10-19-2009

LIVING KIDNEY DONOR INFORMED CONSENT PRACTICES VARY BETWEEN U.S. AND NON-U.S. CENTERS

Ami Parekh

LIVING KIDNEY DONOR INFORMED CONSENT PRACTICES VARY BETWEEN U.S. AND NON-U.S. CENTERS

A Thesis Submitted to the
Yale University School of Medicine
in Partial Fulfillment of the Requirements for the
Degree of Doctor of Medicine

by

Ami Mahendra Parekh

2009

LIVING KIDNEY DONOR INFORMED CONSENT PRACTICES VARY BETWEEN U.S. AND NON-U.S. CENTERS

Ami M. Parekh, Elisa J. Gordon, Amit X. Garg, Amy D. Waterman, Sanjay Kulkarni, and Chirag R. Parikh. (Yale University School of Medicine, New Haven, CT).

ABSTRACT

Living kidney donation rates are increasing in the United States and internationally. Major consensus statements on the care of living kidney donors recommend communicating all potential health and psychosocial risks to donors. We evaluated the degree of international variation in the process of informed consent of potential donors during their evaluation.

Transplant professionals attending the 2006 World Transplant Congress responded to a survey assessing their informed consent processes, donor evaluation and risk communication to living donors. US based respondents were compared to non-US respondents. There were 221 respondents from 177 transplant centers and 40 countries (48% US respondents). Across US and non-US transplant centers, potential donors were most likely to receive written material about living donor risk by mail prior to evaluation, receive risk information in person during evaluation, have a psychosocial evaluation, which usually lasted longer than 30 minutes, and sign an official donation consent form presented to them by a surgeon or a nephrologist. Although over 75% of respondents stated that donors received information about medical risks such as hypertension, chronic kidney disease, and potential need for dialysis, there was less consistency regarding whether or not respondents conveyed an increased risk of these medical complications to

donors. Additionally, the financial and psychosocial costs associated with being a living donor were inconsistently communicated to donors during the informed consent process. Compared to non-US respondents, US respondents were more likely to use written material and visual aids to convey risks to donors, have mandatory psychosocial evaluations, and provide access to donor support groups. US transplant centers were also more likely to discuss the possibility of the donor needing dialysis or a transplant if their remaining kidney fails in the future, possible travel expenses and loss of work income due to donation recovery. Conversely, the US respondents' centers were less likely to offer long-term follow up and to utilize nephrologists to obtain written donor consent for donation.

As dependence on living organ donation increases best practices for informed consent, donor evaluation and uniform risk conveyance need to be established. This may be accomplished by using a model informed consent template to ensure that informed consent from donors is consistently obtained.

ACKNOWLEDGMENTS

Dr. Parikh was supported by the Career Development Award from the National Institute of Diabetes and Digestive and Kidney Diseases; NIH (K23-064689). Dr. Gordon is supported by a Career Development Award from the National Institute of Diabetes and Digestive and Kidney Diseases; Bethesda, MD (DK063953).

TABLE OF CONTENTS

INTRODUCTION

Due to the shortage of deceased donor kidneys and the increasing use of living donor kidneys from non-related and expanded criteria kidney donors[1-3], almost half of all kidneys donated in the United States come from living donors and the rates of living kidney donation internationally continue to increase.[3, 4] The fundamental premise of living kidney transplantation is that the benefits to the recipient and potential psychosocial benefits to the donor significantly outweigh the possible health risks to the donor. The long term benefits for the recipient of transplantation of a kidney from a living donor are significantly better than the benefits of cadaveric transplantation.[5] Despite the improved outcomes for recipients living donor kidney transplantation challenges the core medical ethics principle, "first do no harm."

However, to date, the lack of a national registry, which would track all kidney donation outcomes, limits comprehensive understanding of the donor's medical, financial and psychosocial risks.[6-15] Although the risks of living kidney donation appear to be minimal, as with any major surgery there are some risks of donation.[16] Additionally, if anything were to happen to the remaining kidney, there would be no backup. Also, even if kidney donation does not raise the risk of long-term medical problems such as hypertension, kidney donors who develop hypertension for other reasons may be more vulnerable to kidney damage from the high blood pressure. Additionally, it may be that the absence of discovered problems with living kidney donation is a reflection of the above average health of kidney donors[17] which may change if centers begin using expanded criteria donors.

The ethical practice of medicine requires appropriate informed consent for medical procedures. Requiring physicians to disclose information to their patients regarding treatment preserves patient autonomy and self-determination by lessening the information asymmetry that exists between patient and physician. Informed consent for all medical procedures and treatment is especially necessary in today's patient centered practice of medicine where the patient is expected not only to comply with a physician's orders but to fully participate in his or her treatment decisions.

In the case of living kidney donation, informed consent is particularly important since the donor does not receive any medical benefit from the procedure itself and undertakes the possibility of surgical risks including undergoing anesthesia, wound infection, and post operative bleeding; long term medical risks like earlier onset of hypertension or end-stage renal disease; and short- and long-term psychological and financial risks. Although some scientists believe there are possible benefits like increased self-esteem for those who donate their kidneys, the data are not definitive, since dissatisfied donors may not participate in follow-up research.[2, 7, 14, 18, 19] Additionally some research indicates that a significant portion of donors experience short term depression, while a small percentage of donors, usually linked to a bad outcome for the recipient or chronic pain, regret donation in the long term.[20]

Major consensus statements have been published to provide recommendations for the care of live kidney donor.[21, 22] There is consensus amongst transplant professionals internationally that informed consent for a living kidney donor should include an accurate conveyance of short-and long-term medical, psychosocial and financial risks and that all steps are taken to minimize such risks.[21, 22] However, to date, the informed consent

process has not been standardized. Preliminary research has shown that physicians and transplant staff at a subset of transplant centers vary in how risky they perceive living donation to be and how they convey these risks to potential donors.[3, 23-26] Since the aforementioned consensus statements were published, no international research across transplant centers has been conducted to assess what is being regularly communicated to potential living donors and the degree to which global practice variations exist regarding the evaluation and informed consent of living kidney donors. Significant variability may indicate a need for further consensus building, practice translation and policy development.

