Mental and physical demands
Fertility preservation cost
Need for donor sperm in embryo cryopreservation for single women
Regrets about not proceeding
Views of service barriers
Fertility issues not addressed routinely
Fertility preservation referral not sent in a timely manner
Fertility preservation educational materials not available and accessible

Emotional Stress of Dealing with Double Jeopardy

A common theme expressed by most respondents was the enormous amount of stress they were experiencing at the time of cancer diagnosis. Respondents used words such as “frightened,” “scared,” “overwhelmed,” “extremely stressful time,” and “difficult to mentally process” to describe their emotional state when facing the double jeopardy of dealing with a cancer diagnosis and confronting the potential fertility risks associated with the life-saving cancer treatment. In one open-ended question, two respondents shared that “infertility was one of the biggest fears with my diagnosis” and “hearing that my fertility was in jeopardy was almost more devastating than the cancer diagnosis.” The importance of empathetic communication with front-line staff and health care providers at all levels and being flexible in accommodating to cancer patients’ unique circumstances in fertility care were two commonly expressed sentiments across most qualitative comments with regard to clinical care.

Fertility as a Vital Issue for Cancer Survivors

Fertility was identified as a vital survivorship issue for many respondents. Several women stated that having cancer did not diminish their motherhood desire. Three women used the word *happiness* to describe the emotional significance to be a mother in the future. Having the option to preserve fertility gave some respondents a sense of hope that they could still fulfill their dream of having children after conquering cancer. A few commented on the importance of protecting their fertility, and they deliberately requested their oncologists to modify the cancer treatment to minimize the fertility risks: “I chose not to undergo chemotherapy or radiation for the reason of preserving my natural fertility.” A 28-year-old single woman shared her thought of why it was important for cancer patients to have options: “To preserve the quality of life after cancer, to feel like you haven’t lost everything that you will still have a shot at a normal life, to protect mental and emotional health.” Moreover, some respondents found that adopting a future-oriented optimistic mind-set by thinking about motherhood was therapeutic when they were battling with “cancer.”

Cancer treatment can greatly affect your fertility and it is extremely important to consider your life/happiness/goals once completed treatment. We need to understand and embrace the fact that most people do survive cancer and will have a full life after treatment.

Reasons for Seeking Fertility Preservation Consultation

KNOWING THE OPTIONS

Being informed about their fertility risks and knowing their FP options were two overarching themes in the descriptive comments: “importance for me

to understand my options” and “keeping reproductive options open.” Regardless of what the final FP decision was, almost all (97.6%) respondents replied that it was important for reproductive-age cancer patients to be seen by a reproductive specialist to address fertility matters: “As a patient, I think it is highly important to be informed about all aspects of care, whether the information is positive or negative related to diagnosis and treatment.” When asked about their general knowledge on FP prior to the consultation, only 19.5% said they already knew the options, 39% said they had some understanding, and 41.5% had little or no understanding. The majority of respondents did their own research to locate fertility-related information prior to seeing the fertility specialist. The most popular channel to locate information was the Internet (63.4%). However, some commented on the difficulties of locating FP information specific for cancer patients.

MAKING AN INFORMED DECISION

The decision to preserve fertility through IVF was made at the same time the respondents had to make other decisions relating to their cancer treatment. Most respondents strongly emphasized the importance of being able to “make a decision that is right for themselves.” One woman wrote, “because losing fertility due to cancer treatment can be devastating, women must be able to make choices about their fertility options.”

Fertility Preservation Decision

Respondents were asked to indicate their final FP decision. As shown in Table 3, a total of 28 respondents (68.3%), with 19 being in a relationship and nine being single at the time of cancer diagnosis, indicated that they did not proceed with FP. Among the 13 respondents (31.7%) who had proceeded with IVF for cryopreservation purposes, 11 of them were in a relationship and used their partners’ sperm to create embryos. For the remaining two who were single, one used donor sperm to create embryos, and the other cryopreserved her oocytes.

