

## The Development of Social Relationships, Social Support, and Posttraumatic Growth in a Dragon Boating Team for Breast Cancer Survivors

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Physical activity experiences may contribute to psychological and social well-being among breast cancer survivors. The main purpose of the current study was to qualitatively explore the development of social relationships, social support, and posttraumatic growth among breast cancer survivors participating in a dragon boat program over 19 months. Guided by interpretative phenomenological analysis (Smith, Flowers, & Larkin, 2009), semistructured interviews were conducted with 17 breast cancer survivors on five occasions over their first two seasons of dragon boating. Narrative accounts were developed for each participant, and four profiles emerged describing processes of social and posttraumatic growth development over time: "developing a feisty spirit of survivorship," "I don't want it to be just about me," "it's not about the pink it's about the paddling," and "hard to get close." Profiles were discussed in terms of developing social relationships and support, providing support to others, physicality and athleticism, and negative interactions and experiences.

**Keywords:** social support, posttraumatic growth, interpretative phenomenological analysis

Breast cancer survivors often experience substantial stress associated with the disease and its treatments (Cordova & Andrykowski, 2003). These challenges may continue for years after treatment is complete, and have an ongoing impact on quality of life (Vivar & McQueen, 2005). Physical activity may improve quality of life and facilitate adaptation to breast cancer. Physical activity has numerous benefits for breast cancer survivors, including decreased distress, fatigue, and risk of death from breast cancer, and increased mood, self-esteem, and fitness (Courneya, Mackey, & McKenzie, 2002; Holmes, Chen, Feskanich, Kroenke, & Colditz, 2005). Consistent

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with the general population, most breast cancer survivors are not sufficiently active to receive health benefits (Blanchard et al., 2003), and side effects such as fatigue, pain, weight gain, and loss of aerobic capacity may make physical activity challenging in this population (Schmitz et al., 2010). Even with these challenges, sport and exercise programs for breast cancer survivors have grown in recent years. One activity that has become popular is dragon boating. A dragon boat is a 20-person canoe-like boat that is particularly suitable for breast cancer survivors because it is a non-weight-bearing, repetitive activity with relatively low injury risk, and it accommodates participants of different physical abilities, as each person works as hard as they are able to collectively propel the boat (McKenzie, 1998).

In qualitative explorations of breast cancer survivors' experiences on dragon boating teams, several themes have emerged regarding improved body image, regaining control, active coping, psychological growth in the wake of breast cancer, and developing social relationships and support (McDonough, Sabiston, & Crocker, 2008; Mitchell & Nielsen 2002; Parry, 2007, 2008; Sabiston, McDonough, & Crocker, 2007; Unruh & Elvin, 2004). Social relationships on these teams have been described as invoking feelings of belonging, community, and camaraderie: they provide an opportunity to have an unspoken intimate bond with other breast cancer survivors (Mitchell & Nielsen, 2002; Parry, 2007; Sabiston et al., 2007; Unruh & Elvin, 2004). Survivors are drawn to the idea that they can connect with other survivors without support or cancer being the focus of the group's activities (McDonough et al., 2008; Mitchell & Nielsen, 2002; Parry, 2007; Unruh & Elvin, 2004). Even though many breast cancer survivors do not join dragon boating teams in search of support, they often receive a type of support that they did not know was missing, and come to value that support (McDonough et al., 2008). Support comes in many forms, including empathizing with the breast cancer experience and sharing first-hand information (McDonough et al., 2008; Parry, 2007, 2008). Many breast cancer survivors take solace in having this source of unconditional support available if they need it in the future, particularly if they were to have a recurrence (Sabiston et al., 2007; Parry, 2007, 2008).

Social support is an important resource for both coping with stress (Cordova & Andrykowski, 2003) and initiating and maintaining exercise (Vrazel, Saunders, & Wilcox, 2008). However, there has been little emphasis on how support develops over time in dragon boating groups, what these relationships mean to survivors, and how they relate to improvements in psychological well-being. Posttraumatic growth theory provides a framework to explore these questions (Tedeschi & Calhoun, 2004). The theory states that when an individual goes through a traumatic event, such as breast cancer, in addition to distress they may also experience positive psychological growth as they work through and adapt to the realities of the disease, its treatment, and life as a survivor. The term *posttraumatic growth* refers to both this process of adaptation and growth and to the outcomes: a greater appreciation for life, realization of new possibilities, more intimate relations with others, enhanced personal strength, and spiritual change (Tedeschi & Calhoun, 2004). Group physical activity programs for breast cancer survivors are expected to facilitate posttraumatic growth by providing opportunities for social support and schema change (Tedeschi & Calhoun, 2004). Research with group physical activities has found that developing a positive support system, creating opportunities for disclosure, acting as sounding boards to help each other work through

challenges, and role modeling ways to positively rebuild following breast cancer facilitate posttraumatic growth (Hefferon, Grealy, & Mutric, 2008; Sabiston et al., 2007). The physical nature of exercise may also promote posttraumatic growth, as the body is both a focus of the trauma and fear of cancer, as well as a conduit of growth and renewal as one reconnects with the body during recovery (Hefferon, Grealy, & Mutric, 2010). Indeed, tackling physical challenges together with other survivors may aid posttraumatic growth (Sabiston et al., 2007). Previous research examining social support and posttraumatic growth on breast cancer survivor dragon boating teams has typically been retrospective, has involved a single interview or followed teams for a short time period, and has drawn participants from established teams. These features have limited the ability to examine how social relationships, support, and posttraumatic growth are initiated and develop over time.

Social relationships, support, and posttraumatic growth hinge on individuals' understandings and interpretations. Therefore, we examined the development of social relationships, support, and outcomes of dragon boating over time using interpretative phenomenological analysis (IPA) (Smith, Flowers, & Larkin, 2009). Interpretative phenomenological analysis is a qualitative methodology used to examine how people understand and make sense of life experiences; this analysis is at once phenomenological, hermeneutic, and idiographic. Interpretative phenomenological analysis takes the phenomenological perspective that people understand their experiences in relation to their context, bodies, and interpersonal relationships. The hermeneutic foundations refer to the interpretation of the explicit meaning of the participant's words, the context of the participant, and the researcher's understandings. It is a doubly hermeneutic method in that it involves both the participant's understandings and the researcher's interpretations (Larkin, Watts, & Clifton, 2006). The idiographic roots indicate that IPA is concerned with the experiences of people or cases within a very specifically defined experience (Smith et al., 2009). Therefore, IPA involves conducting detailed analyses of one case before analyzing subsequent cases (Smith, Harré, & Van Langenhove, 1995; Smith, 2004). Interpretative phenomenological analysis does not test hypotheses based on theory or empirical literature. Rather, it is an inductive approach that involves detailed examination of a small number of cases, and making interpretations across cases and in light of existing theory and research only insofar as those interpretations are evidenced in the data (Smith, 2004; Larkin et al., 2006). Using IPA to focus on the physical and social world as central to meaning making and to emphasize individual interpretations of significant life experiences make it particularly well suited to explore positive adaptation to breast cancer.

