Exploring Peer Support Characteristics for Promoting Physical Activity Among Women Living Beyond a Cancer Diagnosis: A Qualitative Descriptive Study

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PURPOSE: To explore women's perceptions of and preferred peer characteristics for peer mentoring to support physical activity promotion. Understanding how women living beyond a cancer diagnosis perceive peers for physical activity may help guide further health behavior mentoring and support practices.

PARTICIPANTS & SETTING: 16 English-speaking adult women living beyond a cancer diagnosis.

METHODOLOGIC APPROACH: Following a qualitative descriptive approach, four in-person focus groups were conducted and discussions were analyzed using inductive content analysis.

FINDINGS: Participants described four considerations for peer matching: (a) personal characteristics, (b) physical activity characteristics, (c) cancer characteristics, and (d) finding a peer. Similarities in age, life phase, location, history of physical activity, type of cancer, severity of cancer, and personality were integral. An online or mobile application and the ability to create multiple partnerships were preferred.

IMPLICATIONS FOR NURSING: Understanding methods to promote physical activity is imperative for long-term survivorship outcomes. Nurses in oncology care settings may promote physical activity and social support for women living beyond cancer diagnoses by facilitating optimal peer matches.

KEYWORDS exercise; social support; qualitative; peers; cancer; women

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Almost one in every two women in North America will be diagnosed with cancer in her lifetime, with 63%–88% surviving more than five years following a diagnosis. Although survival rates are promising, there are many acute and lasting effects of cancer diagnosis and treatment that negatively affect quality of life (Götze et al., 2018). Efforts are needed to improve the survivorship experience, and physical activity is a well-tested behavioral strategy to enhance health and well-being for people living with and beyond a cancer diagnosis. Physical activity has been found to increase muscular strength and aerobic fitness; improve quality of life and body image; and reduce fatigue, anxiety, depression, cancer recurrence, cancer-related mortality, and all-cause mortality (Lugo et al., 2019; McTiernan et al., 2019; Rezende et al., 2018). Despite its well-documented benefits, many women decrease their physical activity after a cancer diagnosis (Sabiston et al., 2014) and do not engage in enough physical activity to realize its potential benefits for health and well-being (Campbell et al., 2019). Given the long-standing and consistent evidence that physical activity is safe, feasible, and beneficial (Campbell et al., 2019), it is critical to help women living beyond a cancer diagnosis to be more physically active.

Leading clinicians and researchers in physical activity and oncology care highlight the need to increase the availability, accessibility, and uptake of physical activity among individuals living beyond a cancer diagnosis (Adams et al., 2021; Basen-Engquist et al., 2017; Kennedy et al., 2021; Mina et al., 2018). A potential source for increasing physical activity, in particular among women, is the development of social support opportunities (McDonough et al., 2019, 2021).

Many women report not engaging in physical activity because they have no one to exercise with or feelings of poor connectedness, and this lack of social support is a pervasive barrier to physical activity among women (Brunet et al., 2013; Smith-Turchyn et al., 2020; Wurz et al., 2015). Social factors are key determinants of behavior change according to the social-cognitive (Ajzen, 1991; Bandura, 1991), self-determination (Ryan & Deci, 2000), and socioecological (Bronfenbrenner, 2005) frameworks. Approaches to behavior change also highlight interpersonal influences (Kok et al., 2016), and many theoretical reviews describe the importance of social factors on physical activity uptake (Dickson & Darcy, 2021; Finne et al., 2018; Teixeira et al., 2012, 2020). Social facilitation, such as witnessing others who are living beyond a cancer diagnosis participating in physical activity, receiving verbal encouragement, developing prompts for oneself and others to engage in physical activity, and receiving education and information, may increase confidence, motivation, and physical activity behavior (Fong et al., 2017; McDonough et al., 2019, 2021; Sabiston et al., 2019). Developing ways to increase social support and feelings of connectedness among women who are living beyond cancer diagnoses may help to increase physical activity participation.

Matching women who are living beyond cancer diagnoses to do peer-supported physical activity can be a way to enhance social support. Improvements in physical activity behavior, fatigue, quality of life, mood, physical functioning, and sitting time have been reported using a peer model whereby women living beyond a breast cancer diagnosis were trained to be physical activity coaches to other women (DeMello et al., 2018; Pinto, Dunsiger, & Stein, 2015; Pinto, Stein, & Dunsiger, 2013, 2015; Stein et al., 2015). In another study, participants who were matched with a same-sex role model were significantly more likely to adhere to physical activity following cancer diagnoses and treatments (Ungar et al., 2016). In these studies, participants were matched on criteria such as similarities in sex, age, cancer type, location, and availability for physical activity training. However, the relative importance of these characteristics for physical activity outcomes has not yet been explored. Ungar et al. (2016) reported major challenges in matching participants based on their geographic location. A better understanding of other potential criteria for matching participants may help foster greater opportunity for social support and promote physical activity. In addition, receiving physical activity support from professionals may undermine the experience of physical activity for women compared to receiving support from peers, and it may not be optimal for long-term behavior change (Martin Ginis et al., 2013). As such, it may be valuable for two (or more) untrained women who are living beyond cancer diagnoses to partner with each other to maintain or increase physical activity together. To date, for women living beyond cancer diagnoses, peer preferences and optimal partnership methods are not well understood.

