Asian American Breast Cancer Survivorship: The Efficacy of a Technology-based Program on Health Outcomes

Wonshik Chee¹, Yaelim Lee², Xiaopeng Ji³, Eunice Chee⁴, and Eun-Ok Im¹

¹Duke University, Durham, United States, ²Chung-Ang University, Seoul, Republic of Korea, ³University of Pennsylvania, Philadelphia, ⁴University of North Carolina, Chapel Hill, United States

Introduction

- Asian American breast cancer survivors (AABC) are more likely to report a lower quality of life compared to Whites in the U.S.—A plausible reason for their low quality of life is inadequate survivorship management.
- Asians are stoic to pain and symptoms, and tend to suffer unnecessarily from pain and symptoms that could be easily managed using a currently existing regimen.
- Based on preliminary studies, a theory-driven technology-based support program for AABC has been developed.
- Purpose:** To explore the preliminary efficacy of a technology-based program on survivorship experience of Asian American breast cancer patients.

Theoretical Basis

• Bandura's Self Efficacy Model (Bandura, 1982)

Methods

- Samples and Settings**
 - 94 Asian American breast cancer survivors from Internet cancer support groups and Internet communities.
- Instruments**
 - Baseline information**
 - Developed by the research team which included questions on background factors (e.g., age, education) and disease factors (e.g., breast cancer types and stages)
 - Outcome variables**
 - Personal Resource Questionnaire
 - Perceived Isolation Scale
 - Support Care Need Survey
 - Mishel Uncertainty in Illness Scale

Methods

- Outcome variables (continued)**
 - Cancer Behavior Inventory
 - Brief Pain Inventory
 - Pain Beliefs and Perceptions Inventory
- Data Collection Procedures**
 - June 2015 to May 2016
 - Participants used technology-based program and answered pre-test, and post-1 month questionnaires.
- Data Analysis**
 - Questionnaires automatically coded using REDCap system
 - SPSS 22.0 statistical software
 - Descriptive: Frequencies, percentages, means, standard deviation
 - Inferential: Pearson correlation, repeated ANOVA, post-hoc Bonferroni

Results

• General characteristics of the

Characteristics	Mean±SD or N (%)
Age (years old)	41.4 (9.1)
Subethnicity	
Chinese	76 (83.6)
Other	15 (16.4)
Born in U.S.	Yes 56 (62.9)
Education	
Middle school	3 (3.2)
High school	20 (21.5)
College	47 (50.5)
Graduate	23 (24.7)
Marital	Yes 85 (92.4)
Religion	Yes 71 (75.5)
Degree of income sufficiency	Sufficient 31 (34.4)
Perceived health	Healthy 21 (23.3)
Breast cancer diagnosis	Years 2.1 (1.2)
Breast cancer type	Invasive 50 (58.1)
Breast cancer	
Stage 0	2 (2.5)
Stage 1	59 (72.8)
Stage 2	16 (19.8)
Stage 3	4 (4.9)
Medication for cancer treatment	Yes 70 (79.5)

Acknowledgement

- The study was funded by the Patient Centered Outcomes Research (PCOR) Pilot Grant, School of Medicine, Center for Therapeutic Effectiveness Research, University of Pennsylvania.

Groups	Outcomes		Mean (SE)	95% Confidence Interval		F	p
				Lower	Upper		
Intervention	Pain	Pre	4.21 (1.94)	3.72	4.71	.44	.5
		Post	3.95 (1.96)	3.31	4.58		
	Isolation	Pre	1.87 (0.49)	1.75	2.00	9.9 **	.00
		Post	1.48 (0.76)	1.23	1.72		
	Resources	Pre	4.31 (1.25)	3.98	4.63	6.6 *	.01
		Post	4.92 (0.98)	4.60	5.23		
	Support care needs	Pre	4.54 (1.16)	4.24	4.83	8.3 **	.00
		Post	3.84 (1.21)	3.45	4.23		
	Uncertainty	Pre	2.70 (0.74)	2.51	2.89	8.7 **	.00
		Post	2.24 (0.79)	1.98	2.50		
Control	Pain	Pre	6.44 (2.11)	5.90	6.98	2.8	.09
		Post	7.11 (1.61)	6.58	7.63		
	Isolation	Pre	5.63 (3.85)	4.20	7.07	.12	.73
		Post	6.08 (3.50)	3.86	8.31		
	Resources	Pre	5.75 (0.62)	5.51	5.98	.19	.66
		Post	5.64 (0.91)	5.06	6.21		
	Support care needs	Pre	2.20 (0.33)	2.07	2.32	1.1	.31
		Post	2.31 (0.35)	2.09	2.54		
	Uncertainty	Pre	3.12 (1.07)	2.72	3.52	.03	.87
		Post	3.06 (1.27)	2.25	3.87		
Self-efficacy	Self-efficacy	Pre	2.83 (0.79)	2.54	3.13	2.2	.15
		Post	3.20 (0.47)	2.90	3.49		
	Self-efficacy	Pre	7.10 (1.99)	6.35	7.84	.27	.61
		Post	6.73 (2.37)	5.22	8.23		

Discussions

- The findings supported the positive effects of technology-based programs on "personal resource," "perceived isolation," "support care need," "uncertainty," "self-efficacy," "pain," and "pain relief" of racial/ethnic minority breast cancer survivors in the U.S.

Conclusions

- Health care providers need to consider using technology based programs in enhancing cancer pain experience of racial/ethnic minorities.