

A Multivariate Testing of Illness Perception, Self-Management and Quality of Life of Taiwanese Cancer Patients

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Background

- Cancer is the leading life-long disease that affects people globally and is a leading cause of morbidity and mortality worldwide. More than 60% of world's total new annual cases occur in Africa, Asia, and Central and South America (World Health Organization, 2016).
- Chinese is the world's most common language ranked among first language speakers. Cancer has been the leading cause of death in ethnic Chinese (World Health Organization, 2016).
- Different cultural backgrounds can influence how patients perceive the disease, how they self-manage their health and disease process, and how these factors can influence their quality of life.
- To provide culturally sensitive health care, more understanding in the impact of cancer and coping with this disease among various cultural subgroups is important.

Purpose

- This paper tests a multivariate model to determine the associations among self-management, illness perception, and quality of life among a sample of Taiwanese cancer patients.

Method

- A sample of ethnic Chinese adult breast and colon cancer patients (N = 159) were included in the multivariate model analysis. The data were from an international collaboration project conducted in 2011-2012 at northern Taiwan region.
- After consent, each participant completed questionnaires for demographics, illness perception, self-management practice, and quality of life.
- Hierarchical multiple regression analysis was used for the model testing.

Measurement

- Illness perception was measured by Chinese version of the revised Illness Perception Questionnaire. Self-management practice was measured in the aspects of self-care efficacy, symptom self-care activity, and health maintenance resources. Quality of life was measured by the Quality of Life Scale. All questionnaires were available in bilingual versions.
- Measurement reliability from the sample: Illness perception (Cronbach's Alpha = 0.75 ~ 0.88), Self-care efficacy (Cronbach's Alpha = 0.93 ~ 0.96), Quality of life (Cronbach's Alpha = 0.75).

Demographic Characteristics (N =159)

- Age: 55 (10.39)
- Gender: 83% female
- Working Full time: 21%
- Karnofsky's Score: 78.43 (13.19)
- Religion: 72% Buddhism/Taoism
- Primary Caregiver: 33% identify "self" as the primary caregiver

Table 1 Comparisons between Breast and Colon cancer patients

Variable	Breast (n=105)		Colon (n=54)		Total (N=159)	
	M	SD	M	SD	M	SD Range
Illness Perception						
Identity (number of perceived symptoms related to illness)	3.33	3.23	3.96	3.05	3.55	3.18 0-16
IPQ Time/line	17.34	5.04	20.67	4.33	18.51	5.04 0-30
IPQ Time Cycle	8.89	2.52	9.35	3.10	9.05	3.38 0-17
IPQ Consequence	16.49	4.62	19.11	4.08	17.40	4.60 0-28
IPQ Personal Control	21.87	4.73	21.74	4.73	21.82	4.71 0-30
IPQ Treatment Control	18.64	4.62	17.93	3.14	18.39	3.30 4-25
IPQ Illness Coherence	16.99	4.49	18.57	3.63	17.54	4.26 0-25
IPQ Emotional Representation	17.25	5.26	17.31	4.15	17.27	4.89 0-30
Self-Care Efficacy						
Positive Attitude	53.17	15.00	48.81	17.17	51.56	15.92 16-80
Stress Reduction	30.37	8.86	29.63	10.98	30.10	9.65 10-50
Making Decision	8.20	3.42	6.87	3.97	7.71	3.68 3-15
Total Score	86.43	29.00	85.31	30.22	86.05	29.33 6-145
Quality of Life	6.32	0.89	5.74	0.84	6.12	0.92 3.48-8.95
Karnofsky's Score	81.33	12.79	72.78	12.20	78.43	13.19 50-100
Age	53.24	9.46	59.94	10.75	55.55	10.19 29-79
Number of Symptom Reported	4.92	3.15	4.98	2.41	4.94	2.88 0-16
Number of Self-Care Strategies Reported	15.62	14.64	16.02	12.17	15.75	13.81 0-71

Note. *p < .05.

Table 2 Bivariate Correlation Analysis

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Identity	—												
2. Timeline	.26**	—											
3. Time Cycle	-.21**	.43***	—										
4. Consequence	.37***	.63***	.54***	—									
5. Personal Control	.00	-.09	-.22**	-.01	—								
6. Treatment Control	-.10	-.19*	-.22**	-.08	.70***	—							
7. Illness Coherence	-.02	.06	-.21*	-.04	.49***	.54***	—						
8. Emotional Representation	.18*	.45***	.40***	.55***	-.11	-.08	-.12	—					
9. Positive Attitude	-.06	-.43***	-.48***	-.42***	.48***	.48***	.42***	-.23***	—				
10. Stress Reduction	.02	-.34***	-.39***	-.34***	.44***	.42***	.47***	.52***	.87***	—			
11. Making Decision	.06	-.31***	-.12	-.35***	.18*	.19*	.14	-.31***	.55***	.55***	—		
12. Total Self-Care Efficacy	-.03	-.24**	-.34***	-.29***	.48***	.48***	.49***	-.38***	.97***	.96***	.65***	—	
13. QOL	-.09	-.36***	-.42***	-.43***	.31***	.25**	.12	-.32***	.49***	.44***	.34***	.37***	—

Note. N = 159; *p < .05, **p < .01, ***p < .001. Pearson product-moment correlation coefficient.

Table 3 Hierarchical Regression Analysis predicting Quality of Life

Variable	ΔR ²	β
Step 1	.24***	
Control variables*		
Step 2	.18***	
Identity		.09
IPQ Timeline		.02
IPQ Time Cycle		-.17
IPQ Consequence		-.23*
IPQ Personal Control		-.21*
IPQ Treatment Control		-.07
IPQ Illness Coherence		-.04
IPQ Emotional Representation		-.06
Step 3	.01	
Self-Care Efficacy (Total Score)		.13
Step 4	.00	
Average Self-Care Strategies Used per Symptom		-.01
Total R ²	.43***	
N	136	

Note. *p < .05, **p < .01, ***p < .001.

aControl variables included diagnosis, age, KPS score, education, religion, marital status, working status, income, number of symptom reported

Result

- On average, about five symptoms were reported from each participant. Stress and overwork were the common perceived causes of cancer reported in the sample.
- Walking and exercise were the commonly used daily health maintenance activities.
- The four-stage hierarchical multiple regression model explained a total 43% of variance in quality of life ($F_{(19,137)} = 4.56, p < .001$). Among all variables, the dimensions of consequence and personal control from the Illness Perception Questionnaire, and Karnofsky's Score were the significant predictors in the model.

Conclusion and Implication

- The overall results from this study showed that enhancing cancer patients' self-care efficacy and empowering patients to have positive personal control and attitude toward cancer and its treatment can significantly contribute to their quality of life.
- While the sample was focused on ethnic Chinese patients in this study, the proposed predicted model can be applied in other population.
- Further research can explore culturally-appropriate interventions to assist cancer patients to support their self-management.
- Variation in illness perceptions of cancer by different types of cancer should be considered in cancer survivorship planning and patient education.

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