## Method

### Participants

Seventeen women who attended at least one practice of a new dragon boating team for breast cancer survivors participated. They had an average age of 51.24 ( $SD = 11.09$ ), were predominantly Caucasian ( $n = 16$ ), and married or living with a partner ( $n = 16$ ). Most ( $n = 15$ ) had a postsecondary degree or diploma, and median household income was between \$80,000 and \$100,000. On average, their first diagnosis with breast cancer had occurred 4.06 years before the start of the study

( $SD = 3.53$ ), and two had experienced a recurrence or new incidence of cancer. The average time since last breast cancer treatment (excluding hormonal therapy and reconstructive surgery) was 2.25 years ( $SD = 2.24$ ). All had undergone multiple treatments for breast cancer, including lumpectomy, axillary node dissection, mastectomy, reconstructive surgery, chemotherapy, radiation, hormonal therapy, and alternative/herbal treatments. Four had attended a support group, and three were current participants. Nine were friends with at least one other team member before joining.

## Procedures

Sampling, interviewing, and data analysis were guided by IPA (Smith et al., 2009). Seventeen participants who signed up for a new dragon boating team for breast cancer survivors were purposively sampled. Following University Research Ethics Board approval at the lead author's institution, the executive committee of a newly forming dragon boating team for breast cancer survivors was approached to recruit participants. Participants were recruited at the first team meeting in mid-January by the first author and a recruitment e-mail was sent to the team. Volunteers contacted the first author. Participants were interviewed on four occasions coinciding with team milestones: (1) late January or early February, at the beginning of their dry land training period; (2) in mid-March after "the launch," their first experience paddling a dragon boat; (3) in late July, after their first trip to a breast cancer survivor dragon boating festival; and (4) in mid-October at the end of the on-water season. Following analysis, many participants' social relationships and posttraumatic growth were still developing. Therefore, an amendment was made to the study to include a fifth interview, in mid-October the following year. All 17 participants were invited via e-mail to take part in this fifth interview. In four cases, attempts to contact participants were unsuccessful. Therefore, 17 women participated in the first four interviews, and 13 also completed the fifth interview.

Interpretative phenomenological analysis is typically conducted with smaller samples and single interviews with each participant, but it is a flexible method that can be adapted to larger designs as dictated by the research questions (Smith et al., 2009). Including 17 participants in this prospective design allowed us to sample breast cancer survivors who may develop different social and posttraumatic growth experiences. Interviewing participants on multiple occasions allowed us to examine the dynamic processes of forming social relationships and posttraumatic growth over time. These decisions present challenges, including the time and effort required to analyze a large quantity of data, and having to limit the focus of the study to provide a concise final report. Previous IPA studies have used larger samples and multiple interviews to answer questions about such dynamic processes as the transition into motherhood (Smith 1994a, 1994b) and coping with the onset of Alzheimer's disease (Clare, 2002).

Semistructured interviews were used to inquire about participants' social relationships, support, and psychosocial outcomes of dragon boating. The first author conducted 70 interviews, and 11 were conducted by the third author or a research assistant owing to scheduling restrictions. The interviews lasted 30–90 min, and the main questions addressed social relationships with (e.g., What are your relationships like with other members of the dragon boating team?) and social

support from (e.g., Do you feel supported by the other people in the dragon boating program? What makes you feel supported?) other members of the dragon boating team, and outcomes related to their experiences in dragon boating (e.g., Do you feel that your participation in the dragon boating program has impacted you in any way? How?). Interviews were audio recorded. At the end of the fifth interview, each participant was provided with a summary of how her first four interviews had been coded and interpreted. In particular, we asked participants about their reactions to our interpretations of their experiences as posttraumatic growth. Throughout the first four interviews, we did not use the words *posttraumatic growth* or ask specifically about positive changes, as we did not want to impose pressure to appear positive in the wake of breast cancer (Lechner, Stoelb & Antoni, 2008). At the end of the Time 5 interview, we explained the concept of posttraumatic growth and showed them our interpretations. Each participant was asked if she thought she had experienced posttraumatic growth and was invited to provide additional comments and her perspective on the interpretations, similar to an approach used by Smith (1994b). In six instances, participants provided clarifications or minor modifications to code labels. All modifications were incorporated. Recordings were transcribed verbatim by a research assistant and checked for accuracy.

In IPA, interpretations are formed by first examining each participant as a single case before moving on to making interpretations across cases and in light of theory (Smith, 2004). Both participants' perspectives and researcher interpretations are essential, but an idiographic focus is prioritized so interpretation must be grounded in data (Larkin et al., 2006; Smith et al., 2009). Extant theory is incorporated to the extent that it fits the data. The analyses involved multiple readings of each transcript to capture several levels of interpretation and meaning. The first author read one participant's Time 1 transcript to obtain a view of the interview as a whole. This was followed by a line-by-line analysis to code for the participants' claims, concerns, and understandings that pertained to the research questions. The software QSR NVivo8 was used to assist with data storage and organization. Coded text was organized into themes with common meanings. Memoing was used to note interpretations and possible connections among concepts. Once this process was complete for one interview, another Time 1 transcript was examined and the procedures repeated, creating codes as new meanings emerged and grouping similar meanings into existing codes. All Time 1 transcripts were coded, followed by subsequent time points as they were completed and transcribed. Once all transcripts had been coded, the first author reread the coded data to ensure relevant text was appropriately coded. In cases where emergent themes were similar to those documented in previous literature, similar labels were used (e.g., McDonough et al., 2008; Sabiston et al., 2007). The second and third authors reviewed the themes and example quotations and provided feedback about the coding and interpretations. When disagreements arose, the alternate points of view were discussed by all three researchers, and in each case were resolved by consensus.

