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**“We’re all in the same boat together”: Exploring Quality Participation Strategies in
Dragon Boat Teams for Breast Cancer Survivors**

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Abstract

Dragon boat offers an opportunity to increase physical activity (quantity participation) in breast cancer survivors; however, quality participation experiences have yet to be explored. Quality participation is one's subjective perceptions and experiences. While there is evidence to suggest dragon boat may offer a quality experience, further exploration is needed. *Purpose:* Guided by a conceptual framework to promote a positive, quality experience in parasport context, the purpose was: (a) to explore strategies that are used to foster elements of quality participation in dragon boat teams for breast cancer survivors and (b) to understand the context in which these strategies are implemented within these teams (i.e., quality participation conditions). *Materials and methods:* After completing a guiding questionnaire, current and previous leaders on dragon boat teams completed a structured, follow-up telephone interview. Transcripts were thematically analyzed inductively and deductively mapped onto a framework. *Results:* Leaders fostered quality participation through elements of challenge and mastery and conditions of the social and physical environments. Facilitating strategies included creating friendly competition, using social media to celebrate success, creating mentorship opportunities and being outside, respectively. *Conclusions:* Future research is encouraged to explore identified strategies for consistency to gain a clearer understanding of quality experiences within dragon boat.

Keywords: quality experience, participation, optimal experience, dragon boat, breast cancer, survivor

Introduction

Following diagnosis and treatment for breast cancer, many breast cancer survivors, defined from the time post-diagnosis to end of life [1] live with debilitating physical and psychological effects including decreased physical functioning, range of motion, and increased depression and anxiety [2,3]. Physical activity (PA; i.e., exercise and sport) is one method to cope with these effects. PA is associated with improved physical [4–6] and psychological health and greater social support [6,7] in breast cancer survivors. Despite associated health benefits, many breast cancer survivors are not engaging in PA. This is unfortunate given that the opportunity to fully participate in PA can be beneficial for rehabilitation and adjustment to life following diagnosis and treatment for breast cancer.

Participation in PA can be conceptualized with two distinct dimensions: quantity, the amount of time spent doing an activity [8], and quality, one's subjective perceptions and experiences [9]. Currently, efforts are focused on promoting PA so that breast cancer survivors engage in more PA (i.e., *quantity*); however, few efforts aim to promote *quality* experiences likely because such experiences are not well understood. A recent configurative review identified six elements of quality participation [10] including: *autonomy* (having independent choice, and control) *belongingness* (experiencing a sense of belonging to a group; acceptance/respect from others; included at interpersonal or societal levels), *challenge* (feeling appropriately challenged), *engagement* (engaged in the activity; motivated; focused, involved; experiencing flow), *mastery* (experiencing achievement/competence/sense of accomplishment; self-efficacy) and *meaning* (contributing toward obtaining a personal or socially meaningful goal; feeling a sense of responsibility to others). Since the review, research in exercise settings for persons with physical disabilities has identified *validation* (feeling important, valued, supported, and worthy of

67 experiencing a high level of service in the PA program) as a potential seventh element that may
68 foster quality experiences [11]. Validation may also be relevant for breast cancer survivors as
69 previous qualitative explorations in the context of PA and breast cancer survivorship have noted
70 that participants derive value and support from being surrounded by others who have a shared
71 experience of cancer [12,13].

72 Further to the identification of factors important to quality participation, Evans and
73 colleagues (2018) have proposed a hierarchical framework for parasport. The precursors that
74 have been identified in parasport as necessary for a quality experience include the *physical*
75 *environment* (the physical and structural components of the sport setting and its surrounding
76 community), *within the activity* (the nature of the sport activity itself; ‘activities’ are shaped by
77 the given sport and its rules, competitive level, as well as coaches or others responsible for
78 designing the sport environment) and the *social environment* (the personal relationships formed
79 with peers, coaches, and family along with others in parasport and the surrounding societal
80 attitudes toward sport). Thus, offering a guide for those in a leadership role (e.g., coaches,
81 program providers and other leaders) to facilitate quality experiences in their athletes. The
82 hierarchical framework developed by Evans and colleagues [14] has yet to be applied in a sport
83 context for populations outside of persons with disability and parasport, as a result, it is unknown
84 if the constructs will hold in another sport context.

85 Within the context of parasport and PA for persons with disability, those in leadership
86 roles facilitate subjective perceptions of autonomy and mastery. Specifically, athletes perceive
87 increased disability-related knowledge (i.e., mastery) when coaches work collaboratively with
88 them [15]. Similarly, through specific instruction and coaching, leaders can facilitate feelings
89 autonomy and competence (i.e., mastery) in athletes [15]. In contrast, breast cancer survivors

discussed preferences for receiving social support and networking (i.e., belongingness) and personal fulfillment (i.e., meaning) following a group-based PA program [16]. Currently, there is a dearth of literature examining the role of leaders in the context of PA for breast cancer survivors. Understanding their roles may offer insight on how to promote a quality PA experience and result in prolonged PA engagement.

One sport that has become popular among breast cancer survivors is dragon boat. A dragon boat is a long, canoe-like boat with 20 paddlers, a drummer at the head and a steersperson at the tail of the boat. Dragon boat is suitable for breast cancer survivors as it is a repetitive activity with a low risk for injury and can be easily adapted for different abilities [17]. Dragon boat for breast cancer survivors may be an appropriate context to examine both elements and conditions of quality participation. Breast cancer survivors on dragon boat teams have discussed perceptions of social support and camaraderie, skill development and self-efficacy as salient outcomes of the sport in previous qualitative examinations [13,18,19]. The reported experiences are similar to belongingness and mastery elements described by Evans and colleagues (2018); however, it is unknown if these elements are salient to quality participation experiences in breast cancer survivors. Additionally, similar to parasport contexts, dragon boat is a sport where participation experiences can be transformed to meet the needs of breast cancer survivors. In particular, intensity of paddling can be adjusted for an individual's physical capabilities and positive psychosocial outcomes have been reported from dragon boat [18].

Dragon boat is also unique since women in leadership roles including coaches, team leaders and administrators, often have experience with cancer (i.e., as a survivor or working directly with survivors) and dragon boat (i.e., as a former or current athlete) and, thus, offer unique perspectives as both dragon boat leaders and participants. Currently, little is known about

how leaders may foster quality participation experiences in breast cancer survivors on dragon boat teams. Identifying the strategies that can be used to create positive subjective experiences in dragon boat teams would guide leaders to delivering full participatory experiences, ultimately enhancing PA maintenance, and thus health benefits, among breast cancer survivors. Accordingly, the purposes of this study were (a) to explore strategies that are used to foster elements of quality participation in dragon boat teams for breast cancer survivors and (b) to understand the context in which these strategies are implemented within these teams (i.e., quality participation conditions).

Methods and Methodology

The current investigation used a sequential mixed-methods study design with an online questionnaire followed by a structured interview.

Philosophical orientation

To understand the leaders' experience within different dragon boat teams, a constructivist paradigm with a relativist ontology and subjectivist epistemology was adopted [20,21]. From this, multiple realities must be acknowledged as the interactions between different leaders and interviewer (HS) are socially constructed. Further, the knowledge constructed is relative to each leaders' personal experiences. It is also recognized that the interviewer, coder (AF) and participants cannot be separated from their previous knowledge on exercise, sport and breast cancer. As a result, interpretations of data are considered partial as they are subjective to the different contexts they were collected and analyzed.

As the work is operating under a constructivist paradigm, the experiences and expertise of the researchers need to be acknowledged. AF holds a PhD in exercise science and is a professor in population science at a cancer center with 9 years of research experience in PA and

breast cancer survivorship. At the time of data collection, HS was an upper year undergraduate research student with experience in PA promotion for persons with disability and breast cancer survivors. KK is a graduate student with research experience in developing community-based PA programs for breast cancer survivors. CS is a professor in exercise and health psychology with over 15 years of experience in PA and cancer. JT is a professor in PA promotion and knowledge translation for persons with physical disabilities and cancer.