Therefore, we surveyed US and non-US transplant professionals attending the World Transplant Congress about their informed consent practices with living donors and compared how risk communication varied between them. We compared US to non-US participants since currently approximately 50% of the world's living kidney donations occur in the US and because healthcare policy and medical culture in the US is sufficiently different from most other countries to warrant this comparison.

METHODS

SURVEY DESIGN AND CONTENT

In order to design a comprehensive survey that was easy to complete, a thorough review of the literature regarding living kidney donation was performed. The review included materials on the short and long-term medical and psychosocial risks of living kidney donation as well as materials on current informed consent practices by professionals working in kidney transplant. Additionally, consensus statements and guidelines regarding living kidney donor evaluation and consent were reviewed.

Based on this research, a 19-question survey addressing both the methods of conveying risk to potential kidney donors and the actual risk parameters conveyed to potential donors was drafted. The survey was designed to consist primarily of closed ended questions so as to ensure that the results were quantifiable. The survey was then independently circulated to ten physicians at various transplant centers for feedback and was modified accordingly. The survey was designed to take approximately ten minutes for a participant to complete. This length was decided upon based on feedback in order to ensure maximum participation and thus generalizability of results.

The survey measured health professional demographics, how the respondent conveyed medical, psychosocial and financial risks to a potential donor and what risks were conveyed during the informed consent process. The survey was divided into three parts, namely A. Background, B. Risk Information and C. Informed Consent Practices. Section B was further subdivided into 3 areas: (i) Medical Risks (ii) Financial Risks and (iii) Psychosocial Risks. All questions were close ended with a built-in skip pattern. For example, regarding medical risks, the respondent was asked to check what increase in relative risk of hypertension was conveyed to the donor. They had a choice of checking various boxes with relative risk increases or checking the "not discussed" box. For the psychosocial evaluations, the participants were asked whether a psychosocial evaluation was mandated for the donor. If so, they were asked what length of time was allocated for such an evaluation. For this follow up question, they were given 4 choices, less than 15 minutes, 15 to 30 minutes, 30 to 60 minutes or greater than 60 minutes. For such questions they were asked to only check one of the answer choices. For other questions, such as what methods were used to convey potential risks to donors, the survey

participants were asked to check all the responses that applied. The only open ended questions in the survey were the demographic questions: name, contact, center location, and how many donor interactions the respondent had in the past year.

The survey was approved by the Institutional Review Board at Yale University Medical Center.

RESPONDENTS

In order to solicit a broad range and large sample of transplant professionals, we assessed a variety of different survey distribution techniques including online survey distribution, mail distribution, email distribution and in person distribution. Based on conversations with a number of experts, we concluded that results were most reliable and respondents were most likely to participate if surveys were given to them in person in a place conducive to immediately filling out the survey. Therefore, we decided to solicit survey participants at the largest gathering of transplant professionals to date, namely at the World Transplant Conference in Boston in July 2006. This opportunity was unique in that it brought together a variety of professionals such as nephrologists, transplant surgeons, transplant nurses and center coordinators, from around the world. It was the first time a joint international transplant conference was held - combining the annual American Transplant Congress and the various conferences held by the International Congresses of the Transplantation Society. It was co-sponsored by the American Society of Transplant Surgeons (ASTS), The American Society of Transplant (AST) and The Transplantation Society (TTS).

In order to recruit survey participants, we decided individuals would be most likely to complete surveys when registering onsite for the conference. Distributing the surveys in the conference registration area allowed us to have a one on one conversation with conference attendees in order to assess whether they were involved with living kidney transplantation, in particular if they were involved in donor evaluation or management. If they stated they worked with living kidney donors, they were invited to fill out the survey. With the help of the conference administrators we were able to provide participants with a table on which to fill the survey out and pencils for doing so. If the participant stated they wanted more time to fill out the survey, they were instructed to fill it out at their leisure and to return it in any of six drop boxes located throughout the conference venue or to mail or fax the survey to us after they had completed it.

In addition to recruiting survey participants during onsite registration, we also provided surveys to individuals attending any conference lectures having to do with living kidney donation. In such instances individuals were instructed that they could return their surveys at the end of the lecture in a box placed outside the lecture room or in any of the drop boxes located throughout the venue. Alternatively, as with those individuals recruited at registration, they were told they could return the surveys via mail or fax. These two recruitment methods were employed to enable a representative sample of conference attendees involved in living kidney donation to be surveyed. In both cases, the respondents were not given any form of compensation.

Consent for study participation was presumed upon returning the survey. An information sheet provided with the survey explained the purpose of the study and

indicated that all responses would be confidential. Permission to distribute the survey at the WTC was obtained from the Conference Planning Committee prior to the conference.

DATA COLLECTION

The surveys were returned in containers located throughout the conference center. The survey also included instructions to mail or fax surveys back to us after the conference. Of the 223 complete surveys we recovered, 220 were returned at the conference, two were received by mail and one by fax. Two of the surveys returned could not be used in the analysis, because only demographic data were provided. Five surveys did not include country of origin and so could not be used in the comparative analysis. Thus the analysis was done using 216 surveys. Each survey was assigned a unique number in order to make the data confidential and the responses were entered into an Excel spreadsheet. The data were checked independently by two people for any typographical or data entry errors.

STATISTICAL ANALYSIS

Standard descriptive statistics were computed for all variables. To assess differences between US and non-US respondents, chi-square tests were used for dichotomous variables and the Wilcoxon Rank-Sum test was used for ordinal variables. In cases where there were a small number of observations for dichotomous outcomes, Fisher's exact test was used. Variables are listed in Table 3 and Table 4 along with the results. Respondents from the same transplant center were treated independently such that some centers may be represented greater than others (Table 1). All analyses were based

on the respondent, not on the transplant center**.** All analyses were conducted using SAS 9.1 (SAS Institute Inc., Cary, NC, USA).