A chart of codes for each participant at each time point was created, similar to an approach used by McDonough et al. (2008) with breast cancer survivor dragon boaters. Using the table and another reading of each participant's complete set of transcripts, a narrative account was written for each participant. The individual narratives were examined, and participants with similar experiences were grouped. A collective narrative of each group was written, including an interpretative account of

the experiences within that profile, a detailed narrative of an example participant, a discussion of convergent and divergent experiences within the group, and supporting example quotations throughout. The researchers' memos, interpretations, and observations that were made by looking at similarities and differences across cases were incorporated. These interpretative narratives were reviewed by the second and third authors. Their feedback was discussed and incorporated. In cases of disagreement, alternate interpretations were discussed and a mutual agreement was reached.

## Results

The results include (1) a description of, and quotations exemplifying, each of the 33 resultant themes; (2) a table of when themes were experienced for each participant; and (3) a narrative description explaining the four profiles or patterns of experiences found.

### Social Relationship and Dragon Boating Outcomes Themes

The 33 themes that emerged fell into two main categories describing the social relationships among teammates and outcomes of being in the dragon boating program. The social relationship category included 17 themes in three categories (see Table 1). "Degree of connection" included themes regarding the type and degree of relationships that the women had with their teammates. "Negative interactions" included aversive or problematic social interactions. "Social support" included helpful actions and perceptions of available help and support. The outcomes of participating in the dragon boating program category contained 16 themes (see Table 2), including 12 that aligned with the five posttraumatic growth concepts ("appreciation of life," "closer relationships," "new possibilities and opportunities," "personal strength," and "spiritual growth"). Two codes related to motivation for and improvements in health or fitness, and two codes dealt with negative outcomes: reminders of the possibility of recurrence, and considering leaving the program.

### Profile Groups

The themes identified by each participant at each time point were charted and are displayed in Table 3, and a narrative description of each of the four resulting profiles appears below. The four profiles were labeled based on quotes that exemplified their general pattern of experiences over time: (a) "developing a feisty spirit of survivorship"; (b) "I don't want it to be just about me"; (c) "it's not about the pink, it's about the paddling"; and (d) "hard to get close."

**Developing a Feisty Spirit of Survivorship.** Alice, Cheryl, Hannah, Kristin, Laura, Michelle, and Rochelle developed progressively closer relationships, helpful and valued social support, and multiple experiences of posttraumatic growth as their involvement with dragon boating evolved. At Time 1, their experiences were typical of most participants in all profiles: they had joined the team looking for fun and fitness. They sensed a camaraderie and potential for friendship, but seeking social support was not a primary goal. As they became more involved and developed close relationships, they discovered support they had not realized

**Table 1 Social Relationship Themes**

Code (n)	Example Quotation
Degree of Connection	
1 Left out (8)	There's just a little clique that all seems to be happier together and, well, I'm just pitiful. I feel like, you know, people stand with their backs to me. (Brittany, T3)
2 Inclusion and camaraderie (15)	They just are a very accepting group and appreciate your participation. (Amanda, T2)
3 Sense of belonging or contributing to the team (8)	We all had the same look on our face, you know, that same moment of, it was, you know, our boat and we had done this and, we were going to do this. (Cheryl, T2)
4 Becoming closer (16)	I do think that we're, we're miles from where we were. . . . [But] I really haven't drawn them into my like, you know, big social circle yet. (Rochelle, T2)
5 Close friendship (13)	They are friends that I can talk to about anything. (Kristin, T5)
Negative Interactions	
6 Controlling behavior (11)	I'm so grateful that we have these powerhouse women that put this together, you know, because I mean it was just wham, here's the boat, and that's how we work. But it, it turns into a corporation and not such a group, where I don't really feel a lot of ownership or anything. (Brittany, T2)
7 Differing priorities about performance (8)	I want to paddle. I want to race. I want to win (laughs). Uh, so no, I wish that some of the ladies took a, had a little bit more competitive outlook on it, took it a little bit more seriously. (Samantha, T2)
8 Giving or receiving unwanted support (3)	Even though people, I'm trying to help. some of the people don't perceive that I'm trying to help, maybe they think that I'm trying to overstep my bounds when I'm really trying to help. (Judy, T4)
9 Interpersonal conflict (10)	You know, the cattiness and, uh, the cliques, and the grouping, which is fairly normal in a group environment, there's some people that hang with other people that don't accept certain other people and it just shouldn't be that way. (Michelle, T4)
Social Support	
10 Empowerment (15)	I look to all the other women, especially [the oldest paddler], and I'm like, if she can get out here and do this, I can get out there and do this. (Laura, T2)
11 Encouragement (15)	When I have gone to practices, when I've been really, kind of weak and not doing well, they are very encouraging for me to just get in the boat anyway. They are like, "Just hold the paddle and just sit there and you know. We'll do the work." (Cheryl, T5)
12 Know how to react to breast cancer-related health concerns (6)	It seems like people just immediately treat you like you're dying and they're so scared. And with this group it's more kind of a, yeah we'll get through this. (Alice, T4)
13 Provide support without dwelling on breast cancer (14)	I like the idea of coming together for a purpose other than sitting around and talking about our issues, and then if, if those things come up over time then that's a good thing. (Cheryl, T2)

(continued)

**Table 1 (continued)**

Code (n)	Example Quotation
14 Sharing first-hand information about breast cancer (13)	I was glad, you know, that I had, could, the kinda questions that I wanted to ask but you never know. (Jennifer, T4)
15 Implicit understanding of the breast cancer experience (14)	[They] have gone through the same thing that I have, and we all know, we can all relate to one another. (Mary, T3)
16 Using humor to cope with breast cancer (7)	And to be able to laugh about it, joke about it. And, you know, when you're around people who haven't been there it's awkward, you know, it's awkward for both, for them and for you both because other people don't find the humor in it. (Alice, T2)
17 Anticipated support resource (17)	I think, I think if it were to turn into needing support about breast cancer that this group would just, it would be un, you wouldn't have to explain it, it would just be easy. (Vicky, T3)