Participants and procedures

Following ethical approval from the host institution, 25 dragon boat teams from the host institution province were identified using Google Advanced Search with the following keywords: *breast cancer*, *dragon boating*, and *province of the host institution*. An additional grey literature search and targeted website search of the provincial cancer care agency and the Canadian Cancer Society was conducted to ensure a comprehensive search. Dragon boat teams were eligible if they were: (a) a dedicated dragon boat-only team, (b) offered to breast cancer survivors primarily, (c) operated in the province of the host institution and (d) had at least one person in a leadership role, either current or from a previous season, who could read and converse in English. Teams were recruited by emailing the team captain or executive member (i.e., individual in a leadership role) as listed on their website. The email contained a link to the study which included the consent form and a questionnaire. Teams that did not respond were sent two reminder emails spaced one week apart before ceasing communications. From the 25 identified teams, $N = 7$ teams agreed to participating in the current study. Reasons for not participating included: did not respond despite multiple attempts ($n = 14$), no longer an active team ($n = 2$), could not be reached ($n = 1$) and did not wish to participate ($n = 1$). Interested teams were asked to nominate one or two participants to complete the study who were either a

leader (e.g., coach, team captain, executive team member) or a leader from a previous season (i.e., they are now current athletes). Allowing leaders from a previous season to participate offered teams flexibility as current leaders may be busy preparing for the upcoming season. Leaders from a previous season were asked to answer questions as an athlete, which allowed for additional perspectives of strategies used to foster quality experiences to be examined. Informed consent was obtained from all nominated participants prior to study commencement. Participants completed an online questionnaire prior to scheduling a 45- to 60-minute follow-up structured interview over the phone. Phone interviews were conducted by a trained undergraduate student (HS). Training included two mock interviews with two co-authors with experience interviewing leaders and breast cancer survivors (KK and JT). Seven participant interviews were conducted from January to March 2018. Participants were compensated for their time with a \$10 for completing the questionnaire and a \$25 gift card for completing the interview.

Measures

Questionnaire. A questionnaire was developed for the purposes of the study with items that collected information about strategies that leaders may use to foster quality participation. A list of 66 strategies that could be used to foster quality participation in community-based exercise programs for persons with physical disabilities [11] was modified for the dragon boat for breast cancer survivors context. Strategies and examples were adjusted to ensure applicability of these strategies to breast cancer survivors on dragon boat teams; for example, a strategy definition was, *invite participants to give their input on the development of their exercise routine* with an original example of, *when creating a program, ask the participants questions about their preferences, such as which machines they like and which they do not*. The strategy was modified to, *invite participants to give their input on the development of their program session* with a

modified example of, *when creating a practice schedule, ask participants about their preferences, such as which drills they like or skills they want to practice*. Participants were asked to indicate whether they use each of the 66 strategies in the delivery of their dragon boat program (e.g., *yes or no or not applicable*). Data were used solely for the purposes to inform follow-up structured interviews. As such, the results section will focus on qualitative findings, only. Refer to Supplemental File 1 for questionnaire.

Interview guide. A structured interview guide was developed from previous research using the quality parasport participation framework [14] and associated strategies [11], as well as a casebook examining PA programs for breast cancer survivors [22]. Questions were developed for each quality participation element to elicit how strategies were implemented and to understand the team's experiences in using different strategies (e.g., *We are looking to expand the quality participation framework to other populations. How do you think quality participation might differ between your program and traditional exercise programs for breast cancer survivors?*). The questionnaire responses (i.e., frequency of strategy use) were used to tailor the order in which elements were discussed for each responding team. For example, the elements targeted by the most commonly-reported strategies were discussed first (e.g., *In the survey, I noticed that a lot of your practices target belongingness, which is defined as feeling a sense of belonging or acceptance into a group. Why do you think that might be?*), followed by elements targeting strategies that were not used at all, followed by elements targeting strategies that were less frequently used. Additionally, questionnaire responses led to development of specific questions were asked about barriers and facilitators for team participation (e.g., *In the survey, it was listed that recruitment is a factor that makes it difficult for members to participate in your program. Please tell me more about this barrier. Please describe any other general facilitators*

or things you think support participants' regular participation in your program.). Similarly, prompts were tailored based on each team's questionnaire responses. The interview guide was pre-tested with two co-authors (HS and KK) who have experience in research on PA promotion for clinical populations (e.g., breast cancer survivors and persons with physical disabilities). Refer to Supplemental File 2 for interview guide.

Data analyses

Interviews were audio recorded and transcribed verbatim. Transcripts were checked against recordings for accuracy. Pseudonyms were used to ensure participant anonymity. Transcripts were analyzed inductively using thematic analysis [23–25]. Transcripts were read multiple times for data familiarity. Quotations served as units of analysis. Initial code generation used an inductive approach to identify, code and organize themes. Themes were then deductively coded and mapped onto the quality parasport participation framework [14] and validation element [11]. Themes that did not deductively map onto the framework were kept as additional strategies. Revision of themes through collapsing, separating or deleting was conducted through two critical friend sessions between two researchers (AF and JT [26]). Critical friend sessions allow for a trusted individual to ask questions, and offer critiques and interpretations of the data through a different lens [26]. For example, one theme labelled *intrinsic motivation* was thought be separate from the framework. However, upon discussion, it was determined that the theme was not distinct enough from *challenge* element and was revised. Strategies to foster quality participation in the dragon boat setting were operationalized from the interview data rather than the initial strategy list on the online questionnaire (see Supplemental File 1). Data analyses were conducted without the use of qualitative analysis software.

To ensure methodological rigor and study quality, in addition to critical friend sessions, Braun and Clarke's 15-point checklist for conducting thematic analysis [23], a recent review on methodological rigor [27] and universal criteria for high quality qualitative research [28] were used. Specifically, Smith and McGannon [27] encourage researchers to apply different quality techniques and criteria while remaining flexible as to not be bound by said techniques and criteria. For example, as guided by Braun and Clarke's checklist [23], to ensure rigor during coding, each quotation was given equal attention in the coding process and themes were developed from robust, supportive quotations as opposed to a few unconvincing examples. Next, universal criteria for high quality research from Tracy and Hinrichs [28] were applied and guided by Smith and McGannon's critiques when operating under a relativist approach [27]. To ensure rich rigor (i.e., "complexity of abundant descriptions and rich explanations" [28]), reporting quotations to support themes from varied perspectives (i.e., from both leaders and athletes) allowed for generation of richness and complexity [27]. Finally, to address credibility (i.e., accuracy of study's findings [28]), thick description with sufficient detail to *show* the reader meaning behind themes, rather than *telling* the reader what to think [27].

Results

Descriptive results

Eleven participants from seven dragon boat teams participated in the study. Participants were primarily female (10/11 = 91% female) and held a role of coach ($n = 4$), team captain ($n = 1$), drummer ($n = 1$) and former leaders who were current athletes ($n = 5$). Participants were also active paddlers on the team with exception of one participant. As is common for the sport, most of the participants ($n = 9$) were breast cancer survivors, while one participant was a male steersperson and coach who did not have a cancer diagnosis; however, he worked primarily with

breast cancer and physical and cognitive disability teams and one participant had a role in health care working with breast cancer survivors. Many participants were leaders from a previous season ($n = 5$), while the remainder ($n = 4$) were leaders in the current season. The seven interviews were 41.4 to 83.1 ($M = 54.3$, $SD = 16.1$ minutes in length and involved one or two leaders.

