



Adaptation Process of Male Kidney Transplant Recipients During the Difficult Postoperative Recovery Stage at Home

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ABSTRACT

Background. Kidney transplantation is the main treatment for irreversible organ failure. It helps patients regain hope, prolongs their lives, and improves their quality of life. Because of cultural barriers, male kidney-transplant recipients in Taiwan may face a difficult adaptation process during postoperative care at home.

Methods. In this qualitative exploratory study, we employed purposive sampling of male kidney-transplant recipients that was obtained from a leading medical center in Taiwan. Semi-structured, face-to-face interviews were used to collect data, which were further content analyzed.

Results. All 30 qualified patients were approached and agreed to participate (age range = 29–67 years). Participants' post-kidney transplant time frame ranged from 2 to 22 years. We revealed several difficulties that participants experienced during their postoperative recovery: (1) physical and mental exhaustion and treatment side effects; (2) worry and uncertainty about rejection, graft failure, and the future; (3) fear of losing one's job and putting the family in financial trouble; and (4) impaired self-image and social barriers. Corresponding adaptation processes included (1) experiencing shock during the early post-transplantation stage, (2) re-identification of the transition period of self-value, (3) seeking support and thinking positively, (4) accepting one's new self-image, and (5) regaining autonomy.

Conclusion. The current results can be used to improve the quality of care at home for male kidney-transplant recipients. Health care providers should assist patients in the adaptation process to reduce discomfort and relieve stress. This study can also serve as a reference for future research.

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CHRONIC kidney disease is associated with various factors such as age, sex, race, medication use, and disorders such as diabetes, cardiovascular disease, and hypertension. Chronic kidney disease can lead to end-stage renal disease that requires dialysis therapy or kidney transplantation and creates a considerable health care burden [1]. An increasing number of people in Taiwan are receiving dialysis because of end-stage renal disease. According to the United States Renal Data System, the incidence of chronic kidney failure in 2016 was about 493 cases per 1 million people in Taiwan, which was ranked first worldwide [2]. Kidney transplantation is one of the main treatments for end-stage renal failure. The survival rate of kidney transplant surgery in Taiwan is very good: the 5-year (2006-2010) survival rate of kidney-transplant recipients in Taiwan was 89.8%, compared to survival rates of 75.6% (cadaver-donor kidney transplantation) and 87.6% (living-donor kidney transplantation) in the United States [3] and 87.1% (cadaver donor kidney transplantation) and 94.3% (living-donor kidney transplantation) in Europe [4]. This suggests that the postoperative period of transplant recipients at home is critical to patient quality of life because of the high survival rate.

Concerning economic benefits, kidney transplantation can reduce medical expenses, lower overall care costs, and improve patient quality of life. Despite these benefits, transplant recipients may face graft loss risks, infection, and long-term rejection threat; side effects of immunosuppressive drugs; and other physiologic, psychological, social, economic, and spiritual difficulties after returning home. These painful experiences may contribute to a difficult postoperative recovery stage among kidney-transplant recipients.

The Chinese family structure differs from that of Western society owing to the nature of the male patriarchal system [5]. Men are often regarded as the main source of income and the pillar of the family, and the health of men has a great impact on the entire family. Therefore, a difficult postoperative period in male kidney-transplant recipients also may be affected by the patient's physical and spiritual health, the challenges of returning to work, and the burden of managing the family, which may influence the man's adaptation process. There were an average of 351 kidney-transplant cases in Taiwan between 2011 and 2015; among these, there was an average of 12.2% more male transplant recipients than female transplant recipients, and the incidence of returning to long-term dialysis owing to kidney failure within 5 years after transplantation was also higher in men than in women [3]. Therefore, it is worth studying whether stress or lifestyle changes lead to a significantly poorer prognosis after kidney transplant surgery among men compared with that experienced by women.

Many patients experience fear concerning not being capable of self-care, especially during the period of postoperative care at home, when physiologic, psychological, spiritual, and social difficulties are a burden, as are the difficulties in adapting to the new organ, the uncertainty of

immunologic rejection, and lifestyle changes. Furthermore, the stereotypes about men and the patriarchy-oriented society in Taiwan lead to certain requirements of men that may not be experienced by women, which may add to the psychological pressure on men.

Consequently, this article explores the difficulties and adaptation processes of male kidney-transplant recipients in the postoperative period at home. Because research related to postoperative care at home is limited, and few studies have focused on male kidney-transplant recipients, this study hopes to offer more advanced insight into patient care to enlighten transplant teams and related medical personnel to encourage attention to the care of male kidney-transplant recipients at home, give appropriate assistance to ease the adaptation process, and improve quality of life.

