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Structural Model of Psychosocial Adjustment for Cancer Patients in Korea

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Abstract

In this study, the structural model was described and validated to understand the degree of psychosocial adjustmentof cancer patients and to estimate the factors that affect psychosocial adjustment directly and indirectly based on Kim's theory which combined with Roy's adjustment theory and proposition of stress-evaluation-countermeasure by Lazarus and Folkman.The data collection was performed through self-reported survey form from November 20, 2016 to February 10, 2017, and 200 data were analyzed out of 220. Data analysis was performed with SPSS Win 23.0 by descriptive analysis per demography and study variables. Statistically significant variables on psychosocial adjustment were symptom experience and uncertainty, demonstrating 41.0% explanatory power of psychosocial adjustmentin the cancer patients by these variables. In conclusion, symptom experience and uncertainty were found to be the crucial factors affecting the psychosocial adjustment of cancer patients.Using these results, it should be prepared to develop symptom relieving programs, objective treatment directions, potential symptoms and nursing interventional program on the information to lower the experiences of symptoms. To lower the uncertainty, it should be prepared to develop the programs of psychosocial adjustment by self-support meeting of the cancer patients who were in common to have counseling and treatments on the progression and treatment plans after diagnosis of cancer.

Keywords: Neoplasms;Patients;Social adjustment;Social support; Syndrome; Uncertainty

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Introduction

The standardized incidence of all cancers in Korea increased from 219.9 per 100,000 in 1999 to 311.6 in 2013, which is an annual increase of 3.3% (National Cancer Center, 2013). Cancer survival rates are increasing with the development of medical technology, but after cancer diagnosis, patients and their families experience complex emotions such as fear and anxiety. In such a state of psychological anxiety, cancer patients experience physical pain and psychosocial anxiety while participating in treatment for a long time (Cha K.S. *et al*, 2012). It also lowers the quality of life and negatively affects the disease recovery process (No I.S. *et al*, 2011). Unlike acute diseases, patients experience long-term relapse and recovery processes. This is similar to those who have been diagnosed with chronic diseases and need to be constantly managed, but due to the nature of cancer, there is a risk of recurrence, so anxiety that needs to be managed continuously for a long time is high, and the difficulties of daily social life are experienced. In other words, after cancer diagnosis, the physical and psychological burden is large (No I.S. *et al*, 2011). In particular, during the repetitive treatment process, suffering depression, inadequate sleep patterns, and emotional stress such as fatigue, they suffer from various difficulties related to exhaustion, nervousness, and depletion of physical and emotional resources (Kim D.K., 2014).

Psychosocial adjustment includes multidimensional areas such as health management, professional environment, family environment, family relationship, social environment, psychological pain, and sexual life(Derogatis, L. R., *et al*, 1986). In the study of Kennard et al. (Kennard. B. D., *et al*, 2004), the difficulty of psychosocial adjustment directly and indirectly negatively affected the treatment process of cancer patients.

Regarding the psychosocial adjustment of cancer patients, research should be conducted to continuously adapt to the ever-changing life of cancer patients after cancer diagnosis. Accordingly, Roy's theory, which explains the adaptation process in a changed life, is introduced with focus stimulus, situation stimulus, and residual stimulus that induce adaptive behavior, but it lacks explanation of the individual control mechanisms of the adaptation level. On the other hand, Lazarus & Folkman's stress-evaluation-coping theory stipulates a control mechanism, that is, an effort to continuously assess and adapt to the stressful situation that must be managed and treated for a long time after cancer diagnosis.

Based on the synthesized theory ofKim (KIM I. J., *et al*, 1997), the focus stimulus of cancer patients was set as the symptom experience as a stress source, and the situation stimulus was set as social support and depression as other stimuli with the stress source, and residual stimulus was not used as it was difficult to measure. In the primary evaluation, perception of negative changes was evaluated through uncertainty, and in the secondary evaluation what you do to manage the

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changed situation was evaluated using resilience and self-esteem. Coping is a cognitive and behavioral effort in a constantly changing situation, and by categorizing it into problem-based coping and emotion-based coping, a hypothetical model to explain psychosocial adjustment of cancer patients was constructed.