**Table 2 Outcomes of Dragon Boating Program Participation Themes**

Code (n)	Example Quotation
A Perceptions of improved fitness or health (15)	I've lost weight. I've, you know, gotten way stronger. I have muscles in my arms now, which is wild. Um, you know, I just feel a lot better. (Rochelle, T2)
B Motivation for healthy behaviors owing to goals, commitment, and fun of boating (16)	It motivates me because I want to win. . . I'll be standing at the counter, you know, and I'll just be standing in the kitchen doing something and I'll start doing some push-ups. (Samantha, T2)
C Reminded or possibility of recurrence by being with other survivors (7)	Through this whole process I think what I have discovered is that I don't want to be around, um, the possibility of reoccurrence. (Diane, T3)
D Considering leaving program (5)	But there have, for as many great times like that, there has been a lot of stressors as well, I think that could be why I've been kind of backed away . . . that I haven't made it a priority to go. (Vicky, T4)
Posttraumatic Growth	
<i>Appreciation of life</i>	
E Appreciation of each other and nature (10)	We all sit in the boat and we're all quiet for a minute and we'll just look at the sky and go, "isn't this just gorgeous?" And we'll all just, you know, it just feels really good being out there and being with them. (Hannah, T4)
F Having fun and laughing (15)	People were hugging each other, jumping up and down, it felt really good. So it was fun for me to do that, you know, 'cause I hadn't done it in so many years. (Amanda, T3)
<i>Closer relationships</i>	
G Able to form more intimate bonds with others (11)	You kind of let your guard down a little bit because you're like, we all have, we've all been there, we all, you know, even like not being as, being more comfortable to just expose yourself. (Kristin, T5)

(continued)



**Table 2 (continued)**

<i>New possibilities and opportunities</i>		
H	Opportunity to compete and develop athletic identity (7)	Just the chance to win or, you know, be the best or something. (Jennifer, T4)
I	Opportunity to help other survivors through personal support or raising awareness (15)	Well, they say that they, they give, I give 'em courage by, you know, by being, looking at me doing it, you know what I mean? So I guess that's encouraging to them, and that's what I really feel good about, you know, that I'm in, that's what I really would like to be a, an inspiration to somebody else, not just it's about me, you know. I don't want it to be about me. (Diane, T2)
<i>Personal strength</i>		
J	Accomplishment (9)	Oh that was, I can't explain it. It's, I've never experienced anything like that in my life. It was so amazing that we, as a group, have only been paddling in the water six months and we came in fourth place. . . . That is amazing, and we're just, we're just like Christmas time. (Diane, T3)
K	Actively coping with breast cancer by fighting recurrence or managing negative emotions about breast cancer (10)	It's good for your health and it benefits, you know, from being healthy. You know to keep disease from hitting me again. Doesn't mean it won't come back but, you know, it does, it's a positive, yeah it does help you. (Mary, T4)
L	Demonstrating that breast cancer survivors are strong, capable, and alive (9)	We're out here, we're ready to go. We're ready to show the world that it's not gonna kill us. (Laura, T4)
M	Improved self-perceptions (competence, confidence, or self-esteem) (14)	My life, I have so much. I feel like things have changed. I've seriously wondered if that's why I have taken this promotion in this job . . . [the dragon boating program] is one of those things that gives you self-confidence too. So it's, the whole thing has been a great journey for me. (Kristin, T4)
N	More positive outlook, attitude, and increased energy (10)	[Dragon boating] just filled this huge gap that I felt after breast cancer. I did. So, it was like this hole and I couldn't seem to dig myself out of it. . . . I might not have laughed. I couldn't even laugh anymore. I am laughing all the time now. Um, it's really helped me emotionally. (Hannah, T3)
O	Prioritizing self (9)	I've probably like stuck up for my right to have an activity, you know, just within my own family. . . . I, I did, I guess, take care of the kids or got everybody to where they were going or stuff like that. And now people are just gonna have to realize there might be a sitter or Dad's gonna have to get home. (Jennifer, T4)
<i>Spiritual growth</i>		
P	Stronger or reinforced faith (3)	I just feel like I've got a firmer foundation of what I can stand on and believe and claim. (Debbie, T4)

Table 3 Themes Identified by Each Participant Across Time

Participant	Time 1	Time 2	Time 3	Time 4	Time 5
Alice	2, 4, 11, 13, 14, 15	1, 2, 4, 14, 15, 16, 17	2, 4, 11, 13, 14, 15, 16, 17	2, 3, 4, 10, 11, 12, 14, 15, 17	2, 3, 4, 5, 6, 14
Cheryl	K, 4, 10	A, F, G, J, K, M 2, 3, 4, 11, 13, 15, 17	A, B, F, G, L, M, N 2, 3, 4, 9, 11, 12, 13, 14, 15	B, F, G, I, K, L, N, O 2, 3, 5, 11, 12, 14, 15, 17	A, B, E, O 2, 3, 5, 10, 11, 13, 17
Hannah	I, J 2, 4, 5, 10, 13, 15	B, H, I, J, L, M 1, 2, 4, 6, 9, 12, 13, 14, 15, 17	A, B, F, J, K, L 2, 3, 4, 5, 10, 11, 13, 14, 15, 16, 17	A, B, H, I, J, L, M, N 2, 5, 6, 9, 10, 11, 12, 13, 15	A, B, C, G, H, K, M 2, 5, 6, 10, 14, 15, 16
Kristin	2, 4 F, I, M	A, B, F, I, J, M, N 2, 4, 10, 13, 16, 17	A, E, F, G, H, I, J, K, M, N 2, 5, 10, 12, 13, 15, 16, 17	A, B, E, F, G, H, K, M, N, P 2, 5, 9, 13, 15	B, E, G, K, M, N, O 2, 3, 5, 9
Laura	4	B, E, F, I A, B, F, G, I, J, L, M, N 2, 4, 5, 10, 11, 14, 16, 17	E, E, O B, F, H, I, L, M, N 2, 3, 4, 13, 14, 15	A, F, G, I, L, M, N 2, 9, 11, 12, 15, 17	—
Michelle	1, 8, 9, 11, 14, 17	A, B, E, I, M 2, 4, 5, 6, 8, 9, 10, 13, 14, 15, 17	A, F, L, N 4, 5, 9, 10, 11, 14, 15	B, F, G, N, O 2, 9, 11, 12, 15, 17	B, C, E, G 2, 11, 14
Rochelle	2, 4, 10, 13, 14	A, E, I, O 2, 4, 5, 6, 7, 9, 15, 17	A, F, H, M, O 2, 3, 5, 6, 10, 11, 13, 17	D, F, G, H, I, J, M, O 2, 5, 6, 9, 15	B, C, E, G 2, 5, 9, 10, 11, 13, 14, 15, 16, 17
Amanda	1, 2, 4, 10, 12, 14, 15, 17 F, I, M, K, N, O	F, G, I 2, 5, 11, 12, 14, 15	A, B, F, H, I, M, O 2, 4, 10, 11, 14, 15, 17	A, E, I, M, O 2, 4, 5, 11, 14, 15, 17	A, E, F, G, M 2, 5, 6, 11, 17