RESULTS

RESPONDENTS DEMOGRAPHICS & TIME SPENT INTERACTING WITH DONORS

The survey respondents (n=216) represented 40 countries and 177 transplant centers. 48% (n=104) of the respondents were from US centers, representing 79 centers from 29 states (Table 1). The number of respondents from the various states ranged from 1 (8 states) to 13 (PA); the number of centers per state represented ranged from 1 (11 states) to 11 (PA). The 112 participants from the other countries represented 98 centers. The number of participants per country ranged from 1 (16 countries) to 15 (UK). The number centers per country represented ranged from 1 (15 countries) to 11 (UK).

Table 1. Countries Represented by Survey Respondents

COUNTRIES (40)	# of respondents n (%)	# centers n (%)
USA	104 (47)	79 (45)
Argentina	3 (1)	3 (2)
Australia	7 (3)	4 (2)
Belgium	2 (1)	2 (1)
Brazil	10 (5)	9 (5)
Canada	6 (3)	6 (3)
China	1 (<1)	1 (1)
Columbia	2 (1)	2 (1)
Denmark	1 (<1)	1 (1)
Egypt	3 (1)	3 (2)
France	1 (<1)	1 (1)
Germany	10 (5)	8 (5)
Greece	1 (<1)	1 (1)
Guatemala	2 (1)	2 (1)
India	5 (2)	5 (3)
Indonesia	1 (<1)	1 (1)
Ireland	1 (<1)	1 (1)
Israel	1 (<1)	1 (1)
Japan	2 (1)	2 (1)
Korea	2 (1)	2 (1)

Kuwait	2 (1)	2 (1)
Malaysia	1 (<1)	1 (1)
Mexico	4 (2)	3 (2)
Netherlands	2 (1)	2 (1)
Norway	1 (<1)	1 (1)
New Zealand	4 (2)	3 (2)
Peru	1 (<1)	1 (1)
Philippines	1 (<1)	1 (1)
Poland	4 (2)	2 (1)
Russia	1 (<1)	1 (1)
Saudi Arabia	2 (1)	2 (1)
Singapore	1 (<1)	1 (1)
Slovakia	1 (<1)	1 (1)
South Africa	2 (1)	2 (1)
Spain	2 (1)	2 (1)
Sweden	2 (1)	2 (1)
Thailand	3 (1)	3 (2)
Tunisia	1 (<1)	1 (1)
Turkey	1 (<1)	1 (1)
UK	15 (7)	11 (6)

The majority of the survey respondents were physicians (78%) and nurses (11%). 38% of the respondents were nephrologists and 28% were transplant surgeons. 14% of the respondents were transplant coordinators. Compared to non-US respondents, more US transplant coordinators (26% v. 6%, $p<0.001$) and non-MDs (29% v. 10%, $p<0.001$) completed the survey than their counterparts outside of the US (Table 2).

Most respondents (74%) spent greater than 20% of their time with living kidney donors, with over a third of respondents (38%) spending greater than 70% of their time with living kidney donors. Additionally, about a quarter of respondents (24%) was either the chairperson or director of their transplant programs. US versus non-US respondents did not differ in the nature or quantity of interactions with donors in the past year (Table 2). Together the respondents interacted with over 10,500 potential donors per year.

Table 2: Demographics of Respondents: US v non-US.

	Respondents (Total n per question)	US n (%)	Non-US n (%)	P value
Degree	208			
MD (Physician)		70 (71)	99 (90)	<0.001
RN (Nurse)		21 (21)	3 (3)	
PA (Physician Assistant)		2 (2)	0 (0)	
PhD (Doctorate)		1 (1)	1 (1)	
Other		4 (4)	7 (6)	
Profession	191			
Nephrologist		38 (40)	46 (48)	0.001
Surgeon		22 (23)	38 (40)	
Psychiatrist/Psychologist		2 (2)	0 (0)	
Transplant Coordinator		25 (26)	6 (6)	
Nurse		6 (6)	2 (2)	
Other		3 (3)	3 (3)	
Proportion of Professional's Time Spent with Living Kidney Donors	208			
>70%		42 (41)	37 (35)	0.56
20-70%		36 (35)	38 (36)	
5 – 20%		15 (15)	23 (22)	
<5%		9 (9)	8 (8)	
# Donor Interactions in previous year, median (range)	208	30 (3-425)	25 (0-400)	0.62

PROCESS OF DONOR EVALUATION AND CONVEYING RISKS

According to respondents, across US and non-US transplant centers, most potential donors were sent written material about living donor risk by mail before evaluation (88%). Most respondents conveyed risk information to donors in person during the medical evaluation (98%). Additionally, many respondents provided risk information to potential donors in writing (49%), over the telephone (13%) and by using video/DVD (19%).

Overall 55% of respondents used greater than one method to convey risks to donors. Survey respondents used a variety of terminology to convey risks to donors. 34%

of respondents stated the primarily used qualitative terms when describing risks of donation. 31% used absolute rates of risk, 16% used relative risk rates and 12% stated that the type of terminology they used varied from one donor to the next.

A majority of the time, nephrologists or surgeons were involved in discussions regarding the medical risks of donation (84%, 56%), and usually multiple individuals discussed the medical risks of donation with the potential donor (56%). No respondent stated that medical risks of donation were not discussed.

Transplant Coordinators or Social Workers generally discussed the financial risks of donation with the donors (51%, 46%). 41% of respondents stated that financial risks were discussed by more than one professional; however, 11% of the respondents stated that financial risks were not discussed with donors.

Social Workers, Nephrologists and Psychiatrists or Psychologists were almost equally responsible for discussing the psychosocial risks of donation (49%, 45%, 44%); with 57% of respondents stating that more than one individual was responsible for discussing the psychosocial risks of donation with the potential donor and 1% of respondents stated that psychosocial risks were not discussed.

