Factors Explaining Quality of Life in People with Kidney Transplant: A Cross–sectional Study

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Abstract: Kidney transplant is a critical treatment option for people with end-stage renal disease. Both the disease and transplant therapy usually reduce people's quality of life. Understanding quality of life and its explaining factors is necessary to design effective intervention. Guided by The Common-Sense Model of Illness Representations, this cross-sectional study aimed to examine whether illness representations and self-management can explain quality of life among people with kidney transplant. Illness representations are people's beliefs and expectations about their illness. Purposive sampling was used to recruit 207 participants with kidney transplant who attended a kidney transplant clinic at a tertiary hospital in northern Thailand. Instruments used were the Demographic and Clinical Data Form, the Revised Illness Perception Questionnaire, the Self-Management Scale for Kidney Transplant Recipients, and the Kidney Disease Quality of Life Short Form. Data were analyzed using descriptive statistics, Pearson's correlation coefficient, and hierarchical regression analysis.

Findings indicated that all dimensions of illness representations except the agreement with the reasons as causes for symptom had a significant and negative association with quality of life. Symptom experience, controlling of health threat, emotional representations of illness and self-management together significantly explained 33% of the variance in quality of life. However, this study should be further tested for the effectiveness through experimental design with people in different locations before implementation in practice. Nurses need to implement interventions to enhance quality of life in people with kidney transplant through designing interventions to support self-management to reduce symptoms of disease, positivity in controlling the health threat, and reduce the negative emotional representations of illness.

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Introduction

Kidney transplant is a therapeutic expectation for people with end–stage renal disease. However, not all people receive this treatment due to the limited number of kidney donors and the incompatibility between recipient and donor tissue, as well as the poor health condition of the recipients. By region, kidney transplant was performed mostly in Americas, followed by Europe, Western Pacific, Southeast Asia, Eastern Mediterranean, and Africa.[1] In 2018, kidney transplants performed by region were 36,541 cases in Americas, 27,917 cases in Europe, 18,505 cases

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in Western Pacific, 8,604 cases in Southeast Asia, 3,207 cases in Eastern Mediterranean, and 705 cases in Africa.[1] In Thailand from 1994 to 2020, 5,889 people countrywide received kidney transplant.[2] In 2019, data from 26 hospitals demonstrated that 729 people received kidney transplant, accounting for an increase of 8.8 % from 2018.[3]

People with kidney transplant (PWKT) have to encounter side effects of the immunosuppressive regimen causing significant comorbidity, including cardiovascular complications,[4] malignancies,[5] and infections.[6] Recurrence of the underlying cause of end-stage renal disease (ESRD)[7] and chronic allograft nephropathy[8] were reported. Due to medication, many changes to a patient's physical appearance can occur such as hirsutism, gingival hyperplasia, acne, alopecia, cushingoid facies, weight gain, hand tremors, or skin disorders, causing people to experience low self-esteem.[9] Changes in physical appearance bring many effects on interpersonal relationships, leading to social isolation and decreased sexual function.[10] Loss of job and financial issues may occur due to poor physical function. The PWKT who survive with a new functioning kidney may face with threats to their health that involves interactions between the individual cognitive and emotional pathways.[11] They also need to manage their new role, new activities of daily living, and lifestyle modifications to maintain level of kidney function. In addition, they may still suffer from chronic conditions and their quality of life may fluctuate from time to time. We argue that illness representations, self-management and quality of life are essential components in chronic care, especially for kidney transplant. Unfortunately, existing knowledge about these concepts in PWKT are limited, particularly in the Thai population. Therefore, this study was designed to describe illness representations, self-management, and quality of life among PWKT and to identify the influence of illness representations and self-management on quality of life. The knowledge gained from this study may help nurses develop effective nursing interventions that facilitate and improved self-management and quality of life in PWKT.

