Understanding Patient Barriers to Kidney Transplantation

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Tabriz- November 2019

Introduction(1)

ESRD is increasing globally. Currently, there are over two million ESRD patients in the world and this number is estimated to rise by 8% annually. It is because of the rising elderly population and increased risk of developing diseases such as diabetes mellitus and hypertension.

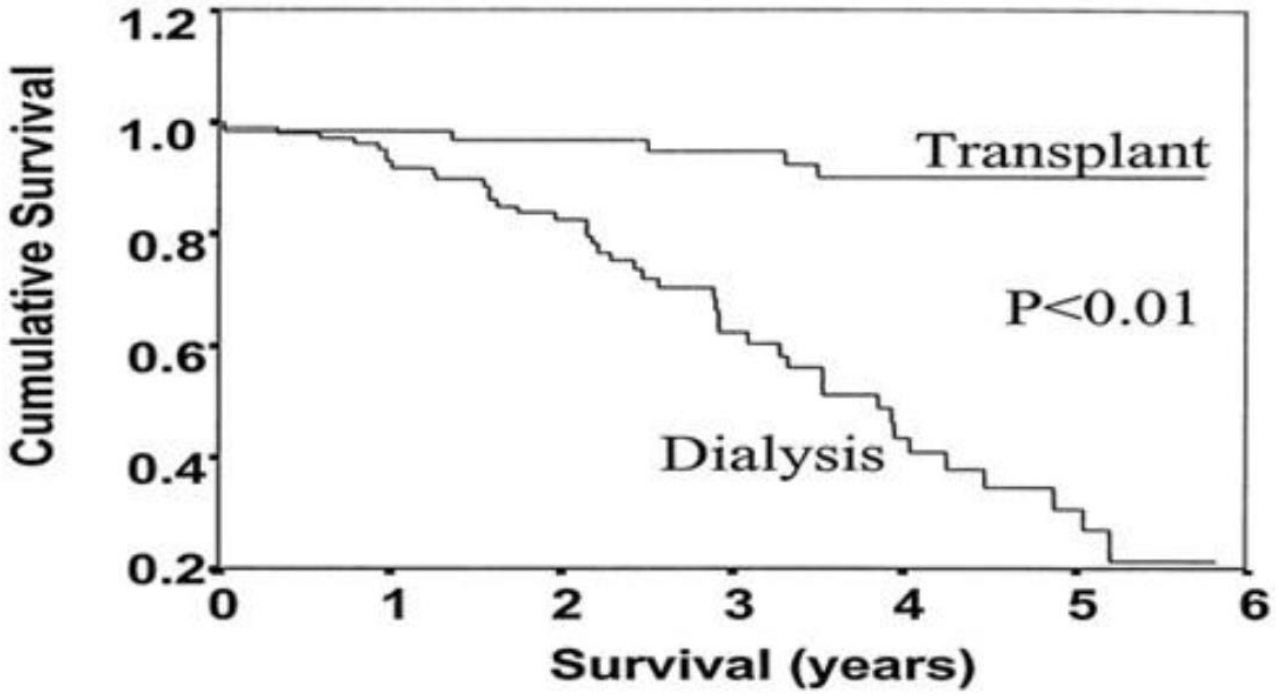
Introduction(2)

Renal transplantation is the treatment of choice for ESRD patients, however less than 30% of dialysis patients are on waiting list of Tx worldwide.

A*lthough, the story in Iran is different but there is potential to increase kidney transplantation program*.