As discussed above, there is a limit to comprehensively explaining the psychosocial adjustment pathway because it reports fragmented variables related to psychosocial adjustment in cancer patients. Therefore, applying the Kim (KIM I. J., *et al*, 1997) theory, which synthesized the proposition of Roy and Lazarus & Folkman theory, a study was done on the psychosocial adjustment of cancer patients, a model was built and tested to provide basic data for nursing intervention development by identifying factors that affect it.

Materials and Methods

This study is based on the theory of Kim(KIM I. J., *et al*, 1997),, which synthesized Roy's adaptation theory and Lazarus and Folkman's stress-evaluation-coping model, and after constructing a hypothetical model with an influencing factor explaining the psychosocial adjustment of cancer patients, this is a model construction study to test the suitability of the model and the hypothesis presented in the model by collecting data from cancer patients.

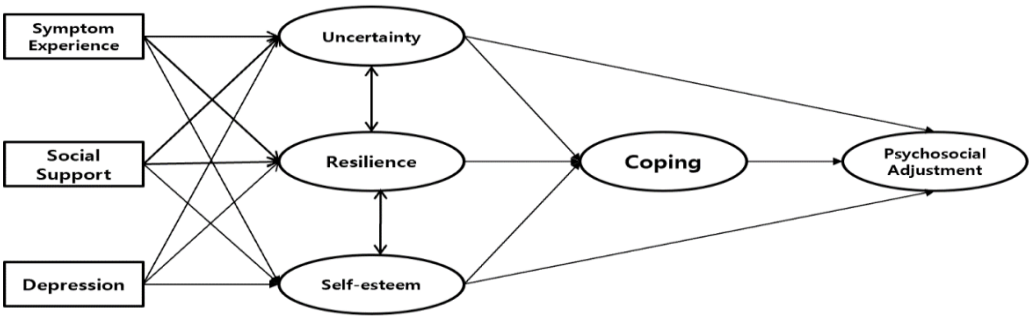

Figure1: Concept framework of this study

Subjects

The subjects of this study were cancer patients who were diagnosed with cancer of the digestive system, breast cancer, respiratory system cancer, and genitourinary system cancer who are undergoing inpatient treatment and outpatient treatment after being diagnosed with cancer at a general hospital in D city. The specific criteria for selecting a target are 20 years of age or older, who receive inpatient treatment at a general hospital or go to the outpatient clinic after diagnosis, and those who understand the contents of the questionnaire and can communicate, understand the purpose of the study, and agree to participate in the study.

Joreskog and Sorbom(Bae B.R., 2011) proposed the principle of determining the sample size. If the number of measurement variables is less than 12, it is recommended to use at least 200

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samples. In this study, 220 patients were conveniently sampled considering the ideal recommended size and 10% dropout rate due to incomplete questionnaire, and 200 cancer patients participated in the study, excluding those who did not complete the questionnaire.

Symptom experience

As a tool for measuring symptom experience, the MDASI-K produced and validated in Korean by Yun et al.(Yun Y. H., *et al*, 2006) from MD Anderson Symptom Inventory developed by Cleeland(Cleeland, C.S., *et al*, 2001) was used, and it consists of physical symptoms (13 questions) and daily life functions (6 questions). Each item of the symptom experience measurement tool is a Likert scale from 0 to 10 points. Based on the worst symptom time in 24 hours, a score of 0 means no symptoms, and a score of 10 means it is unimaginable. At the time of development, the reliability Cronbach's alpha = .91 and in this study was .97.

Social support

For social support, a tool that was modified and supplemented from the social support tool produced by Kim (Kim O. S., 1993)was used. There are 24 questions in total, consisting of 12 questions for family support and 12 questions for medical personnel support. Each question was based on ‘strongly disagree’ 1 point and ‘strongly agree’ 5 points on the Likert 5-point scale. The higher each score, the higher the level of family support and medical personnel support. At the time of development, the reliability was .94 for family support and .93 for medical personnel support, and the reliability in this study was .96 for family support and .95 for medical personnel support.

Depression

Depression utilized the Brief Edinburgh Depression Scale (BEDS) (Lee J. H., *et al*, 2009), with a total of 6 questions, in a Likert 4-point scale, where the score per item ranges from 0 to 3, and negative responses mean lower scores. It was standardized as a Korean version, and the reliability at the time of development was .94, and in this study, it was .89.