(continued)

Table 3 (continued)

Participant	Time 1	Time 2	Time 3	Time 4	Time 5
Diane	4, 10, 15 A, I	2, 4, 10, 11, 15 A, F, G, J, K, L, M	2, 4, 5, 10, 11 A, B, E, F, I, J, K, L, M	2, 3, 5, 11, 13, 17 A, B, E, I, M, N	—
Mary	4, 17 I	2, 4, 11, 15, 17 F, I	2, 4, 9, 15, 17 A, E, F, I, L, M, N	2, 4, 6, 7, 9, 13, 14, 15 A, B, E, F, I, K, N	2, 14, 15, 17 F, G, I
Jennifer	4, 9, 11, 13, 15, 17 J, M	4, 5, 6, 9, 10, 11, 14, 17 B, F, H, I	2, 4, 5, 6, 9, 11, 14, 15, 16, 17 A, B, F, I, M	4, 5, 6, 7, 9, 14, 17 A, B, F, H, J, M, O	1, 2, 11 K
Samantha	2, 4, 10, 13, 17 B, E	2, 4, 6, 7, 9, 15, 16, 17 B, H, I, L	2, 4, 9, 10, 13 A, B, F, H, I, M	2, 5, 6, 7, 9, 11, 13, 14 B, E, I, L, N	2, 5, 9, 13, 17 B, F
Judy	4, 6, 9, 13	1, 2, 4, 5, 6, 9, 14 A, E, I, P	5, 6, 9, 10, 11 D	1, 2, 5, 6, 7, 8, 9, 10, 11, 13 A, D, P	1, 5, 6, 7, 9, 13, 17 A, C, D, F, I, J, P
Brittany	1, 6, 8, 14, 16 E, I, O	1, 4, 6, 11 I	1, 2, 3, 4, 7, 10, 11 A, B	2, 4, 5, 7, 11, 14, 17 E, F, I, M	1, 2, 4, 10, 11, 17 A, B, G, I, O
Vicky	4, 9 F, I	2, 4, 5, 6, 9, 10, 17 A, C	5, 7, 10, 11, 13, 15, 17 A, B, I, K, L	5, 9, 11, 17 A, B, D, M, O	—
Tanya	2, 4 B	2, 15 J	1, 2	2, 4, 6, 17	—
Debbie	2, 4, 13, 14	2, 4, 10, 11, 17 B, C, D	C	2 C, K, P	—

Note. Numbers correspond to social relationships codes in Table 1. Letters correspond to program outcomes codes in Table 2.

was missing. Their teammates knew how to react to their concerns about breast cancer, implicitly understood the cancer journey, and offered first-hand information about the challenges of survivorship. These other breast cancer survivors were encouraging, empowering, and could joke about cancer. Seeing other survivors overcoming physical challenges and displaying a positive attitude and feisty spirit was contagious: they felt supported by these positive role models of how to live with breast cancer. Everyone in this group experienced multiple posttraumatic growth outcomes, which they identified as a profound personal transformation.

Kristin is a vivid example of this development of social connection and post-traumatic growth. At Time 1, she was interested in being part of the team, and saw its potential as a positive community program. But she did not sense that it would benefit her personally beyond having fun and getting fit and the opportunity to raise awareness. She was not highly motivated to go to practices or spend time with the other women. "I haven't participated enough, and that's just my lack of, you know, sometimes it's a combination of just, um, schedules and things like that, and also just motivation" (T1). "They invited me to come [out to dinner] and, you know, and I was like thank you so much. . . . And I won't go to that because I just don't, I just don't have the desire to go" (T1). Her lackluster involvement at the beginning is in stark contrast to her strong commitment to and involvement with the team by Time 2, illustrating how unexpected these social experiences were. Just before the launch, she became more involved, and was taken by the physical challenge and resilient, positive attitude of the women on the team:

I just completely fell in love with it. I mean, it is the coolest thing I've ever done in my life. . . . Once I got involved in it I was like, I mean I can't wait to go to practice. . . . We all have something in common and that's kind of that, that same sort of energy and . . . it's physical strength and endurance but just kinda fighters and like I can do this. (T2)

Through the months of training and traveling to the breast cancer survivor dragon boating festival, her relationships continued to grow closer and stronger: "I feel like I have a bunch of new friends" (T3). She had several posttraumatic growth experiences, particularly developing personal strength—demonstrating what breast cancer survivors can do, improved self-perceptions, and a more positive outlook: "It's been a different course for me . . . I mean, it brings me happiness. It makes me feel happy, and it makes, I feel when we're out there and people go by and see us I just feel so proud" (T3). Her description of posttraumatic growth took on a more transformative tone as time progressed and her confidence and positive attitude seeped into the other areas of her life. By the end of her first year, she realized what dragon boating's impact had been: she felt closer to others, and had a profound change in confidence and courage to take on new challenges in life including new leadership roles:

I feel like things have changed. I've seriously wondered if that's why [I made a big career decision]. . . . I always said, "No I don't want—I don't want that much—you know. I'm good with what I'm doing." . . . I think it's affected my self confidence. (T4)

In the second year, she continued to grow closer to others and develop confidence, which led to greater leadership and positive impacts on her career:

The more I get to know the different people and to learn more about different people, become even more experienced as a, you know, a dragon boat paddler, it changes just, actually confidence. I really truly think it's affected me even with my job . . . [and having] a position that I hope has been a positive impact on the team" (T5).