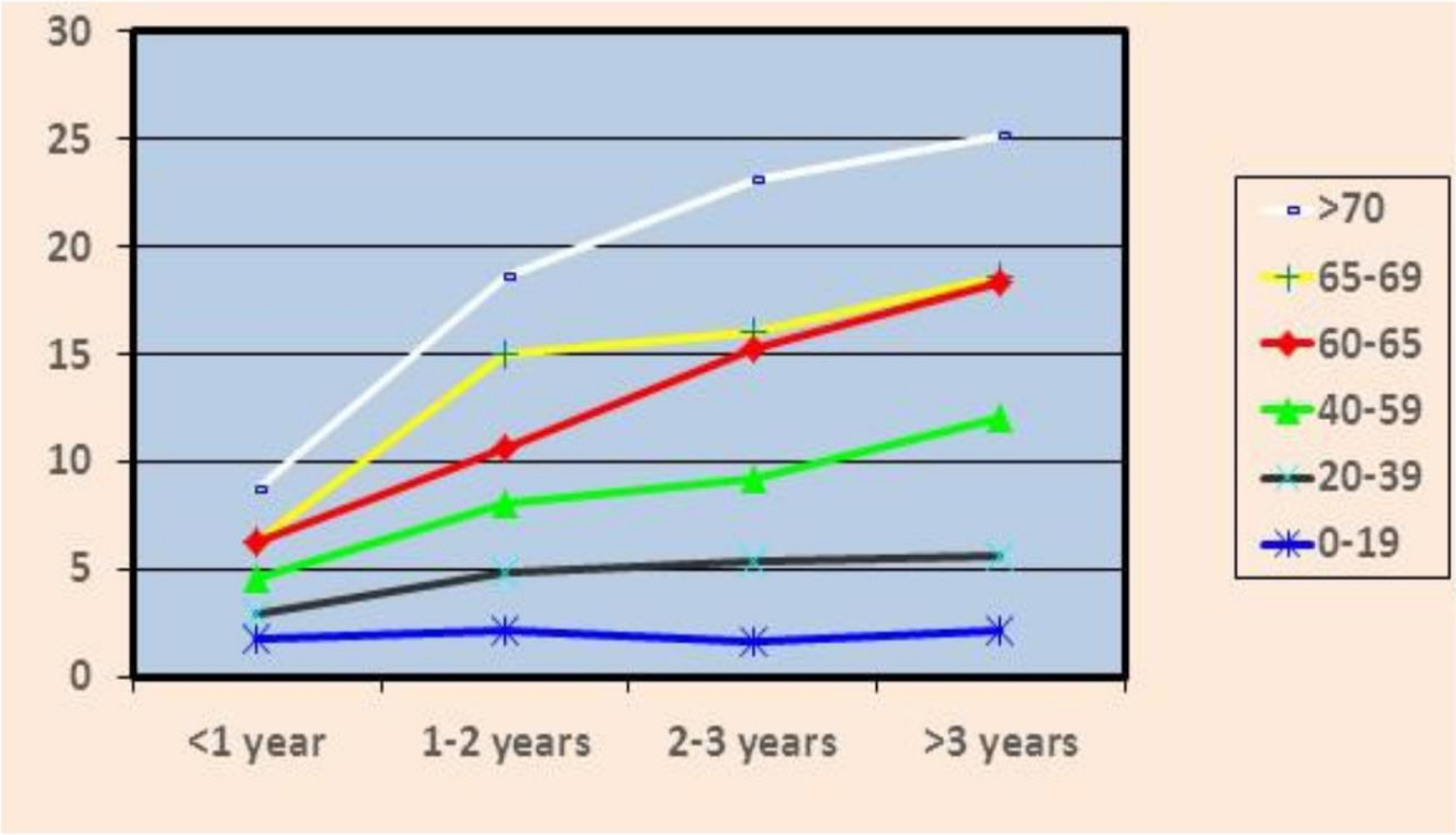
There are **multiple barriers** for kidney transplantation in **different levels** including lack of education, nephrologist perceptions and recipient factors(sensitization, age, active infections, severe cardiovascular & pulmonary diseases ,noncompliance...)

Survival



Kaplan-Meier survival estimate for kidney transplant recipients versus pts on waiting list on HD

Survival



Mortality rate on the waiting list (per 100 patient years)

Mortality on waiting list

CKD patients have significantly higher mortality than the general population & than patients with a functioning renal allograft & this effect is accentuated in people over 65.

Actually, almost 50% of patients > 60 die while on the waiting list.

In a study on American population, the following **risk factors** were associated with higher mortality on dialysis:

Age
Smoking
DM
Cardiovascular disease
Cerebrovascular disease
Peripheral vascular disease
Psychiatric disorders
Hx of malignancy

Comorbidity can progress over time in dialysis patients.