Identifying the preferred physical activity peer characteristics for women partnering with other women living beyond cancer diagnoses could inform the development of physical activity programs and practices. In particular, it could help oncology clinicians promote physical activity initiatives among their patients while overcoming many of the barriers they face in providing access and supporting uptake (e.g., lack of time, knowledge, equipment, and competence; scope of practice) (Adams et al., 2021; Avancini et al., 2021; Fong et al., 2018; Haussmann et al., 2018; Roberts et al., 2019). Partnering women for physical activity promotion may facilitate social support and behavior change, which could improve quality of life and well-being for individuals living beyond a cancer diagnosis (McDonough et al., 2019, 2021).

The purpose of this qualitative descriptive study was to explore women's perceptions of and preferred peer characteristics for peer mentoring as a source of support for physical activity promotion. Understanding how women living beyond a cancer diagnosis perceive peers for physical activity may help guide further health behavior mentoring and support practices.

Methodologic Approach

Understanding peer matching for physical activity among women living beyond cancer diagnoses is suited best to a qualitative descriptive study design to gather insights, experiences, and preferences for peer characteristics (Beck, 2013; Doyle et al., 2020). Qualitative description is an approach that acknowledges the subjective and personal nature of the problem (i.e., lack of understanding of peer matching characteristics for physical activity) and the various experiences that women may have had or perceive (i.e., challenges and benefits of peer matching for physical activity) while guiding descriptions of these perceptions and experiences to inform programs and practices (Doyle et al., 2020; Sandelowski, 2000).

This qualitative descriptive study sought to explore the central phenomenon of physical activity peer support in the context of cancer survivorship. This methodology used an inductive strategy that

acknowledged the subjectivity of the participants and the researchers such that the participants' perspectives, experiences, and descriptions primarily directed the discussions used for data collection and analyses (Sandelowski, 2010). The researchers' epistemologic and ontologic position is subjectivist relativism, which frames the phenomenon of physical activity peer support such that women living beyond cancer diagnoses experience and perceive their own realities, interpretations, and meanings (Doyle et al., 2020; Sandelowski, 2000, 2010). Qualitative description is an appropriate strategy of inquiry for research questions focused on gaining insights and defining poorly understood phenomena such as physical activity peers (Kim et al., 2017). Understanding the value and implications of the phenomenon of physical activity peers requires a flexible approach that is not informed by only one theory, and qualitative description embraces a malleable commitment to guiding theories and frameworks (Sandelowski, 2010). Because of the implications of developing ways to partner women living beyond a cancer diagnosis for physical activity within a healthcare context, it is also important that qualitative description has been used in healthcare research as a clear way to inform and improve practice (Doyle et al., 2020).

Participants and Setting

English-speaking women aged 18 years or older who self-reported a cancer diagnosis were recruited through posters in medical clinics in the greater Toronto, Ontario, Canada, area and social media advertisements to participate in an in-person focus group discussion. Data collection took place prior to the declaration of the COVID-19 pandemic. Women who self-reported never having had a physical activity peer or partner were purposefully selected. Consistent with a qualitative descriptive method, participants were purposively selected using maximum variation sampling so that a wide range of commonly diagnosed cancers, ages, socioeconomic statuses, and living and social situations were represented because these factors are important for social support among individuals living beyond cancer diagnoses (McDonough et al., 2011, 2019, 2021). The university research ethics board approved this study, and all participants provided informed written consent before the start of the focus group discussions.

Data Collection

Aligning with a qualitative descriptive study (Doyle et al., 2020; Sandelowski, 2010), focus groups were used as a data collection strategy to foster natural dialogue and inclusivity of a variety of perspectives using minimal guidance (Neergaard et al., 2009; Sandelowski, 2010). Based on data saturation guidelines for focus groups (Guest et al., 2006; Hennink et al., 2017), four focus groups (with four to six participants each) were initially planned, and the study remained open to the potential to have as many discussion groups as needed to garner meaningful information for the study purpose. The first focus group was held at a community center in a rural town and contained four women ranging in age from 27 to 68 years; the second focus group was held at a university in a large city and contained three women ranging in age from 31 to 87 years; and the third and fourth focus groups were held at a hospice center providing supportive and educational workshops in a midsized city and contained four women ranging in age from 28 to 73 years, and five women ranging in age from 30 to 76 years, respectively.