79% of respondents stated that their centers mandate psychosocial evaluations of potential donors. These generally lasted longer than 30 minutes (81%).35% of respondents stated that their evaluations lasted longer than 60 minutes. 43% of respondents said these evaluations were done by social workers; 51% were done by either psychiatrists or psychologists.

Overall, 69% of respondents stated that donors were asked to sign an official donation consent form prior to donation presented to them by a non-resident surgeon or

nephrologist (88%). 42% of respondents stated that their centers provided donors with access to support groups and 81% said their centers provided donors with long term follow up care. 89% of respondents say they discussed donor risks with recipients.

Regarding the comparative analysis, US respondents were more likely to report sending donors written materials prior to donation (95% vs. 83%, p = 0.007), require psychosocial evaluations of the potential donors (92% vs. 68%, p <0.0001), have surgeons be responsible for obtaining written consent (74% vs. 50%, p < 0.001), and offer donors a support group (54% v. 32%, p<0.002). In contrast, respondents from non-US centers were more likely to report that donors receive long-term follow up (96% v. 64%; p <0.0001), and were more likely to sign a consent form specifically for organ donation (77% v. 61%, p <0.01) and have nephrologists responsible for obtaining consent (40% v. 5%, p<0.01). Psychosocial evaluations occurring at US and non-US transplant centers varied considerably. In the US, respondents reported that social workers most commonly conducted the psychosocial evaluation of potential donors (89% v. 41%, p<0.01), with most of these evaluations taking longer than 30 minutes (91% v. 69%, p<0.01).

Table 3. Process of Donor Evaluation and Informed Consent: US v. non-US

	Overall N (%)	US n (%)	Non-US n (%)	P value
How medical risks are conveyed				
Qualitative	73 (36)	36 (37)	37 (35)	0.35
Relative	35 (17)	19 (19)	16 (15)	
Absolute	69 (34)	28 (29)	41 (39)	
Varies	25 (12)	13 (13)	12 (11)	
What methods are used to convey risks to potential donors				
In Person	204 (98)	99 (100)	105 (95)	0.03
By Telephone	86 (41)	57 (58)	29 (45)	0.06
Written Material	28 (13)	23 (23)	5 (5)	<0.0001
Video/DVD	42 (20)	30 (30)	12 (11)	0.001
Donor receives written material prior to donation				

Yes	184 (88)	92 (95)	92 (83)	0.007
No	24 (12)	5 (5)	19 (17)	
Mandatory psycho-social assessment of all potential donors				
Yes	167 (80)	92 (92)	75 (68)	<0.0001
No	43 (20)	8 (8)	35 (32)	
Who is responsible for the psychosocial evaluation				
Psychiatrist	76 (44)	36 (38)	40 (51)	0.08
Psychologist	71 (41)	34 (36)	28 (36)	0.54
Social Worker	117 (68)	85 (89)	32 (41)	<0.0001
How long is the evaluation				0.004
<15 minutes	5 (8)	0 (0)	4 (5)	
15 – 30 minutes	28 (16)	9 (10)	19 (25)	
30 – 60 minutes	77 (45)	50 (54)	27 (35)	
> 60 minutes	60 (35)	34 (37)	26 (34)	
Center provides donors access to a support group				
Yes	84 (42)	50 (54)	34 (32)	0.002
No	115 (58)	43 (46)	72 (68)	
Center provides long term follow up				
Yes	171 (81)	65 (64)	106 (96)	<0.0001
No	41 (19)	37 (36)	4 (4)	
Center has a specific consent form for live organ donation				
Yes	145 (69)	59 (61)	86 (77)	0.012
No	64 (31)	38 (39)	26 (23)	
Who is the person responsible for obtaining consent				
Nephrologist	48 (24)	5 (5)	43 (40)	<0.0001
Surgeon	124 (62)	70 (74)	54 (50)	0.0007
Nurse/Nurse Practitioner	26 (13)	18 (19)	8 (7)	0.015
Social Worker	8 (4)	0 (0)	8 (7)	0.007
Nephrologist Trainee	5 (3)	1(1)	4 (4)	0.22
Surgical Trainee	7 (4)	4 (4)	3 (3)	0.59
Donor nephrectomy risks are discussed with kidney recipients				
Yes	185 (89)	84 (83)	101 (93)	0.085
No	24 (11)	17 (17)	7 (7)	
Center would adopt a centralized informed consent template				
Yes	159 (81)	77 (79)	82 (84)	0.001
No	37 (19)	21 (21)	16 (16)	

CONTENT OF RISK COMMUNICATION

More than 90% of respondents discussed multiple possible long-term medical risks with living donors including: hypertension, proteinuria, premature death, premature

cardiac disease, chronic kidney disease, and the possibility of needing dialysis or a transplant, should their kidney fail in the future. However, respondents varied considerably in whether or not they conveyed an increased risk for the donor as compared to a non-donor. For example, 15% of respondents told donors there was no increased risk of developing hypertension, 81% told them there was an increased risk and 4% did not discuss hypertension with donors. There was similar variation with regards to proteinuria: 15% stated there was no increased risk, 78% stated there was an increased risk and 7% did not discuss the risk. The variation in medical risk conveyance was even more pronounced for the risk of premature death and cardiac disease and the greatest for the risk of future chronic kidney disease and the possible requirement of dialysis or kidney transplant. For premature death, 66% of respondents stated no increased risk, 23% stated an increased risk, and 11% did not discuss this risk; for premature cardiac disease, 61% stated no increased risk, 28% stated an increased risk post donation, and 10% did not discuss this risk. For the increased risk of developing future chronic kidney disease 40% of respondents stated there was no increased risk with donation, 56% stated there was an increased risk and 5% did not discuss this risk. Similarly, for the risk of requiring dialysis or kidney transplantation in the future, while 48% of respondents stated that there was no increased risk of requiring such measures, 46% stated that there was an increased risk and 6% did not discuss this risk with donors.