Respondents were asked to indicate the likelihood of initiating a pregnancy plan in the near future. Among the 13 respondents who had

TABLE 3 Decision to Proceed or Not to Proceed with Fertility Preservation ($n = 41$)

	Single	Married or Partnered	Total
Decision not to proceed	9 (22%)	19 (46.3%)	28 (68.3%)
Decision to proceed	2 (4.9%)	11 (26.8%)	13 (31.7%)
Total	11 (26.8%)	30 (73.2%)	41 (100%)

cryopreserved oocytes or embryos, six (46.2%) respondents replied that they were planning to initiate the process soon, and five (38.5%) were indecisive about the timing. For the remaining two respondents (15.4%) who did not plan to use their frozen embryos, both had already conceived successfully, either through natural conception or a successful frozen embryo transfer cycle post cancer treatment. These two patients indicated that they had completed their family and did not plan to have more children.

REASON FOR PROCEEDING

Hope to be a mother. Although there are a confluence of reasons why some women choose to proceed with FP, “hope of being a mom even after a devastating cancer diagnosis” was the most commonly expressed reason for many respondents who chose to preserve fertility despite the time pressure. A few others shared that knowing they had cryopreserved embryos not only gave them a sense of hope for recovery, but also the mental strength to fight cancer.

Avoid future regrets. “Avoiding future regrets” was another main reason for some respondents who decided to preserve fertility through IVF: “It would be devastating if you found out after treatment that you were unable to conceive because of early menopause.” One woman wrote, “although it was very hard to deal with both a new diagnosis and the prospects of infertility, the fact is that I would have deeply regretted it if I hadn’t preserved my eggs.”

REASON FOR NOT PROCEEDING

Concerns about delaying cancer treatment. Time pressure to begin cancer treatment was the main reason for declining FP: “I felt rushed making a decision because my surgery was done and they needed to start chemotherapy.” Several respondents worried that preserving fertility through IVF “would have taken too much time resulting in a risky delay of treatment,” and therefore decided to “let nature take its course” and “leave it in God’s hand.” One respondent wrote she did not want to postpone the chemotherapy to risk her survival chance.

Mental and physical demands. Not surprisingly, some women hesitated to undergo FP procedure because of the additional physical and mental demands put on their body in an attempt to preserve fertility: “couldn’t handle an additional procedure” and “did not want to undergo additional medical procedures beyond the cancer treatment.”

Fertility preservation cost. At present, IVF cycle is not covered by the provincial health care plan in Ontario, except for women with bilateral blocked tubes due to natural causes. The fee associated with fertility

preservation was another major barrier for those who wanted to preserve oocytes or embryos but did not have the financial means to do so. Unlike infertility patients who have usually done a lot of research, including the costs, prior to seeking IVF treatment, some respondents commented that they had no prior knowledge of IVF costs not being covered by the government and therefore the FP cost hit them by surprise: "The additional burden of the expense for fertility can be overwhelming and cause many women to choose to not preserve it or take their chances on it not affecting their fertility."

Need for donor sperm in embryo cryopreservation for single women.

Cancer patients without a male partner are confronted with the time pressure of choosing to cryopreserve oocytes, or using donor sperm to create embryos: "I thought I could preserve eggs only, the fertilization process took me by surprise and made my decision much more difficult." Nine women who were single at the time of cancer diagnosis had decided not to proceed with cryopreservation.

REGRETS ABOUT NOT PROCEEDING

At the time of the survey, several respondents were regretful of their prior decision to not proceed with FP when they had the opportunity, and they lamented not having cryopreserved embryos or oocytes for future pregnancy attempts. One respondent who could not delay her chemotherapy wrote, "If I had more time to make my decision before starting chemo, I would have been able to preserve some fertilized eggs. I wish I knew my options sooner."

Views of Service Barriers

FERTILITY ISSUES NOT ADDRESSED ROUTINELY

Cancer patients often see a variety of physicians during their cancer care. Respondents were asked to indicate who initiated the discussion with them about fertility risks. A total of 46.9% reported that the discussion was initiated by their oncologists, as compared to 18.2% that were recommended by their nurses, gynecologists, and family doctors. About 35% indicated that the discussion was initiated by themselves, their friends, and families rather than their health care providers: "In my personal experience there was a complete disconnection between my oncology and fertility options. In my time of crisis, it was me who initiated the fertility preservation."