Conceptual Framework and Literature Review

The Common-Sense Model of Self-Regulation (CSM)[12,13] was used as a conceptual framework in this study. From the CSM, health threat stimuli of illness representations include nine key dimensions: (1) identity (the label for and symptoms associated with illness); (2) timeline (perceptions about duration of illness in terms of whether it is acute, cyclical or chronic); (3) consequences (the individual's expected outcomes of illness in terms of its likely physical, psychological, social, and economic implications, which include its impact on day-to-day life and in the long term); (4) control (how recommended treatments are controlling the illness); (5) emotional representations such as distress, fear, and anger (response to illness and other health threats where people develop parallel cognitive and emotional representations which, in turn, give rise to problem-based and emotion-focused coping procedure); and (6) causes (beliefs about the factors responsible for the onset of illness). Causes are classified into four dimensions, including causes: psychological attributions, causes: risk factors, causes: immunity, and causes: accident or chance.[12,13] In this model, all nine illness representations aid in the recognition and use of methods for controlling health threats, which are evaluated based on their success in controlling the threats, and these appraisal feedbacks then update the illness representations. At the same time, both stimuli and threat representation activate emotional responses, most commonly fear-related responses. The cognitive representations of fear elicit procedures to control emotional arousal, and the outcomes are appraised for their success. The success in both self-regulation processes (self-management) will result in a diminished impact on disease-targeted and physical and mental health status, or in other words, the quality of life of people.[12,13]

This study focused on illness representations and the concepts of cognitive and emotional representations based on the CSM model. Following the cognitive and emotional perceptions, PWKT perform self-regulation by taking actions of illness and emotional control. This is termed self-management by Kosaka and colleagues,[14] including self-monitoring, self-care behaviors in daily living, early detection and coping with abnormalities after kidney transplant, stress management, and medication and fluid intake. Being able to self-manage reflects the proper problem-focused and emotional-motivational processes of people. This will decrease the effect of the disease and increase quality of life of recipients.

As defined by World Health Organization (WHO), quality of life is the individuals' perception of their position in life within the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns.[15] Quality of life is a multidimensional concept that concerns an individual's usual or expected physical, emotional, and social well-being. Currently, there is no consensus regarding a goal standard instrument for measuring quality of life.[16] The Kidney Disease Quality of Life - Short Form (KDQOL-SF™) originally developed to measure quality of life of people with chronic kidney disease (CKD)[17] contains general items, kidney disease specific items, and overall health item. Therefore, it is considered proper for using with PWKT.[16] Due to the inconclusive findings on quality of life in PWKT from previous studies and very limited report on this issue, a study of quality of life and its related factors in Thai PWKT was required. From a literature review of PWKT, quality of life has been defined and evaluated using different measures that are both generic[18] and specific.[19] However, for PWKT, the use of both generic and specific quality of life instruments is a frequently implemented strategy in an effort to maximize the utility of assessment.[20] Concurrent evidence shows that their quality of life is better than pretransplant,[16] particularly in role limitations caused by physical health problems and global quality of life.[16] Overall quality of life is rated as much higher when compared with quality of life in various functioning domains. Post-transplant quality of life is higher than during dialysis, and similar or better than other transplant groups and healthy controls.[21] High quality of life was reported in Portuguese recipients,[22] while moderate quality of life was observed in Palestinian recipients[23] and low quality of life was found in Egyptian recipients.[18] The inconsistent findings may be due to the lack of a universally accepted conceptual definition, different instruments used, and different stages of the disease and settings.[19]

Quality of life in PWKT is attributable to self-management. Similar to other chronic diseases, increasing attention is given to extending the role of people in caring process. PWKT need to take actions with illness and emotional control, termed self-management.[14] Self-management actions include self-monitoring, self-care behaviors in daily living, early detecting and coping with abnormalities after kidney transplant, stress management, and medication and fluid intake.[14] The consistent proper self-management helps people control symptoms and prevent complications, thereby achieving positive outcomes of disease control and better quality of life. In the literature there are some reports of the relationship between self-management and quality of life in people with CKD[24] and diabetes,[25] coronary heart disease,[26] and chronic obstructive pulmonary disease.[27] However, the relationship between self-management and quality of life in PWKT was limited.