Fewer respondents discussed specific financial risks with potential donors. Of the five specific financial costs that donors may face that we listed, on average 41% of respondents did not discuss the specific cost. Approximately two thirds of respondents did discuss loss of salary, travel costs and family care costs, whereas increased costs of

health insurance and rehabilitation were discussed by a little more than half of the respondents. When the costs were discussed there was again great variability regarding whether donors were told there would be no significant cost, or whether there were costs associated with donation. For example, with regards to the costs of family care during the donation process, 27% of respondents told donors there was no increased cost, 33% told donors there was an increased cost and 39% of respondents did not discuss the cost at all.

Although 78% of respondents discussed the potential of future improved psychosocial well being with their prospective donors (17% not discussed, 5 % stated improved psychosocial well being was not likely), they were less likely to inform donors about potentially negative psychosocial outcomes. For example, over a quarter of US respondents did not discuss the potentially stressful nature of transplant (27%, not discussed), the possibility of post-operative depression (24%) or suicidal ideation (36%), or the possibility of adverse effects to the donor's marital or family life (23%). If psychosocial risks were discussed, some health professionals told living donors that they were not likely to have these issues arise in their situation while others told donors that these risks were somewhat likely. For example, while 30% of respondents told potential donors that adverse effects on their marital/family life would not be likely, 48% of respondents stated that such risks were likely.

Exploring differences in what risks were communicated to potential donors at US and non-US transplant centers, US transplant professionals were more likely to communicate to potential donors that they might have to go on dialysis or receive a transplant if their remaining kidney failed (57% v. 36%; p =0.01), to discuss with donors that they may have to pay travel costs to the transplant centers (63% v. 35%; p=0.001)

and discuss possible lost income while they recovered (59% v. 40%; p=0.01). There were no significant differences in the conveyance of psychosocial risks between US and non-US respondents.

Table 4. Risks Communicated with Potential Donors: US v. non-US Respondents

	Respondents (total n per question)	US n (%)			Non-US n (%)			P Value
Medical Risks*		**Not Increased**	**Increased**	**Not Discussed**	**Not Increased**	**Increased**	**Not Discussed**	
Hypertension	198	20 (21)	70 (74)	4 (4)	10 (10)	91 (88)	3 (3)	0.057
Proteinuria	197	17 (18)	69 (74)	7 (8)	13 (13)	85 (82)	6 (6)	0.44
Premature Death	199	60 (64)	27(29)	7 (7)	72 (69)	19 (18)	14 (14)	0.12
Premature Cardio Vascular Disease	197	60 (64)	25 (27)	9 (10)	61 (59)	31 (30)	11 (11)	0.80
Chronic Kidney Disease	196	35 (38)	54 (59)	3 (3)	43 (41)	55 (53)	6 (6)	0.58
Requirement of Dialysis/Kidney Transplant	197	37 (40)	52 (57)	3 (3)	58 (55)	38 (36)	9 (9)	0.01
Financial Costs		**No Cost**	**Cost**	**Not Discussed**	**No Cost**	**Cost**	**Not Discussed**	**P Value**
Travel Expenses	144	5 (8)	38 (63)	17 (28)	21 (25)	29 (35)	34 (40)	0.001
Loss of Work Days	147	6 (10)	35 (59)	18 (31)	24 (27)	35 (40)	29 (33)	0.019
Family Care Needs	142	16 (28)	18 (32)	23 (40)	23 (29)	29 (29)	33 (42)	0.95
Increased Cost of Insurance	149	29 (43)	8 (12)	36 (45)	33 (43)	8 (11)	35 (46)	0.96
Rehabilitation Costs	136	28 (44)	4 (6)	31 (49)	31 (42)	10 (14)	32 (44)	0.37
Total estimated cost	111	6 (13)	17 (37)	23 (50)	11 (17)	25 (38)	29 (45)	0.80
Psychosocial Risks		**Not Likely**	**Somewhat Likely**	**Not Discussed**	**Not Likely**	**Somewhat Likely**	**Not Discussed**	**P Value**
Improved Well Being	171	4 (5)	58 (74)	16 (21)	5 (5)	75 (81)	13 (14)	0.53
Recollection of time as traumatic/stressful	164	12 (16)	38 (51)	25 (33)	24 (27)	45 (51)	20 (22)	0.14
Post Op Depression	162	18 (24)	34 (46)	22 (30)	27 (31)	44 (50)	17 (19)	0.28
Suicidal Ideation	158	32 (44)	7 (10)	33 (46)	53 (62)	9 (10)	24 (28)	0.06
Marital/Familial Life Adverse Eff.	164	17 (23)	35 (47)	22 (30)	32 (36)	43 (48)	15 (17)	0.07

* We did not define any of the medical risks in the survey.

CONSENSUS BUILDING, PRACTICE TRANSLATION

Finally, most (82%) respondents reported that they believe their center would be willing to adopt a centralized informed consent template. More non-US transplant professionals, said they would be willing to adopt such a template as compared to the US respondents (84% v. 79%; p =0.001).

DISCUSSION

This study, an international study on informed consent practices during donor evaluation, reveals that the risks communicated to donors and the informed consent process vary considerably across transplant professionals, centers and countries. For a potential donor to truly make an informed choice whether to donate their kidney they must understand the medical, financial and psychosocial risks they face as compared to the alternative of not donating their kidney. Patients also need sufficient time to have a conversation with a health professional, to have risk percentages explained in a way that makes sense to them, to have education tailored to their level of health literacy, to be provided with additional materials to take home with them to review and discuss with their family members, and to be provided with ample opportunity to ask any questions the may have about the process of donation and risks associated with it.

VARIATION IN RISKS CONVEYED

This study uncovered several important problems that need to be addressed to improve the living donor informed consent process. First, information about the medical risks that a potential donor may face is presented to donors at some transplant centers

inaccurately. We found, for example, that while 56% of practitioners told potential donors they had an increased risk of developing ESRD, 40% said that there was no increased risk or did not discuss the risk at all. Most research available to date indicates that while GFR does decrease following uninephrectomy, the likelihood of ESRD requiring dialysis increases only slightly.[3, 11, 12] Some research does indicate that the risk of ESRD does not increase after donation.[10, 27, 28] Although the variation in what risks are conveyed to the reader is probably due to the debate still occurring about what the actual risks to a living donor are, the result is that potential donors are making donation decisions based on different risk information depending on the center in which they undergo transplant evaluation.