When asked if their referring physician addressed the potential negative effects of cancer treatment on fertility, 32 respondents (78%) indicated yes, and nine (22%) indicated their physician did not discuss the risks at all. Respondents suggested that physicians should adopt a more proactive approach to initiating the discussion because not all young cancer patients

are aware of the potential fertility risks and may not even bring up the topic and ask for information:

While my oncologist discussed infertility as a possibility, it was my husband and I that initiated the conversation about preservation. It would be helpful if my oncologist initiated that conversation too because not every patient knows about it as an option.

FERTILITY PRESERVATION REFERRAL NOT SENT IN A TIMELY MANNER

Timely referral to a fertility specialist is essential for patients who want to preserve fertility so that IVF does not cause a significant delay in their cancer treatment. Overall, 95% of the survey respondents replied that they were seen in a timely manner once their physician sent the referral to the IVF clinic. However, eight respondents wrote it was too late for them to consider FP because of the time pressure of starting cancer treatment. A total of 33 (80.4%) respondents indicated that their cancer treatment involved a combination of surgery, chemotherapy, and radiation. In cases where surgery is required, the surgeon is usually the first physician involved in treating the patient before referring the patient to see a medical oncologist to discuss adjuvant treatment: "It's the surgeon who needs to be involved from a timing perspective. They just need to ensure to suggest a referral and discuss it as an option." One respondent who strongly advocated for timely referral by the oncologists, especially the surgeons, wrote:

The fertility issues are discussed soon after diagnosis by the surgical oncologist even though the surgeon does not decide whether you will receive chemotherapy. With breast cancer, by the time you see the medical oncologist it is too late to take any action towards preservation. The only reason I had the option of preservation was because I took the initiative to speak to someone about fertility issues early on.

FERTILITY PRESERVATION EDUCATIONAL MATERIALS NOT AVAILABLE AND ACCESSIBLE

A total of six respondents expressed the value of receiving cancer-specific FP information ahead of time to mentally prepare themselves for a full discussion of the risks and benefits of various FP options when seeing the fertility specialist. These respondents also spoke about the difficulties in locating cancer-specific FP resources from reliable sources and in a timely manner:

I had hoped there would be more knowledge/information available to people like me, 26-year-old with aggressive breast cancer, to help us make educated decisions and that there would be an option for

preservation that would fit into my treatment schedule and not compromise my health further.

Respondents also wanted other health care practitioners such as family physicians and nurses to be more aware of fertility-related resources so that they can disseminate the information: "Perhaps more information could be made available to the nursing staff involved in the care plan of the newly diagnosed patients, also increased awareness needs to be made to general practitioners in family medicine."

DISCUSSION

The findings provide empirical evidence of the clinical and psychological benefits of addressing cancer patients' fertility needs when making plans for cancer treatment. The data show that having concerns about fertility risks are not only limited to cancer patients who are married or younger in age. Cancer patients who are single or slightly older might still be interested in exploring FP options (Duffy, Allen, & Clark, 2005; Mancini, Rey, Préau, Malavolti, & Moatti, 2008; Partridge et al., 2004). Our findings suggest that all reproductive-age cancer patients should be routinely asked about their future childbearing plan and their desire for motherhood, to differentiate those who would have greater needs in further addressing fertility concerns.

Previous studies have shown that oncology health care providers do not always inform young cancer patients about the potential fertility risks when making plans for cancer treatment (Forman, Anders, & Behera, 2010; King et al., 2008; Quinn, Vadaparampil, King, et al., 2009; Quinn, Vadaparampil, Lee, et al., 2009; Vadaparampil, Quinn, Clayton, King, & Miree, 2008). Infertility may come as a surprise for survivors, as a late effect of cancer therapy (Carter et al., 2010; Schover, 2009). Studies conducted in Australia, France, and the United States have found that 29.8% to 72% of females recalled having discussions with a health care provider about the potential fertility risks associated with their cancer treatment (Duffy et al., 2005; Mancini et al., 2008; Partridge et al., 2004; Thewes et al., 2005). In a large-scale web-based survey study of 1,072 young women with breast cancer (Partridge et al., 2004), 57% of cancer survivors recalled having substantial concern about fertility at the time of cancer diagnosis, but 26% reported that their concerns had not been addressed adequately by their physicians. Only 17% reported being referred to see a fertility specialist. Qualitative research literature has also drawn similar conclusions about the gaps (Dunn & Stegina, 2000; Reis et al., 2010; Thewes et al., 2003; Zebrack et al., 2004), with many participants reporting that fertility was important at the onset of their cancer diagnosis. Those who initially felt fertility was not a significant concern reported a gradual increase of its importance over time.