Nefrologia 2015;35(1)

http://www.revistanefrologia.com

short reviews

Mortality on a renal transplantation waiting list

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Nefrologia 2015;35(1):xx

doi:10.3265/Nefrologia.pre2014.Oct.12681

Table 2. Charlson comorbidity index score

Score[a]	Comorbidity
1	Myocardial infarction Congestive heart failure Peripheral vascular disease Cerebrovascular disease Dementia Chronic respiratory disease Connective tissue disease Peptic ulcer Mild liver disease Diabetes mellitus without involvement of target organs
2	Hemiplegia Moderate-severe kidney disease Diabetes mellitus with involvement of target organs Any tumour without metastasis Leukaemia (acute or chronic) Lymphoma
3	Moderate or severe liver disease
6	Solid tumour with metastasis AIDS

[a] For each decade above 40 years, one more point is added.
(Adapted from Charlson, ME et al.[46]).

CCI predicts mortality risk of ESRD patients & when there is higher comorbidity, the score increases & the risk of mortality increases.

Table 1. Different comorbidity rates for predicting mortality in kidney patients

Reference/year	Study/number of patients	Population	Variables	Assessment/risk stratification
Hutchinson[44] 1982	Multi-centre N = 220	Start of dialysis	Age, duration of diabetes, ventricular failure	Low (<30), medium (30-70), high (>70)
Wright[55] 1991	Single centre N = 138	HD	Age and comorbidity	Low-medium-high
Khan[47] 1993	Single centre N = 375	HD	Age, diabetes and comorbidity	Low-medium-high
Davies[49] 1995	Single centre N = 97	PD	Age, comorbidity, albumin	Low-medium-high
Barrett[48] 1997	Multi-centre N = 822	Start of dialysis	Age, comorbidity	Low (0-4), medium (5-9), high (>9)
Fried[56] 2001	Single centre N = 268	PD	Age, comorbidity, albumin	HR, increase in the CCI
Beddhu[58] 2002	Single centre N = 97	PD	Age, comorbidity	HR, increase in the CCI
Miskulin[51] 2003	Multi-centre N = 1039	Start of dialysis	ICED	Low (ICED 0-1), medium (ICED 2), high (ICED 3)
Van Manen[50] 2002	Multi-centre N = 1205	Start of dialysis	Comorbidity	Low-medium-high
Hemmelgarn[57] 2003	Monocéntrico N = 237	HD y DP	Comorbidity (CCI)	HR, CCI score
Cohen[52] 2010	Multi-centre N = 449	HD	Age, comorbidity, albumin, doctor's impression	Risk quintiles
van Walraven[54] 2010	USRDS N = 169 393	HD, PD and Tx	Age, comorbidity, race, BMI, year of inclusion	Increased risk score
Wagner[53] 2011	Multi-centre N = 5447	HD and DP	Age, race, comorbidity and biochemical parameters	Increases in the HR

HD: haemodialysis; PD: peritoneal dialysis; CCI: Charlson comorbidity index; Tx: renal transplantation; HR: Hazard ratio.