Second, discussion of financial and psychosocial outcomes does not always occur and the conclusions drawn by transplant professionals summarizing the current research are inconsistent. In this study, and in others, information about financial and psychosocial risks to the donor was left out about by at least 30% of respondents.[25] Even when discussed, the information communicated to donors varied. For example, although some research indicates that most donors are satisfied with their donation decision, current research also consistently shows that worsened familial relations are a possible but unlikely risk associated with donating a kidney (2 - 13%).[14, 19, 29, 30] However, we found that while a large percentage of practitioners communicated to donors that donation may negatively affect familial life, many either inform donors that such effects are not likely or do not discuss this potential risk at all. Similarly, while most respondents discussed the potential improved psychosocial status of donors, many did not discuss the risk of donor regret, depression or recollection of the surgery as a traumatic experience.

Evidence for some risk of these negative psychosocial consequences can be found in the scientific literature surrounding living kidney donation.[20]

VARIATION IN DONOR EVALUATION AND INFORMED CONSENT PROCESSES

Inadequate provision of informed consent for prospective organ donors is not ethically sound clinical practice as it can undermine individuals' ability to make autonomous medical decisions. Public awareness of unethical practices can threaten public trust in the system of transplantation and donation, which in turn, may decrease the percentage of individuals who volunteer to be living donors.[31] In examining differences in the informed consent process across transplant centers, potential donors may or may not receive written material about living donor risk by mail, undergo a psychosocial or medical evaluation of a sufficient duration to get their questions answered, and sign a donor informed consent document.

Mandatory psychosocial evaluation varied significantly between US and non-US centers despite an international consensus that psychosocial evaluations are necessary.[21, 22, 24, 25, 32, 33] Given the lack of medical benefit to the donor, living kidney donation continues to spark controversy – within the family, ethicists worry about coercion and with anonymous donation, ethicists worry about the psychological stability of the donor; thus a thorough psychosocial evaluation of potential donors is essential in ensuring donors are in fact making autonomous decisions.[17] Given the recent increase in non-related donations, and evidence that such evaluations can effectively rule out psychopathology amongst anonymous donors, this step in the evaluation process should become standard in all countries.[22, 26, 34-37]

Regarding country variation in informed consent processes, it is not clear why US centers would be more likely to send donors written information prior to donor evaluation as compared to international transplant centers. However, evidence indicates that having written material available for donor education prior to donation makes donors more comfortable with donation.[38] Thus, consistently providing written materials to potential donors may significantly improve the informed consent process. Receiving written material prior to actual evaluation may also lead to increased donation.

Additionally it is not immediately evident why non-US centers would be more likely to use specific organ donation consent forms, whereas US centers use more general surgical consent forms. Perhaps this variation is a result of the US being a more litigious society and hence less willing to modify basic written forms that have already been deemed appropriate by the legal system. Alternatively, it could be because as our data indicates, in the US surgeons are more likely to be responsible for informed consent and perhaps surgeons are more likely to prefer uniform consent forms for all their surgeries.

Finally, regarding donor follow up, the finding that US centers are less likely to offer long term follow up for donors may be due to different government policies. The availability of national health insurance schemes in other countries may facilitate such follow up for donors. It is not as clear why non-US centers would be less likely to offer support groups; however, cultural differences may explain this variation. For example, in most non-Western cultures, patients commonly rely on family members for assistance with self-care management rather than rely primarily on themselves for their care.[39, 40] On the other hand, American health care expects patients to be self reliant after medical procedures.[41] Accordingly, patients in the US may experience additional stress until they

are fully recovered and thus, may be more amenable to finding comfort in support groups. While these variations in follow-up and long-term support exist and may be explained by political and/or cultural differences, there is some evidence that donors, everywhere, would benefit from access to both long term care and support groups.[42]

Furthermore, long-term care and follow up will lead to an increase in kidney donation in two ways. First, potential donors may be more willing to donate if they are assured that the transplant center will provide them with long-term care. Second, because of the concerns recipients have for donors, potential recipients may become more willing to accept kidneys from living donors if they are assured that transplant centers will treat the health sequelae that result from donating the kidney.[4, 19, 42-44] For the reasons above, all centers should consider providing both long term care and support groups available to donors.

In the US, the Centers of Medicare and Medicaid Services (CMS) have implemented conditions of participation that require a broadening of the follow-up and informed consent practices. As of March 2007, all US transplant centers must follow donors for 2 years after donor nephrectomy. This initial step should provide for a clarification on the immediate outcomes following donor nephrectomy; however, longer-term assessment of outcomes following donation can only be obtained through the creation of a mandatory donor registry, which would track all outcomes of living kidney donors over the long term.

The informed consent process mandated by CMS and currently developed by the OPTN/UNOS (Organ Procurement and Transplantation Network/United Network for Organ Sharing), outlines specific elements that transplant centers must fulfill during the

informed consent process. This should limit the variability in informed consent processes that were evident in this survey for US transplant centers. However, follow up surveys of practices must be conducted to ensure this occurs.