Uncertainty

Uncertainty was measured with 22 questions modified by So (So H.S., 1995) using The Mishel Uncertainty in Illness Scale developed by Mishel (Mishel M. H., 1981). There are four sub-areas and each item is in the range of 0 to 4 points, and the higher the score, the higher the degree of uncertainty. The 8 questions were converted in reverse. At the time of development, the reliability was .84, and in this study, it was .84.

Resilience

Resilience was measured using the Korean version of the 10-item Connor-Davidson Resilience Scale (CD-RISC) modified and supplemented by Campbell-Sills and Stein (Campbell-Sills, L., *et al*, 2007) from the Connor-Davidson Resilience Scale (CD-RISC). This tool was composed of a

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Likert 5-point scale. The higher the score, the higher the resilience. At the time of the tool development, the reliability was .85, and in this study, it was .93.

Self-esteem

Self-esteem was measured by Rosenberg's scale as a tool of Jeon(Jon B.J., 1974). The 8th questio n that gives reliability problem was removed with 10 questions, and the opposite of the contents w as reversed from 'not at all' to 'very yes' to '5' as Likert's 5-point scale. The higher the score, the hi gher the degree of self-esteem. At the time of the tool development, the reliability was .86 and in this study, it was .84.

Coping

Coping was measured with a tool modified by Yang (Yung J. H., *et al*, 2014) based on the result of factor analysis of WCQ (The Way of Coping Questionnaire), a tool for measuring the coping method by Lazarus and Folkman. This tool consists of a total of 30 questions, 14 questions in the problem-based coping method and 16 questions in the emotion-based coping method. With a Likert scale ranging from 1 point 'not at all' to 5 points of 'always', the higher the score, the more the coping method is used. The reliability of the tool was problem-based coping .88 and emotion-based coping .84, and the reliability in this study was problem-based coping .91 and emotion-based coping .83.

Psychosocial adjustment

Psychosocial adjustment was measured using a self-reported Korean version of the psychosocial adjustment scale (Psychosocial Adjustment to Illness Scale-Self Report) developed by Derogatis and Lopez (Derogatis L. R., *et al*, 1986). This scale (PAIS-SR Korean version) consists of 7 areas, a total of 46 questions. In the case of sexual relations, subjects without a spouse were substituted with the average value, and "0" was scored for those who were reluctant about the sexual adaptation question. Higher score indicates higher psychosocial adjustment in the 5-point Likert scale ranging from 0 points 'strongly disagree' to 4 points 'strongly agree'. The reliability of the tool was .82, and in this study, it was .91.

Data collection

Data collection was carried out by the researcher and two research assistants from November 20, 2016 to February 10, 2017. Research assistants were two nurses, who were educated to explain the purpose of the researcher, questionnaire, and writing method before the start of the study, and for cases where the subject did not understand the question. Permission was obtained from each institution, and the purpose of the study was explained to the subjects of the study, and when consenting to participate in the study, a structured questionnaire was written in a self-report format, and the time required to complete the questionnaire was about 30 minutes.

Ethical consideration

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In this study, data was collected after obtaining approval from the "Institutional Bioethics Committee of Kongju National University" for the protection of research subjects (approval number KNU_IRB_2016-68). The consent form included details on anonymity and confidentiality, and it was explained that participation in the study can be stopped at any time if he/she wants to discontinue the study even after consenting to participate in the study according to his or her voluntary will, and that there is no disadvantage. The data collected after the survey will be kept in a locked place and will be disposed of collectively after the study is completed.

Data analysis

The collected data were tested for differences through descriptive statistics, independent t-test and one-way ANOVA for general characteristics and variables of the subjects using IBM SPSS Statistics 23.0 program, and the Scheffé test was used for the post-test, and the correlation coefficient was analyzed by Pearson's correlation coefficient. AMOS 23.0 program was used to test the fitness of the hypothesis model and test the hypothesis.

Results and Discussion

Differences in Psychosocial Adjustment According to the General Characteristics of Subjects

As for the study subjects, 62.5% were women, outnumbering men, and 79.0% had spouses, which consisted of the majority. As for the composition of age, 41-60 years old was the most frequent at 61.5%, followed by 61 years old and over, then 20-40 years old. For occupation, unemployment was the most common with 51.0%, then office worker, service worker in order, and the diagnosis was digestive system cancer with 34.0%, breast cancer, urogenital cancer, and respiratory system cancer in the order of frequency. Cancer diagnosis period was most frequent in less than 2 years 55.0%, followed by 2~4 years, followed by more than 4 years.