MATERIALS AND METHODS

This was an exploratory qualitative study. Male kidney-transplant recipients from a medical center in central Taiwan were selected by intentional sampling as the research participants. The inclusion criteria were (1) male patients who had received kidney transplantation, (2) patients who had returned home for postoperative recovery, and (3) patients who were willing to participate in the interview and research. The exclusion criteria were (1) patients who had difficulties with spoken language and could not read or speak Mandarin or Taiwanese, (2) patients who were bedridden and unconscious, and (3) patients who were living abroad during the study period. After informing participants of the research objectives and obtaining their consent, we completed in-depth, semi-structured

Table 1. Interview Guide

1. Have you experienced any major changes after kidney transplantation? What specific kinds of pains and difficulties have you experienced during the postoperative time at home? (Physical, psychological, family role-related, social, economic, etc.)
2. How did you adapt during the most difficult postoperative times at home (the difficult postoperative recovery stage)?
3. During the at-home adaptation process, in the most difficult times after kidney transplantation (the postoperative recovery stage), what kinds of assistance did you seek? (Support from family, friends, a medical team, a religious community, etc.)
4. How has your overall life and mood changed since kidney transplantation now that you are at home? How is the adaptation process?
5. What kinds of difficulties do you think you have encountered, as a man, in your family, society, and workplace after kidney transplantation? Has this been stressful? How do you adapt?
6. What are you most worried about during this postoperative phase at home?
7. What have you been unable to adjust to so far after kidney transplantation? What is the reason for this?
8. Have you noticed any changes after kidney transplantation or after the initial adaptation period when you returned home after transplantation? Have you become used to a new postoperative lifestyle? Is there any difference?

interviews on a one-on-one basis using an interview guide with open-ended questions (Table 1). Data were collected until data saturation and then coded to develop themes for qualitative analysis. The researchers repeatedly reviewed the recorded data to ensure reliability and representativeness (ie, that the content accurately reflected the participants' perspectives). This study was approved by the relevant institutional review board, and it conformed to the ethical standards of the Declaration of Helsinki.

RESULTS

Demographic Data

Thirty male kidney-transplant recipients were enrolled in this study. Men were aged 29 to 67 years. The postsurgery period ranged from 2 to 22 years. Nineteen had an education level below high school, and 11 had graduated from university. Concerning religious beliefs, there were 4 atheists, 3 Buddhists, 19 Taoists, 2 folk believers, 1 Christian, and 1 who believed another religion. Concerning occupation, 5 worked in administrative jobs, 14 were in the working class, 2 were company owners, 1 was a teacher, 1 was a farmer, 1 was a

freelancer, 4 were retired, and 2 were unemployed. The participants' characteristics are shown in Table 2.

Difficulties

According to the in-depth analysis of interview data, the difficulties were classified into 4 major categories: (1) physical and mental exhaustion and treatment side effects ($n = 25, 83.3\%$); (2) worry and uncertainty about rejection, graft failure, and the future ($n = 24, 80.0\%$); (3) fear of losing one's job and putting the family in financial trouble ($n = 21, 70.0\%$); and (4) impaired self-image and social barriers ($n = 20, 66.7\%$) (Table 3).

For male kidney-transplant recipients, the most common difficulties during their recovery period were physical and mental exhaustion and medication side effects. The discomfort caused by the surgical wound; rehospitalization because of unexplained ascites; and the side effects, such as obesity, moon facies, etc., of long-term use of anti-rejection drugs and corticosteroids, coupled with the pressure of adapting to the new organ, rendered patients physically and mentally exhausted. This not only affects patient quality of life but also places pressure on family members, especially their spouses. One participant said, "my wife had to take days off to take care of me at home after discharge from the hospital, and I often released my bad mood on her because of discomfort caused by the wound and side effects; this gave her a lot of pressure." Most patients were worried about the impact of transplant failure, and they felt uneasy about the ups and downs of renal function. Many recipients worried about frequent infections and expressed concerns about organ rejection, repeat dialysis, and related complications, resulting in a sense of uncertainty about the future.

Under the traditional Chinese family concept, men bear the responsibility for their family's earnings, raise children, take care of all family members, and fulfill family duties. Many recipients were worried about not being qualified for work, which would affect their income and family. Long-term physiologic and psychological challenges would further affect patients' self-perception, and some patients experienced an unsatisfactory sexual life after transplantation, resulting in a lack of confidence, impaired self-image, concerns about familial changes, or the inability for men who were single to get married.

Finally, men faced social barriers, such as a mindset that they would rather stay home for rest than go out owing to the fear of infection, which negatively affected men's self-esteem and quality of life. One patient said that since transplantation, he seldom went out with friends because he was worried about being infected and he felt pressure from friends' constant questioning about his illness.