Illness representations were found to relate to self-management in Korean people receiving hemodialysis.[28] However, to date, the correlation between illness representations and self-management has not been reported in Thai PWKT regarding quality of life. Recent studies suggest that a patient's illness representations are related to quality of life in different patient groups.[29] A few studies demonstrated the relationship between illness representations and quality of life in end-stage renal disease treated with hemodialysis in Jordan,[30] Saudi Arabia,[31] and Taiwan.[32] Nevertheless, investigation of relationship between illness representations and quality of life in PWKT has not been reported, particularly in Thai population.

Study Aim

To examine the associations among illness representations, self-management, and quality of life as well as the ability of illness representations and self-management in predicting quality of life in PWKT.

Methods

Design: A cross-sectional, correlational design was used. This report follows the STROBE Statement—Checklist of items that should be included in reports of cross-sectional studies.

Sample and Setting: The sample in this study was adult persons with CKD receiving kidney transplant and attending a kidney transplant clinic in a tertiary hospital in northern Thailand. They were purposively selected based on the following inclusion criteria: aged >18 years, received a kidney transplant for at least one month, having normal mental functioning as determined by a score of 8 out of 10 on the Mental Status Questionnaire (MSQ), having basic self-care activities as determined by a score of >4 on the Katz Index of Independence in Activities of Daily Living (Katz ADL), receiving treatment planning of medication and lifestyle modification, being able to read and write Thai, and willing to participate in the study. Exclusion criteria were those who had any serious health problem including a return to dialysis after a failed kidney transplant and mental health issues as diagnosed by physicians.

The sample size was calculated using G*Power 3.1 program with an alpha of .01, a power of .95, medium effect size of .15,[33] and 10 predictors. This resulted in a primary estimated sample size of 172 PWKT. Additionally, 20% was added[33] to the estimated sample size for account for a dropout rate. The final estimated sample size was 207 PWKT. In this study, 207 potential participants were approached and all of them accepted to participate in this study.

Ethical considerations: This study was approved by the Research Ethics Committee of Faculty of Nursing, Chiang Mai University, Thailand (approval no.168/2015, Study Code: EXP-123-2558) and the human research boards of the hospital (approval no.143/59 COA-NUR 168/58, Research ID: 3825, Study Code: NONE-2559-03825). A summary of the research project and the role of research participants, including their rights, and the risks and benefits of participating, were explained to all participants. They were informed that participation in the study was voluntary, and they had the right to refuse or withdraw from the study at any time without any prejudice. All participants were treated anonymously. The participants' names were not provided on the questionnaire and all information was kept confidential. The result of the study was used in the analysis between the primary investigator (PI) and research team. Those who agreed to participate in the study were asked to sign an informed consent form to ensure that their participation was on a voluntary basis.

Instruments: Data were collected using four instruments: the Demographic and Clinical Data Form, the Revised Illness Perception Questionnaire, the Self-Management Scale for Kidney Transplant Recipients, and the Kidney Disease Quality of Life Short Form (KDQOL-SF^{TM}) Version 1.3.

In this study, the instruments were tested for reliability with 10 PWKT who had the same characteristics with the actual participants, but who were not included in the main study. An item example and the internal consistency reliability of all instruments in pilot and actual study is shown in **Table 1.** Before reliability testing, all three instruments, except the Demographic and Clinical Data Form, were originally in English, and with permission from the copyright holders, were translated into Thai by the PI and a research team member then back-translated by two bilingual experts using the back-translation technique.[34]

Table 1 The internal consistency reliability of instruments in pilot and actual study; Descriptive statistics of the study variables (n = 207)

Instruments and Number of items	Reliability (Cronbach's alpha)		Example item	Possible range	Actual range	Mean	SD	Score
	(n = 10)	(n = 207)						
Illness representations (65 items)	0.83	0.83						
Identity (14 items)	0.92	0.81	This symptom is related to my illness	0-14	0-12	1.70	2.41	low
Timeline (10 items)	0.81	0.74	My illness will last a short time	10-50	10-45	29.60	6.15	high
Consequences (6 items)	0.87	0.77	My illness is a serious condition	6-30	6-29	19.16	4.57	high
Control (11 items)	0.83	0.51	There is a lot which I can do to control my symptoms	11-55	25-55	39.99	4.35	high
Emotional representations (6 items)	0.81	0.85	I get depressed when I think about my illness	6-30	6-30	17.39	4.76	high
Causes: Psychological attributions (6 items)	0.74	0.73	Stress or worry	6-30	6-30	16.17	4.00	high
Causes: Risk factors (7 items)	0.60	0.72	Hereditary	7-35	7-35	21.94	4.88	high
Causes: Immunity (3 items)	0.47	0.51	A germ or virus	3-15	3-15	9.57	2.30	high
Causes: Accident or chance (2 items)	0.49	0.22	Chance or bad luck	2-10	2-10	5.58	1.79	high
Self-management (24 items)	0.89	0.89	Daily documentation of blood pressure	24-96	52-96	81.34	10.25	high
Quality of life (76 items)	0.84	0.86	In general, would you say your health is?	0-100	42.82-96.01	74.89	11.85	high