Study Strengths and Limitations

There were several limitations to our study. First, the survey was only available in English to attendees of the World Transplant Congress, thus non-English speaking conference attendees could not participate. As a result of this, it is not evident how generalizable the results of the survey are. However, sampling of professionals at over 177 transplant centers internationally helps to overcome limitations in generalizability raised by this concern. It would have been helpful to compare non-responders to responders using demographic data; however detailed demographic data of all the Conference attendees were not available. Second, it was not possible to determine a true response rate for the survey. Given the broad range of WTC attendees including professionals working in non-kidney transplantation, non-clinician scientists, individuals working primarily with kidney recipients or with deceased donor kidneys, it was impossible to estimate the number of attendees who worked primarily with living kidney donors. Third, although the survey was pilot-tested with experts in transplant and informed consent issues, it had not been previously validated. Fourth, survey responses represent self-reported practices, which may not accurately reflect actual informed consent practices due to social desirability biases and it was not possible to accurately test how knowledgeable each respondent was about the general practices of their center. However, knowing that most of the participants spent a significant amount of their time

working with living donors helps in ensuring some substantial working relationship with the overall kidney donation program. Fifth, the closed-ended questions of the survey limit the respondents from providing information about the subtleties of informed consent practices conducted at their respective centers. Additionally, while nephrologists and transplant surgeons were overrepresented in the sample population, transplant coordinators, social workers, and psychologists were underrepresented in the sample. This disproportionate representation is a concern because the living kidney donor informed consent process is an iterative team-based process involving all of these disciplines. Sixth, we did not survey about the risk and duration of prolonged post-operative pain and incapacity. Finally, an individual's responses may not represent the true policy of the transplant center, and as with all surveys, the framing of the questions may lead to inherent biases.

RECOMMENDATIONS:

In summary, the variation in donor informed consent found in this study may be occurring as a function of not having definitive information about what risks donors face or due to the increasing pressures of increasing organ availability conflicting with the ethical obligations of providing complete donor information. Most likely, the variations in practices are a result of a combination of these two. Our study reinforces and further develops previous articles that have also indicated significant geographic variation in informed consent practices.[45, 46]

We recommend establishing international practice guidelines for informed consent of living kidney donors. According to our survey results, there is significant interest in a

uniform informed consent template, and the next step may be to assess what such a template would actually look like. The benefits of universal guidelines for informed consent for living donors are numerous, such as reducing healthcare costs and improving efficiency of clinical practice by avoiding unnecessarily lengthy informed consent discussions, and ensuring that prospective donors are provided with sufficient information necessary for adequate decision making, which would reduce the occurrence of poor decision-making and subsequent low patient satisfaction. Additionally, in legal cases involving informed consent, courts would have a uniform process to turn to for evidence of best practices as opposed to relying on the testimony of individual physician experts. Some disadvantages of having a uniform consent template may include imposing cultural values and beliefs and foreign concepts onto other cultural groups that do not share such values and beliefs or concepts. Or conversely, a universal template developed in the US may not address concerns salient in other cultures.[47, 48] Moreover, informed consent practices are generally shaped by the local health care organizational context in which they occur, which may therefore hinder standardization.

Overall, however, the development of evidence-based guidelines will help to ensure that adequate informed consent for living donation is guaranteed for all potential living donors at transplant centers nationally and internationally. Future research should ascertain how much time is needed for adequate donor decision making, from whom donors are most likely to retain risk information, what methods of risk conveyance are most effective for donor comprehension, and whether variations exist along other parameters such as size of program or UNOS region.

REFERENCES

1. Kim SJ, Gordon EJ, Powe NR. The economics and ethics of kidney transplantation: Perspectives in 2006. *Curr Opin Nephrol Hypertens*. 2006;15:593-598.

2. Sommerer C, Morath C, Andrassy J, Zeier M. The long-term consequences of living-related or unrelated kidney donation. *Nephrol Dial Transplant*. 2004;19 Suppl 4:iv45-7.

3. Davis CL, Delmonico FL. Living-donor kidney transplantation: A review of the current practices for the live donor. *J Am Soc Nephrol*. 2005;16:2098-2110.

4. Zimmerman D, Albert S, Llewellyn-Thomas H, Hawker GA. The influence of socio-demographic factors, treatment perceptions and attitudes to living donation on willingness to consider living kidney donor among kidney transplant candidates. *Nephrol Dial Transplant*. 2006;21:2569-2576.

5. Herwing-Ulf Meier-Kirsche BK. Advantages of living donor kidney transplantation in the current era. In: Robert Gaston JW, ed. *Living Donor Kidney Transplantation: Current Practices, Emerging Trends and Evolving Challenges*. London: Taylor and Francis; 2005:19.

6. Yang RC, Thiessen-Philbrook H, Klarenbach S, Vlaicu S, Garg AX, Donor Nephrectomy Outcomes Research (DONOR) Network. Insurability of living organ donors: A systematic review. *Am J Transplant*. 2007;7:1542-1551.

7. Clarke KS, Klarenbach S, Vlaicu S, Yang RC, Garg AX, Donor Nephrectomy Outcomes Research (DONOR) Network. The direct and indirect economic costs incurred by living kidney donors-a systematic review. *Nephrol Dial Transplant*. 2006;21:1952-1960.

8. Johnson EM, Najarian JS, Matas AJ. Living kidney donation: Donor risks and quality of life. *Clin Transpl*. 1997:231-240.

9. Johnson EM, Anderson JK, Jacobs C, et al. Long-term follow-up of living kidney donors: Quality of life after donation. *Transplantation*. 1999;67:717-721.

10. Najarian JS, Chavers BM, McHugh LE, Matas AJ. 20 years or more of follow-up of living kidney donors. *Lancet*. 1992;340:807-810.

11. Ramcharan T, Matas AJ. Long-term (20-37 years) follow-up of living kidney donors. *Am J Transplant*. 2002;2:959-964.

12. Boudville N, Prasad GV, Knoll G, et al. Meta-analysis: Risk for hypertension in living kidney donors. *Ann Intern Med*. 2006;145:185-196.

13. Garg AX, Muirhead N, Knoll G, et al. Proteinuria and reduced kidney function in living kidney donors: A systematic review, meta-analysis, and meta-regression. *Kidney Int*. 2006;70:1801-1810.

14. Clemens KK, Thiessen-Philbrook H, Parikh CR, et al. Psychosocial health of living kidney donors: A systematic review. *Am J Transplant*. 2006;6:2965-2977.

15. Matas AJ, Bartlett ST, Leichtman AB, Delmonico FL. Morbidity and mortality after living kidney donation, 1999-2001: Survey of united states transplant centers. *Am J Transplant*. 2003;3:830-834.

