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Convenient and Live Movement (CALM) for women undergoing breast cancer treatment: Challenges and recommendations for internet-based yoga research

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Abstract

Objective—To conduct a pilot trial of internet-based, cancer-adapted yoga for women receiving breast cancer treatment

Design—Women undergoing radiation or chemotherapy for breast cancer were recruited for 12, 75-minute, biweekly, cancer-adapted yoga classes delivered via internet-based, multipoint videoconferencing. Data were collected on feasibility and acceptability, including qualitative feedback from participants and the yoga instructor.

Results—Among 42 women approached, 13 declined eligibility screening, and 23 were ineligible. All 6 women who were eligible provided consent, but 2 withdrew prior to beginning yoga classes. The remaining 4 participants attended 1–11 of 12 online yoga classes. In post-intervention interviews, participants and the instructor agreed that internet-based yoga classes hold great potential for increasing access and improving psychological outcomes in adults with cancer. Qualitative feedback from participants revealed suggestions for future trials of internet-based, cancer-adapted yoga classes, including: continued use of group format; offering more varied class times to accommodate patients' demanding schedules and fluctuating symptoms; enrolling patients after they have acclimated to or completed cancer treatment; streamlining the technology interface; and careful attention to participant burden when designing surveys/forms. The instructor recommended closed session courses, as opposed to rolling enrollment; teaching the same modified poses for all participants, rather than individual tailoring; and using a large screen to allow closer monitoring of students' class experience.

Conclusions—Internet delivery may increase patients' access to cancer-adapted yoga classes, but cancer-related and technological barriers remain. This study informs how to optimally design

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yoga classes, technology, and research procedures to maximize feasibility and acceptability in future trials.

Keywords

yoga; breast cancer; eHealth; Internet delivery; radiation therapy; chemotherapy

Introduction

Evidence supports efficacy of yoga for improving adult cancer patients' psychological outcomes.[1] However, many lack access to instructors with cancer-specific training, and treatment schedules and symptoms limit patients' ability to attend yoga classes.[2,3] A review of psycho-oncology interventions suggests internet delivery may minimize these barriers.[4]

Research on remotely delivered yoga is scant. Program evaluation comparing veterans self-selecting into in-person versus Tele-yoga, where veterans gathered at VA facilities for yoga classes broadcast from another VA facility, found no differences in satisfaction or symptom improvement.[5] A pilot of twice-weekly internet-based yoga for cardiopulmonary patients demonstrated feasibility and acceptability.[6] Participants liked home-based classes, but half wanted to see other participants, not just the instructor.[6]

Online trials of other mind-body interventions support further study of internet-based yoga. One study demonstrated feasibility of synchronous online group delivery of mindfulness-based cancer recovery.[7] In Tai Chi research, attrition and adherence were equivalent among older adults randomized to community classes versus home-based online videoconferencing; both were superior to home-based videos.[8] Analyses further suggested that home-based interventions without contact with staff or other participants may not be acceptable to distressed participants.[8]

No known studies allowed individuals to take synchronous online yoga classes from home while interacting with the instructor and other participants, and no published internet-based yoga trials were tailored to cancer patients. These factors are important to patients, who want cancer-specific, live classes with expert instructors, delivered in a group setting to facilitate social support.[3] We therefore conducted a pilot trial of cancer-adapted yoga classes delivered via internet-based, multipoint videoconferencing with breast cancer patients with elevated distress.

Methods

Recruitment occurred at a comprehensive cancer center in the southeastern US. Inclusion criteria were: female; age ≥18; stage 0-III breast cancer; scheduled for ≥4 weeks of radiation/chemotherapy during the intervention period; ECOG status 0–2[9]; Internet-connected computer with full-size screen; English-speaking; elevated distress (Hospital Anxiety and Depression Scale depression ≥8[10] or Distress Thermometer ≥4[11]). Exclusion criteria were: regular yoga or vigorous exercise; recent or planned surgery during the intervention period.

Cancer-adapted, 75-minute, Integral yoga classes delivered twice/week via multipoint videoconferencing (GoToMeeting) allowed women to participate from any location while seeing and interacting with other participants and the instructor, a Registered Yoga Teacher with specialized training in cancer-adapted yoga. Classes included the same gentle postures, breathing, meditation, and relaxation delivered in prior in-person research,[12] using verbal cuing instead of manual adjustments. Participants were asked to attend ≥10 of 12 biweekly classes during the 6-week intervention period, concurrent with their course of radiation/chemotherapy.

Procedures and materials were designed to facilitate trust and clarity online.[13] The brochure included research team photographs and biographies. For camera/software installation, staff provided detailed, printed instructions with photos, plus individual telephone support. Dedicated staff provided technological assistance during classes.

Primary endpoints were feasibility and acceptability (enrollment rate, retention, adherence, satisfaction ratings, qualitative feedback from program evaluation forms and telephone interviews). Additional measures (pre- and post-class distress and fatigue ratings; home practice; distress,[10,11] fatigue,[14] sleep;[15] medical records) were not analyzed due to sample size. All procedures and materials received IRB approval.

