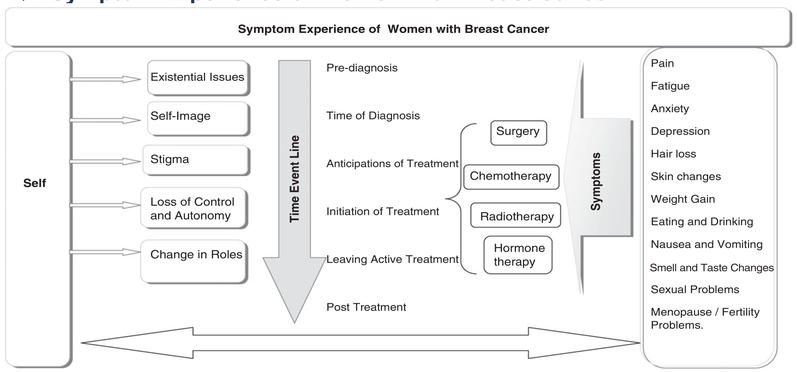
Effectiveness of post-discharge management program of breast cancer patients based on Smart Cancer Care 2.0 using patient reported outcome, a preliminary analysis of a randomized clinical trial

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BACKGROUND

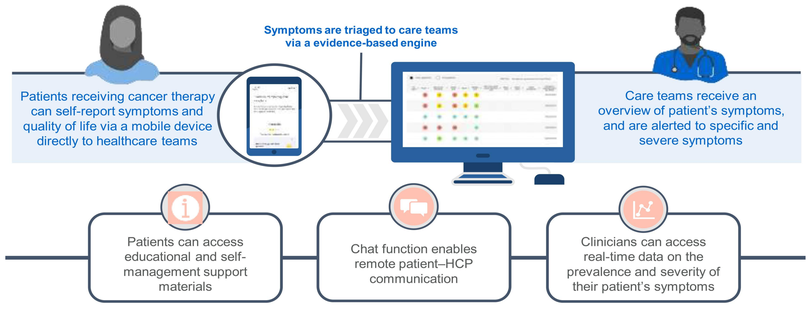
◆ Symptom Experience of Women with Breast Cancer[1]



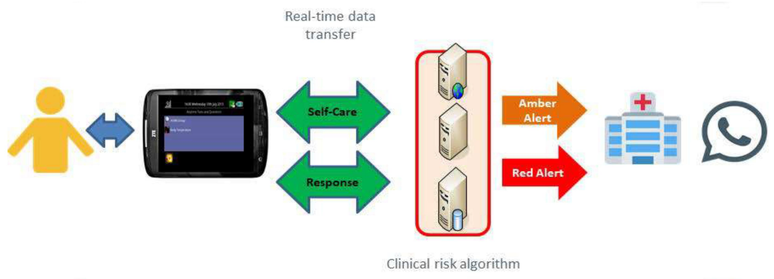
- Diverse range of symptoms are common due to cancer and its treatments toxicity in cancer patients
- Poorly controlled symptoms can have a negative impact on patient quality of life and clinical outcomes[3]
- Early symptom management can improve patient quality of life, depressive symptoms, mood and overall survival versus usual care[4,5]

METHODS

◆ Digital patient monitoring program using PRO enable patients to report symptoms in real time



◆ Smart Cancer Care : Personalized and anticipatory care using ePRO

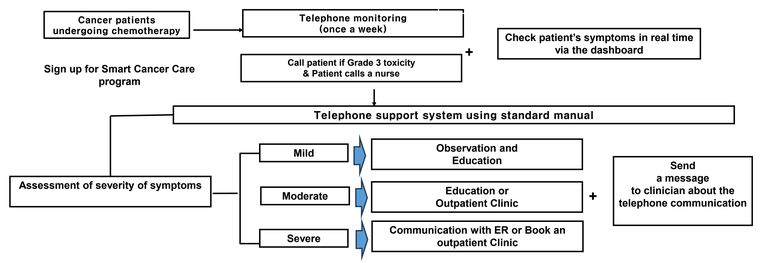


◆ Monitoring symptoms by treatment type

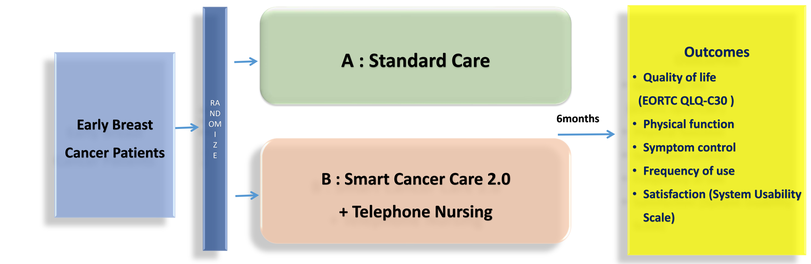
Treatment type	Symptom category
Chemotherapy	Oral/Pharyngeal mucositis, Anorexia, Nausea, Vomiting, Heartburn, Constipation, Diarrhea (Loose stools), Melena, Dyspnea (Shortness of breath), Cough, Hemoptysis, Palpitations, Rash, Dry skin, Acne, Itchy skin, Hand-foot Syndrome, Paronychia (inflammation around the fingernails or toenails), Peripheral neuropathy, Dizziness, Blurry vision, Pain, Chest pain, Insomnia, Fatigue, Bleeding, Breast or chest wall mass, Fever, Weight loss, Hot flashes, Injection site Reaction
Surgery	Seroma / infection, Hematoma, Chronic incisional pain, Sensory disturbances, Mondor, Skin necrosis, Postmastectomy pain Syndrome
Radiation therapy	Radiotherapy Pharyngeal mucositis, Radiotherapy dermatitis
Rehabilitation	Shoulder pain (Pain around the shoulder joint on the operated side) ,Axillary web syndrome (Mondor disease), Myofascial pain syndrome (Muscle pain in the back neck, shoulder blades [back], or trapezius area), Epicondylitis (Elbow pain), Wrist & finger joint pain, Back pain, Knee pain, Pain (Musculoskeletal pain in other areas [joints, ligaments, tendons, muscles, etc.]), Fatigue (feeling tired, weary, or groggy [same as fatigue above]), Peripheral neuropathy (Tingling or numbness in hands and feet), Lymphedema
Health care	Cardiac health, Anxiety, depression, trauma, and distress, Cognitive function, Fatigue, Lymphedema, Pain, Hormone-related symptoms, Sexual function, Sleep disorder, Healthy lifestyle, Immunizations and infections, Employment/return to work

