

Appendix: Identification of Underlying Constructs of Concerns using EFA

We used a standard statistical technique, exploratory factor analysis (EFA), to identify a set of latent constructs (i.e. factors) underlying the measured variables¹² and reduce data for further analysis.¹³

Polychoric correlation coefficients were used to account for categorical rather than continuous response choices to concerns.¹⁶ Factors having an eigenvalue greater than 1 were considered for the most appropriate factorial structure for the twelve observed concerns, and a two-factor solution was obtained. Because the eigenvalue greater than 1 criterion is susceptible to over-selecting the number of factors, we confirmed our solution using a scree plot as well as parallel analysis. Maximum likelihood estimation was used in EFA to obtain factor loadings. To obtain the factor structure, Promax oblique rotation³⁵ with Kaiser normalization³⁶ was applied to allow for correlation between latent factors.

Observed variables with loadings of <0.5 were dropped, and EFA was repeated in an iterative manner to identify the number of factors and estimate parameters through maximum likelihood until all observed variables had loadings of ≥ 0.5 . Because these variables were considered indicative of the associated factor, they were included in the calculation of scale scores (described below). After repeating EFA until all variables loaded at the criterion level, two observed concerns did not load onto either factor and were not used in computing a scaled score. Scale scores for the two factors were calculated using the method suggested by Bartlett,^{37, 38} which uses maximum likelihood estimates to produce unbiased estimates of the true factor scores.³⁹ The scores were standardized to a mean of zero with a standard deviation of one.

Two concerns were not included in an underlying category:

1. I'm doing just fine on dialysis
2. Nobody has discussed transplantation with me

We identified two underlying latent constructs, which each comprised five measured concerns.

Health-related concerns (Factor 1) components included:

1. I am not a medically appropriate candidate for transplantation
2. Somebody has discussed transplantation with me and discouraged me from pursuing it
3. I don't think a transplant will help me
4. I'm too weak to undergo a kidney transplant
5. I didn't know a transplantation was an option at my age

Psychosocial concerns (Factor 2) components included:

1. I don't feel comfortable receiving a kidney from a dead person
2. I don't feel comfortable asking a living person to donate a kidney for me
3. It's too expensive
4. I don't want to take any more medications
5. I'm afraid of an operation

Having a discouraging discussion about KT and the cost of KT are the most highly weighted components of health-related and psychosocial concerns factors, respectively, based on the rotated pattern matrix loadings. Loadings are similar to standardized regression coefficients from multiple regression such that each loading relates the observed variable to the factor in a linear model with the influence of the other observed variables parsed out. In contrast to the pattern matrix, which shows only the direct path from a factor to a variable, the structure matrix reflects all paths from a factor to a variable including factor-to-factor paths since the factors are also correlated. The structure matrix loadings suggest that not thinking a transplant will help and fear of an operation are the most highly weighted components of health-related and psychosocial concerns factors. The correlation matrix shows that physiological and psychological concerns are moderately correlated ($r=0.50$) (Appendix Table 1).

Appendix Table 1: Factor structure, pattern, rotation, and correlation matrices

	Structure Matrix		Pattern Matrix		
Concerns about Kidney Transplantation	<i>Factor 1</i>	<i>Factor 2</i>	<i>Factor 1</i>	<i>Factor 2</i>	<i>Uniqueness</i>
I'm not a medically appropriate candidate for transplant	0.8198	0.5302	0.7405	0.1577	0.3094
Somebody has discussed KT with me and discouraged me from pursuing it	0.6289	0.0957	0.7775	-0.2954	0.5393
I don't think a transplant will help me	0.8232	0.5431	0.7363	0.1727	0.3000
I didn't know a transplantation was an option at my age	0.5337	0.3043	0.5095	0.0480	0.7135
I'm too weak to undergo a transplantation	0.6507	0.3437	0.6397	0.0219	0.5762
I don't feel comfortable receiving a kidney from a dead person	0.4874	0.7088	0.1752	0.6207	0.4746
I don't feel comfortable asking a living person to donate a kidney for me	0.3751	0.7222	0.0158	0.7142	0.4782
Transplantation is too expensive	0.2530	0.6904	-0.1262	0.7539	0.5115
I don't want to take any more medication	0.1628	0.5033	-0.1210	0.5642	0.7358
I'm afraid of an operation	0.5325	0.7384	0.2155	0.6300	0.4200

Factor Rotation Matrix			Correlation Matrix		
	<i>Factor 1</i>	<i>Factor 2</i>		<i>Factor 1</i>	<i>Factor 2</i>
<i>Factor 1</i>	0.9042	0.8240	<i>Factor 1</i>	1	
<i>Factor 2</i>	-0.4271	0.5666	<i>Factor 2</i>	0.503	1

The number of factors (underlying latent constructs) was determined using principal components analysis of the polychoric correlation matrix. Factor loadings displayed in the pattern matrix were estimated using Promax oblique rotation with Kaiser normalization. Factor 1 and Factor 2 are referred to as Health-related Concerns and Psychosocial Concerns, respectively. The two individual concerns that did not load on to an underlying factor are not included.