Some may argue that not all cancer patients will experience fertility challenges following cancer treatment, therefore discussing FP options may cause them unnecessary anxiety when they are already quite overwhelmed with their cancer diagnosis. In contrary to this suggestion, our findings suggest that almost all cancer patients appreciated the opportunity to see a fertility specialist prior to commencing cancer treatment. The benefits of receiving individual consultation have also been confirmed by other studies (Klock et al., 2010; Thewes et al., 2003; Thewes et al., 2005). Those who had received fertility consultation were generally more satisfied even if they chose not to pursue cryopreservation at the end.

Cancer patients are usually under significant time constraints when making treatment decisions. The fertility treatment options following cancer therapy are often quite limited, depending on the resultant reproductive function. This underlines the importance of timely referral to fertility clinics, so that patients are able to proceed with FP without needing to delay their cancer treatment. In this study, a few respondents voiced concerns about wanting to preserve fertility but not having the time due to the urgency to initiate cancer treatment. At the time of survey, some were still regretful of missing the opportunity. The time pressure expressed by our respondents is consistent with the data reported by Klock et al. (2010), whereby 30.5% of participants in their study declined FP treatment because of concerns about delaying cancer treatment and other logistic constraints. Our findings strongly advocate for expeditious referrals to avoid cancer patients missing the chance to consider FP options and to allay the emotional distress due to time pressure during the decision-making process.

The findings confirm the importance of oncology health care providers in initiating discussions with all reproductive-age cancer patients in cancer care (de Ziegler et al., 2010; Quinn, Vadaparampil, Bell-Ellison, Gwede, & Albrecht, 2008; Quinn, Vadaparampil, Lee, et al., 2009; Redig, Brannigan, Stryker, Woodruff, & Jeruss, 2011). Furthermore, respondents also commented on the benefits of receiving some background information on FP options and their related medical procedures prior to meeting with a fertility specialist, so as to avoid being in a state of shock or feeling overloaded with new information during the consultation. Our data also call attention to the lack of accessible and reliable cancer-related FP resources for Canadian patients, and the need to develop such resources to reduce service barriers (Canada & Schover, 2005; Meneses, McNees, Azuero, & Jukkala, 2010). In addressing this information gap, a federal government body Assisted Human Reproduction Canada (2008), and a national cancer patient organization Fertile Future (2011), have developed patient brochures which are available in web-based format.

At present, there are no published guidelines to standardize care in Canada to raise the awareness of health care providers on oncology FP issues. The American Society of Clinical Oncology (Lee et al., 2006) and

American Society of Reproductive Medicine (Ethics Committee of the American Society for Reproductive Medicine, 2005; Practice Committee of the American Society for Reproductive Medicine, 2006) have issued position statements and developed practice guidelines in oncology FP. Both organizations recommend that physicians should inform their reproductive-age cancer patients routinely about the potential fertility risks when planning for cancer therapy. The lack of practice guidelines in Canada, to steer physicians toward appropriate practice models, may lead to a variety of attitudes and inconsistent practice behaviors towards FP for oncology patients.

Dealing with a life-threatening illness and the possibility that the life-saving cancer treatment may have negative impact on future fertility creates a very complex situation for young women who have not yet completed their family at the time of receiving a cancer diagnosis. More Canadian research studies are needed to explore how fertility concerns are being addressed during cancer care, how oncology health care providers communicate with cancer patients about the fertility risks associated with cancer treatment, and the current state of oncology FP services provided by fertility clinics.

Limitations

There are several limitations of this study. First, it is a single-site study using a convenience sample from a fertility clinic. The sample size was small. Generalization of findings to a wider Canadian cancer population must be made with caution. Second, participants in this study were reporting their views on FP retrospectively, and their responses may have been influenced by recall bias. Third, patients who chose to complete the questionnaire may have more concerns about their fertility status or may have a more favorable attitude toward FP than nonrespondents. We are unable to compare the differences between respondents and nonrespondents. Nonetheless, the findings contribute to the limited data pertaining to the views of Canadian cancer patients in fertility preservation.

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