Qualitative results

Based on thematic analysis, participants identified 15 strategies that can be used to foster seven quality participation elements (contributor to a quality experience) and 11 strategies for the three conditions (precursor for a quality experience) for quality participation. Definitions (as originally conceptualized [11,14]) and modified strategies for quality participation elements and conditions with representative quotes are presented in table 1. Overviews are findings are presented below.

Strategies that foster quality participation elements.

Autonomy. Autonomy was perceived when an individual athlete had a choice in terms of how often they participated in team-related activities, such as pool practice, in-boat practice, and dryland training sessions. Leaders facilitated autonomy by allowing athletes to voice their opinions in formal settings (i.e., team meetings) and informal settings (i.e., having an unplanned discussion with an executive member). Additionally, leaders allowed athletes to contribute to the team if they were unable to attend practice or participate fully due to work and/or treatment schedules, "...there's a new woman, she [can only] practice on Wednesday nights. But she knows that when it comes to [our big competition] she won't paddle all races with us [because she hasn't attended all practices] and she's fine with that" (Dakota, team captain). Contributions included maintenance of dragon boats and cheering for the team during regattas and thus, offers

another opportunity for athletes of all abilities to contribute. Allowing athletes to choose how they participate within the team structure gives athletes an additional opportunity to contribute without actively paddling and may lead to a quality experience.

Belongingness. The first strategy to foster belongingness included providing opportunities for social support among the team related to breast cancer and being an athlete. The dragon boat team was described as a, “floating support group. In that sense we're all in the boat together, literally and figuratively, and so there's that support and the PA itself is really a great relief from any kind of you know tension or stress” (Darlene, athlete). A second strategy to foster belongingness included providing opportunities to be social as a team outside of sport-related activities. Some examples included organizing potlucks or dinners at restaurants, scavenger hunts and weekend excursions to try new activities such as fly fishing. One leader reported having a social committee comprised of athletes to organize social events, “so the social committee organizes events and we tell them the things we want to do as well” (Darlene, athlete). Using these strategies allowed for opportunities to build connections between athletes and foster a quality experience.

Challenge. Some coaches created individualized training programs to suit the varying needs of the athletes, which allowed breast cancer survivors of all abilities to participate. To further push the team out of their comfort zone, coaches and leaders created friendly competition between athletes on a voluntary basis. As Deidra, coach, explains “[Meeting before practice to do plyometrics together] is also was a fun way of having some internal competition.” Another strategy was to sign the team up for races against both breast cancer and non-breast cancer survivor teams. For example, Deidra, coach, states, “The ability for every athlete to be able to be included in an activity of some kind regardless of any of their strengths or weaknesses.” While

the interviewed leaders and athletes may not win the races, they are open to facing the challenge of competing against teams that are perceived to be “fitter” than themselves. Next, some of the participants interviewed incorporated the latest evidence-based training techniques (e.g., paddling techniques and dryland training) by hiring dragon boat coaches with national-level accreditations. Finally, teams were given space to discuss personal motivations to start and remain in the sport; as Danna, drummer, explains, “It’s not a competition between who is sitting beside you or in front of you, it’s a competition against yourself.” Combined, these strategies allowed athletes to push themselves out of their comfort zones without feeling frustrated as exemplified by friendly, internal competitions, including all athletes, evidence-based training and space to discuss personal motivation for the sport.

Engagement. Dragon boat teams encouraged athletes to participate in PA outside of sport, including other training opportunities and yoga, to enhance performance on the team. For example, Dahlia, coach, described how her team implements this strategy by giving athletes additional and optional training opportunities, “We would have, so for example on [date] we’re doing a three-hour indoor training session with the athletes and this is in addition to the normal Monday and Wednesday.” The strategy allows leaders to foster athletes’ perceptions that there is more to their involvement within the team beyond the sport itself and perceptions of continued involvement in the sport.

Mastery. Strategies included using social media to facilitate sharing athletes’ individual successes. For example, Dahlia, coach, created a Facebook group for the team to share accomplishments and allow the team to “celebrate human successes.” Another strategy was to use verbal persuasion to increase an athlete’s confidence in their ability to perform the activity. Teams accomplished this using positive reinforcement to motivate the athletes. Danica, athlete,

noted that this type of encouragement was welcomed as it was a juxtaposition to “your treatments [since] you've been beaten down and [it's] just another little positive reinforcement.” Finally, teams also used peer demonstration of proper technique as another strategy to aid experiences of mastery. Denise, athlete, described how the team would be divided up into two boats so they could watch and learn from one another. Together, these strategies allow athletes to be encouraged and determine which skills need improvement.

Meaning. Leaders encouraged survivors on the team to see themselves as athletes. Being perceived as an athlete is particularly meaningful as breast cancer survivors experience many physical changes from cancer and its related treatments (e.g., lymphedema) and may not feel like an athlete, as described by Dakota, team captain, “...but I mean you look, you put our group together and people wouldn't say, ‘that's a team of athletes,’ just [by] looking at us.” Similarly, the sport itself is seen as personally meaningful as it is an opportunity to cope with physical effects of a breast cancer treatment. Leaders discussed the sport as a chance for them to be active and gain associated health benefits. Collectively, the strategies allow athletes to find meaning in their sport participation as it pertains to cancer.

Validation. Leaders fostered validation by providing opportunities for constructive or positive feedback and reflection about the team as a whole. Diane, athlete, explained how the coach would ask the team about how practice was perceived:

“The odd time the coach will say at the end of our practice as we're coming into the docks you know how did you feel about tonight. You know [team name], ‘how did you find the pace of tonight's program...’ I'm not saying that goes on after every practice. And that gives us time to think about the practice.”

The strategy exemplifies how time for reflection is an opportunity for the team to think about their own experiences. Further, these opportunities are a chance for athletes to have their opinions be heard and perceive value and worth of their roles on the team.

345 *Strategies that foster quality participation conditions.*

346 ***Physical environment.*** Strategies used by leaders to facilitate the physical environment
347 included travel and access to both practice and regattas, and access to equipment. Teams
348 accommodated these two components through developing an executive committee that
349 coordinated travel to and accommodations for regattas for the entire team, which allowed the
350 experience to be less stressful for athletes as Daniel, coach, explains, “We coordinate all the
351 travel all the accommodations we share everything to make it stress-free and more accessible.” A
352 barrier to practice is geography as practices take place on larger bodies of water that may be
353 difficult to access by public transportation so, many teams will carpool to address this barrier.
354 Additionally, equipment such as paddles and lifejackets were supplied at all practices and
355 regattas, which diminished barriers to participation. An additional strategy outside of the original
356 Evans and colleagues’ [14] conceptualization of the physical environment was the sport provided
357 opportunities to be outside and enjoy nature. Teams enjoyed being outside in the fresh air and
358 part of nature. The three strategies created an environment that allowed athletes to experience
359 quality participation.

360 ***Within the activity.*** Most leaders ($n = 6$) offered an opportunity for athletes to offset
361 individual costs. Leaders chose to do this by hosting fundraisers and selling team merchandise,
362 allowing athletes to try the sport for three practices before committing to a season, and by
363 subsidizing fees for athletes in need. An additional strategy that was outside of Evans and
364 colleagues [14] framework included unique elements that connect the sport to breast cancer as
365 reported by all participants in the study. For example, the Carnation Ceremony, a common event
366 at dragon boat regattas, involves all breast cancer survivor dragon boat teams lined up on the
367 water. Each athlete then throws a carnation flower into the water. The flowers represent athletes

368 and teammates who have lost their battles to breast cancer or are unable to paddle with the team.