Note: (1) Cronbach's α (n = 207) of Causes: Immunity (.51) and Cause: Accident or chance (.22) were low may be because of a small number of items (Causes: Immunity has only 3 items while Cause: Accident or chance has only 2 items). Therefore, the less item, the low reliability might occur; (2) Cut point of every variable, the low or high score was compared with mean.

The Demographic and Clinical Data Form was developed by the PI and includes gender, age, religion, marital status, education, family income, income adequacy, and living arrangements. The related clinical information includes stage of CKD, date of transplant, type of kidney transplant, number of comorbid conditions, serum creatinine level, estimated glomerular filtration rate, body weight, height, medical expenses, CKD medications, immunosuppressive medications, and education for disease and treatment.

The Revised Illness Perception Questionnaire (IPQ-R) was developed by Moss-Morris et al.[35] for measuring illness representations. There are 10 dimensions (70 self-report items) including identity, timeline, consequences, control, coherence, and emotional representations; causes: psychological attributions; causes: risk factors; causes: immunity; and causes: accident or chance. In this study, the coherence dimension (5 items) was not included because it was not included in Leventhal's model. Thus, the IPQ-R used in this study consisted of 9 dimensions (65 self-report items). The identity dimension includes a list of commonly occurring symptoms. Each item consists of 2 questions. The first question asks the respondents whether or not they have experienced each symptom since their illness (yes or no). The second question asks if they believe the symptom to be specifically related to their illness (yes or no). The summed "yes-rated" items on the second question present the identity dimension, with lower scores indicating less symptoms from illness perceived by person. Next, the timeline, consequences, control, and emotional representations dimensions contains items are rated on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Higher scores on the timeline indicate stronger held beliefs about duration of illness have presented or not cured, while higher scores on the consequences indicate that the outcome of illness have affected the person. Higher scores on the control indicate higher positive beliefs about the controllability of the illness. Higher scores on the emotional representations indicate a more intense emotional reaction to the disease. Finally, the causes dimension consists of 4 main common causes: psychological attributions; risk factors; immunity; and accident or chance. Each item is rated on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Higher scores on each cause dimension indicate higher agreement with the reasons as causes for symptom(s).

The Self-Management Scale for Kidney Transplant Recipients was developed by Kosaka et al.[14] to measure self-management. It is comprised of 24 self-report items including self-monitoring, self-care behaviors in daily living, early detecting and coping with abnormalities after kidney transplant, stress management, and medication and fluid intake. Each item has a 4-point Likert scale ranging from 1 (not applied) to 4 (strongly applied). The total score ranges from 24 to 96 and a higher score indicates higher self-management.

The Kidney Disease Quality of Life Short Form (KDQOL-SF™) Version 1.3 was developed by Hays et al.[17] for measuring quality of life. It is composed of 80 self-report items including kidney-disease targeted, physical and mental health status, and an overall health rating. In this study, four items in kidney-disease targeted were excluded because these items involve dialysis situation that was not applicable for the participants. Thus, the total number of items was 76 self-report items. The details are as follows:

For kidney-disease targeted (39 items), this consists of 5 characteristics items: a 2-point scale ranging from 0 (yes) and 100 (no) (2 items); a 4- point scale ranging from 0 (very dissatisfied) to 33.33 (somewhat dissatisfied), 66.66 (somewhat satisfied), and 100 (very satisfied) (2 items); a 5-point scale ranging from 0 (definitely true), 25 (mostly true), 50 (don't know), 75 (mostly false) and 100 (definitely false) (25 items); a 6-point scale ranging from 0 (all of the time), 20 (most of the time), 40 (a good bit of the time), 60 (some of the time), 80 (a little of the time), and 100 (none of the time) (9 items); and a 0-10 rating scale from 0 (very bad) to 10 (very good) (1 item).