16. Weitz J, Koch M, Mehrabi A, et al. Living-donor kidney transplantation: Risks of the donor--benefits of the recipient. *Clin Transplant*. 2006;20 Suppl 17:13-16.

17. David Orentlicher, Mary Anne Bobinski, Mark Hall. 4. organ transplantation: The control, use and allocation of body parts. In: *Bioethics and Public Health Law*. Second ed. New York, NY: Aspen Publishers; 2008.

18. Schostak M, Wloch H, Muller M, et al. Living donor nephrectomy in an open technique; a long-term analysis of donor outcome. *Transplant Proc*. 2003;35:2096-2098.

19. Schover LR, Streem SB, Boparai N, Duriak K, Novick AC. The psychosocial impact of donating a kidney: Long-term follow-up from a urology based center. *J Urol*. 1997;157:1596-1601.

20. Ingela Fehrman-Ekholm. The pyschosocial impact of donor nephrectomy. In: Robert Gaston JW, ed. *Living Donor Kidney Transplantation: Current Practices, Emerging Trends and Evolving Challenges*. London: Taylor and Francis; 2005:113.

21. Abecassis M, Adams M, Adams P, et al. Consensus statement on the live organ donor. *JAMA*. 2000;284:2919-2926.

22. Ethics Committee of the Transplantation Society. The consensus statement of the amsterdam forum on the care of the live kidney donor. *Transplantation*. 2004;78:491-492.

23. Eggeling C. The psychosocial implications of live-related kidney donation. *EDTNA ERCA J*. 1999;25:19-22.

24. Adams PL, Cohen DJ, Danovitch GM, et al. The nondirected live-kidney donor: Ethical considerations and practice guidelines: A national conference report. *Transplantation*. 2002;74:582-589.

25. Rodrigue JR, Pavlakis M, Danovitch GM, et al. Evaluating living kidney donors: Relationship types, psychosocial criteria, and consent processes at US transplant programs. *Am J Transplant*. 2007;7:2326-2332.

26. Mandelbrot DA, Pavlakis M, Danovitch GM, et al. The medical evaluation of living kidney donors: A survey of US transplant centers. *Am J Transplant*. 2007;7:2333-2343.

27. Narkun-Burgess DM, Nolan CR, Norman JE, Page WF, Miller PL, Meyer TW. Forty-five year follow-up after uninephrectomy. *Kidney Int*. 1993;43:1110-1115.

28. Fehrman-Ekholm I, Elinder CG, Stenbeck M, Tyden G, Groth CG. Kidney donors live longer. *Transplantation*. 1997;64:976-978.

29. Jacobs C, Johnson E, Anderson K, Gillingham K, Matas A. Kidney transplants from living donors: How donation affects family dynamics. *Adv Ren Replace Ther*. 1998;5:89-97.

30. Westlie L, Fauchald P, Talseth T, Jakobsen A, Flatmark A. Quality of life in norwegian kidney donors. *Nephrol Dial Transplant*. 1993;8:1146-1150.

31. Ohler L. Organ transplantation and the media: The good, the bad, and the ugly. *J Transpl Coord*. 1997;7:52-53.

32. Dew MA, Jacobs CL, Jowsey SG, et al. Guidelines for the psychosocial evaluation of living unrelated kidney donors in the united states. *Am J Transplant*. 2007;7:1047-1054.

33. Fisher MS S. Psychosocial evaluation interview protocol for living related and living unrelated kidney donors. *Soc Work Health Care*. 2003;38:39-61.

34. Jendrisak MD, Hong B, Shenoy S, et al. Altruistic living donors: Evaluation for nondirected kidney or liver donation. *Am J Transplant*. 2006;6:115-120.

35. Burley JA, Stiller CR. Emotionally related donors and renal transplantation. *Transplant Proc*. 1985;17:123-127.

36. Kluge EH. Designated organ donation: Private choice in social context. *Hastings Cent Rep*. 1989;19:10-16.

37. Truog RD. The ethics of organ donation by living donors. *N Engl J Med.* 2005;353:444-446.

38. Waterman AD, Covelli T, Caisley L, et al. Potential living kidney donors' health education use and comfort with donation. *Prog Transplant*. 2004;14:233-240.

39. Becker G, Beyene Y, Newsom EM, Rodgers DV. Knowledge and care of chronic illness in three ethnic minority groups. *Fam Med*. 1998;30:173-178.

40. Galanti G. *Caring for Patients from Different Cultures: Case Studies from American Hospitals*. 2nd ed. Philadelphia: University of Pennsylvania Press; 1997.

41. Minkler M. Personal responsibility for health? A review of the arguments and the evidence at century's end. *Health Educ Behav*. 1999;26:121-140.

42. Cabrer C, Oppenhaimer F, Manyalich M, et al. The living kidney donation process: The donor perspective. *Transplant Proc*. 2003;35:1631-1632.

43. Gordon EJ. "They don't have to suffer for me": Why dialysis patients refuse offers of living donor kidneys. *Med Anthropol Q*. 2001;15:245-267.

44. Waterman AD, Stanley SL, Covelli T, Hazel E, Hong BA, Brennan DC. Living donation decision making: Recipients' concerns and educational needs. *Prog Transplant*. 2006;16:17-23.

45. Housawi AA, Young A, Boudville N, et al. Transplant professionals vary in the long-term medical risks they communicate to potential living kidney donors: An international survey. *Nephrol Dial Transplant*. 2007.

46. Lennerling A, Nyberg G. Written information for potential living kidney donors. *Transpl Int*. 2004;17:449-452.

47. Marshall P. A. "The relevance of culture for informed consent in U.S. funded international health research." In: NBAC, ed. *Ethical and Policy Issues in International Research: Clinical Trials in Developing Countries, Volume II: Commissioned Papers*

and Staff Analysis.. Vol II. Bethesda, MD: National Bioethics Advisory Commission; 2001:C1.

48. Christakis NA. Ethics are local: Engaging cross-cultural variation in the ethics for clinical research. *Soc Sci Med*. 1992;35:1079-1091.