Looking at the difference in the degree of psychosocial adjustment according to the general characteristics of cancer patients, there were differences according to spouse (t=2.25, p=.026) and cancer diagnosis period (F=4.12, p=.018), but gender, age, occupation, and diagnosis did not show any significant difference in psychosocial adjustment.

Those with a spouse showed higher psychosocial adjustment than those without a spouse, and those with less than 2 years within cancer diagnosis had higher psychosocial adjustment among those within fewer than 2~4 years [Table 1].

Table1:Differences in psychosocial adjustment according to the general characteristics of subjects (N=200)

Variable	Division	Frequency (persons)	Percentage (%)	Psychosocial adjustment			
				M±SD	t or F	*p*	Scheffé

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Gender	Male	75	37.5	2.10±0.45	0.30	.768	
	Female	125	62.5	2.08±0.50			
Spouse	Yes	158	79.0	2.13±0.46	2.25	.026	
	No	42	21.0	1.94±0.53			
Age	20~40	16	8.0	2.26±0.62	1.43	.241	
	41~60	123	61.5	2.09±0.50			
	Over 61	61	30.5	2.03±0.39			
Occupation	Office worker	45	22.5	2.04±0.70	0.22	.886	
	Sales and construction	41	20.5	2.13±0.43			
	Unemployed	102	51.0	2.09±0.38			
	Other	12	6.0	2.09±0.39			
Diagnosis	Gastrointestinal cancer	68	34.0	2.08±0.45	0.15	.964	
	Respiratory cancer	16	8.0	2.05±0.29			
	Urogenital cancer	20	10.0	2.15±0.47			
	Breast cancer	58	29.0	2.08±0.54			
	Other	38	19.0	2.11±0.52			
Cancer diagnosis period	Under 2 years[a]	110	55.0	2.25±0.43	4.12	.018	a>b
	Under 2~4 years[b]	54	27.0	2.02±0.47			
	Over 4 years[c]	36	18.0	2.07±0.51			

Descriptive Statistics of Study Variables

The symptom experience, a variable of the study, was at an average level of 4.96±2.45 points out of 10 on average. Family support, a sub-factor of social support, was 3.91±.81 points out of 5, and medical personnel support was 3.45±.79 points out of 5 points, indicating high perception of family support and medical personnel support. Depression was reported at a moderate level of 1.28±.74 points out of 3 points on average. The sub-factor of uncertainty, ambiguity, was 1.89±.73 points, 1.85±.59 points for unpredictability, 1.71±.66 points for complexity, and 1.68±.49 points for information deficit out of 4 points on average which were low levels. The average resilience was 2.42±.73 points out of 4, which was a moderate level. Self-esteem reported a high level of 3.62±.62 points out of 5 on average. Coping consists of problem-based coping and emotion-based coping, and active, which is a sub-factor of problem-based coping, was 3.08±.78 points, information seeking 2.98±.95 points, and cognitive restructuring 3.20±.70 points out of 5 points which were high, and threat reduction, a sub-factor of emotion-based coping, was 2.92±.69 points, 2.44±.80 points for self-criticism, 2.97±.90 points for hope, 2.47±.72 points for emotional expression out of 5 points, which showed moderate emotion-based coping. Health management, a

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sub-factor of psychosocial adjustment, showed moderate adaptability of 2.09±.48 out of 4 points [Table 2]. In this study, the values of skewness and kurtosis did not exceed 2 and 7, and normality was maintained.

Table2:Descriptive Statistics of Subject-related Factors

(N=200)