Results

Thirteen (31%) of 42 women approached for recruitment declined screening (scheduling conflict, *n*=8; not interested, *n*=5). Of 29 women screened, most (*n*=23, 79%) were ineligible (no Internet/computer, *n*=10; no/low distress, *n*=8; regular yoga/exercise, *n*=4; non-English-speaking, *n*=1). The remaining 6 were eligible and consented (see Table 1).

Two withdrew before beginning yoga. In telephone interviews, both described feeling overwhelmed by initiating cancer treatment. Both thought yoga sounded promising, but ultimately decided against adding this new activity to the emotional, time-intensive context of cancer. One recommended recruiting after women acclimated to treatment. Both suggested that online yoga classes during cancer treatment might be more acceptable to younger adults.

Four women attended 1, 3, 5 or 11 of 12 online yoga classes. Despite assistance from study staff and family, two women missed classes due to technological difficulties. Additional barriers to class attendance and completion of surveys/forms included scheduling conflicts, treatment-related fatigue, feeling overwhelmed by cancer, and forgetfulness due to “chemo brain” or “mountains of [cancer-related] paperwork.”

All who attended >1 class (*n*=3) completed quantitative program evaluations. One was satisfied with yoga and internet-based delivery; one was satisfied with yoga but not internet-based delivery; one was dissatisfied with both. All positively rated the instructor.

Qualitative data were available for all four women who attended at least one class. The three women who attended >1 class enjoyed learning about yoga, relaxing, and meeting each other. One wanted more vigorous movements/postures. All four women indicated that

offering classes at varied times of day could facilitate increased attendance, and two recommended beginning yoga post-treatment. One preferred shorter classes. All four women described negative experiences with the videoconferencing technology (e.g., “complicated,” “confusing”). Two appreciated the convenience of home-based classes, but one found her home setting stressful due to lack of well-lit, private space.

The instructor also completed a qualitative interview. She viewed technical issues as minor, infrequent, and quickly resolved. Remote delivery hindered her ability to perceive participants’ “subtle expressions” of interest, emotion, and physical comfort. In future internet-based trials, she would have everyone practice yoga at the same level, introducing more advanced poses only when all participants are ready. She also recommended closed-session courses, rather than rolling enrollment; ≤6 participants; and maximizing the instructor’s screen size.

Discussion

Pilot studies such as this one are critical for iterative development of mind-body interventions.[16] Although feasibility of in-person yoga during breast cancer treatment is well-established,[1] this study demonstrates that the combination of cancer-related stressors and technological barriers can impede participation in online delivery of cancer-adapted yoga. These results can inform design of classes, technology, and research procedures for future trials. Our findings suggest that internet-based, cancer-adapted yoga could be feasible and acceptable if researchers deliver yoga in a group format; offer varied class times to accommodate fluctuating schedules and symptoms; recruit after patients acclimate to or complete treatment; minimize surveys/forms; and simplify the technology interface.

Future online yoga studies might minimize technological challenges using methods from previous successful trials of internet-based groups – e.g., provide Internet access, embed all study materials and videoconferencing within a streamlined interface, hold a technology practice session.[5,6,8,17–19] Our instructor also recommended using a larger screen for closer monitoring of students. Because videoconferencing difficulties may still occur,[6,19] studies should dedicate staffing for technological assistance. This support may be particularly important for older participants, who have fewer Internet/videoconferencing skills,[20–22] and for people with additional challenges (e.g., illness, distress, lack of yoga experience). Similarly, internet-based interventions might be especially useful for younger groups such as adolescent and young adult survivors.

Internet-based oncology interventions offer scalability and access to specialty providers,[4] yet our findings demonstrate that cancer-related and technological barriers remain. Larger assessments of feasibility and acceptability are needed. To advance mind-body research,[16] researchers should engage stakeholders throughout intervention development[23] and examine which approaches benefit which patients.

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Highlights

- This report describes challenges with recruitment and retention of women undergoing treatment for breast cancer in cancer-adapted yoga classes delivered by internet-based videoconferencing.
- Data from qualitative interviews with participants and the yoga instructor can inform the development of future trials of internet-delivered mind-body interventions for adults with cancer.

Table 1

Baseline characteristics of consented participants (*N*=6)

	Mean (SD)	Range	n (%)
Age, years	59 (12.7)	41–76	
Race			
Black			2 (33)
White			4 (67)
BMI	30.9 (5.8)		
Healthy (normal)			1 (17)
Overweight			1 (17)
Obese			4 (67)
ECOG score			
0			1 (17)
1			5 (83)
Cancer stage			
I			2 (33)
II			1 (17)
III			3 (50)
Months since diagnosis	4.7 (2.4)	1–7	

Note. BMI = body mass index; ECOG = Eastern Cooperative Oncology Group