Preliminary results from the Call to Action program

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Introduction

Over the last 30 years, an aging population and medical advances in cancer screening and treatment has led to an increase in cancer survivors (Popat et al., 2013; Ray, 2014). Compared to individuals with no prior cancer history, cancer survivors tend to have poorer health outcomes and experience a decrease in health-related quality of life (QOL) (Huang et al., 2017; Vijayvergia, 2015). As a result, new research has started focusing on innovative ways to help lower cancer recurrence and improve QOL in cancer survivors. Interventions that positively impact QOL in cancer survivors can lower the risk of secondary cancers and lower the prevalence of symptoms such as pain, fatigue, anxiety, and depression (Huang et al., 2017).

Retreat environments are shown to provide emotional support and the opportunity for previous cancer patients to engage with fellow cancer survivors, experience therapeutic aspects of connecting with nature, and remove feelings of isolation, which are often present when undergoing traditional cancer treatment (Barber, 2012). Knights Cabin Cancer retreats was created in 2014 to improve health behavior post cancer diagnosis (see Lesser et al., 2019 for more information about the program). Preliminary findings of Knights Cabin retreats, which are no-cost retreats for participants and their supporters, show an improvement in mental health related QOL, physical activity, self-esteem, and perceived stress at the 3 and 6 month mark post-retreat. Adherence and motivation are challenging in cancer survivors due to the long-term adverse effects of treatment on psychosocial and physiological health. Thus, the aim of this report was to assess the impact of a behavioral phone intervention after participants attended a Knights Cabin Cancer retreat on health related QOL and physical activity.

Study Design

Participants were recruited from cancer survivors who attended a Knights Cabin Cancer Retreat and who provided written informed consent. Ethics approval was obtained from the University of the Fraser Valley's Human Research Ethics Board. The primary outcome measure was a change in leisure time physical activity, assessed using the Godin Leisure Time Physical Activity Questionnaire. Secondary outcome measures and their measurement instruments included health related quality of life (SF-12), fatigue (FACIT 7), stress (Perceived Stress Scale), sleep (PROMIS short form), depression (CES-D 10), self-esteem (Rosenberg) and exercise self-efficacy (adapted from the CHALLENGE program). The aforementioned questionnaire measurements were taken before retreat participation (baseline) and again at 3- and 6-months post retreat attendance. Participants were randomized into either a usual care of behavioral calling group after attending the Knights Cabin Cancer retreat using a 2 by 1 stratification.

The intervention group received an introductory phone call two weeks post-retreat where they were able to begin building a relationship with their caller, identify goals, address health concerns, and ask questions. Each phone call was a point of contact to encourage maintenance of the behavioral changes which resulted from their Knights Cabin Retreat participation. Participants were educated on how to cope effectively with lapses in positive behavior change and how to handle variations in their health status in terms of programming. If participants were doing well, they were encouraged to attempt to increase their health behaviors, but if they were struggling to maintain health behavior change, other suggestions were made such as utilizing social support, making it fun, adapting goals, and addressing time-related barriers.

Methods

Questionnaires were downloaded from Survey Monkey and coded according to the questionnaire criterion for scoring. Participants who only completed baseline data were removed and any missing data was filled in with the previously collected data. A repeated measures ANOVA was run with a 3 factor of time (0, 3 and 6 months) and 2 conditions (usual care = GROUP A, calling = GROUP B). All analysis was completed in SPSS Version 22.0.

Results

Table 1. Participant Demographics and Cancer History

	Usual Care (n=11)	Behavioral Counselling (n=14)
Age	48 ± 8	44 ± 6
Males	n=3	n=0
Females	n=8	n=14
Type of Cancer		
Breast	n=7	n=10
Colorectal	n=1	n=1
Lymphoma	n=2	n=2
Leukemia	n=1	n=0
Brain	n=0	n=1
Stage of Cancer		
1	n= 6	n=4
2	n=1	n=4
3	n=2	n=2
4	n=2	n=3
Unknown	n=0	n=1
Treatment		
Surgery	n=8	n=10
Radiation	n= 9	n=8
Chemotherapy	n= 10	n=8

The average age of the usual care group was 48 and the behavioral counselling was 44. The majority of participants were females with more males in the usual care group. The majority of individual were stage one breast cancer survivors with a breadth of medical treatment (Table 1). There was no significant differences across the variables measured between groups over time (Table 2. Exercise self-efficacy was significantly improved over time but did not differ between groups (results not shown).