369 The Carnation Ceremony is an opportunity to reflect on the impact of breast cancer on the

370 community as Danica, athlete, describes:

371 “...it’s the boats we all line up together and we all have our carnations. And boy
372 this is a very emotional thing for all of us, that we honor those who are no longer
373 with us or even those who may be on our team and are unable to paddle with us, or
374 on the shore you know with their carnation yeah. Oh, that’s a hard thing to describe,
375 but you know it is part of our routine [as athletes on breast cancer dragon boat
376 teams]. It is part of being a breast cancer survivor [on a dragon boat]. And it is a
377 plus. You know it is, plus I find it more plus than negative for me anyway, yeah, as
378 a member.”

379
380 These strategies allow all athletes to participate and reflect on their experiences in the sport as it

381 relates to breast cancer.

382 ***Social environment.*** Coaches play a large role in the social environment, where most of
383 the strategies discussed during the interviews involved the coach. First, the coach continually
384 sought education and resources related to dragon boat within the context of breast cancer. One
385 leader described this as trying to actively stay up to date on recent paddling techniques to be able
386 to increase athletic performance. Similarly, coaches practiced an open attitude towards developing
387 paddling technique; for example, one team would do circuit training so the coach could offer
388 individual attention to each athlete, and so that athletes could ask questions and request feedback
389 from the coach. Another strategy involved the coach finding ways for athletes to perceive control
390 over training, practices and regattas. Coaches offered opportunities for perceived control by giving
391 the athletes choice through breaking up longer in-boat training periods into shorter intervals and
392 giving athletes an opportunity to skip an interval in order to rest. Another coach-lead strategy used
393 by the teams included actively encouraging individual athletes to take on and appreciate unique
394 roles where all roles contributions are recognized. One leader developed roles as, Dorie, coach,
395 explains a strategy where athletes who are not active paddlers could pay a fee to attend social

activities and cheer on the team at regattas. Developing different roles allows for all abilities to participate in dragon boat as Dahlia, coach, explains:

“We’re giving people responsibility, like we have one girl we asked to do the T-shirt this year, we have another one who’s our secretary. We try to provide a lot of opportunity for people to step up and take part and get more if that’s what they want. for that day.”

Lastly, the coach developed a supportive leadership style and fostered positive relationships with athletes that engender trust. To use this strategy, teams actively listen to athletes’ concerns and ideas without being dismissive, thus allowing all voices to be heard.

Within the dragon boat group environment, athletes on the team represent a cohesive group that feel unified as they pursue shared goals. The group environment is supported and fostered by coaches, other leaders and athletes. One leader developed a point system where athletes earn points for practice attendance and contributions to the team, where athletes with the most points will attend international regattas. This method was developed to ensure fair representation among athletes rather than based on physical capabilities. Moreover, there were opportunities for current and previous athletes to act as sport and cancer journey role models. In general, athletes have opportunities to seek mentorship from peers and coaches. Leaders offered either a formal or informal mentor, usually a seasoned athlete, to answer questions for newer athletes, and allowed other athletes to be seen as role models for both dragon boat and breast cancer survivorship. Combined, these strategies created a welcoming and supportive social environment for interviewed teams.

{Insert table 1 here}

Discussion

The current study aimed (a) to explore strategies that are used to foster elements of quality participation in dragon boat teams for breast cancer survivors and (b) to understand the

context in which these strategies are implemented within these teams (i.e., quality participation conditions). From the findings, leaders on dragon boat teams discussed strategies used to foster elements (i.e., autonomy, belongingness, challenge, engagement, mastery, meaning [10] as well as validation [11]) and conditions (i.e., physical environment, within the activity, and social environment; [14]) to promote quality participation experiences. Several strategies mapped onto those for fostering quality elements and conditions in a physical disability and parasport context, as outlined by Evans and colleagues [14] and Man and colleagues [11], respectively; however, definitions were revised to suit dragon boat for breast cancer survivors context. Additionally, some identified strategies were outside the original framework and conceptualizations [11,14], including dragon boat providing an opportunity to be outside and in nature (physical environment) and unique elements of the sport specifically related to breast cancer (within the activity). Through exploring experiences of leaders on dragon boat teams for breast cancer survivors, a nuanced understanding of the quality parasport participation framework [14] as it applies to this context has developed.

Key findings

Leaders in the current study experienced challenge as conceptualized by Evans and colleagues [14], where a majority (3 out of 5) of the strategies focused on coach behaviors. In a previous study, persons with disability engaged in adapted PA programming discussed confidence in knowledgeable instructors (akin to a coach) in order to achieve goals as a salient condition to foster quality participation in PA programs [15]. Moreover, leaders had an opportunity to discuss personal motivations for engaging and continuing in the sport. Intrinsic motivation is associated with PA in various contexts including persons with disability [29] and breast cancer survivorship [30]. Based on the current findings and previous literature it is

important to develop a sense of control and competence for support, which may foster quality experiences and lead to increased or maintained PA over time [15].

In the current study, leaders fostered mastery as originally conceptualized [14], specifically through sharing similar successes on social media, verbal persuasion and peer demonstration, which are aligned with Social Cognitive Theory [31,32]. Specifically, sharing successes on social media relates the tenets related to increasing self-efficacy (i.e., confidence) in one domain and allowing the self-efficacy to “spill over” to another domain in cancer survivors changing lifestyle behaviors [33]. Verbal persuasion and peer modelling map onto self-efficacy and observational learning [31,32]. Similarly, mastery has developed from different exercise contexts from breast cancer survivors enrolled in an exercise intervention [34] and breast cancer survivors who are meeting PA guidelines [35], where survivors noted importance of feeling competent when exercising leading to motivation to maintain PA. From the current study, mastery is important for developing sport-related skills and contributes quality experiences. Future research is encouraged to determine the roles of coaches within dragon boat and breast cancer survivor context as it pertains to challenge and mastery experiential elements.

Participants discussed strategies in the social environment that were aligned with strategies outlined in the quality participation framework [14]. Again, discussions focused on coach-specific behaviors and skills including those which foster development of sport-related skills, autonomy and developing roles within the team. It is important to consider how individual roles foster or impede quality experiences. Instructors whom address unique needs and abilities can foster conditions for mastery [36] by creating an autonomous-supportive environment for athletes [15]. In contrast, some conditions of the social environment (e.g., integration of familial support and educating family members [14]) did not develop into strategies. Further qualitative

investigations are needed to determine if there are other important strategies under the social environment condition within the dragon boat for breast cancer survivorship context.

Strategies that were discussed included accommodating access to sport-related activities and equipment. Similar to parasport, participants in the current study discussed concepts related to sport safety and access to facilities [14]. These strategies address commonly reported barriers for PA in breast cancer survivor samples [16,35,37]. An additional strategy that developed was value on being outside as part of the sport, which has also been reported by military veterans engaging parasport following an injury [38]. Additional research is needed within this context to determine if there are associations between being outside and any quality participation elements or conditions.

Overall, fewer strategies were created for autonomy, belongingness, meaning, engagement, validation and conditions within the activity compared to aforementioned elements and conditions. Developed strategies for these elements were aligned with the current body of literature examining experiences and outcomes of breast cancer survivors in various PA settings. For example, social support (akin to belongingness) is an important theme that developed in PA in active breast cancer survivors [35] and those engaged in a community-based cancer-specific PA program [16]. Being viewed as an athlete (i.e., meaning) was explored in a different breast cancer survivor dragon boat sample, where participants preferred a focus on athletic achievements over discussions on breast cancer [13,18]. Strategies developed related to conditions within the activity addressed cost-related barrier to PA for breast cancer survivors [35] and may be a potential template by which other dragon boat teams mitigate similar barriers. Future research is encouraged to interview more leaders and athlete to determine the relatively importance of the identified strategies.