Variable	Range	Average	Standard deviation	Skewness	Kurtosis
Symptom experience	0~10	4.96	2.45	-.16	-.92
Social support	1~5	3.68	0.69	-.71	1.24
Family support	1~5	3.91	0.81	-.74	.71
Medicalpersonnel support	1~5	3.45	0.79	-.30	.10
Depression	0~3	1.28	0.74	-.11	-.80
uncertainty	0~4	1.79	0.49	-.75	.60
Ambiguity	0~4	1.89	0.73	-.12	.25
Unpredictability	0~4	1.85	0.59	-.19	-.12
Complexity	0~4	1.71	0.66	-.05	.07
Information deficit	0~4	1.68	0.49	-.40	.27
Resilience	0~4	2.42	0.73	-.52	1.35
Self-esteem	1~5	3.62	0.62	.17	.59
Coping	1~5	2.92	0.55	.98	2.97
Problem-based coping	1~5	3.09	0.72	.44	.32
Active	1~5	3.08	0.78	.38	.00
Information seeking	1~5	2.98	0.95	.05	-.41
Cognitive restructuring	1~5	3.20	0.70	.54	.32
Emotion-based coping	1~5	2.70	0.59	1.09	3.42
Threat reduction	1~5	2.92	0.69	.38	1.06
Self-criticism	1~5	2.44	0.80	.66	.92
Hope	1~5	2.97	0.90	.27	-.30
Emotional expression	1~5	2.47	0.72	.85	1.72
Psychosocial adjustment	0~4	2.09	0.48	-.33	1.58

Modified Model Analysis

For uncertainty, the pathways with social support (β=-.49, t=-4.90) and depression (β=.53, t=6.09) were significant, and the explanatory power was 55.1%. Resilience was significant in the paths of

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social support (β=.25, t=2.33), depression (β=-.39, t=-4.25), and uncertainty (β=-.23, t=-1.99), and the explanatory power by these variables was 40.3%. Self-esteem was significant in the paths of social support (β=.27, t=3.28), depression (β=-.24, t=-3.19), and resilience (β=.38, t=5.15), and the explanatory power by these variables was 44.1%.

Problem-based coping was significant in the paths of social support (β=.41, t=3.43) and self-esteem (β=.29, t=3.17), and the explanatory power was 33.2%. Psychosocial adjustment was significant in the paths of symptom experience (β=-.16, t=-2.32) and uncertainty (β=-.34, t=-2.91), and the explanatory power was 41.0%.

Table 3: Direct Effect, Indirect Effect, and Total Effect in Modified Model (N=200)

Endogenous variable	Exogenous variable	SRW (β)	C.R (p)	SMC	Direct effect (p)	Indirect effect (p)	Total effect (p)
Uncertainty	Symptom experience	.05	0.56(.287)	.551	.05(.287)		.05(.287)
	Social support	-.49	-4.90(<.001)		-.49(<.001)		-.49(<.001)
	Depression	.53	6.09(<.001)		.53(<.001)		.53(<.001)
Resilience	Symptom experience	.03	0.44(.672)	.403	.03(.672)	-.01(.291)	.02(.550)
	Social support	.25	2.33(.010)		.25(.010)	.12(.041)	.36(.002)
	Depression	-.39	-4.25(<.001)		-.39(<.001)	-.12(.091)	-.51(.005)
	Uncertainty	-.23	-1.99(.024)		-.23(.024)		-.23(.024)
Self-esteem	Symptom experience	-.02	-0.25(.403)	.441	-.02(.403)	.01(.440)	-.01(.472)
	Social support	.27	3.28(.001)		.27(.001)	.14(.001)	.40(.005)
	Depression	-.24	-3.19(.001)		-.24(.001)	-.19(<005)	-.43(.004)
	Resilience	.38	5.15(<.001)		.38(<.001)		.38(<.001)
Problem-based coping	Social support	.41	3.43(<.001)	.322	.41(<.001)	.10(.088)	.51(.001)
	Uncertainty	-.07	-0.64(.261)		-.07(.261)	.00(.731)	-.10(.192)
	Resilience	-.13	-1.37(.915)		-.13(.915)	.11(.980)	-.02(.660)
	Self-esteem	.29	3.17(.001)		.29(.001)		.29(.001)
Psychosocial adjustment	Symptom experience	-.16	-2.32(.010)	.410	-.16(.010)	-.02(.291)	-.17(.024)
	Social support	.13	1.11(.133)		.13(.133)	.25(.013)	.38(.004)
	Depression	-.07	-0.71(.240)		-.07(.240)	-.26(.024)	-.33(.006)
	Uncertainty	-.34	-2.91(.002)		-.34(.002)	-.02(.164)	-.37(.020)
	Resilience	.06	0.70(.241)		.06(.241)	.04(.166)	.10(.192)
	Self-esteem	.10	1.29(.098)		.10(.098)	.01(.365)	.11(.185)