For physical and mental health status (36 items), there are 4 characteristics items: a 2-point scale ranging from 0 (yes) and 100 (no) (7 items); a 3- point scale ranging from 0 (yes, limited a lot), 50 (yes, limited a little), and 100 (no, not limited at all) (10 items); a 5-point scale ranging from 0 (poor), 25 (fair), 50 (good), 75 (very good), and 100 (excellent) (9 items); and a 6-point scale ranging from 0 (very severe), 20 (severe), 40 (moderate), 60 (mild), 80 (very mild), and 100 (none) (10 items).

For an overall health rating (1 item), there is a 0-10 rating scale from 0 (worst possible health), 50 (half-way between worst and best), and 10 (best possible health).

For scoring, the sum of scores from all items is undertaken by dividing them by 76 and the possible total score ranges from 0 to 100. A higher score indicates higher quality of life.

Data Collection: This was done during November 2016 to May 2017. A research assistant (RA) was utilized, a registered nurse who had experience in conducting research and trained by the PI for sample recruitment, informed consent, and questionnaire administration. In the collection process, the PI or RA reviewed the medical records and identified potential participants who met the inclusion criteria. The study aims, procedure, and confidentiality were explained to the participants. After obtaining permission, the PI or RA gave the questionnaires with explanation to participants in a private zone of the outpatient kidney transplant clinic. Time to complete all questionnaires was within 45-60 minutes.

Data Analysis: Data were analyzed using IBM SPSS version 21. Descriptive analysis was used for all study variables and assumption for normal distribution of study variables was tested using a Kolmogorov-Smirnov test. The results revealed normal distributions, except for two variables (consequences and emotional representations) that violated the assumption. The rank-based inverse normal transformation (INT) using Blom's formula was applied and improvements of normality were accepted. Assumptions of linearity (bivariate scatter plot between dependent and independent variables) and multicollinearity (bivariate correlation) were tested. The results met the assumptions. Associations between the study variables were tested using Pearson's correlation coefficient. Ability to predict the outcome was analyzed using hierarchical regression analysis. Based on the conceptual framework, two blocks of variables were entered into the hierarchical regression analysis. Illness representations (identity, timeline, consequences, control, emotional representations, causes: psychological attributions, causes: risk factors, causes: immunity, causes: accident or chance) were entered in the first block while self-management was added in the second block.

Results

There were 207 participants, most whom were men. Around half were in middle adulthood. The majority of participants held a bachelor degree or higher, and just over one-third had a monthly salary of 330-992 USD. All participants reported receiving immunosuppressive medication and received CKD and kidney transplant education from physicians and nurses in the kidney transplant unit. See detail in **Table 2**.

Table 2 Demographic characteristics of the study variables (n = 207)

Demographic characteristics	Number	%
Gender		
Male	128	61.84
Female	79	38.16
Age (years)		
(Range = 18-72, mean = 46.76, SD = 12.72)		
Early adulthood	65	31.40
Middle adulthood	109	52.66
Elderly	33	15.94

Table 2 Demographic characteristics of the study variables (n = 207) (Cont.)

Demographic characteristics	**Number**	**%**
Marital status		
Single	53	25.60
Married	136	65.70
Divorced/ Widowed/ Separated	18	8.70
Educational level		
Primary level	38	18.36
Secondary level	49	23.67
Diploma degree	22	10.63
Bachelor degree or higher	98	47.34
Family income		
< 10,000 baht (< 299.31 US$)	61	29.47
10,000-30,000 baht (< 299.31-897.93 US$)	76	36.71
> 30,000 baht (> 897.93 US$)	70	33.82
Received immunosuppressive medication	207	100.00
Received chronic kidney disease education	207	100.00
Received kidney transplant education	207	100.00

For descriptive statistics of illness representations, the mean scores of eight dimensions, including timeline, consequences, control, emotional representations, causes: psychological attributions, causes: risk factors, causes: immunity, and causes: accident or chance, were at a high level, while identity was at a low level. Self-management and quality of life were at a high level **(Table 1)**.