Limitations

The investigation is not without its limitations. First, themes created from leaders' and athletes' experiences in dragon boat were mapped onto a framework [11,14] and developed from structured interviews. Deductive coding may have concealed any contradictions and continuities from individual experiences, which may have revealed additional, relevant strategies. Second, as the dragon boat community is close knit and small within the province of the host institution, specific details on participants' demographic information and history with the sport and cancer were not collected to ensure anonymity. However, it is acknowledged that these details may have offered additional insight on elements and conditions as it relates to cultural differences, as well as sport and cancer history. It is recognized that the accounts reflected in the current study are partial and situated. Participants are active within the sport and likely have a positive view of the sport. Future research is encouraged to interview dragon boat leaders who no longer participate in the sport in order to gain a deeper understanding of their experiences and their opinions on quality participation.

Implications

The quality participation framework [14] is a description of and process-based account of how conditions support quality experiences and may lead to quality participation. The current investigation contributes to the description of these experiences and conditions within the context of dragon boat for breast cancer survivors, which is a novel contribution and begins to extend the framework to different contexts. Additionally, the current study offers some support for the addition of validation as a core experiential element as proposed by Man and colleagues [11], as participants discussed the provision of opportunities for constructive or positive feedback and reflection about the team as a whole. Future research is encouraged to continue exploring

validation as a core experiential element in various PA contexts to determine if it is indeed distinct and unique from the other six elements of quality experiences.

Similarly, the current investigation integrated unique opinions and views from a combination of current and previous leaders, which sheds light on other contexts and a broader range of participants out of parasport for framework application [14]. In particular, strategies within elements and conditions developed that were context-specific including the opportunity to be outside and breast cancer specific elements within the sport (i.e., Carnation Ceremony). Future research is needed to identify salient strategies within this context through qualitative explorations and quantitative evaluations.

There are practical implications that can be gleaned from current findings. Based on discussions with athletes, coaches are encouraged to facilitate a supportive, yet challenging environment to offer a quality experience to athletes in dragon boat. Such an environment can be achieved through individualized training programs to athletes' specific needs, creating friendly competition between athletes and registering the team for races against non-breast cancer survivor teams. Further, the context is important for fostering a quality experience, specifically through enhancing the social environment by encouraging athletes to take on different roles and fostering positive relationships with athletes and opportunities for role modelling.

Conclusions

The qualitative investigation aimed to explore quality participation strategies in dragon boat programs for breast cancer survivors and the context with which experiences occurred. Strategies that developed from the discussions were mostly related with challenge, mastery, conditions in the social environment and the physical environment. One strategy under an element outside the original framework, validation, was developed. To facilitate quality

experiences for breast cancer survivor athletes on dragon boat teams, future research is encouraged to explore and test identified strategies for consistency to gain a clearer understanding of quality experiences within dragon boat.

Declaration of interest statement

No potential conflict of interest was reported by the authors.

Data availability statement

The data that support the findings of this study are available from the corresponding author, [JT], upon reasonable request.

References

- [1] Mullan F. Seasons of survival: reflections of a physician with cancer. *N. Engl. J. Med.* [Internet]. 1985 [cited 2015 Feb 17];313:270–273. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/4010738>.
- [2] Battaglini CL, Mills RC, Phillips BL, et al. Twenty-five years of research on the effects of exercise training in breast cancer survivors: A systematic review of the literature. *World J. Clin. Oncol.* [Internet]. 2014;5:177–190. Available from: <http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=4014791&tool=pmcentrez&rendertype=abstract>.
- [3] Hadd V, Sabiston CM, McDonough MH, et al. Sources of stress for breast cancer survivors involved in dragon boating: examining associations with treatment characteristics and self-esteem. *J. Womens. Health (Larchmt).* [Internet]. 2010 [cited 2014 Mar 30];19:1345–1353. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/20528480>.
- [4] Segal R, Zwaal C, Green E, et al. Exercise for People with Cancer: a systematic review. *Curr. Oncol.* 2017;24:e290–e315.
- [5] Schmitz KH, Courneya KS, Matthews C, et al. American College of Sports Medicine roundtable on exercise guidelines for cancer survivors. *Med. Sci. Sports Exerc.* [Internet]. 2010 [cited 2014 Sep 24];42:1409–1426. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/20559064>.
- [6] Brunet J, Sabiston CM, Meterissian S. Physical Activity and Breast Cancer Survivorship: Evidence-Based Recommendations. *Am. J. Lifestyle Med.* [Internet]. 2012 [cited 2015 Sep 14];6:224–240. Available from: <http://ajl.sagepub.com/content/early/2011/11/08/1559827611421460.abstract>.

- [7] Speck RM, Courneya KS, Mâsse LC, et al. An update of controlled physical activity trials in cancer survivors: A systematic review and meta-analysis. *J. Cancer Surviv.* 2010;4:87–100.
- [8] Dijkers MP. Issues in the conceptualization and measurement of participation: An overview. *Arch. Phys. Med. Rehabil.* [Internet]. 2010;91:S5. Available from: <http://dx.doi.org/10.1016/j.apmr.2009.10.036>.
- [9] Hammel J, Magasi S, Heinemann A, et al. What does participation mean? An insider perspective from people with disabilities. *Disabil. Rehabil.* 2008;30:1445–1460.
- [10] Martin Ginis KA, Evans MB, Mortenson W Ben, et al. Broadening the Conceptualization of Participation of Persons With Physical Disabilities: A Configurative Review and Recommendations. *Arch. Phys. Med. Rehabil.* [Internet]. 2017;98:395–402. Available from: <http://dx.doi.org/10.1016/j.apmr.2016.04.017>.
- [11] Man KE, Tomasone JR, Caron JG, et al. An exploration of the strategies used to foster quality participation in community-based physical activity programs for persons with physical disabilities. *J. Exerc. Movement, Sport (SCAPPS Ref. Abstr. Repos.* 2017. p. 182.
- [12] Burke SSM, Sabiston CMC. Fostering growth in the survivorship experience : Investigating breast cancer survivors ' lived experiences scaling Mt . Kilimanjaro from a posttraumatic growth perspective. *Qual. Rep.* [Internet]. 2012 [cited 2014 Dec 11];17:32–37. Available from: <http://eric.ed.gov/?id=EJ978731>.
- [13] McDonough MH, Patterson MC, Weisenbach BB, et al. The difference is more than floating: factors affecting breast cancer survivors' decisions to join and maintain participation in dragon boat teams and support groups. *Disabil. Rehabil.* [Internet].

- 2019;41:1788–1796. Available from: <https://doi.org/10.1080/09638288.2018.1449259>.
- [14] Evans MB, Shirazipour CH, Allan V, et al. Integrating insights from the parasport community to understand optimal Experiences: The Quality Parasport Participation Framework. *Psychol. Sport Exerc.* 2018;37:79–90.
- [15] Shirazipour CH, Evans MB, Leo J, et al. Program conditions that foster quality physical activity participation experiences for people with a physical disability: a systematic review. *Disabil. Rehabil.* [Internet]. 2018;1–9. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/30324815>.
- [16] Wurz A, St-Aubin A, Brunet J. Breast cancer survivors' barriers and motives for participating in a group-based physical activity program offered in the community. *Support. Care Cancer* [Internet]. 2015;23:2407–2416. Available from: <http://link.springer.com/10.1007/s00520-014-2596-2>.
- [17] McKenzie DC. Abreast in a boat--a race against breast cancer. *C. Can. Med. Assoc. J.* [Internet]. 1998;159:376–378. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/9732719>.
- [18] McDonough MH, Sabiston CM, Ullrich-French S. The development of social relationships, social support, and posttraumatic growth in a dragon boating team for breast cancer survivors. *J. Sport Exerc. Psychol.* [Internet]. 2011;33:627–648. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/21984639>.
- [19] Sabiston CM, McDonough MH, Crocker PRE. Psychosocial experiences of breast cancer survivors involved in a dragon boat program: exploring links to positive psychological growth. *J. Sport Exerc. Psychol.* [Internet]. 2007;29:419–438. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/17968046>.