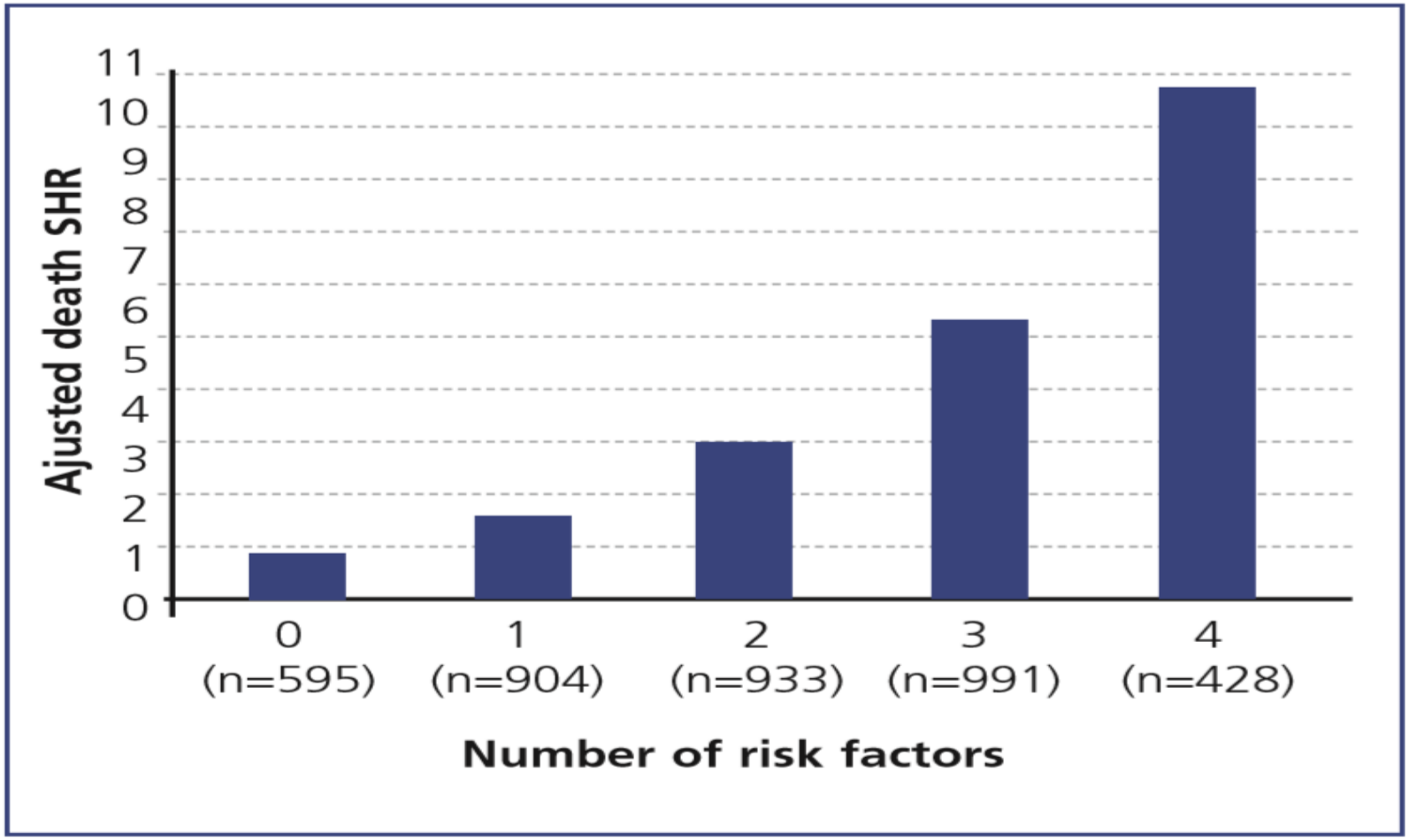

Figure 3. Risk of death in patients with one (95% confidence interval 1.6-2.1), two (95% confidence interval 2.5-4.1), three (95% confidence interval 4.1-8.3) or four (95% confidence interval 6.6-17) risk factors according to the compound risk model made using a competitive risk regression model.

KEY CONCEPTS

1. Patients on the Tx WL have a high mortality rate, particularly mortality of cardiovascular origin, compared with those who receive a renal graft.
2. There are classic risk factors inherent to the uraemic process that increase mortality in patients who are candidates for a Tx.
3. Demographic, geographic, social and financial factors may be barriers that limit access to Tx, increasing the time on the WL and enabling the onset of comorbid conditions.
4. CI are very useful for predicting mortality in dialysis patients, but they generally do not include factors related to the uraemic process.
5. Estimation of comorbidity using the CCI and other factors inherent in uraemia upon starting dialysis is a useful tool for predicting mortality on the WL and prioritising patients who are at risk for a Tx from a deceased donor of a similar age.

Nefrologia 2015;35(1)

Factors Considered by Nephrologists in Excluding Patients from Kidney Transplant Referral

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Int J Org Transplant Med 2019; Vol. 10 (3)

Table 4: Multivariate analysis of factors considered "important" or "very important" by nephrologists for not referring patients for transplant *vs* practice-related and patient-related characteristics

Characteristics	Factors (OR, 95% CI)
≤2 Transplant centers within 50 miles	"Inadequate social support" (3.15, 1.59–6.24) "Age > 65" (1.88, 1.01–3.49)
Majority of patients have not completed high school	"Education limits understanding" (3.31, 1.60–6.86)

PLOS ONE

RESEARCH ARTICLE

A qualitative examination of barriers and solutions to renal transplantation in Malaysia: Key-informants' perspective