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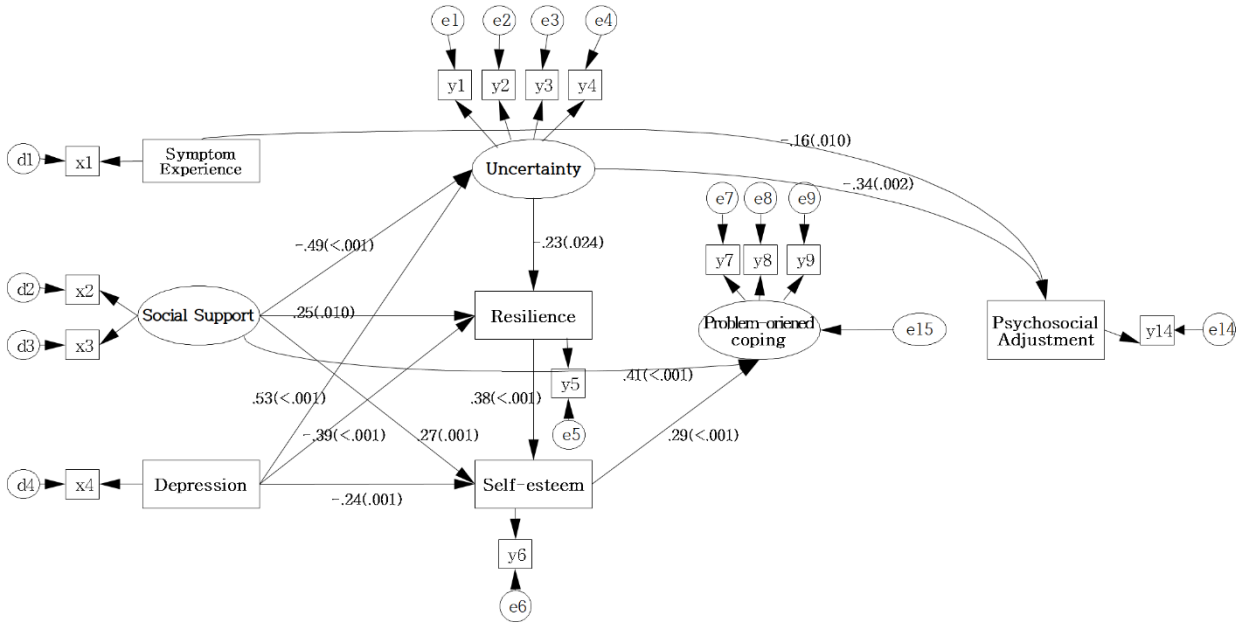
	Problem-based coping	.03	0.34(.369)	.03(.369)	.03(.369)



X_1: Symptom experience X_2: Medical personnel support X_3: Family support X_4: Depression,
Y_1: Ambiguity Y_2: Unpredictability Y_3: Complexity Y_4: Information deficit Y_5: Resilience Y_6: Self-esteem Y_7: Active
Y_8: Information seeking Y_9: Cognitive restructuring Y_{10}: Threat reduction
Y_{11}: Hope Y_{12}: Self-criticism Y_{13}: Emotional expression Y_{14}: Psychosocial adjustment

Figure2. Path diagram of the modified model

In the final modified model, for factors affecting psychosocial adjustment in cancer patients, the direct effects were uncertainty and symptom experience, and the indirect effects were social support and depression. The magnitude of each influence was in the order of uncertainty, depression, social support, and symptom experience, and the study will discuss the results as follows.

Regarding uncertainty, in this study, exogenous variables such as social support and depression were found to have a direct effect on endogenous variable uncertainty, showing 65.9% explanatory power. This is the same as the result of a study on cancer patients that reported that the higher the social support, the lower the uncertainty (Kim H. Y., *et al*, 2012). In other words, in order to reduce uncertainty, it is believed that nursing intervention is necessary to increase the social support system by providing information on disease management and to reduce depression.

For resilience, social support and depression, which are exogenous variables, have a direct effect on resilience, which is an endogenous variable, showing 41.5% explanatory power. This is the same as the result of this study by Yang (Yung J. H., *et al*, 2014)and Lee(Lee E. K., 2007). Thus, resilience plays a positive role in treating cancer, and it is necessary to improve resilience. In promoting resilience, social support system and depression have a direct effect on resilience, and

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therapeutic measures for improving the social support system and reducing the degree of depression should be considered together.