- The cancer patient post-discharge management program monitored and managed various treatment side effects that cancer patients may experience, and even provided information on cancer rehabilitation and health behavior improvement.

◆ Telephone support system for cancer patients by nurse



STUDY DESIGN



RESULTS

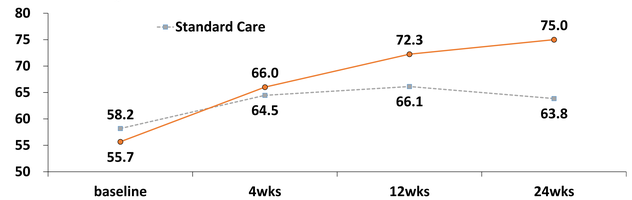
◆ Feasibility of Smart Cancer Care 2.0 (patients=81, medical staff=21)

Evaluation domain	Patients (n = 81) Statement	Mean ± S.D.[a] (possible range: 1–5)	Healthcare workers (n = 21) Statement	Mean ± S.D.[a] (possible range: 1–5)
Cognitive	I was able to understand the uses of the program	4.10 ± 0.68	I was able to understand the uses of the program	4.24 ± 0.54
	The overall content of the program was difficult to understand (reverse-coded)	4.19 ± 0.88	The overall content of the program was difficult to understand (reverse-coded)	3.90 ± 0.89
	Overall, the program was easy to use	4.16 ± 0.93	Overall, the program was easy to use	4.14 ± 0.65
Psychological	It was uncomfortable to input my treatment situation to the program (reverse-coded)	3.95 ± 0.99	It was uncomfortable to use the program to check patient-related information (reverse-coded)	3.76 ± 0.89
	I would feel at ease if my side effects were managed using the program	4.30 ± 0.77	I would feel at ease if patients' side effects were managed using the program	4.43 ± 0.81
	I want to recommend the program to other patients with cancer I know	4.01 ± 0.93	I want to recommend the program to other healthcare workers I know	4.24 ± 0.77
Compositional	The information input to the program reflects my treatment situation accurately	3.79 ± 0.96	The patient information that can be obtained through the program is appropriate	3.95 ± 0.67
	I need to respond to too many questions in the program's questionnaires (reverse-coded)	3.75±0.99	Checking patients' symptoms through the program will help provide appropriate treatment to patients	4.29 ± 0.56
	I need help from someone else to use the program	2.00 ± 1.15	Additional functions are needed for the use of the program	3.14 ± 0.85
Social	Using a side effect management program will reduce hospital visits	3.51 ± 0.90	The program will reduce the overall burden of side effect management for patients	4.19 ± 0.60
	The program will help when I have a consultation with healthcare workers	4.05 ± 0.72	The program will help with patient care	4.43 ± 0.51
	I hope the program will be widely used	4.21 ± 0.68	I hope the program will be widely used	4.62 ± 0.50
Total	-	3.83 ± 0.48	-	3.90 ± 0.29

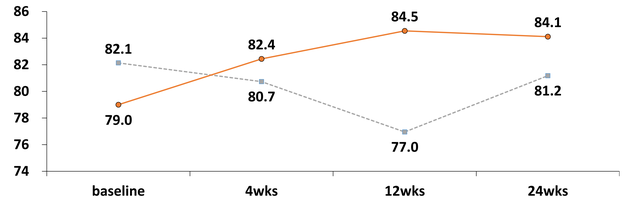
◆ Baseline Characteristics

Characteristic		Group A (N=101)	Group B (N=99)	p
Sex — no. (%)	Female	101(100)	99(100)	
Median age (range) — yr		50.0(26.0-76.0)	51.0(29.0-76.0)	0.598
Treatment modality	Radiotherapy	28(27.7)	28(28.3)	0.592
	Surgery	57(56.4)	51(51.5)	
	Chemotherapy	16(15.8)	20(20.2)	
Stage	0	17(17.7)	9(9.6)	0.525
	I	39(40.6)	43(45.7)	
	II	23(24.0)	22(23.4)	
	III	15(15.6)	19(20.2)	
	IV	2(2.1)	1(1.1)	
ECOG	0	21(20.8)	17(17.2)	0.590
	1	80(79.2)	82(82.8)	
Satisfaction (System Usability Scare)			70.73±15.84	

◆ Change from baseline at each assessment time point for Health-Related Quality of Life



◆ Change from baseline at each assessment time point for Physical Function



CONCLUSION

- The post-discharge management program based on Smart Cancer Care 2.0 was estimated to be effective in improving the health-related quality of life, physical function, symptom control of breast cancer patients.
- Smart Cancer Care 2.0 may play a crucial role in establishing a comprehensive post-discharge management system for patients with cancer as it provides suitable interventions based on patients' responses and allows the regularly collected PROs to be easily viewed for streamlined care.

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