In-person focus groups were facilitated by the lead author who self-identifies as a woman and has nearly 20 years of qualitative research experience conducting interviews and focus group discussions about approaches to physical activity among individuals living with and beyond a cancer diagnosis. A research assistant who self-identifies as a woman was also present to take notes to capture the main discussion content and to identify each woman who was speaking, which helped with the transcription and interpretation of the data. The discussions lasted 54–93 minutes, were audio recorded, and were transcribed verbatim by a professional transcription service within one week of the focus group discussion. Consistent with a qualitative descriptive strategy, the focus groups were minimally semistructured and guided by broad questions to explore women's interest in finding and partnering with peers for physical activity. Nine questions were posted in each focus group (see Figure 1). All discussion questions were facilitated with validation and clarification probes (e.g., "Let's talk more about that," "Can you elaborate on that?").

Data Analysis

The research assistant read through the transcripts and added participant numbers to ensure each woman was properly identified. All participant data were identified and organized using NVivo, version 12.0, for individual coding, and focus group discussions were maintained at a group level for group analysis. Inductive content analysis (Elo & Kyngas, 2008) was used to identify codes and categories from individual statements and group discussions.

FIGURE 1. Focus Group Questions

General Questions About Peers or Partners for Physical Activity

- Have you personally thought about or had a peer or partner for physical activity? Why or why not?
- Discuss when it would be appropriate (and not appropriate) to have a peer or partner for physical activity.

Perceived Benefits and Challenges of Having Peers or Partners for Physical Activity

- Can you each tell me about the possible benefits of having a peer or partner for physical activity?
- Are there any drawbacks to having a peer or partner for physical activity?

Perceived Important Characteristics for Physical Activity Peers or Partners

- Can you describe the characteristics that you would look for in a peer or partner for physical activity promotion and why?
- What characteristics are important to you?
- What characteristics are not important when thinking about finding a peer or partner for physical activity?

Logistics of Finding and Matching With a Peer or Partner for Physical Activity

- How would you go about finding a physical activity peer or partner and matching with them?
- Are there any other considerations we need to think about to help women find and use a peer or partner for physical activity?

Inductive content analysis is ideal for the direct description of qualitative data to ensure that codes and categories fit the data (Sandelowski, 2000, 2010). In the preparation phase of analysis, the lead author read the full group transcripts and began to identify similarities in the discussion content. A second reading of the transcripts was used to begin to identify codes, and a third reading was used to merge similar codes into categories as the organizing step of analysis (Elo & Kyngas, 2008). A fourth reading involved an individual-level analysis whereby the transcript excerpts organized by each participant were reviewed and coded independently, then matched to the group discussions. This process was iterative, with repeated reading, reviewing, and refining of codes and categories that aligned with a data analysis spiral (Creswell & Creswell, 2018). This enabled the analysis to focus on the women's perspectives and experiences while ensuring that the researcher's interpretations were transparent (Sandelowski, 2000). The second author, who self-identifies as a woman and has a background in exercise science and psycho-oncology, and the third author, who self-identifies as a woman and has clinical experience in cancer rehabilitation and exercise science, provided support in the analysis process by exploring and refining the final codes and categories (i.e., serving as critical friends). Participants were also given a list of the codes and manifest content categories that emerged from the analysis for member checking and to explore the data accuracy for descriptive and interpretive validity (Sandelowski, 2000). All participants acknowledged receiving the summary, and there was no critical feedback provided during the member checking phase. This analysis process was completed for all four focus groups, and saturation was perceived based on no additional codes for peer characteristics or preferences being identified in the discussions (i.e., code saturation) and consensus among researchers about understanding all identified peer characteristics and preferences (i.e., meaning saturation) (Guest et al., 2006; Hennink et al., 2017). Code and meaning saturation were identified based on comparisons across individual- and focus group–level analyses.

Study rigor was supported in ways that were consistent with qualitative description (Finlay, 2006; Sandelowski, 2010). Participants were sampled purposefully to gather broad perspectives and descriptions of the phenomenon. Rapport between the interviewer and participants was established during the study inception phase (e.g., communication, information, consent, focus group scheduling), as well as during the introduction of the focus groups as women entered the locations, made name tags, and shared brief introductions. This latter step of participant introductions also helped build rapport among the participants. A trusting relationship was developed between the participants and the researchers through willingness to exchange information, expression of compassion and empathy during the discussions, and prolonged engagement with the discussions taking place as long as the natural dialogue occurred. Strategies of member checking and critical friends were used for verification of data accuracy and transparency. Direct quotes were used to represent the data gathered from the participants themselves, and an audit trail was used to document the data collection and analysis process.

Findings

Sixteen women participated in the focus groups. Of the 16 women, 6 had been diagnosed with breast

cancer, 5 with gynecologic cancer, 4 with colorectal cancer, and 1 with pancreatic cancer (see Table 1).

