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Role of in-hospital care quality in reducing anxiety and readmissions of kidney transplant recipients



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ABSTRACT

Background: A total of 17,000 patients receive kidney transplants each year in the United States. The 30-day readmission rate for kidney transplant recipients is over 30%. Our research focuses on the relationship between the quality of care delivered during the patient's hospital stay for a kidney transplant, and the patient health outcomes and readmissions related to the transplant.

Methods: We interviewed 20 kidney transplant recipients at a major transplant center in the United States. Findings from these interviews were used to inform the data collection using structured surveys, which were administered to an additional 77 kidney transplant recipients. We used ordinary least squares regression to predict the effects of two dimensions of in-hospital care quality—information consistency and empathetic care delivery—on level of patient anxiety 1 week following discharge. Further, we estimated a logistic regression to predict the effect of anxiety, combined with the two dimensions of in-hospital care quality, on occurrence of 30-day readmissions.

Results: Patient anxiety levels 1 wk after discharge are significantly associated with information consistency and empathetic delivery of care. Patient anxiety 1 wk after discharge is associated with occurrence of 30-d readmissions. The logistic regression model indicates that the risk of getting readmitted is 110% higher for a one unit increase in patient anxiety level 1 wk after discharge. Finally, patient anxiety fully mediates the effects of consistency of information and empathetic care delivery on occurrence of 30-d readmissions (50.96% of the effect is mediated).

Conclusions: Our study suggests two ways of preventing readmissions through reduction of postdischarge anxiety: (1) standardizing in-hospital care, so that information received by patients is consistent, and (2) by training caregivers to be more empathetic toward patients during the delivery of this information.

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Introduction

In 2014, over 17,000 patients received kidney transplants in the United States.¹ The wait list for such transplants is longer than 100,000 with >3000 patients being added to the list every month.¹ Post-transplant, kidney recipients have high occurrence of 30-d readmissions. A study covering kidney transplants from 2001 to 2005 found the readmission rate to be 31%.^{2,3} Proper self-care by patients after discharge, including adherence to medication protocols, doctor visits, dietary modifications, and infection prevention, plays an important role in preventing readmissions.^{4,5} The instructions for such postdischarge care are given to the patients during their transplant-related stay at the hospital. However, these instructions for kidney transplant recipients are becoming more complex with the aggressive use of marginal organs and with increasingly complicated transplant cases being accepted.^{6,7} In addition, with early discharges stemming from added pressures for reducing patient lengths of stay,⁸ the scope of patient responsibilities for self-care is also increasing. This added complexity and content of post-transplant self-care can lead to increase in patient anxiety with respect to their conditions immediately after discharge. In this research, we seek to examine the role of reducing patient anxiety after discharge in prevention of 30-d readmissions for kidney transplant recipients.

Although several studies have directly linked quality of care within-hospital settings to patient health outcomes such as patient satisfaction and readmissions,⁹⁻¹¹ the transition of care after discharge is also important to the well-being of the patient. Given the importance of postdischarge self-managed care for kidney transplant recipients, we reason that, for such patients, anxiety after discharge may be the “missing link” between quality of care delivered at the hospital and clinical outcomes such as occurrence of readmissions.¹² By focusing on these relationships, our study seeks to contribute toward research on the combined effects of patient characteristics and actions of care-providing teams on outcomes of surgeries.^{13,14}

The relationships that we study are supported in the extant health care and service delivery literature. The transitions theory in health care emphasizes the need for understanding and reducing a patient’s vulnerabilities during milestone changes such as organ transplants so that the patient is better prepared for life, post-transition.¹⁵ This follows the established view on the importance of a service delivery process that, besides providing consistent delivery, also generates a

good rapport between care provider and the patient.¹⁶ Based on these perspectives, we studied the effects of information consistency and empathetic care during hospital stay on patient’s anxiety 1 wk after the discharge and the mediating role of patient anxiety in the link between in-hospital care and occurrence of patient readmission. [Figure 1](#) represents the model examined in this research.

Materials and methods

We examined these relationships using data collected from a sample of patients at the kidney transplant unit of the Ohio State University Wexner Medical Center (OSUWMC). This transplant unit conducts about 200 kidney transplants per year, which is the type of allograft studied in this research. Institutional Review Board (IRB) approval was obtained (IRB # 2014H0405) to collect both primary (qualitative interviews and structured survey) and secondary (hospital records) data from adult kidney transplant recipients at OSUWMC. The investigators included the chief quality and patient safety officer, the physician transplant director, and the nursing director for the kidney transplant unit at OSUWMC. The research team interacted with all the members of the transplant team, which consisted of 24 nurses (15 inpatients and nine outpatients), 12 transplant physicians, and inpatient and outpatient nurse managers.

Our interview and survey data (a subset of questions and discussion points for our interviews and the questions used in our survey are provided in [Appendices A1 and A2](#)) are related to the discharge instructions delivered during hospitalizations, interactions with the caregivers, and self-reported health status of the patients 1 week after discharge. We matched these data with secondary data about patient complexity (e.g., preexisting psychological and health conditions), length of stay, patient controls (e.g., age, gender, ethnicity), graft functioning during the time of discharge, and the occurrence of 30-d readmissions. Patients undergoing multivisceral transplants were excluded from our sample because such procedures have substantially different discharge instructions and postoperative care guidelines. All of the patients ($n = 20$) that we interviewed had undergone single kidney transplant surgeries within the past 6 mo (Jan 2014-June 2014). Of the patients in our subsequent survey sample, 70% had undergone single kidney transplant surgeries within the past 4 y (2011-2014).

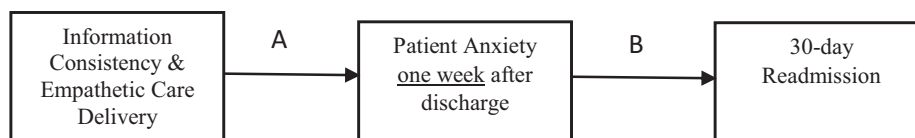


Fig. 1 – Framework relating in-hospital care quality and readmissions for kidney transplant recipients. Patient level controls: age, gender, ethnicity, donor type, year of transplant, preexisting psycho-social and health conditions, length of stay, and graft function at the time of discharge. (A) 13% of variation in anxiety levels are explained by information consistency and empathetic care delivery (total explanation with controls = 30%). (B) Odds of getting readmitted is 110% higher for a unit increase in anxiety levels 1 wk after discharge.

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