

**The Benefits of Dragon Boat Participation for Breast Cancer Survivors**  
Temple University, Dept. of Rehabilitation Sciences, Recreation Therapy Program  
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**Number of Articles:** 6

### Summary of Research Findings

Breast cancer is one of the most common types of cancer among women in North America (McDonough, Sabiston, & Crocker, 2008; Ray & Verhoef, 2013). While advancements in treatment have resulted in higher survival rates, women often experience considerable stress associated with their diagnosis and treatment (McDonough, Sabiston, & Ullrich-French, 2011). Furthermore, the impact of the breast cancer experience often results in survivors feeling a loss of power or control over their bodies (Mitchell, Yakiwchuk, Griffin, Gray, & Fitch, 2007) and challenges often continue for years after treatment is complete (McDonough et al., 2011). It is well documented that physical activity can positively influence cancer survivors' physical, psychological and social well-being (McDonough et al., 2008), as well as overall quality of life (Carter et al., 2012). Recently, there has been an increase in cancer survivors participating in the team based sport, dragon boating, where 22 paddlers row a canoe-like boat in synchronization for 500-650 meters (Mitchell et al., 2007).

This literature review aimed to explore the benefits of participation in dragon boat teams for breast cancer survivors. In the six articles reviewed, researchers utilized quantitative, qualitative and mixed research methods to explore a variety of outcomes connected to quality of life (QoL). In all of the studies reviewed, participants were 18 years and older, with a predominant representation of Caucasian women 35-70 years of age who resided in North America (Canada and the United States). Many had a past history of being physically active (McDonough et al., 2008; Mitchell et al., 2007; Sabiston, McDonough & Crocker, 2007). The time since initial breast cancer diagnosis varied greatly. However, the majority of the women were at least six months post their most recent breast cancer treatment. Some participants had previous dragon boat experience (Ray, & Verhoef, 2013; Sabiston et al., 2007), while others were novice paddlers (Carter et al, 2012; McDonough et al. 2008; McDonough et al., 2011; Mitchell et al., 2007). Details on length and structure of participation was not provided in all studies. However, some of the women attended sessions 1-3 times per week (Ray & Verhoef, 2013) for at least one hour per session during a season that ranged from 8 – 18 weeks (Carter et al., 2012; McDonough et al., 2008).

Following participation in dragon boat programs, women experienced physical, psychological and social improvements. Physically, women experienced significant increases in aerobic capacity, upper-body strength and lower body strength (Carter et al., 2012); paddlers reported they were stronger, had more energy, experienced greater physical competence/fitness, and had a positive change in their physical appearance (McDonough et al., 2008). They identified increased endurance and energy (Mitchell et al., 2007) and reported feeling physically fit (Ray & Verhoef, 2013). Additionally, women who participated in multiple seasons of dragon boating had less fatigue than new rowers (Ray & Verhoef, 2013).

Socially, participation in the dragon boat programs contributed to expanded social networks and support (McDonough et al., 2008; McDonough et al., 2011; Ray & Verhoef, 2013; Sabiston et al., 2007), a sense of team cohesion (Carter et al., 2012), and team spirit (Mitchell et al., 2007). Psychologically, women experienced decreased depressive symptoms (Carter et al., 2012), and improved emotional (Ray & Verhoef, 2013; Sabiston et al., 2007) and psychological well-being (McDonough et al., 2008). They also had reductions in stress levels (Mitchell et al., 2007; Ray & Verhoef, 2013), increased positive feelings related to physical appearance (McDonough et al., 2008; Sabiston et al., 2007), and empowered attitudes (McDonough et al., 2011; Mitchell et al., 2007; Ray & Verhoef, 2013). Dragon boat participation also led to enhancement in QoL (Mitchell et al., 2007; Ray & Verhoef, 2013), and positive increases in post-traumatic growth (McDonough et al., 2011; Sabiston et al., 2007).

Other interesting findings were that women participating in dragon boating had significantly higher exercise adherence/attendance and group cohesion than women participating in a walking group (Carter et al., 2012). Additionally, the dragon boat participants reported they began to self-identify as athletes which was both empowering and inspirational (McDonough et al., 2008, McDonough et al., 2011). Although the majority of women found dragon boating a positive experience overall, a few participants did indicate they did not like the visibility of being a survivor (McDonough et al., 2008) or having a constant reminder of their cancer experience (McDonough et al., 2011).

Generalizability of these findings is somewhat limited due to limited diversity in participants (Carter et al., 2012; McDonough et al., 2008; McDonough et al., 2011; Mitchell et al., 2007; Ray & Verhoef, 2013; Sabiston et al., 2007) and a lack of control groups (McDonough et al., 2008; McDonough et al., 2011; Mitchell et al., 2007; Ray & Verhoef, 2013; Sabiston et al., 2007). Nonetheless, the collective findings of the studies reviewed shows dragon boating can be an effective intervention in improving physical, psychological, and social well-being in female breast cancer survivors, and participation in this team activity can increase the QoL of women who have survived breast cancer.