All women described value and showed interest in securing peers for physical activity pursuits. The following four categories were identified from the focus group discussions regarding preferences and processes for optimal peer matching for physical activity: (a) personal characteristics of the peer, (b) physical activity characteristics of the peer, (c) cancer characteristics of the peer, and (d) how to find a peer (see Figure 2).

Personal Characteristics of the Peer

Women living beyond cancer diagnoses discussed the importance of age, geographic location, employment status, and personality as important matching characteristics for physical activity peers. Age was discussed as important as a number based on birth year (e.g., "roughly the same age as me," said a 62-year-old woman living beyond a breast cancer diagnosis) and in the context of developmental phase. Some women living beyond cancer diagnoses felt that it was important to find a peer with the same general life stage characteristics. A 60-year-old woman living beyond a gynecologic cancer diagnosis stated the following:

> Someone in the same age bracket, or really it is life circumstances as me, regardless of the type of cancer . . . you know, kids about the age of mine, husband as poor of a coper as mine, working because [she] can't afford not to.

The oldest participant, an 87-year-old woman living beyond a colorectal cancer diagnosis, expressed trepidation for herself finding a physical activity peer but also discussed the potential benefits to physical activity and well-being of finding support. Once the discussion continued, this participant expressed some excitement about the possibility of finding a peer if they were of the same age and general health status. She said the following:

> I can't see myself going out and finding an exercise partner at this point in my life, but it sure would be nice to have someone to move around the neighborhood with and maybe the odd grumble about all our health problems.

Proximity was another key peer criterion. Participants mentioned that it was important for a peer to be local to their home or workplace. A 56-year-old woman living beyond a breast cancer diagnosis mentioned the following:

> There is no way I have time or energy to trek across town before or after work to get together with someone else to exercise so . . . peers would have to be easy to get together with . . . meaning either close to where I work or close to where I live.

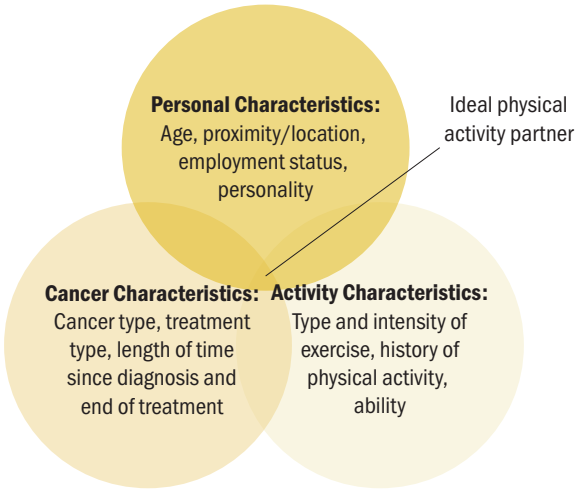
A 47-year-old woman who had been diagnosed with gynecologic cancer added, "Trying to get somewhere that is not already in my daily routine would be my physical activity, so the partner wouldn't do much at that point. The person certainly needs to live near me."

TABLE 1. Participant Characteristics (N = 16)

Characteristic	$\bar{X}$	SD	Range
Age (years)	54.43	15.64	27–87
Time since diagnosis (months)	29.94	11.96	14–61
Characteristic			**n**
Cancer type			
Breast			6
Gynecologic			5
Colorectal			4
Pancreatic			1
Cancer stage			
0–I			7
II			4
III			3
IV			2
Cancer treatment[a]			
Radiation therapy			14
Chemotherapy			10
Marriage status			
Married or cohabitating			9
Not married or cohabitating			7
Children			
Yes			10
No			6
Rural primary residence			
No			9
Yes			7
Highest level of education			
High school diploma			2
Some college or university			2
Undergraduate or equivalent			8
Graduate degree			4

[a] Participants may have received chemotherapy and radiation therapy.

FIGURE 2. Optimal Physical Activity Peer Characteristics



Note. Figure was developed by the study team based on study data.

Employment status was also important for some participants, who mentioned that having a peer with similar time commitments would be important for scheduling physical activity. A 38-year-old woman living beyond a breast cancer diagnosis said the following:

> I would be no use to any other cancer survivor if they didn't understand my work schedule. Being on call means there could be lots of rescheduling or canceling planned workouts with someone else, so I would imagine having partners that have similar work schedules or at least an understanding of the work demands would be needed.

A 27-year-old woman living beyond a breast cancer diagnosis added, "[It is] probably important to find partners who either both work or don't work. . . . Wouldn't that help with scheduling?" Personality was raised in two focus groups, and participants felt it was important to have a peer with a similar disposition. A 57-year-old woman living beyond a colorectal cancer diagnosis described why personality was a key matching characteristic as follows:

> I want someone with the same general personality as me—I am fairly outgoing so I don't want to be exercising with someone who is shy and quiet, or more importantly, they might not want to exercise with me because I won't shut up.