For correlation among illness representations, self-management, and quality of life, the results showed that seven variables were significantly negatively associated with quality of life, including identity, timeline, consequences, emotional representations, causes: psychological attributions, causes: immunity, and causes: accident or chance. Two variables were significantly positively associated with quality of life, including control and self-management. No association was found between causes: risk factors with quality of life **(Table 3)**.

Table 3 Correlations for quality of life (n = 207)

Variables	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**
1 Identity	1.00										
2 Timeline	.05	1.00									
3 Consequences	.19**	.59**	1.00								
4 Control	.01	-.24**	-.12	1.00							
5 Emotional representations	.11	.42**	.44**	-.23**	1.00						
6 Causes: Psychological attributions	.09	.21**	.18**	-.08	.35**	1.00					
7 Causes: Risk factors	-.05	.07	.03	.15*	.05	.47**	1.00				
8 Causes: Immunity	.01	.17*	.14*	-.08	.24**	.55**	.58**	1.00			
9 Causes: Accident or chance	-.05	.16*	.16*	-.18**	.25**	.42**	.40**	.47**	1.00		
10 Self-management	.06	-.24**	-.13	.09	-.15*	-.11	.07	-.05	-.04	1.00	
11 Quality of life	-.32**	-.28**	-.34**	.21**	-.38**	-.31**	-.13	-.27**	-.16*	.22**	1.00

* p < 0.05, ** p < 0.01

With regard to the ability of illness representations and self-management in predicting quality of life, the result (in Model 2) showed that only three dimensions of illness representations: identity ($p < .001$), control ($p < .05$), emotional representations ($p < .05$), and self-management ($p < .05$) could together explain 33% of the variance in quality of life in PWKT **(Table 4).**

Table 4 Results of hierarchical regression analysis of factors predicting quality of life (n = 207)

Model	Predictor	b	S.E.(b)	Beta	t	p-value
1	(Constant)	78.790	9.535		8.053	<.001
	Identity	-6.097	1.454	-0.258	-4.194	<.001
	Timeline	-0.075	0.149	-0.039	-0.503	.615
	Consequences	-1.663	0.941	-0.138	-1.767	.079
	Control	0.388	0.177	0.142	2.190	.030
	Emotional representations	-2.111	0.873	-0.176	-2.417	.017
	Causes: Psychological attributions	-0.362	0.230	-0.122	-1.572	.118
	Causes: Risk factors	-0.100	0.195	-0.041	-0.512	.610
	Causes: Immunity	-0.617	0.426	-0.120	-1.449	.149
	Causes: Accident or chance	0.339	0.476	0.051	0.712	.478
$R = .551$, $R^2 = .303$, R^2 Adjusted $= .272$, R^2 Change $= .303$, Std. Error = 10.111 Overall $F_{(9,197)} = 9.533$, $p < .001$						
2	(Constant)	58.957	11.370		5.185	<.001
	Identity	-6.453	1.436	-0.273	-4.495	<.001
	Timeline	-0.001	0.149	-0.001	-0.007	.995
	Consequences	-1.721	0.926	-0.143	-1.859	.065
	Control	0.390	0.174	0.143	2.239	.026
	Emotional representations	-2.040	0.859	-0.170	-2.374	.019
	Causes: Psychological attributions	-0.298	0.228	-0.101	-1.311	.191
	Causes: Risk factors	-0.169	0.193	-0.070	-0.874	.383
	Causes: Immunity	-0.583	0.419	-0.113	-1.392	.165
	Causes: Accident or chance	0.330	0.468	0.050	0.704	.482
	Self-management	0.196	0.071	0.170	2.773	.006
$R = .574$, $R^2 = .330$, R^2 Adjusted $= .295$, R^2 Change $= .026$, Std. Error = 9.943 Overall $F_{(10,196)} = 9.640$, $p < .001$						

Discussion

The findings demonstrated that the quality of life in PWKT was high. The high quality of life of participants in this study may be due to the positive outcome of the transplant on physical function and emotional status. PWKT are generally free from disease symptoms, thereby increasing health status.[36] Moreover, they might be overwhelmed with the positive feeling of receiving a new kidney, resulting in good mental health. The finding regarding high quality of life in this study is consistent with a previous study in Indonesian people[37] that revealed a moderate to a high quality of life in PWKT, even though different tools were used to explore quality of life level.