Regarding self-esteem, exogenous variables social support and depression and endogenous variable resilience showed direct effects on self-esteem, and the explanatory power for this was 44.1%. In other words, for cancer patients who experience hopelessness and helplessness after cancer diagnosis, self-esteem will promote active participation in their treatment process, and this can be said to be one of the important factors for cancer patients who need to treat cancer and continue health care. Accordingly, there is a need for a therapeutic method for improving social support and resilience that can improve self-esteem and for reducing depression level.

For problem-based coping, exogenous variable social support and endogenous variable self-esteem showed direct effects, and the explanatory power for this was 32.2%. As problem-based coping has a positive effect on psychosocial adjustment (Cha K.S. *et al*, 2012), a plan is needed to improve social support and self-esteem in order to utilize an appropriate coping mechanism.

The main variables affecting the psychosocial adjustment of cancer patients through the structural model of this study were identified as uncertainty and symptom experience, and social support and depression were found to have indirect effects.

Uncertainty has a strong influence on psychosocial adjustment and has a direct effect. This study showed the same results as those of Davis (Davis, L. A., 1997) and Christman (Christman, N. J., 1990) where higher uncertainty, resulted in lower psychosocial adjustment. In order to alleviate uncertainty, it is necessary to develop a counseling program for the progress and treatment plan after cancer diagnosis. In addition, social support and depression had an indirect effect on psychosocial adjustment through uncertainty. By activating self-help groups for cancer patients undergoing the same diagnosis and treatment, psychosocial adjustment could be improved by reducing uncertainty through improvement of social support system and reduction of depression.

Symptom experience had significant direct and total effects on psychosocial adjustment. These results are similar to those of Westbrook (Westbrook, J. M., 2005) and Kim(Kim H. Y., *et al*, 2012), who reported that the higher symptom experience, led to less psychosocial adjustment.

Cancer patients experience various symptoms such as fatigue, sleep disturbance, and decreased concentration as a result of active treatment, which negatively affects psychosocial adjustment. As symptom experience itself affects psychosocial adjustment, it is necessary to develop a nursing intervention program to relieve symptoms. In addition, it is considered that continuous research should be conducted to prepare effective coping plans for symptom experiences of cancer patients.

Social support represents a factor that indirectly influences psychosocial adjustment. This supports the study of Davis (Davis, L. A., 1997), Westbrook (Westbrook, J. M., 2005), and Kim (Kim H. Y., *et al*, 2012) who reported that social support has a direct effect on psychosocial

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adjustment, and it is similar to the study of Caplan (Caplan, R. D., 1971), which reported that support by spouses or experts is the most influential compared to other support systems in crisis situations. This supports the results of better psychosocial adjustment in the presence of a spouse described earlier. It can be seen that family support influences psychosocial adjustment. Cancer patients are motivated to participate more actively in the treatment of cancer if they have received the explanation of the treatment prognosis and training necessary for the treatment process through the support of a medical professional who is an expert.

Social support has been shown to have an indirect effect on psychosocial adjustment, and it is necessary to prepare a nursing intervention program related to social support in order to better treat cancer and maintain continuous health management. It has been shown that depression has an indirect effect on psychosocial adjustment, and in the process of receiving repeated treatment for a long period of time in cancer patients, depression can be experienced by recognizing the decline in physical strength and the difference from life before cancer diagnosis. Therefore, it is necessary to periodically measure depression level in the course of cancer treatment to continuously manage health after cancer diagnosis and improve psychosocial adjustment.

Conclusion

Through the psychosocial adjustment model constructed in this study, symptom experience and uncertainty were found to have significant effects on psychosocial adjustment. For psychosocial adjustment, in order to reduce symptom experience through nursing intervention development in the field of practice, it is necessary to develop a symptom relief program, and a nursing intervention program for providing specific treatment directions for symptoms that may appear in the future, and information that can be used for coping. In addition, in order to reduce uncertainty, it is necessary to develop a psychosocial adjustment program that can reduce uncertainty through counseling on the course of cancer diagnosis and treatment plan and self-help meetings of cancer patients receiving the same treatment. As a way to promote psychosocial adjustment in cancer patients, it is suggested to establish a nursing intervention program that strengthens psychosocial adjustment through systematic and detailed information provision and symptom relief programs, and family support and medical personnel support systems.

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