Overall, age, proximity or location, employment status, and personality were the key personal characteristics that may be important for physical activity peers.

Physical Activity Characteristics of the Peer

Women living beyond cancer diagnoses generally expressed wanting a peer with similar physical activity interests and similar motivations for being active. Interests were related to the type of physical activity (e.g., walking, joining group classes, swimming) as well as the intensity of physical activity and goals for being active. A 62-year-old woman living beyond a breast cancer diagnosis alluded to women who dragon boat because they want competition or women who run races to achieve performance goals, as follows:

> I see photos all over Facebook of women who are proud of their medals or their team race times. That would not be me, I don't like to compete and I don't want to be on a big team of other cancer survivors . . . so a partner to me would be someone who also doesn't want or need those kinds of things.

Across all focus groups, there was a clear divide among those who liked competition and personal achievements compared to those who did not, with a few women also pointing out that partners might help each other enjoy different ways of being active. A 74-year-old woman living beyond a breast cancer diagnosis stated, "You know, some of these women dragon boaters just might be good to help motivate other cancer survivors to get involved and, who knows, maybe even like it after all." Nonetheless, an alternative to a more competitive partner was, according to one 59-year-old woman living beyond a pancreatic cancer diagnosis, "another woman who simply wants to move more every day or every week."

Ability or competence was also discussed with little consensus. Some women reported that a more active peer would be a motivator and role model, whereas others mentioned they would feel discouraged about being active with someone much more fit than they were. These two diverse perspectives are illustrated by the following two views. A 54-year-old woman living beyond her colorectal cancer diagnosis stated, "Someone with the same ability in physical activity because it creates some friendly competitiveness," and a 47-year-old woman living beyond a gynecologic cancer diagnosis described, "[Someone] who is in similar shape, actually better shape, because

they would push me." Related to the physical ability of the peer, some women also mentioned that it would be important to partner with another woman with a similar history of physical activity, either being active before receiving the cancer diagnosis or becoming more active after receiving the diagnosis. A 51-year-old woman living beyond a gynecologic cancer diagnosis stated the following:

> Since I have no background in exercise, I have never been active and am just trying to do something now a couple of years after my diagnosis. . . . I am not sure how helpful a partner would be to me if she had been active her whole life and was just getting back into exercise after treatment. Maybe I would get some tips, but I certainly would not be able to help and would worry [that] I would hold her back.

It was also mentioned that knowing who had gone through survivorship wellness programs, such as oncology-specific exercise programs, would be valuable. For some women, having a peer with some cancer wellness program experience was described as a "bonus." A 34-year-old woman living beyond a gynecologic cancer diagnosis stated, "And if my partner happened to have some training with a survivorship wellness program that has taught her how to exercise and what to do with this ache or this pain, then that would be a bonus." In comparison, other women mentioned that partners with training or survivorship support group experience may hinder starting out on a physical activity journey together. For example, one 38-year-old woman living beyond a breast cancer diagnosis stated the following:

> Maybe that would be OK, but they are not experts and might come across as know-it-alls and better than those of us who have not participated in an exercise program before. So, I like the idea of starting and sticking to something together, from the start.

In summary, the physical activity characteristics that are important for peer matching are type, intensity, history of physical activity, and ability. Based on the interpretation of the findings, there was no apparent distinct response pattern based on women's age.

Cancer Characteristics of the Peer

Women provided mixed opinions on the importance of type of cancer for choosing a partner for physical activity peer support. Most of the women aged 40 years or older alluded to the severity of treatment and time since treatment as being more important than the type of cancer. A 57-year-old woman living beyond a colorectal cancer diagnosis described her experience with a group exercise class as follows:

> There [are] shared experiences, which would help motivate a person to be physically active. The age doesn't matter, in our group we have young and old. It's mostly the shared experience of cancer, of any kind, which would keep the person interested and motivated.

In contrast, women aged younger than 40 years expressed a preference for having a physical activity peer with the same cancer diagnosis. The severity and extent of treatment were also highly relevant. A 27-year-old woman living beyond a breast cancer diagnosis said the following:

> I had triple-negative breast cancer. I would want an exercise partner who understands the complexity of HER2-, estrogen-, and progesterone-positive breast cancer, or even any of these. I also had implants that caused a reaction and had to go back for more surgery to have the flap reconstruction, so my core was just destroyed. Oh, and I won't even start on with lymphedema. Let's just say I have to exercise with my sleeve. So I just don't think someone who has not had breast cancer would understand all this.