- [20] Guba E, Lincoln Y. Competing paradigms in qualitative research. *Handb. Qual. Res.* [Internet]. 1994 [cited 2016 Nov 16];105:163–194. Available from: http://steinhardtapps.es.its.nyu.edu/create/courses/3311/reading/10-guba_lincoln_94.pdf.
- [21] Guba E, Lincoln Y. Fourth generation evaluation [Internet]. Sage; 1989 [cited 2016 Nov 16]. Available from: https://books.google.ca/books?hl=en&lr=&id=k_zxEUst46UC&oi=fnd&pg=PA7&dq=guba+and+lincoln+1989&ots=_Z9eqnbMBV&sig=m5i-fkiKYkdtqIntzlU-b08nZBw.
- [22] Kauffeldt KD, Sabiston CM, Tomasone JR. Barriers and Facilitators to Exercise Program Implementation for Breast Cancer Survivors.
- [23] Braun V, Clarke V. Using thematic analysis in psychology. *Qual. Res. Psychol.* [Internet]. 2006 [cited 2015 Jul 14]; Available from: <http://www.tandfonline.com/doi/abs/10.1191/1478088706qp063oa#.VaWGhxNViko>.
- [24] Braun V, Clarke V. Thematic Analysis. In: Cooper H, editor. *APA Handb. Res. Methods Psychol.* Vol 2 Res. Des. American Psychological Association; 2012. p. 57–71.
- [25] Braun V, Clarke V, Weate P, et al. Using thematic analysis in sport and exercise research. In: Smith B, Sparkes AC, editors. *Routledge Handb. Qual. Res. Sport Exerc.* [Internet]. Routledge; 2016. p. 191–205. Available from: <https://www.routledgehandbooks.com/doi/10.4324/9781315762012.ch15>.
- [26] Smith B, Sparkes AC. *Routledge Handbook of Qualitative Research in Sport and Exercise*. Smith B, Sparkes AC, editors. New York: Taylor & Francis; 2016.
- [27] Smith B, McGannon KR. Developing rigor in qualitative research: problems and opportunities within sport and exercise psychology. *Int. Rev. Sport Exerc. Psychol.* [Internet]. 2018 [cited 2019 Jul 5];11:101–121. Available from:

- <https://www.tandfonline.com/doi/full/10.1080/1750984X.2017.1317357>.
- [28] Tracy SJ, Hinrichs MM. Big Tent Criteria for Qualitative Quality. *Int. Encycl. Commun. Res. Methods* [Internet]. Hoboken, NJ, USA: John Wiley & Sons, Inc.; 2017 [cited 2020 Jan 3]. p. 1–10. Available from: <http://doi.wiley.com/10.1002/9781118901731.iecrm0016>.
- [29] Perreault S, Vallerand RJ. A test of self-determination theory with wheelchair basketball players with and without disability. *Adapt. Phys. Act. Q.* 2007;24:305–316.
- [30] Wilson PM, Blanchard CM, Nehl E, et al. Predicting physical activity and outcome expectations in cancer survivors: An application of self-determination theory. *Psychooncology*. [Internet]. 2006 [cited 2017 Aug 24];15:567–578. Available from: https://journals-scholarsportal-info.myaccess.library.utoronto.ca/pdf/10579249/v15i0007/567_ppaaoesaaost.xml.
- [31] Bandura A. *Social Foundations of Thought and Action: A Social Cognitive Theory*. Englewood Cliffs, NJ: Prentice-Hall; 1986.
- [32] Bandura A. Social cognitive theory: an agentic perspective. *Annu. Rev. Psychol.* [Internet]. 2001 [cited 2014 Jul 15];52:1–26. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/11148297>.
- [33] Amireault S, Fong AJ, Sabiston CM. Promoting Healthy Eating and Physical Activity Behaviors : A Systematic Review of Multiple Health Behavior Change Interventions Among Cancer Survivors. 2016;XX:1–16.
- [34] Hefferon K, Grealy M, Mutrie N. The perceived influence of an exercise class intervention on the process and outcomes of post-traumatic growth. *Ment. Health Phys. Act.* [Internet]. 2008 [cited 2014 Jan 20];1:32–39. Available from: <http://linkinghub.elsevier.com/retrieve/pii/S1755296608000069>.

- [35] Brunet J, Taran S, Burke S, et al. A qualitative exploration of barriers and motivators to physical activity participation in women treated for breast cancer. *Disabil. Rehabil.* [Internet]. 2013;35:2038–2045. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/23772995>.
- [36] Côté J, Turnnidge J, Evans MB. The dynamic process of development through sport. *Kinesiol. Slov.* 2012;20:14–16.
- [37] Fong AJ, Faulkner GE, Jones JM, et al. Exploring Confidence in Overcoming Barriers for Physical Activity Among Breast Cancer Survivors.
- [38] Shirazipour CH, Evans MB, Caddick N, et al. Quality participation experiences in the physical activity domain: Perspectives of veterans with a physical disability. *Psychol. Sport Exerc.* [Internet]. 2017;29:40–50. Available from: <http://dx.doi.org/10.1016/j.psychsport.2016.11.007>.

Table 1

Modified Quality Participation Strategies from Interviews with N = 7 Dragon Boat Teams

Element or Condition (definitions)	Total Strategies (n)	Specific Strategies for Dragon Boat	Representative Quotes
<i>Element</i>			
<u>Autonomy</u> (Wherein participants perceive choice or control related to their sport involve, and obtain a sense of independence in relation to sport involvement)	1	Coaches, leaders and athletes create an environment where an individual athlete is perceived to have a choice in terms of how often they participate in sport-related activities (e.g., pool practice, in-boat practice, dryland training session and other team activities).	<p>[At the annual general meeting] in the fall and that's where you know everything is planned, we get to voice all our opinions and changes, that kind of thing. But if through the year, if there's any suggestions, anything that has come up, the executive [members] can call a little meeting and you know tackle or change or whatever or get ideas from or have something voted upon at that time. (Dorie, coach)</p> <p>However, there is a group of women they can't, they might be going through a re-occurrence. You know they have other things that have been going on in their lives that they can't participate in that way. But there are other ways that you can help the club. And you know getting the boat ready to go on water. Participation you know there are just so many other ways you can help the club and even coming out to support the team that is racing and come out for the evening or come out in the morning and be with your teammates. I think their participation is on a large much larger scale than just the physical part of it. (Danica, athlete)</p>
<u>Belongingness</u> (Wherein participants develop	2	Providing opportunities for social support among athletes related to breast cancer and being an athlete.	We do a lot of social change [social gatherings] to get together so that we're celebrating together, sharing our story. There's a lot of sharing that goes on, because even though we've all had breast cancer, we all have different types of breast cancer different, we went through different treatment regimens. [Denise] can tell you a great story about

relationships
and gain
group
memberships
that underpin
a sense of
connection
and
acceptance as
well as
contribution
to share tasks
or goals. This
may relate to
becoming a
member of
smaller
groups (e.g.,
teams) or to
broader
communities
(e.g., clubs or
leagues))

Challenge

(Wherein
participants
feel their sport
activities
require their
best effort and
may

5

There are opportunities to
be social as a team outside
of the sport including
practices and regattas.