Within this profile, there were individual variations in the rate that women "jumped in" socially. Hannah developed connections immediately: "I already feel like, like I've made, that our group is pretty, pretty, getting close" (T1). In contrast, Cheryl and Alice were both hesitant to socially connect at first: "We've all been really individual when we come. And week by week it seems like we're getting a little more interactive and a little more, umm. I wouldn't call us close yet" (Cheryl T1). But as they trained, socialized, and traveled to races they became close: "With the races I think we just became more of a team, you know, especially after the [dragon boat festival]. When we were finished with that we all just felt really close. It just really felt like we'd really become a team, and, you know, we've done it together" (Alice T3).

Michelle's, Rochelle's, and Laura's progressions toward closer relationships and deepening posttraumatic growth were interrupted for a period by stressful negative social interactions or injury. Michelle and Rochelle both briefly considered leaving the team as a result of conflicts, but decided to continue because the benefits they were experiencing outweighed what they saw to be isolated negative incidents: "I had to really restrain myself and not say, I'm quitting this group. . . . I chalk that up to more of a, an organization trying to figure out its, its, how it works. . . . I still really do care for all of them, you see?" (Rochelle, T5). Despite these difficulties, and because they believed that they were benefiting from participating, all resumed their progression toward closer relationships and positive growth once the conflicts or injuries were resolved.

**I Don't Want It To Be Just About Me.** Amanda, Diane, and Mary wanted to help and support other breast cancer survivors, which linked to how they built relationships and were supported themselves. What set this group apart was a combination of three characteristics that put them in an excellent position to provide support. First, they maintained their focus on providing support throughout the study, and actively sought ways to support others. Second, they had few support needs and were well supported from other sources, so they were in a good position to reach out. Third, they shared a very matter-of-fact attitude about cancer, and were not bothered by talking about or being reminded of it, a characteristic that further enabled them to provide support for others:

You just take life as it comes, you know, so it does not bother me to listen to her. And I have talked to her on the phone . . . she likes to talk about the radiation and this and that because she doesn't get a chance to anywhere else (Amanda T2).

Other participants frequently mentioned the support these three women provided directly and as positive role models. Despite their lack of professed need for support, they gradually discovered they were receiving support, and it was important to them. They also had numerous posttraumatic growth experiences, including appreciation of life, closer relationships, new possibilities and opportunities, and personal strength.

Diane's story exemplified this profile. Despite having physical challenges to participation, Diane's focus was on helping others and moving on from cancer, and other team members frequently mentioned the support she provided. "Were anything would come up that I need to do, I would be available" (T1). She was excited by the potential to become close to other survivors and move on together. By Time 2, Diane felt included, and was in a good position to support others: "We understand what each one is, you know, in some form we're going through, you know. And that's, uh, you know, you can relate to them because you've been there like they're there" (T2). She was able to support others by demonstrating what breast cancer survivors can do, and she was particularly effective at this because of her physical limitations:

Well, they say that they, they give, I give 'em courage by, you know, by being, looking at me doing it, you know what I mean? So I guess that's encouraging to them, and that's what I really feel good about, you know, that I'm in, that's what I really would like to be a, an inspiration to somebody else, not just it's about me, you know. (T2)

By Time 3, Diane had several close friends. She maintained her focus on helping others, but she began to see the program as having a profound effect on her. "I'm more outgoing. I mean I'm, I have more, I, I have more to talk about, you know . . . I'm having the best time of my life, even when I was young I didn't have this much fun." (T3). She was more proactive about coping with her cancer diagnosis, and was able to share it with others more easily. Diane stopped participating in dragon boating toward the end of the first year due to health concerns not related to breast cancer. She had a sense that the support would be available to her for the rest of her life. "I'm sure I will get support from them because I'll give support . . . I believe truly they will support without me even expecting it" (Diane T4). Despite her health concerns, she reported improved self-perceptions and a more positive outlook: "It's been a great, it's been a great experience in my life, it's been the most, happy, I mean, it's been a really happy year" (T4).

Mary and Amanda both expanded their role as supporters at Times 4 and 5 by taking on leadership roles. Mary was an informal leader and mediator of several interpersonal conflicts: "I wanted to get focused, back on track. And not people having, I know people are going to have differences, but where everybody's, you know, going to get along and not get their feelings hurt" (T4). For Amanda, taking on a more formal leadership role was a growth experience: "My personality is starting to develop. I am feeling more confident being around the women" (T5). Mary and Amanda were both frequently acknowledged by other team members as being helpful and supportive—evidence of their skill at providing support and building positive relationships.

*It's Not About the Pink, It's About the Paddling.* The emphasis for Samantha and Jennifer was on the physical activity of dragon boating. Their motivation was centered on competition, athleticism, and exercise. They valued the friendship and camaraderie, but they felt that those bonds were based on their shared athletic goals and experiences, not focused on breast cancer. While many participants initially shared this emphasis on physical activity and de-emphasis on social support, Samantha and Jennifer were unique in that this view prevailed throughout the study. Their outcomes focused on fitness, motivation, accomplishment, and demonstrating what survivors can do. There was no indication that they were denying or avoiding the idea of being a breast cancer survivor. Rather, by focusing on being active, athletic, having fun, demonstrating what survivors can do, and not dwelling on cancer, dragon boating was a way to move forward from breast cancer.

Samantha's story provides a good example of this profile. She was excited to be part of a group brought together by breast cancer, but where the day-to-day focus was on physical goals rather than breast cancer: "We've got a goal we're working at, it's, you know. We're not just meeting to talk about breast cancer. . . . We really don't dwell on it. We work on paddle techniques; we worry about getting stronger" (T1). She developed relationships quickly, had fun, and felt empowered by working with strong women. She acknowledged that breast cancer played a role: "I think it's neat 'cause you all are coming from the same place . . . uh, you can make jokes about it, uh, yeah I, I think, I think you, you immediately have that bond" (T2). Once they started paddling, she was inspired, and relished competitive opportunities: "I want to paddle. I want to race. I want to win! . . . I love being in something at this age in my life that I can compete. I mean, I just love that part" (T2).

By midyear, Samantha had grown closer to others, but felt that breast cancer was more an accident bringing them together rather than a core part of their relationships: "I mean, we all know we have it, we all, you know, are very well aware of what we've been through. I said we're not about the pink, we're about the paddling" (T3). As the first season ended, she identified close friendships and support, but she still felt that support and breast cancer were not her focus: "I don't need that support. I don't need the cancer aspect of it" (T4). She did not shy away from being with other breast cancer survivors though, as evidenced in her posttraumatic growth experiences: "It shows women that you can have breast cancer, and it doesn't mean you have to crawl under the covers and not come out again" (T4). In the second year, her experience was similar: being active, enjoying friendship, and having fun.