### Knowledge Translation Plan

Recreational therapists have a unique opportunity to positively influence the Quality of Life (QoL) of breast cancer survivors by introducing survivors to the sport of dragon boating. Since QoL for women diagnosed with breast cancer consists of physical, psychological and social domains (McDonough et al., 2008), the research findings summarized above indicate that participation in dragon boating can lead to improvements in all these areas. Additionally, dragon boating may be more meaningful than traditional support groups (Sabiston et al., 2007).

Recreational therapists can promote participation in dragon boating by offering the intervention to women in breast cancer support groups through discussions, handouts and education about the sport. When recruiting participants, therapists should target individuals who are fitness focused and self-

directed in their decision to participate. Although dragon boating requires no previous experience and allows for diverse skill sets (Carter et al., 2012), therapists should have participants obtain physician clearance prior to participation.

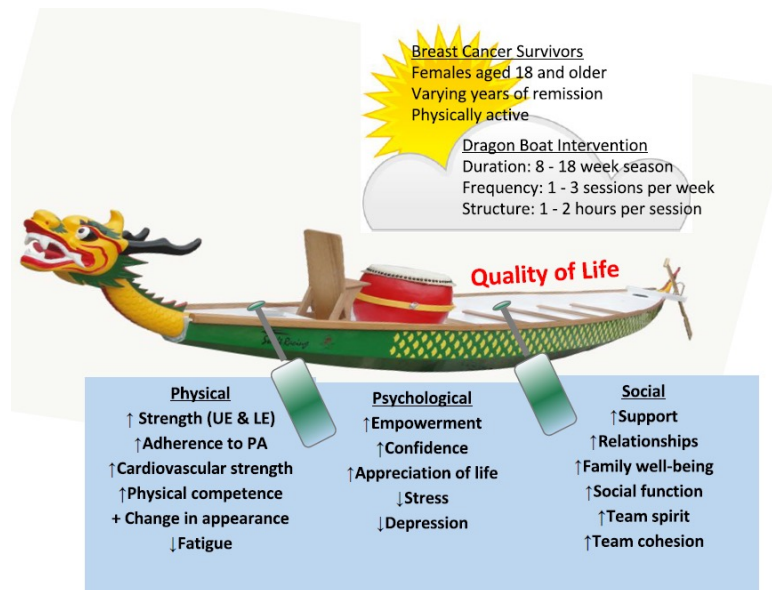
Given the unique elements of dragon boating, therapists will need to consider program location, weather, and equipment, as these all hold the potential to be barriers to participation. Access to a body of water where boating is permitted is necessary, as well as a dragon boat and a place to store equipment. Additionally, a total of 22 participants are typically required. Given these constraints, it may be in the therapist's best interest to promote involvement with women from multiple support groups to obtain the best response rate. Since dragon boating is growing in popularity around the country, a dragon boat program may already exist in the community that offers an opportunity for collaboration by sharing equipment, trained coaches, and/or participants. Utilizing trained coaches and veteran participants in the first few sessions will improve novice paddlers' technique and assist in the prevention of injuries.

Dragon boating should be offered 1-3x per week for at least one hour during a season that lasts 8 – 18 weeks. Since dragon boating is a team-oriented sport, participants should be made aware of the importance of regular attendance/participation. Not only will this ensure an appropriate number of women for a successful experience, but also could contribute to increased adherence, as women may be motivated to attend if the rest of the team is reliant on their efforts.

Prior to getting out on the water, participants should be involved in information sessions related to paddle stroke technique and practice, safety tips, and fitness benefits (Carter et al., 2012). Groups should initially focus on technique and timing and work up to more powerful paddling and racing (Carter et al., 2012). Working up to competition in a dragon boat festival can serve as something to work towards as a team (McDonough et al., 2011).

Weather is a key factor in this outdoor sport, so indoor training, utilizing equipment such as indoor rowing machines in a group setting, or team strength and endurance workouts, can be utilized in the case of inclement weather. It is important that these workouts are done with the team, however, as it continues the promotion of team cohesion and improved social factors of the experience. As individuals and the team develop and progress, recreational therapists should introduce new challenges as the physical and psychological benefits of continuous growth can be therapeutic.

Recreational therapists can also look for ways team members can socialize before and after practices since the support and bonding that occurs among dragon boat team members can enhance many aspects of a participant's life. A positive increase in breast cancer survivors' physical, psychological, and social well-being can create a more optimistic outlook on the survival experience, as well as encourage survivors to lead by example for future survivors, showing what possibilities can be achieved.



## References

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