Regarding the correlation between illness representations, self-management, and quality of life as well as prediction of quality of life, the results partially supported the conceptual framework of this study. The correlation between illness representations and self-management, only two dimensions of illness representations, timeline and emotional representations, had a significant negative association with self-management. In terms of timeline, the negative association with self-management means that PWKT perceived their illness as non-chronic and curable, so they might have felt hopeful or motivated to perform self-management.[12,13] However, this is inconsistent with the finding in people with hemodialysis where an increased perception of the disease chronicity was positively and significantly associated with better personal control and physical functioning.[38] For emotional representations, the negative association with self-management means that the less negative emotions (fear, distress, anger) PWKT exhibited, the more likely they were to consistently perform self-management. These results are consistent with a study in people with hemodialysis in Ethiopia[39] revealing that anxiety and depression were negatively correlated with self-management.

Regarding the correlation between illness representations and quality of life, the results mostly supported the conceptual framework of this study. Seven variables (identity, timeline, consequences, emotional representations, causes: psychological attributions, causes: immunity, causes: accident or chance) had significant negative associations with quality of life, while only one variable (control) was significantly positively associated with quality of life. The negative correlation means that less perception of illness in terms of identity, timeline, consequences, emotional representations, causes: psychological attributions, causes: immunity, and causes: accident or chance may lead to happiness and cheerfulness. In addition, the positive correlation means that perceiving control of illness as a standard part of life may increase ability to manage and regulate oneself toward nearly normal life. The negative correlation results in this study were consistent with a study in Taiwanese people with ESRD receiving hemodialysis[32] reporting a negative correlation of identity, consequences, treatment control, and emotional representations with quality of life.[32] The negative correlation results in this study were similar to the finding in people with hemodialysis in Saudi Arabia[31] which showed a relationship of identity, timeline, consequences and emotional representations with quality of life. In conclusion, the findings from this study supported the conceptual framework and were consistent with previous studies that revealed correlations between illness representations and quality of life.[31,32]

Regarding the positive correlation between self-management and quality of life, the results totally supported the conceptual framework of this study. From a review of literature, the relationship between self-management and quality of life was limited. These results are consistent with a study in people with CKD (stage 3 to 5), diabetes, and hypertension in Thailand[24] revealing that self-management was positively correlated with quality of life.

With regard to predictors of quality of life, the result supported the conceptual framework to some extent. Illness representation dimensions (identity, control, emotional representations) and self-management together could explain 33% of the variance in quality of life in PWKT. Whereas six dimensions of illness representations (timeline, consequences, causes: psychological attributions, causes: risk factor, causes: immunity, and causes: accident or chance), though related to quality of life, could not predict it. The explanation might be because these variables had low levels of correlation with quality of life; therefore, they could not be predictive. Other variables such as coping, self-efficacy or depression symptoms[40] may need to be added in future research to increase the variance explained in quality of life.

Limitations

This study might have a limitation in generalizability to other groups of renal replacement such as hemodialysis and peritoneal dialysis. Additionally, the IPQ-R instrument used in this study had low internal consistency reliability in some dimensions, including causes: risk factors (.60), causes: immunity (.47), and causes: accident or chance (.49), although its internal consistency reliability was .83 for total illness representations.

Conclusions and Implications for Nursing Practice

The results of this study have confirmed and extended the knowledge of illness representations, self-management, quality of life, and their associations in PWKT. The findings can contribute to understanding of the view toward the condition of persons receiving a new organ. Our results provide evidence that illness representations and self-management can promote quality of life in PWKT. Thus, nurses should develop a comprehensive intervention to improve quality of life by supporting self-management to reduce symptoms, controlling health threats, and reduce the negative emotional representations of illness and test for its effectiveness. Future research should employ a longitudinal design to investigate the quality of life over time during treatment trajectory. Further testing of our conceptual framework is needed in different samples in different locations.