Jennifer's experience differed slightly in that she periodically had in-depth discussions with team members about breast cancer that she really valued. For example, on the trip to the breast cancer survivors' dragon boating festival, she ended up talking about treatment and reconstruction with teammates: "That was like the first time where we were all like, 'well you have this and you have this and those feel good.' That was kind of fun" (T3). Jennifer also felt that her experience with the team changed how she felt about and coped with breast cancer:

It was more just, I think, something to focus on besides what really was happening, you know. . . . The other day I was thinking about it, I was like, that seems so long ago, did that really happen? It was really bad for a while, wasn't it? You know, really scary, and now I don't think about it every day. (T5)

**Hard to Get Close.** Brittany, Debbie, Judy, Tanya, and Vicky all struggled with developing close connections to the group. They joined the team with expectations of having fun, getting exercise, and meeting new people. At some point, however, they all had experiences that disrupted or made it difficult to build relationships and be supported by their teammates. Specifically, participants had difficulties with interpersonal conflict (Brittany, Judy, and Vicky), reminders of breast cancer and death (Debbie), and barriers to participation (Tanya). Although these difficulties varied, the results were common: all reported gaining some benefits from participating, but they experienced fewer instances of posttraumatic growth and lower motivation to participate.

For those who experienced interpersonal conflict, social connections, support, and outcomes varied with the intensity of the conflict. Having conflict did not preclude having close relationships, and participants reported inclusion, camaraderie, feeling like part of the team, and friendship with at least some teammates: "Probably a lot of these girls will be, you know, my lifelong friends because of this commonality that we have" (Judy T4). Often when conflict abated, social connections strengthened and positive outcomes were perceived: "I missed the fun part and, and, and the, the laughter and the jokes. And it seems to me that now that we're not gearing up for some pendant thing, it's a lot more fun" (Brittany T4). But when conflict, control, and problems giving and receiving support dominated their experience, it was harder to feel included: "I'm kind of like the outsider . . . like in my own home but feeling out of my own home type of thing" (Judy T4). Ultimately, negative experiences led some participants to consider limiting their participation:

At the time when I signed on, I only thought it was gonna be, you know, just this wonderful, bring women together to do this da da da da da. And, um, surprisingly, it has not been, been like that; there have been a lot of, of those times, that it's been huggy and great and, and camaraderie and wonderful. But there have, for as many great times like that, there has been a lot of stressors as well; I think that could be why I've been kind of backed away . . . that I haven't made it a priority to go. (Vicky T4)

For Debbie, the negative interaction was an early encounter that reminded her of the possibility of recurrence. As a result, she discontinued participation before Time 2. At first, she felt that she left the team because of a lack of time and family obligations. But she also was troubled by reminders of breast cancer, and by Time 4 understood the two as being linked:

I ended up sitting next to a woman that had had a recurrence and um, I think that is what started the ball rolling as far as me needing to explore these feelings that I didn't know I had. So I needed to learn how to cope and I needed to learn how I could help. So it just definitely opened up a door and not necessarily, I won't say that it wasn't a good one, because like I said, these were feelings that apparently had hidden that I needed to have pulled out of me at some point. (T4)

She also held the belief that her brief encounter with the team had led her to discover and work through those fears, and ultimately cope with them better. Her experience with the dragon boating team was a catalyst for posttraumatic growth that



occurred after she had left the team. Debbie is the only participant who discontinued participation owing to reminders of recurrence, but discomfort with these reminders and concerns about whether participating was healthy were not uncommon:

When [teammate] died and my mom just died and I was like, wow, all this death, you know. I guess it makes you stronger, um, but should I really be around all these folks? . . . I was thinking well maybe I just shouldn't be around [the team], and then I thought, oh hell no, these women are just dynamite and we're going to live every minute we can to the max! (Michelle T5)

Finally, Tanya had limited social connections with the team because she experienced several barriers, mainly family obligations, and therefore participated rarely. As time passed, she faced the additional barrier of not feeling competent or fit enough to join: "I haven't been able to commit the time so I don't feel worthy . . . I feel like, oh my gosh, I shouldn't be there taking up a spot if I can't commit myself a hundred percent" (T2) and "I feel so heavy right now in my life that it's like I'm almost embarrassed to . . . I almost want to . . . work out in my basement so I'm not out there in front of everybody" (T4). These barriers limited her connections with team members, and she was minimally impacted by the program: she had an increase in motivation for physical activity at Time 1, and a sense of accomplishment at the launch, one of the few times she actually participated: "I teared up too when I saw [teammates] tear up and everyone because here is a vision that they've had that all of the sudden, you know, we're in the water, we're in the boat" (Tanya T2). While barriers most severely limited Tanya's participation, all participants reported some barriers, the most prevalent being lack of time, family obligations, perceived lack of fitness and sport competence, side effects from breast cancer, and work.

## Discussion

The results of this study suggest that there are multiple pathways of social relationships, social support, and posttraumatic growth and adaptation among breast cancer survivors involved in dragon boating. Four profiles of change in social relationships and support and outcomes of participation emerged, characterized by (1) progressive improvements in social relationships, support, and posttraumatic growth; (2) a consistent focus on supporting others, but unexpectedly receiving support, growth, and personal fulfillment; (3) emphasis on physical activity and competition and not dwelling on cancer in a process of moving on; and (4) experiences that limit positive social experiences and thwart positive outcomes.

The link between social relationships, support, and posttraumatic growth over time was a novel finding. Participants who had positive social relationships and support also reported enhanced posttraumatic growth. This pattern was evidenced in the growing relationships and posttraumatic growth in the first three profiles, and, when relationships and support were disrupted, posttraumatic growth was minimal. This finding is consistent with research linking social support and posttraumatic growth (Cadell et al., 2003). Specifically, it has been proposed that having opportunities to discuss concerns with other breast cancer survivors (Lechner, Stoelb, & Antoni, 2008) and interact with survivors who role model posttraumatic growth (Weiss,

2004) can facilitate such growth. Interestingly, providing support for others also played a role in posttraumatic growth. Consistent with previous research, breast cancer survivors frequently expressed an interest in helping others through dragon boating (McDonough et al., 2008; Sabiston et al., 2007). Taking the opportunity to prioritize oneself by committing to dragon boating was an important and fulfilling outcome for many women. Emslie et al. (2007) discussed the conflict created by women's social roles as caregivers and efforts to participate in a group exercise class for breast cancer survivors—a conflict that was also reported in this study. Helping others can be both taxing and fulfilling, and physical activity programs may provide opportunities to prioritize oneself and experience the fulfillment of helping others while also being supported.