Based on the focus group discussions, cancer type and treatments may be important for matching peers for optimal physical activity promotion. Many women discussed the value of having a peer at the same survivorship stage. Women could be matched with others immediately after diagnosis, during treatment, immediately after chemotherapy (which was identified as most impactful for promoting physical activity), or many years later. One 57-year-old woman living beyond a colorectal cancer diagnosis mentioned the following:

> When I walked out of the doctor's office with a diagnosis of the big C [cancer], not even my closest friend could have gotten me to exercise. Then after surgery and chemotherapy . . . again, no way in hell I would have started to exercise with anyone, let alone a fancy new partner. I am guessing others think differently, but in my experience,

> I wasn't ready for an exercise anything until long after treatment.

A 38-year-old woman living beyond a breast cancer diagnosis added the following: "I do see reports that exercising during chemotherapy is allowed and even helps sometimes. I just would not have been a good partner at that point." A 47-year-old woman living beyond a gynecologic cancer diagnosis stated the following: "Maybe if there was another woman who was just diagnosed and wanted to start exercising together to help with all the side effects and crappy emotions, I would have tried it out."

In another focus group, a 59-year-old woman living beyond a pancreatic cancer diagnosis highlighted that health was the biggest barrier to considering physical activity engagement during surgery and treatment, stating the following: "The partner needs to understand the daily ups and downs of cancer." Similarly, a 62-year-old woman living beyond a breast cancer diagnosis mentioned the following: "It might be easier to start a partnership for exercise after diagnosis and treatment. . . . Just focus on you, get through it all, and then build a support system to kick butt out there."

In summary, the key cancer characteristics that may be important for physical activity are treatment type and length of time since diagnosis or end of treatment. Cancer type may be more personal and tailored to the needs of the women. The side effects from diagnosis and treatments are also important, but the women felt that these were more personal and may not be integral to their initial attempts at finding a peer.

Finding a Physical Activity Peer

All women discussed how to find a physical activity peer. Some women mentioned options like notices posted in community centers and other high-traffic public areas or meet-and-greet sessions hosted in cancer support centers and local gyms. All the women in the focus groups endorsed the value of an online platform to find peers for physical activity. The three youngest participants across different focus groups mentioned that they would use an online platform, but would also use and may prefer a smartphone application (app). After apps and online platforms were discussed, women were asked to describe the desired features. In this study, women living beyond cancer diagnoses suggested a website or app that they could visit to sign up and register their interest in finding a partner for physical activity. Across all focus groups, women expressed the importance of cyber safety and knowing with whom they were connecting. Some women mentioned that they would like to be able to message each other online in "discussion forums" (56-year-old woman living beyond a breast cancer diagnosis) or "private chats" (60-year-old woman living beyond gynecologic cancer diagnosis) before giving out their personal email or telephone number. A 66-year-old woman living beyond a gynecologic cancer diagnosis said, "You need to be able to trust the person before letting them find where you live."

When asked how partnerships would be established, the women wanted to see written biographies and stories by potential peers. One 57-year-old woman living beyond a colorectal cancer diagnosis described the importance of uploading a photo as follows: "to give a face to a name and story before meeting them in a park." The women also said they would like the platform to generate possible peers based on all the matching criteria. A 38-year-old woman living beyond a breast cancer diagnosis stated, "It would be great to have some computer program use our data to match us based on what we want in a partner." Follow-up discussions also highlighted autonomy for choosing peers by searching through the submitted profiles. A 54-year-old woman living beyond a colorectal cancer diagnosis stated the following: "I would like to see what people write and more about them before something magical happens in the program and out pops my match . . . like I would want to have some say in who my exercise partner is."

Across the focus group discussions, there was a lot of laughter and humor about likening this system to online dating websites. One 66-year-old woman living beyond a gynecologic cancer diagnosis stated, "It's like eharmony [online dating website] for exercise, not a relationship." A 74-year-old woman living beyond a breast cancer diagnosis described it as "the Lavalife [online dating website] of physical activity." A 64-year-old woman living beyond a breast cancer diagnosis said, "an exercise matchmaking website . . . maybe as much fun as a dating app." Juxtaposed with the humor, many women discussed the importance of finding physical activity peers and reconfirmed the value that this would bring to improving their physical activity levels. A 54-year-old woman living beyond a colorectal cancer diagnosis said the following: "Kidding aside, this type of program or app, or whatever it is, that would help women find a person to exercise with and who has had cancer is going to make a big difference to many women."

Finally, some participants expressed the need to meet in person as a larger group. A 66-year-old woman living beyond a gynecologic cancer diagnosis stated the following:

> It would be ideal if women could all meet together once a month, maybe even the hospital would give space? Then we could all discuss how exercise is going, possibly have an exercise coach discuss other exercises that could be implemented . . . maybe there could be an exercise coach who could donate some time once a month?

Some women said that they would not need check-ins or reminders. A 57-year-old woman living beyond a colorectal cancer diagnosis described the following: "I do not need any phone calls or reminders, I just need a partner in crime." This same participant went on to say that she would most favor a free platform for finding a physical activity peer.