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ปัจจัยอธิบายคุณภาพชีวิตในผู้ที่ได้รับการปลูกถ่ายไต: การศึกษาภาคตัดขวาง

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บทคัดย่อ: การปลูกถ่ายไตเป็นวิธีการรักษาหนึ่งที่จำเป็นสำหรับผู้ที่เป็นโรคไตวายเรื้อรังระยะสุดท้าย ทั้งโรคและการปลูกถ่ายไตมักจะลดคุณภาพชีวิตของคน การทำความเข้าใจคุณภาพชีวิตและปัจจัยที่อธิบายเป็นสิ่งจำเป็นในการออกแบบโปรแกรมที่มีประสิทธิภาพ นำโดย Common-Sense Model of Illness Representations การศึกษาภาคตัดขวางนี้มีวัตถุประสงค์เพื่อตรวจสอบว่าภาพสะท้อนทางความคิดต่อการเจ็บป่วยและการจัดการตนเองสามารถอธิบายคุณภาพชีวิตในผู้ที่ได้รับการปลูกถ่ายไตได้หรือไม่ ภาพสะท้อนทางความคิดต่อการเจ็บป่วยคือความเชื่อและความคาดหวังของบุคคลเกี่ยวกับความเจ็บป่วย เลือกกลุ่มตัวอย่างแบบเฉพาะเจาะจงในผู้ที่ได้รับการปลูกถ่ายไต จำนวน 207 คน ที่มารับบริการที่คลินิกปลูกถ่ายไตในโรงพยาบาลระดับตติยภูมิแห่งหนึ่งในภาคเหนือของประเทศไทย เครื่องมือที่ใช้คือ แบบบันทึกข้อมูลส่วนบุคคลและข้อมูลทางคลินิก แบบสอบถามการรับรู้ความเจ็บป่วยฉบับแก้ไข แบบสอบถามการจัดการตนเองสำหรับผู้ที่ได้รับการปลูกถ่ายไต และแบบสอบถามคุณภาพชีวิตโรคไตแบบสั้น วิเคราะห์ข้อมูลโดยใช้สถิติเชิงบรรยาย สถิติสหสัมพันธ์เพียร์สัน และสถิติวิเคราะห์ถดถอยพหุคูณแบบเชิงชั้น

ผลการศึกษาพบว่า ทุกมิติของภาพสะท้อนทางความคิดต่อการเจ็บป่วย ยกเว้นความเห็นพ้องกับเหตุผลที่เป็นสาเหตุสำหรับอาการมีความสัมพันธ์เชิงลบและมีนัยสำคัญกับคุณภาพชีวิต ประสบการณ์เกี่ยวกับอาการ การควบคุมภาวะคุกคามต่อสุขภาพ การแสดงอารมณ์ต่อการเจ็บป่วย และการจัดการตนเองร่วมกันอธิบายความแปรปรวนร้อยละ 33 ของคุณภาพชีวิต อย่างไรก็ตาม การศึกษานี้ควรได้รับการทดสอบประสิทธิผลผ่านการศึกษาเชิงทดลองกับผู้คนในสถานที่ต่างกันก่อนนำไปปฏิบัติ พยาบาลจำเป็นต้องประยุกต์โปรแกรมเพื่อส่งเสริมคุณภาพชีวิตในผู้ที่ได้รับการปลูกถ่ายไตโดยการออกแบบโปรแกรมเพื่อสนับสนุนการจัดการตนเอง เพื่อลดอาการของโรค ควบคุมภาวะคุกคามต่อสุขภาพในเชิงบวก และลดการแสดงอารมณ์ต่อการเจ็บป่วยทางลบ

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คำสำคัญ: ภาวะคุกคามต่อสุขภาพ ภาพสะท้อนทางความคิดต่อการเจ็บป่วย โรคไต การปลูกถ่ายไต คุณภาพชีวิต การจัดการตนเอง ประเทศไทย

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