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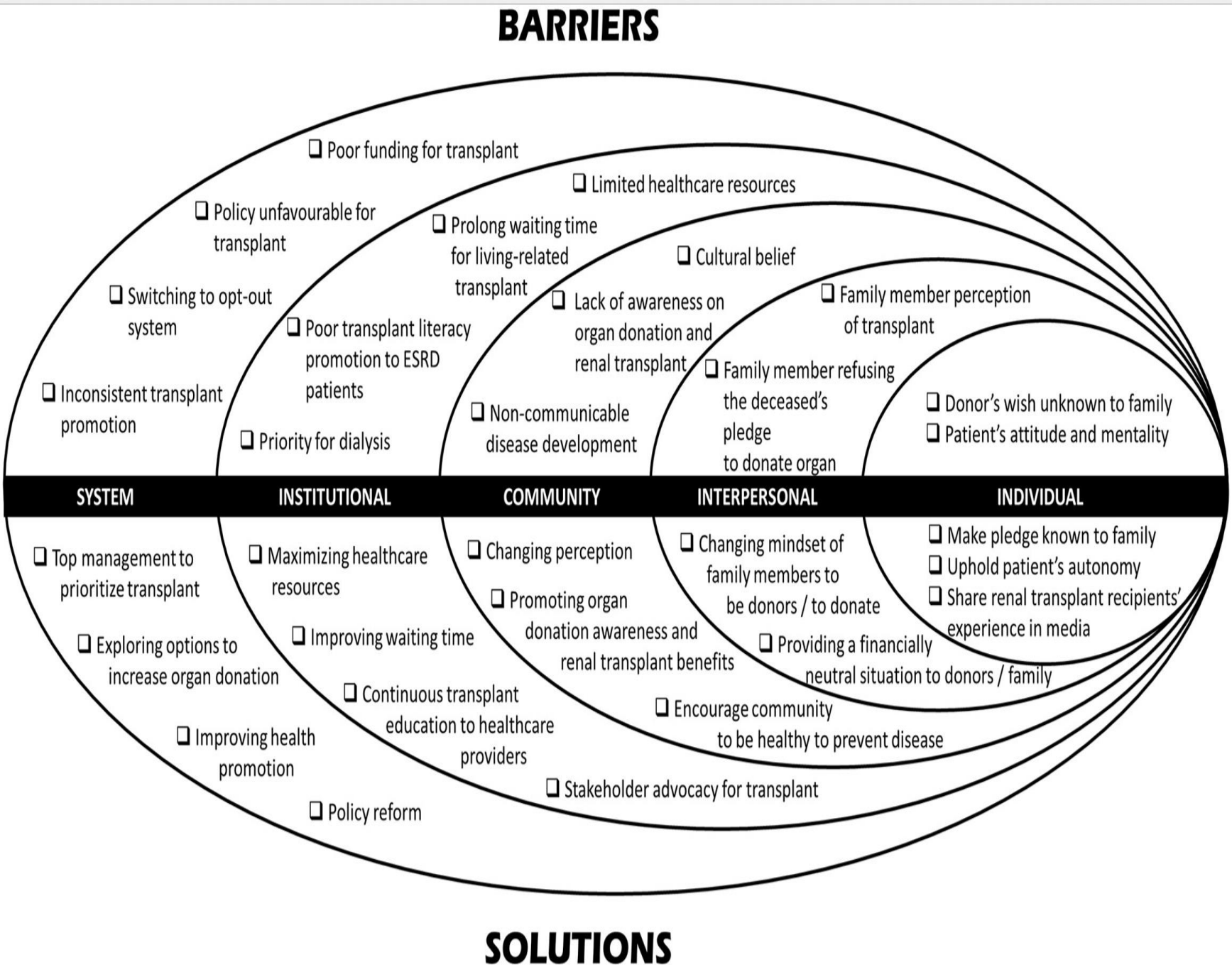
BARRIERS
❑ Poor funding for transplant
❑ Limited healthcare resources
❑ Policy unfavourable for transplant
❑ Prolong waiting time for living-related transplant
❑ Cultural belief
❑ Switching to opt-out system
❑ Lack of awareness on organ donation and renal transplant
❑ Family member perception of transplant
❑ Poor transplant literacy promotion to ESRD patients
❑ Family member refusing the deceased's pledge to donate organ
❑ Inconsistent transplant promotion
❑ Non-communicable disease development
❑ Donor's wish unknown to family
❑ Patient's attitude and mentality
❑ Priority for dialysis
SYSTEM
INSTITUTIONAL
COMMUNITY
INTERPERSONAL
INDIVIDUAL
❑ Top management to prioritize transplant
❑ Maximizing healthcare resources
❑ Changing perception
❑ Changing mindset of family members to be donors / to donate
❑ Make pledge known to family
❑ Uphold patient's autonomy
❑ Share renal transplant recipients' experience in media
❑ Promoting organ donation awareness and renal transplant benefits
❑ Exploring options to increase organ donation
❑ Improving waiting time
❑ Providing a financially neutral situation to donors / family
❑ Continuous transplant education to healthcare providers
❑ Encourage community to be healthy to prevent disease
❑ Improving health promotion
❑ Stakeholder advocacy for transplant
❑ Policy reform
SOLUTIONS

It is guided by the **socio-ecological model** to identify a range of independent and interacting factors that influence RT in Malaysia.