Many women mentioned a desire for small groups of three to five women rather than the restriction of dyads. A 38-year-old woman living beyond a breast cancer diagnosis said, "I would like to be able to create matches with more than one person. So, even if one of us is sick or away, we would still have at least one other person to keep us accountable." The potential for matching with more than one other woman should be possible for physical activity peer matching. Some women also discussed the importance of being able to dissolve a partnership or remove themselves from a matched partnership if they were not mutually supportive. A 59-year-old woman living beyond a pancreatic cancer diagnosis stated the following: "Would we be able to get out of a partnership? I mean, what if I don't like my partner and want to be free to match with another woman? This should be possible." No specific ways of dissolving a partnership were provided other than talking to the peer or removing them as a match on any online profile.

Discussion

Physical activity participation in dyads has significant benefits for quality of life and mental health among women living beyond cancer diagnoses (Campbell et al., 2019; DeMello et al., 2018; Pinto, Stein, & Dunsiger, 2015; Stein et al., 2015). However, the optimal peer matching characteristics for physical activity promotion are not generally well understood. In this study, women's perceptions of characteristics that may guide effective partnerships in the context of physical activity were explored. The peer matching criteria identified in the focus groups, including age; life stage; proximity of a peer to home or work; personality; physical activity preferences for type, intensity, and previous history; cancer type; and treatment severity, are important characteristics that could inform small group or dyadic physical activity programs for women living beyond cancer diagnoses. The methods of identifying and securing a partner (e.g., online or app, written biography, posted photo, potential for more than one other person in a group, cyber safety, possibilities for passively or actively choosing a partner) may also inform distance-based or autonomous programs targeting physical activity promotion.

Some of the characteristics identified in this study for optimal peer matches for physical activity promotion have been used in formal peer mentoring and coaching programs. Women living beyond breast cancer have been trained to coach other women in physical activity promotion (DeMello et al., 2018; Pinto, Dunsiger, & Stein, 2015; Pinto et al., 2005, 2017; Pinto, Stein, & Dunsiger, 2015). Women living beyond cancer diagnoses have been matched with coaches based on scheduling availability and similarity of treatments. All coaches were highly physically active, and no other physical activity matching considerations were reported. Similarly, Ungar et al. (2016) matched inactive individuals living beyond cancer diagnoses for physical activity support using type of cancer and geographic location. Individuals who connected with their role models (i.e., peers) were more likely to adhere to physical activity guidelines. Given the evidence, peer mentor matches based on type of cancer, type of treatment, geographic location, and level of physical activity may be important factors to consider when partnering women for physical activity promotion. In this study, additional considerations were age and life stage, personality, and preferences for physical activity type and intensity. Programs offering support for physical activity may involve nurses and oncology health professionals endorsing physical activity practices and recommending that women match with other women who are interested in behavior change. This model for joint dyadic behavior change may require both women to be actively involved in increasing physical activity together (Scholz et al., 2020). Training women to be coaches or role models to other women may also be effective for the coach or mentor as well as the mentee (Pinto et al., 2017), but because of negative perceptions of professionalism, this may not be the preferred model for dyadic behavior change for all women (Martin Ginis et al., 2013). Advocacy efforts suggest that dyadic models of physical activity

promotion are needed to meet the needs of healthcare teams and individuals living beyond cancer (Rini et al., 2018; Scholz et al., 2020). Future research strategies must build on the limited but promising evidence using peer-based physical activity interventions to determine the outcomes of different methods of peer matching and peer mentoring.

Preferences for physical activity peers and the effectiveness of partnerships at changing physical activity may also relate to the extent to which women are dedicated to shared goals (Carr et al., 2019). Fitzsimons et al. (2016) identified a number of ways that goals can be shared, including goals for which partnered women share the same goal as a dyad (shared system-oriented goals; e.g., both women living beyond cancer diagnoses want to engage in 150 minutes or more of moderate to vigorous physical activity per week), goals where both women have the same goal for one of them (shared target-oriented goal; e.g., both women living beyond cancer diagnoses want to help the least active woman engage in more minutes of moderate to vigorous physical activity per week), and goals where both women have the same goal as individuals (parallel self-oriented goals; e.g., both women living beyond cancer diagnoses want to engage in more minutes of moderate to vigorous physical activity per week). In their meta-analysis, Carr et al. (2019) found that shared target-oriented goals were the most effective goals for physical activity, whereas the other types of goals were less effective for physical activity. In this study, the importance of shared system-oriented and target-oriented goals was evident within the focus groups, as well as the potential for parallel self-oriented goals. Developing a way for women to identify peers for physical activity may inherently endorse shared goals that lead to different physical activity behavior change outcomes. As such, it is important for future interventions to identify and examine the types of goals that women have for physical activity following a cancer diagnosis and to explore the effects on perceptions of social support and physical activity.