Coaches create
individualized training
programs to suit the needs
of the athletes.

you know medications and learning something for another paddler that really helped her out, I'm sure that's happened multiple times. There's quality of what we try to make sure the quality in all of our interactions in the club whether they're physical dragon boating or whether they're just about every day living. (Danica, athlete)

I think that the other motivation is to bring awareness to the community and beyond that to show people that you know your life doesn't end when you have breast cancer and you can be really physically active. And you can learn the sport and get out there and do it and do it well (Darlene, athlete)

The social committee runs all of those things, and they organize, and they ask they ask team members like what kinds of things do you want you want you know short and sweet, you know do you prefer after a practice or you want you know during the week where it might be more convenient so you don't have to give up a weekend (Darlene, athlete)

... we all get together, we have a little meeting but then we socialize. We might bring a potluck or we'll go to a restaurant and just chat you know, just find out how everybody's doing after the winter that kind of thing. Now a lot of times our fundraisers are like a social as well. (Dorie, warm-up coach)

I think it's the fact that we [coaches] are willing to always take a look at several parameters. So, we take a look at a person's physical fitness and oftentimes with breast cancer survivors we're hearing about people who have never been active in their entire lives. So, this is the very first time that they're participating in a fitness program of some type. [...] They may have been a person who belonged to a gym and was out doing physical activity all the time. So, what we really try to do is get a really good idea on where are you coming to us from, what was your

appropriately
push them
beyond their
comfort zone-
while not
generating
frustration)

Coaches and leaders
create friendly
competition between
athletes on a voluntary
basis.

The team is registered for
races against both breast
cancer and non-breast
cancer survivor teams.

Coaches incorporate the
latest evidence-based
training techniques.

Athletes have an
opportunity to discuss the
driving force that
motivated them to start
and remain in dragon boat

background, what is your mindset and try to tailor the program for each
individual person. (Deidra, coach)

[...] And we made no announcement of winner [from the plyometrics
competition before practice] at the end or anything like that. The entire
group was congratulated for their participation in the in what we called
a fitness challenge. (Deidra, coach)

[At dragon boat regattas] there are teams that have gathered together
you know. I don't know if they call themselves professional teams but I
know they do travel around as well. And we paddle against these team
so some time we can be in a race with four boats and we are the only
breast cancer survivor team paddling against a boat full of firefighters.
[...] And then there could be you know a boatload of university
students or whatever. So, we really do hold our own during those races.
We don't typically win those races but we place like we seed ourselves
quite nicely to go into the next races and that we will eventually paddle
against all breast cancer survivors because there's a specific race for
that, typically that's cool. (Dorie, coach)

And he [paddling coach] gives us a lot of information about exercises,
technique and then we go out on the water for an hour and he corrects
everybody. [...] He would be up to date on the latest techniques and the
techniques have changed, we've changed quite a bit the way we do the
stroke is changed over the years as research I guess is done and the
things that are more effective than. (Desiree, athlete)

I think you can get in better shape if you dragon boat [...] I mean doing
a race racing your heart out and not being able to talk after two-and-a-
half-minutes that's a challenge. So, dragon boating isn't as hard as I
thought it was going to be, but I wouldn't say it is easy either. So, I

		and what it's takes to be a dragon boat athlete.	think you want to be challenged, but I think it's for the purpose of improving your fitness. (Dakota, team captain)
<u>Engagement</u> (Wherein participants feel continually involved in sport activities, and being focused or immersed within those activities)	1	Encourage athletes to participate in physical activity outside of sport to enhance performance on the team.	But as far as going out as a group and doing yoga together or like [dragon boat team name] they join a gym and they work together, we don't do that but we do encourage people to do their own physical training, any which way that they feel is better for them (Danna, drummer)
<u>Mastery</u> (Wherein participants accomplish new things or incrementally improve skills and feel confident about their sport abilities)	3	Use social media to facilitate sharing athletes' individual successes. Use verbal persuasion to increase an athlete's confidence in their ability to perform the activity.	We connect quite a bit through email and Facebook and stuff like that, we have a website, [dragon boat team name] website on Facebook and the team is encouraged to bring not only their dragon boat successes but also their private successes. One of our ladies this year she got her black belt and she posted it on our website. (Danna, drummer) The feedback that we get is a lot of times framed as empower improving and how we're doing better because you're going to have varying levels of mastery out there. But if each individual feels like their mastery of it is increasing or improving then I think we all go away feeling pretty good about it. [...] And then when you hear your coach or others will tell you know make this correction and you do, that's it, that's it you know you can you can do this and you know just that positive umm reinforcement that you can do this goes a long way. And I think every single person benefits from that just that little bit. (Danica, athlete)

		Peer demonstration of proper paddling technique.	And very positive feedback. No one's ever felt like they're centred out it's for the benefit of the team as a whole. Often times, you know, if we have two boats on the water the coach will be maybe in the middle in the safety boat, but she'll say, "Ok Boat One watch the people in Boat Two." Now we learn from each other as well. And what do you see what can be improved. [We can see] what's right, what's wrong. (Denise, athlete)
<u>Meaning</u> (Consists of whether sport involvement represents a personally- and socially-meaningful activity for participants)	2	Team members (e.g., leaders, athletes, and members not actively paddling) have opportunities to see themselves as athletes.	<p>I think it has to do with the fact that we do refer to them as paddlers and as athletes. We've been told many times that it's the first time in their lives that they've ever heard these words told to them. [...] So that makes people feel very good about themselves. And I think that's quite profound in a person's life after coming through something like the therapy that's associated with breast cancer. (Deidra, coach)</p> <p>I think the last thing anybody thought was that they are ever going to be involved in a competitive very physical sport. And that is an incredible feeling and you know and that's what this has given a lot of us, is the opportunity to be becoming athletes. You never really thought that that was on that was never on my radar. (Danica, athlete)</p>
		Sport is perceived as an opportunity to cope with physical effects of a breast cancer diagnosis.	... a lot of the older doctors think that you're not supposed to do anything with your upper body, he [a doctor] put together team of woman as part of a study and he documented there you know whether they're starting to experience any edema or anything like that and he was able to scientifically prove that it wasn't a risk and that the benefit of the team was such that has just taken off. (Dakota, team captain)
<u>Validation</u> (Feeling important,	1	Provide opportunities for constructive or positive feedback and reflection about the team as a whole.	[At Monday night after-practice potluck] And in the circle too if somebody has been lacking something or not feeling up to par or not feeling their best and we can point out, that that's improving or whatever to give them a boost of self-esteem. (Danna, drummer)

valued,
supported, and
worthy of
experiencing a
high level of
service in the
physical
activity
program)

It's [post-season meeting] an opportunity for athletes to give us feedback on what they feel like went well and what they would see us, what they would like to see us working on. And then we have a similar meeting one week before the start of the season where again we're gathering that information. We're not doing it on individual basis, we're doing it on a team basis. So, the team can let us know this year what are the team goals, what are the team objectives that you would like to have and then when we gather that information in the spring and compare it to where we are in the fall it gives the individual athletes an opportunity to say hey we as a collective reached our goal. (Deidra, coach)

We have our team captain who works with the coach. I mean the coach is in charge of technique and in teaching instruction and the coach comes with us to festivals usually and they're in charge of placing people on the boat. The team captain isn't, but the team coach they consult the team captain and uh the boat captain. I know if we we have that people feel that a practice or a drill is too tough, then we just fire off an email to the boat captain saying you know I found that a little bit rough, given that we work from 50 60 70, and so that gets relayed, the boat captain is pretty good about feeding that back to the coach. So, it's a balance of kind of challenging us but not expecting too much. (Darlene, athlete)

Condition
Physical
Environment

(The physical
and structural
components
of the sport
setting and its

- 3 *Travel and access to
practice and regattas.*
To accommodate athletes,
teams coordinate travel
and accommodation for
practices and regattas.