Adaptation Processes

The adaptation processes of male kidney-transplant recipients included (1) experiencing shock during the early post-transplantation stage ($n = 25, 83.3\%$); (2) re-identification of the transition period of self-value ($n = 23,$

Table 2. Participants' Characteristics

Subject	Years		Education	Religion	Occupation
	Age	Post-Transplant			
1	57	7	University	Buddhist	Retired
2	51	11	Secondary	Atheist	Hairdresser
3	40	4	Secondary	Taoist	Freelancer
4	47	7	Secondary	Christian	Unemployed
5	63	22	Secondary	Taoist	Retired
6	56	18	Secondary	Taoist	Taxi driver
7	62	12	University	Taoist	Teacher
8	53	11	University	Taoist	Company owner
9	49	12	University	Taoist	Mechanic
10	51	17	Secondary	Folk believer	Technician
11	51	19	University	Taoist	Export salesman
12	29	15	Secondary	Atheist	Technician
13	67	15	Secondary	Taoist	Businessman
14	43	21	Secondary	Taoist	Cement worker
15	39	7	University	Atheist	Manager
16	60	8	University	Taoist	Retired
17	33	2	Secondary	Taoist	Unemployed
18	63	8	Secondary	Taoist	Mechanic
19	51	5	Illiterate	Taoist	Waiter
20	55	14	Secondary	Taoist	Gardener
21	37	9	University	Taoist	Market staff
22	56	11	University	Buddhist	Company owner
23	40	7	Secondary	Taoist	Waiter
24	34	6	Secondary	Taoist	Accountant
25	58	9	Secondary	Folk believer	Retired
26	34	14	Secondary	Atheist	Salesclerk
27	33	14	Secondary	Buddhist	Salesclerk
28	37	14	University	Other	Farmer
29	65	12	Elementary	Taoist	Mechanic
30	51	19	University	Taoist	Manager

Table 3. Difficulties and Adaptation Processes Perceived by Kidney-transplant Recipients (n = 30)

Difficulties	Adaptation Processes
1. Physical and mental exhaustion and treatment side effects (n = 25, 83.3%)	1. Experiencing shock during the early post-transplantation stage (n = 25, 83.3%)
2. Worry and uncertainty about rejection, graft failure, and the future (n = 24, 80.0%)	2. Re-identification of the transition period of self-value (n = 23, 76.7%)
3. Fear of losing one's job and putting the family in financial trouble (n = 21, 70.0%)	3. Seeking support and thinking positively (n = 22, 73.3%)
4. Impaired self-image and social barriers (n = 20, 66.7%)	4. Accepting one's new self-image (n = 21, 70%)
	5. Regaining autonomy (n = 20, 66.7%)

76.7%); (3) seeking support and thinking positively (n = 22, 73.3%); (4) accepting one's new self-image (n = 21, 70%); and (5) regaining autonomy (n = 20, 66.7%) (Table 3).

As male kidney-transplant recipients suddenly switch from needing dialysis to a transitional period requiring self-care, constant adaptation and self-adjustment are required. After kidney transplantation, the first period experienced by patients was shock, which was caused by their pain, medication side effects, uncertainty about the future, fear of organ rejection and transplant failure, and familial burdens. Many patients feel like they have experienced life and death, and most will seek encouragement from their family or seek help from the medical team. A few patients said that they felt like God has given them a second chance to live, that they are grateful toward the organ donors, and that they will take good care of their new kidney. These experiences brought forth a transitional period of re-identification of self-value in which patients felt the whole world had become better after the initial shock and as they began to adapt to their new lifestyle.

After kidney transplantation, it is necessary to take anti-rejection drugs, which requires medication compliance. In this process, many patients experience side effects and some experience infection, ascites, and related complications. One patient mentioned that he actively seeks help from the medical team, even searching for information on the internet about use of the drugs and information on side effects. Other patients noted that they loved to share their concerns and condition with other patients (ie, support seeking and positive thinking). Patients experienced self-acceptance; some stated, "It is better to have the kidney replaced than to have dialysis," "The most painful days after kidney transplantation have already passed," and "There is no need for me to go to the hospital for dialysis anymore, and I can do whatever I want and live more freely."

After patients accept the new organ and return to life as normal and their traditional male role, they regain a sense of autonomy. Some patients said that after kidney transplantation, they felt more like "a real man" and could take care of their families again. Although the threat of kidney failure was still present, they realized the value of their new lives.