Participants in this study were younger on average ($\bar{X}$ = 54 years) compared to 62 years as the median age of women at cancer diagnosis (American Cancer Society, 2021; Canadian Cancer Society, 2021). Knowing that younger and middle-aged adults have increased comfort with technology compared to older adults, and that younger individuals living beyond cancer diagnoses prefer interventions using technology to facilitate physical activity (Roberts et al., 2019; Smith-Turchyn et al., 2016, 2020), the age of this sample may have been one factor behind the unanimous desire for a matching program to be online or within an app. The data from this study were collected before the COVID-19 pandemic, and it is likely that familiarity and use of online and virtual technology have increased among individuals of all ages. Previous studies examining online or distance-based physical activity interventions for individuals living beyond cancer have proven feasible, effective, and acceptable (Faro et al., 2021; Frensham et al., 2018, 2020). However, none of these interventions involved matching women living beyond cancer diagnoses to independently facilitate physical activity. Future research studies are needed to explore how physical activity peers are identified using online or how distance-based platforms can facilitate physical activity behavior change. Increased perceptions of social support are likely outcomes of these types of dyadic physical activity promotion opportunities (McDonough et al., 2019).

A strength of this study was the qualitative descriptive approach to understanding the peer characteristics desired to match women for physical activity promotion. This study identified important characteristics that may be targets for supportive interventions conducive to physical activity behavior change. Many of the characteristics that women living beyond cancer diagnoses identified in this study may be important for peer mentoring strategies across a wide range of health service areas that can be tested in future research and implementation approaches.

Limitations

This study used a convenience sample of women living within a specific region in Ontario, Canada, which may limit the transferability of these findings. Participants volunteered to take part in this study and may represent a sample of women who are interested in physical activity with other people, which may introduce bias. The focus groups were planned for four to six participants each, but some women did not attend, so the number of women in each discussion group may have tempered the depth of data collection. Nonetheless, participant- and focus group–level analyses were conducted, and there were no between-group differences in the content of the codes (Hennink et al., 2017). On this note, using focus groups may have precluded personal disclosure of opinions and experiences that could have been obtained in individual discussions. Finally, although data saturation strategies were upheld, there is continued debate on whether saturation is possible, and it may have been prematurely claimed. However, substantial evidence of saturation within inductive analyses suggests that

no new information is acquired after four to six focus groups (Guest et al., 2017; Hennink et al., 2019).

Implications for Nursing

Nurses and other oncology health professionals are central in women's supportive care following a cancer diagnosis and are also trusted knowledge brokers for health promotion, including for physical activity (Adams et al., 2021; Mina et al., 2018). The findings from this study highlight important considerations for enhancing potentially autonomous opportunities for physical activity promotion. The care team can encourage women to match with each other based on the characteristics identified in this study (e.g., personal, physical activity, cancer diagnosis, cancer treatment) using an online or app-based platform (Roberts et al., 2019) to enhance cost-effective and low-resource physical activity opportunities. Matching women with ideal characteristics to engage in autonomous physical activity may help oncology clinicians endorse physical activity initiatives while overcoming many of the barriers they face in providing access and supporting uptake to physical activity programming (Adams et al., 2021; Fong et al., 2018; Kennedy et al., 2021; Mina et al., 2018; Roberts et al., 2019).

Peer mentoring and dyadic behavior change programs are underdeveloped, but they provide opportunities to support physical activity promotion (Pinto, Stein, & Dunsiger, 2015; Rini et al., 2018; Scholz et al., 2020). In an attempt to offer accessible outcomes of this study, the findings have informed an online physical activity matching program called ActiveMatch (n.d.). ActiveMatch is a free-to-use, no-advertising online service helping women who are living beyond cancer diagnoses to find optimal physical activity peers. ActiveMatch has also informed 2Unstoppable (2Unstoppable, n.d.) in the United States, which is another free-to-use, no-advertising platform to help women find physical activity partners. Health professionals can recommend programs like ActiveMatch and 2Unstoppable to patients to show initial support for physical activity while providing autonomy to help women living beyond cancer diagnoses find peers for physical activity promotion.

Conclusion

This study highlighted the importance of personal, physical activity, and cancer characteristics when matching women living beyond cancer diagnoses for physical activity. In addition, the study findings showed that women prefer online or app-based platforms and the ability to create multiple partnerships for physical activity. Findings from this study can be used to facilitate partner matches in physical activity interventions and health service programs for women living beyond cancer diagnoses to overcome barriers such as accessibility of services and social support.

KNOWLEDGE TRANSLATION

- Optimal characteristics for peer matching and support can be identified to promote physical activity in cancer survivors.
- Similarities in age, life phase, location, history of physical activity, type of cancer, severity of cancer, and personality are integral to physical activity peer matching.
- Tailored physical activity interventions can be developed by including women who are living beyond a cancer diagnosis in the development process.

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