Assessment of the Changes in Health-related Quality of Life After Kidney Transplantation in a Cohort of 232 Thai Patients

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ABSTRACT

Aim. The aim of this study was to investigate QoL of these patients before and after KT and to determine relationships between basic factors of gender, age, educational background, marital status, income, and QoL of patients after undergoing KT.

Methods. A retrospective study to determine HQoL of 232 ESRD patients who received KT in a single center in Thailand. HQoL was determined by 3 methods: WHO questionnaires, EQ5D questionnaires, and visual analog scale (VAS) questionnaires. Other important demographic information including gender, age, education, marital status, and family income were recorded. Pre- and post-KT HQoL was scored and compared. The Pearson method was used to calculate correlation statistics.

Results. WHO QoL is significantly improved in all domains including physical health, psychological health, social health, and environmental health after KT ($P < .001$). EQ5D QoL is also significantly improved after KT for the categories of self-mobility, self-care, pain, distress, anxiety, and depression. The mean score of VAS before KT was 40.98 and rose to 83.10 after KT ($P < .001$). Gender and marital status were not significantly correlated with quality of life. The level of education and average income of the family are positively correlated with increased QoL after KT ($P < .01$ and $P < .001$). However, age is negatively correlated with increased QoL ($P < .05$).

Conclusion. Successful KT leads to a significant increase of HQoL as determined by 3 independent measurements. The improvement is shown by better physical health, psychosocial health, environmental health, and functional abilities of the transplant recipients. Our results confirm that KT should be the treatment of choice for patients with ESRD.

KIDNEY TRANSPLANTATION (KT) not only creates hope in life for patients on hemodialysis but also promotes both short-term and long-term psychological, social, and functioning well-being of patients. A study of quality of life in kidney tx patients aged older than 60 with a 12-month follow-up with the Short Form 36 (SF36) has revealed no difference in QoL between male and female patients [1]. The study looked at the quality of life of patients with ESKD undergoing hemodialysis or peritoneal dialysis, patients with terminal kidney failure undergoing KT, and healthy people in the control group and found that those who had a KT and the control subjects had better QoL than that of patients undergoing hemodialysis or peritoneal dialysis in terms of physical, psychological, and social well-being, as well as return to work [2].

MATERIALS AND METHODS

The study was descriptive retrospective research. Data were collected from patients who had undergone KT at Ramathibodi Hospital between 2005 and 2010 and returned home. The aims of the study

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Table 1. Comparison of Scores of Quality of Life Before and After Undergoing a Kidney Transplantation Using Paired-Samples Test

	Paired Differences							
				95% Confidence Interval of the Difference				
	Mean	Std. Deviation	Std. Error Mean	Lower	Upper	*t*	*df*	Sig. (2-tailed)
Quality of life after vs. Quality of life before a kidney transplant	28.50862	17.73396	1.16429	26.21463	30.80261	24.486	231	.000*

*$P < .001$.

were to investigate QoL of these patients before and after KT and to determine relationships between basic factors of gender, age, educational background, marital status, income, and QoL of patients after undergoing KT. The Thai version of the QoL scale of the World Health Organization was used to collect data (WHOQOL-BREF-THAI) in 4 aspects—physical, psychological, social relationships, and environmental. The scale consisted of 26 items [3]. The second instrument employed in this study was the QoL assessment questionnaire (EQ5D), composed of 5 items regarding the following 5 dimensions of health: movements, self-care, daily living activities, pain/discomfort, and anxiety/depression. The last instrument utilized in the present study was the visual analog scale (VAS) of perceived health. SPSS (Statistical Package for the Social Sciences, Chicago, Ill., United States) was used in the analysis. Data regarding basic factors including gender, age, educational background, marital status, and income were analyzed in terms of frequency and percentage. Moreover, the quality-of-life scores of patients, both overall and for each aspect, were analyzed on the basis of mean and standard deviation values before the means were interpreted based on the previously specified criteria. Finally, Pearson's product moment correlation coefficient was employed to determine the relationships between basic factors of gender, age, educational background, marital status, income, and QoL.

RESULTS

According to the study findings, 232 subjects participated in the study. Of these, 62.1% were male and 36.6% were female. Most subjects (87.7%) were adults between 33 and 60 years old. As regards income, most subjects (85.6%) had family incomes of 50,000 baht per month or less. Close to two-thirds (65.1%) were married and nearly half (45.5%) held a bachelor's degree or equivalent.

When considering overall QoL of subjects before KT, almost three-quarters, or 72.8%, had a moderate level of QoL, whereas 22.1% had a poor QoL and 3.8% had a good QoL. With regard to the 4 aspects of QoL, the findings showed that the largest percentages of subjects had a moderate level of all 4 aspects of QoL, making up 62.1%, 51.1%, 67.2%, and 76.6% of the total, respectively.

After KT, it was found that 61.3% of subjects had a good QoL, whereas 37.4% had a moderate level of QoL. It is noteworthy that none of the subjects had a poor level of QoL.

As for all 4 aspects of QoL, the findings revealed that more than half the subjects (53.2%) had a moderate level of QoL in the physical aspect, whereas 45.1% had a good level of QoL in the physical aspect. In terms of the psychological aspect, 61.3% of subjects had a good level of QoL, and 37.0% had a moderate level of QoL. As for the social relationship aspect, 53.6% had a good level of QoL, and 41.7% had a moderate level of QoL. Finally, regarding the environmental aspect, 59.1% had a good level of QoL, and 39.1% had a moderate QoL level.

According to Table 1, when comparing the scores of quality of life before and after KT, it could be seen that there were statistically significant differences at the $P < .001$ level. In other words, after KT, QoL of patients was higher than it was before KT, with statistical significance at the $P < .001$ level.

As regards *gender*, it was found to be not related to QoL ($r = -0.071$, $P = .283$) (Table 2). However, *age* was negatively related to QoL of patients after undergoing KT at the .031 level ($r = -0.071$, $P < .05$). In addition, there was no relationship between *marital status* and QoL ($r = -0.057$, $P = .388$), but there was a positive relationship between *educational background* and QoL of patients after undergoing KT at the 0.003 level ($r = 0.194$, $P < .01$). Finally, *family income* was found to be positively related to QoL of patients after undergoing KT at the 0.002 level ($r = 0.207$, $P < .01$).

In Table 3 using the EQ5D to assess QoL of patients undergoing KT, it was found that when comparing the mean scores of QoL obtained after and before KT, the result showed that there was different with statistical significance, mean difference equal to 0.25, $P<.001$ level. The scores for the 5 aspects of movements, self-care, daily living activities, pain/discomfort, and anxiety/depression were also consistent with this finding.

When the VAS was used to determine health status of patients before and after KT, it was discovered that the mean score of health status before KT was 40.98, which was considered a moderate level (Table 4). After KT, the mean score of health status was 83.10, which was a good level.

Table 2. Relationships Between Basic Factors and Quality of Life of Patients After Undergoing a Kidney Transplantation

	Quality of Life Of Patients After KT	
Basic Factors	r	*P* Value
1. Gender	−.071	.283
2. Age	−.141	.031*
3. Educational background	0.194	.003†
4. Marital status	−.057	.388
5. Family income	0.207	.002†

*$P < .05$.
†$P < .01$.