DISCUSSION

Under traditional patriarchy, failure to fulfill one's responsibility as a man (eg, because they are unable to work

after falling sick) is a significant pressure, especially among married men. Chen, Weng, and Lee [6] noted that men were more concerned about the recovery of organ function after kidney transplantation, their physical health, and their ability to return to employment and fulfill family responsibilities than were women. The predicament of most men in this study is that they were worried about the impact of their sickness on their family members and their families' financial situation. This especially may be true for manual laborers, whose jobs are physical. In addition, some men complained about impaired sexual function after transplantation, and one study showed that male kidney-transplant recipients have poorer sexual function than do healthy men [7], which compromises patients' masculinity. The information discussed here should be considered by those providing postoperative care.

Patients' psychological status is closely related to their medication compliance [8,9]. Some patients noted that their compliance was low when they were depressed, and they would reject the prescribed medicine if they were convinced of other folk remedies. This may affect patients' recovery after surgery, increases their care difficulties, and increases medical and societal expenditures. One study noted that the familial roles and responsibilities of patients will affect men's psychological adjustment [10]. This study also showed that the pressure of being the main source of family income led to a difficult period after surgery. However, during this transitional period, men used positive thinking to cope with their difficulties and sought help from the medical team and support from relatives and friends. After having fully adapted to their new life, they regained autonomy. Therefore, when caring for these patients, medical professionals need to pay attention to the patients' psychological feelings, help them more effectively deal with role conflicts, and promote role acceptance and medication adherence, thus helping men maintain their physical and mental health.

CONCLUSIONS

This study elucidated the adaptation process of male kidney-transplant recipients during their difficult period of postoperative care at home. The results inform medical teams about the difficulties that male kidney-transplant recipients may face so they can provide complete and continual assessment and care to promote healthy adaptation, reduce men's physical and mental pain, alleviate their social and familial pressures, and elevate their quality of life.

REFERENCES

- [1] Hsu CC, Wang H, Hsu YH, Chuang SY, Huang YW, Chang YK, et al. Use of nonsteroidal anti-inflammatory drugs and risk of chronic kidney disease in subjects with hypertension: nationwide longitudinal cohort study. *Hypertension* 2015;66:524–33. <https://doi.org/10.1161/hypertensionaha.114.05105>.
- [2] United States Renal Data System. 2018 annual data report. International comparisons. In: End-stage renal disease in the United States. <https://www.usrds.org/2018/view/Default.aspx>; 2018 [accessed 28.06.29].
- [3] Hsu CC, Wu M-S, Hsiung CA, Hwang S-J, Lin Y-F, Hsu Y-H. 2017 annual report on kidney disease in Taiwan. https://www.tsn.org.tw/UI/L/TWRD/ebook_2017%E5%B9%B4%E5%A0%B1.pdf; 2017 [accessed 28.06.19].
- [4] Wang JH, Skeans MA, Israni AK. Current status of kidney transplant outcomes: dying to survive. *Adv Chronic Kidney Dis* 2016;23:281–6. <https://doi.org/10.1053/j.ackd.2016.07.001>.
- [5] Sechiyama K. *Patriarchy in East Asia: a comparative sociology of gender*. Leiden, Netherlands: Brill; 2013.
- [6] Chen KH, Weng LC, Lee S. Stress and stress-related factors of patients after renal transplantation in Taiwan: a cross-sectional study. *J Clin Nurs* 2010;19:2539–47. <https://doi.org/10.1111/j.1365-2702.2009.03175.x>.
- [7] Yavuz D, Acar FO, Yavuz R, Canoz MB, Altunoglu A, Sezer S, Durukan E. Male sexual function in patients receiving different types of renal replacement therapy. *Transplant Proc* 2013;45:3494–7. <https://doi.org/10.1016/j.transproceed.2013.09.025>.
- [8] Osterberg L, Blaschke T. Adherence to medication. *New Engl J Med* 2005;353:487–97. <https://doi.org/10.1056/nejmra050100>.
- [9] Pérez-San-Gregorio MÁ, Martín-Rodríguez A, Sánchez-Martín M, Borda-Mas M, Avargues-Navarro ML, Gómez-Bravo MÁ, Conrad R. Spanish adaptation and validation of the transplant effects questionnaire (TxEQ-Spanish) in liver transplant recipients and its relationship to posttraumatic growth and quality of life. *Front Psychiatry* 2018;9:148. <https://doi.org/10.3389/fpsy.2018.00148>.
- [10] Oktay JS, Bellin MH, Scarvalone S, Appling S, Helzlsouer KJ. Managing the impact of posttreatment fatigue on the family: breast cancer survivors share their experiences. *Fam Syst Health* 2011;29:127. <https://doi.org/10.1037/a0023947>.