The results of this study offer qualitative evidence of the interplay of individual factors, the interpersonal environment, community, the organizational environment and system/policy in practice for Malaysia's RT process. This highlights the homogeneity of barriers to renal transplantation across diverse healthcare professionals and speaks to a shared understanding of the solutions to overcome them.

Browne et al. BMC Nephrology (2016) 17:108
DOI 10.1186/s12882-016-0326-3

BMC Nephrology

RESEARCH ARTICLE Open Access

Everybody needs a cheerleader to get a kidney transplant: a qualitative study of the patient barriers and facilitators to kidney transplantation in the Southeastern United States

Teri Browne[1*], Ahinee Amamoo[2], Rachel E. Patzer[3], Jenna Krisher[2], Henry Well[4], Jennifer Gander[3] and Stephen O. Pastan[3]

Abstract

Background: Kidney transplantation (KTx) disparity is a significant problem in the United States, particularly in the Southeastern region. In response to this phenomenon, the Southeastern Kidney Transplant Coalition was created in 2011 to increase the KTx rate, and to reduce disparities in access to transplantation in the Southeast, by identifying and reducing barriers in the transplant process.

Methods: To determine perceived barriers and facilitators to KTx that dialysis patients in this region experience, we conducted three focus groups with 40 total patients in Georgia, North Carolina, and South Carolina.

Results: We identified two novel themes specific to Southeastern dialysis patients that describe the major barriers and facilitators to kidney transplantation: dialysis center approaches to patient education about KTx, and dialysis center advocacy and encouragement for KTx. In addition, themes related to barriers and facilitators of KTx were evident that were previously mentioned in the literature such as age, fear, knowing other patients with good or bad experiences with KTx, distrust of the KTx process equity, financial concerns and medical barriers.

Conclusions: Dialysis providers are encouraged to enhance their delivery of information and active assistance to underserved patients related to KTx.

Everybody needs a cheerleader

Dialysis center encouragement and assistance

- ✓ Evidence suggests that not all dialysis patients receive information about kidney transplantation.
- ✓ Less than 50% of dialysis patients receive comprehensive counseling about kidney Tx.
- ✓ Implementation of training course

How can we make a difference and increase the number of transplants?

1. Decreasing the need for a transplant through health promotion and disease prevention
2. Increasing the supply of kidneys
3. Transplant education in dialysis centers
4. Decreasing the kidney discard rate
5. Increasing living donation by altruism
6. Increasing kidney paired donation (KPD)
7. Improving recipient factors & to defeat immunological barriers

Our Study
(unpublished)

A cross sectional study was done on about 240 dialysis patients to evaluate the role of patients characteristics and related factors in the informed decision for selecting the type of RRT.

Results-1

- It was shown that **85%** of ESRD patients did not have any role in the selection of RRT & it was just physician choice.

- In about **7.3%**, the patients selected their treatment by themselves & in about **7.3%** it was based on physician consultation with patient.

Results-2

- **G**enerally 70% of the patients reported that they did not receive **information** about RRT modalities before referring to dialysis center.

- **O**nly 5% of the patients were **satisfied with education** about RRT.

Results-3

- About 50% of dialysis patients referred for transplantation work up and finally 25% of the patients registered in the transplantation waiting list.

- Younger age, male gender, marital status, employment, high school education, ability to perform daily activities were associated with transplant referral.

- History of CVD, inadequate family support, non compliance and positive PRA were among the important factors to **exclude** patients from transplant list

Conclusion

- **E**ducation about RRT on right time when they are in pre ESRD period parallel with preventive measures

- **T**aking care of ESRD patients needs a multidisciplinary team (nephrologist, nurse, dietician, social worker, psychiatrist, transplant coordinator,..)

Thank you