That's [coordinating travel] a big part I know we talked earlier about the regattas in the practices but traveling and make it very easy we share everything so that we can go on these places. People are not used to doing all those things they get stress by the little details, when they know we're going to help them do it and we're all going to share then it becomes very accessible to participate. They know it's going to be a very good experience and all those little things are taken care of, and

surrounding
community)

we have a proven track record of doing those kinds of things. (Daniel, coach)

Access to equipment.
Opportunities to easily
access equipment for
dragon boat practice and
regattas.

This is a great sport because there is no equipment required. Paddles and lifejackets are supplied at all practices and regattas. (Daniel, coach)

Opportunity to be outside.
The sport itself provides
opportunities to be outside
and enjoy nature.

...getting fresh air, seeing the waterfront, just the nature part and fresh air and the exercise just goes with it. And you don't even realize you're getting the exercise half the time. And I mean it's done at a pace that that's fun. (Daniel, coach)

I think it's just the fact that you're on the water. I think that is engaging in itself, the idea of the calmness and that we're environmentally friendly and there's no noise, no smell and we just float along. It's so peaceful and quiet where we paddle. (Dorie, coach)

Within the
Activity

2

Funding and cost.
Teams offer an
opportunity for athletes to
offset individual costs.

We offer is a is a initially when an athlete becomes involved in the program, uh we offer what's called "Three for Free." You can come and try three sessions at absolutely no expense to yourself, so making sure that you enjoy the program and that you want to invest your time in this program. So, you're able to come and do three sessions, which does amount to three hours of paddling out on the water. Where it comes to finances is we have work with our treasurer as we can take the cost of paddling and divide it up over a 12-month time, so that you have monthly installments of your payments, rather than all of it being due at the beginning of the program. (Deidre, coach)

(The nature of
the sport
activity itself.
'Activities'
are shaped by
the given
sport and its
rules,
competitive
level, as well

We are lucky that we can afford to keep the membership fee at a very reasonable level. It's not an issue and if it is an issue we are told we

as coaches or others responsible for designing the sport environment)

have a policy that if somebody can't afford the fee or can't afford to go to a festival, but they just come to the executive confidentially and we will help to subsidize. I think that has only happened a few times over many years that someone has actually had to come forward to do that. But uhm is there if someone needs it. (Darlene, athlete)

Relation to breast cancer.
Within the sport, there are unique elements that are specifically related to breast cancer beyond social support (e.g., Carnation Ceremony).

... it's [Carnation Ceremony] just another thing that brings the breast cancer survivor paddlers and teams together. You know it's the end of your race or the last race of the race today, or whatever it is. You take those nine boats of 20 paddlers wrap them all up together, so you've got a hundred and eighty breast cancer survivors, each of them holding up a carnation above their head and while the speeches are being made and songs being played, we're all remembering, even myself, those that have passed away. It's a very beautiful ceremony. I first got involved participating in that as a volunteer steer person about 15 years ago or something and I never forget that I'll never forget that. (Daniel, coach)

Social Environment

6

Coach knowledge, skill, education and attitude
Coach continually seeks education and resources related to dragon boat within the context of breast cancer.

And we [coaches] stay up to date on those recent techniques to be able to increase performance for the athletes. It's so you can generate more power if you stay slightly forward. So, it's been found that you can have a stronger frontloaded stroke than if you sit up fully. Yep, so it's about power generation. We'll often have people come that tell us that they've done kayaking or canoeing in the past. And dragon boat paddling is actually quite different than what you would do in a recreation canoe. So, there is the biomechanics and the motor-learning of what needs to happen for learning the new stroke. But then there's also some unlearning of some other paddling that they may have learned in the past as that's what often people will automatically revert to. (Deidra, coach)

(The personal relationships formed with peers, coaches, and family along with others in parasport and the surrounding societal attitudes toward sport)

Coach practices an open attitude toward

Whereas when we're doing the weight training sessions, we typically run as a circuit training, so it allows the individual athlete, I'm right there, so it allows them to physically stand out from the bench press or

developing paddling and training techniques.

bench row and or military press, whatever it is that they may be doing and they can physically walk up to me and have a quiet conversation, saying hey when I do this movement I don't quite feel right. Can we look at a modification, do I need to lower the weights, should I increase the weight. And we can have an individual conversation around the weight training and I can provide some education around what it is that the muscle is that they're having difficulty with, and how we can do some different kinds of stretching and strengthening. (Deidra, coach)

Coach autonomy support. Coach finds ways for athletes to perceive control over training, practices and regattas.

Obviously, there are 20 [athletes] in a boat you can't get a lot of individual coaching, but we do get individual coaching, the coach will walk down the middle of the boat and they'll make corrections and suggestions. And that's really helpful during our practices. And I think the, you know, the coaches are good and encouraging and we get reinforced when we do well. And when we are racing and we do well, even if we don't win any hardware, we are racing hard. (Darlene, athlete)

Coach develops roles. Coach actively encourages individual athletes to take on and appreciate unique roles; all roles contributions are recognized.

We have something called Shore Buddy. So that person can pay 25 dollars for the year to be a Shore Buddy and ...what that means is they can participate in any social activities or come out to race and cheer us on or help us with any fundraising and just kind of have the social aspect without actually the physical aspect of being in the boat. (Dorie, coach)

Interpersonal skill of coach. Coach develops a supportive leadership style and fosters positive relationships with athletes that engender trust.

So, [coaches are] pretty good about listening to the teams concerns and not shutting it down. Not everybody has the skills to do that, but currently they, our [executive] board, is very good at that and they realize their limitations. And if [...] they think we need some team building, well maybe they don't have the expertise to do that, they'll bring in somebody, you know, [who] does that all the time. (Darlene, athlete)

Group environment.

Athletes on the team represent a cohesive group that feel unified as they pursue shared goals. The group environment is supported and fostered by coaches, leaders and athletes.

We do travel to a festival like there's four or five of us in a car you know like we're like a bunch of kids you know that way you know so you're visiting with all these ladies you might travel like I might travel with [name of athlete] to [City] for the festival but then I might travel with somebody else to another one. You get to know people that way and then when you stay overnight we have a great you know. (Diane, athlete)

So, the people with fewer points will probably have to sit out one race. But if you if you go you are guaranteed to be in one race as long as you have you know a reasonable number of points. And some people at the highest point will get to race in all of the races, if they want to. And some people will volunteer to sit out a race because they don't really feel they can do all three or four races you know in a one day. So, it works out pretty well. And so, Florence [international dragon boat regatta] is coming up and the points will count for who gets in the boat and everybody knows it and everybody accepts it, and you know we don't ever have many problems with it, it seems to be working. So far that is the best method that we've come up with to make sure that it's as fair as possible. (Darlene, athlete)

Mentorship or role modelling. Opportunities for current and previous athletes to act as role models for newer athletes in areas related to dragon boat and cancer survivorship. In general, athletes have opportunities to seek

We started a program called the Sister Program, so that means that anybody new coming in the boat was matched up with somebody who had been in the boat for the years and so they sort of looked after them. And if they had any questions or were you know were particularly welcoming to them or you know that kind of thing. So, it was an attempt to make people who were coming in for the first time feel that they had a personal connection with another paddler. (Desiree, athlete)

... just being in contact with someone from the get go you are made to feel important. Somebody is there to listen to you, you are valued just because of that one on one you know, from the very beginning you

mentorship from peers
and coaches.

have that one on one and that just grows all the way through as as you
become an experienced paddler. (Denise, athlete)

They [newer athletes] have a buddy that they can ask those questions
of, and then the buddy always makes sure that they help that athlete get
in and out of the boat, because that's the most dangerous time of
paddling, is actually getting in and out of the boat. So, the buddy's job
is to teach the new athlete how they get in and out of the boat and
maintain their safety. (Deidra, coach)