De-emphasizing breast cancer and focusing on athletic achievement was important for many participants. Previous work has documented the importance of not feeling pressured to talk about breast cancer in physical activity programs for breast cancer survivors (Emslie et al., 2007; McDonough et al., 2008; Sabiston et al., 2007). Furthermore, athleticism and competition are linked to improved physical self-perceptions and posttraumatic growth for some participants (McDonough et al., 2008; Sabiston et al., 2007). Physical activity and associated physical changes may be a means to achieve empowerment, improve health behaviors, shift focus away from fear and toward living fully, and move on from breast cancer (Burke & Sabiston, 2010; Heffernon, Grealy, & Mutrie, 2009; Mustain, Katula, & Gill, 2002). While competition is controversial, as some survivors feel marginalized by competitive goals (McDonough et al., 2008; Sabiston et al., 2007), the challenge and athleticism can be fulfilling, and may attract survivors who eschew programs that place greater emphasis on discussing breast cancer.

Finally, an important finding is that some breast cancer survivors have negative experiences in dragon boating that may disrupt social relationships and support, and limit posttraumatic growth. Previous studies have documented negative experiences (Burke & Sabiston, 2010; McDonough et al., 2008; Sabiston et al., 2007), but the examination of negative experiences over an extended period, even after leaving the program, is a unique contribution. Even though some distress is normal, manageable, and necessary to developing posttraumatic growth (Burke & Sabiston, 2010; Tedeschi & Calhoun, 2004), it is important to find resolutions to problems that disrupt social relationships, as these may contribute to declines in participation and limited growth. In particular, there is a need for participative leadership and autonomy support, methods to manage reminders of breast cancer and recurrence, and strategies to overcome barriers to participation. *Autonomy support* refers to interpersonal interactions that promote freedom and volitional control and is associated with meeting physical activity guidelines among breast cancer survivors (Milne, Wallman, Guilfoyle, Gordon, & Courneya, 2008). Controlling practices were a source of conflict, and introducing more autonomy support and participative leadership led to the resolution of many problems. It may also be important to minimize reminders of cancer in the early stages of participation. Interacting with someone experiencing a recurrence led Debbie to identify herself with someone doing worse than she was; this downward comparison is associated with avoidance and poorer well-being (Holland & Holahan, 2003; Van der Zee et al., 2000). Because this interaction occurred before she was able to identify role models and form more adaptive upward comparisons, she was at particular risk for

downward comparison and avoidance. However, by crediting her efforts to cope with her fears to that interaction at dragon boating, she also highlights that dragon boating programs may have a positive impact even on survivors who do not fully participate. Finally, given that the benefits of dragon boating for breast cancer survivors appear to be linked to active participation, it is important to minimize barriers. This population may experience unique barriers related to cancer, gender, age, and other factors that need to be further explored (Blaney et al., 2010).

Limitations of this study included the lack of Time 5 data for all participants, the large sample size, the possibility of participants globally endorsing positive changes, and participant demographics. Breast cancer survivors who did not participate in the fifth interview may have had social experiences that contributed to their not participating, and those experiences were not captured in the current study. The large sample size presented challenges for data analysis, including analysis time and limitations on how much of the data could be presented. However, given the research question, the sample size was appropriate. While it is possible that participants may globally endorse positive changes due to social pressures to report positive outcomes in the wake of breast cancer (e.g., Wilkinson & Kitzinger, 2000), research has found that breast cancer survivors do not tend to do so (Cordova & Andrykowski, 2003). Furthermore, by building rapport over time and asking participants to recount their personal experiences, both positive and negative, this possibility was minimized. Finally, the participants in this study were mostly Caucasian and of higher socioeconomic status, providing a view of survivorship from one particular group of breast cancer survivors. Future research is needed with survivors who are from marginalized populations, such as minorities and those with lower socioeconomic status, to better understand how social support, physical activity, and posttraumatic growth intersect with the social and cultural experiences of breast cancer survivors.

Quality of the findings was evaluated based on Smith's (2011) guidelines for evaluating IPA. The focus of the article is demonstrated by the bounded research question on social relationships, support, and posttraumatic growth among breast cancer survivors involved in dragon boating. Semistructured interviews conducted primarily by a researcher with extensive experience conducting interviews with this population, or by researchers with specific training in interviewing breast cancer survivors, support the strength of the data. The rigor of the analyses are evidenced by reporting theme prevalence and incidence across time, and including quotations from more than half of participants to support each of the four groups. We have attempted to devote sufficient space to elaborating on each theme by focusing on the four patterns of experience across time. The results include both description of participants' experiences and our interpretations, and we discussed converging and diverging perspectives within each group. Finally, we have made our best attempt to craft a carefully written article that conveys the essence and emotion of participants' experiences.

Collectively, these findings reinforce the roles of social relationships and support as possible mechanisms in the development of posttraumatic growth through dragon boating for breast cancer survivors, and highlight different patterns of experiences and implications for adaptation to breast cancer. Theoretically, the results provide insight into the links between social relationships, support, and posttraumatic growth. Future work is needed to examine the prevalence and strength

of the links between social relationship and support constructs and posttraumatic growth, and how they may be linked causally and over time. The potential for social relationships and support to facilitate posttraumatic growth in the dragon boating context is also of practical value given recent recommendations about encouraging psychosocial programs for breast cancer survivors that facilitate posttraumatic growth indirectly. Pressuring breast cancer survivors to engage in positive thinking or endorse positive outcomes can disrupt social support, so programs should allow breast cancer survivors to discover posttraumatic growth at their own pace (Lechner et al., 2008; Wilkinson & Kitzinger, 2000). Programs like dragon boating may fit this need by promoting social connections and providing survivors with a positive and productive challenge to move on and grow.

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