Table 2. Baseline, 3 month and 6 month results of behavioral and usual care groups across measured variables

		Baseline	3 months	6 months	P-value Time * Group
Physical SF-12	**Group A**	44.72 ± 9.21	44.85 ± 8.51	44.65 ± 11.43	0.877
	Group B	45.59 ± 8.61	46.41 ± 9.86	47.78 ± 7.41	
Mental SF-12	**Group A**	47.24 ± 10.35	52.10 ± 7.65	51.36 ± 6.36	0.240
	Group B	46.42 ± 12.24	47.08 ± 10.26	49.69 ± 7.45	
FACIT-7	**Group A**	9.23 ± 5.61	8.38 ± 4.31	8.23 ± 3.88	0.156
	Group B	10.00 ± 4.16	10.00 ± 4.86	6.69 ± 4.25	
PROMIS Sleep Short	**Group A**	20.92 ± 8.14	20.85 ± 6.39	20.46 ± 5.87	0.729
	Group B	24.39 ± 8.75	21.08 ± 5.39	18.77 ± 6.31	
Perceived Stress Scale	**Group A**	15.31 ± 6.60	14.31 ± 4.48	12.85 ± 3.83	0.266
	Group B	17.77 ± 5.90	17.31 ± 6.63	12.23 ± 6.09	
Rosenberg Self Esteem	**Group A**	30.31 ± 10.61	32.92 ± 5.16	33.23 ± 5.43	0.266
	Group B	28.62 ± 6.00	29.23 ± 6.93	31.54 ± 6.48	
CES-D 10 Depression	**Group A**	5.85 ± 3.26	6.39 ± 4.41	6.54 ± 3.45	0.333
	Group B	9.31 ± 6.06	9.38 ± 5.00	6.62 ± 3.45	
Godin Leisure Time Physical Activity	**Group A**	59.77 ± 61.90	68.89 ± 32.44	90.69 ± 58.41	0.793
	Group B	104.89 ± 103.68	119.89 ± 102.34	130.15 ± 121.97	
Exercise Self-Efficacy	**Group A**	22.77 ± 7.95	28.39 ± 4.25	28.08 ± 4.13	0.387
	Group B	25.15 ± 6.21	28.15 ± 5.99	27.54 ± 6.39	

Discussion

We did not find a significant change in measured physical activity and psychosocial variables with behavioral follow up. While attending the Knights Cabin Retreat, participants learned a variety of tools aimed at improving their overall quality of life after their cancer diagnosis, treatment, and remission such as guided hikes, yoga, nutrition classes, stress reduction strategies, and sleep improvement techniques. We hypothesized that we would see a greater improvement in psychosocial and physical activity variables with behavioral follow up that would further alter the improvements in variables seen after attending a Knights Cabin Cancer retreat (Lesser et al, 2020). The main advantage of distance-based measures is that they are generally more cost-effective than in-person clinic style interventions and can still yield positive behavioural adaptations in terms of maintenance and further improvement. However, implementing remote style intervention is certainly not without its shortcomings since these limitations can negatively impact the validity of the results (Groen et al, 2018). Many researchers have questioned the success of distance-based interventions due to the facelessness inherent in this intervention style (Groen et al, 2018; Rabin et al, 2013).

Limitations of this research that may explain the non significant findings include; (1) a small sample size (2) the behavioural intervention calling is not salient enough to instigate and/or maintain behavioural change, or (3) the calling script was ineffective by being nonreflective of the major theories of behaviour change and intervention design (4) questionnaires are not sensitive enough to detect changes in intended outcomes. It may be beneficial in the future to alter the intervention calling script to better reflect participants' capability, opportunity, and motivation for sustained behavioural change once they have returned home after their Knights Cabin Retreat. Perhaps greater script sensitivity, more succinctly aligned with theories of behavioural change and intervention implementation may increase adherence and improve subsequent intervention outcomes leading to statistically significant results.

Conclusion

The purpose of this study was to evaluate the effectiveness of follow-up phone calling on sustained behavioural changes in cancer survivors who recently participated in a Knights Cabin Retreat. The primary measure assessed for potential increases in physical activity during leisure time, with secondary measures more focused on aspects of the participants' psychosocial functioning. Results from all measures were not found to be statistically significant. Future studies should seek to explore the effects of distance-based interventions by using a much larger sample size and/or by altering the calling script of distance-based intervention phoning to better reflect aspects involved in the theories of behavioral change.

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