

Culturally responsive interventions to enhance immunosuppressive medication adherence in older African American kidney transplant recipients

Context—Immunosuppressive medication nonadherence is variable among older kidney transplant recipients and is a problem in African American recipients despite the severe consequences of this behavior. Many factors place older African American recipients at risk for medication nonadherence.

Objective—To provide an overview of interventions to enhance immunosuppressive medication adherence in older African American kidney transplant recipients using a culturally responsive model. Culturally sensitive, innovative, and transformation interventions are discussed. Situations when each intervention would be most and least appropriate are described.

Conclusion—Moving culturally appropriate interventions forward into practice and testing their effectiveness in improving adherence outcomes in vulnerable, older African American kidney transplant recipients is a worthy practice and research goal for transplant nursing. (*Progress in Transplantation*. 2006;16:187-196)

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Notice to CE enrollees:

A closed-book, multiple-choice examination following this article tests your ability to accomplish the following objectives:

1. Discuss issues related to medication nonadherence in kidney transplant recipients
2. Identify factors affecting medication nonadherence in older African American kidney transplant recipients
3. Describe strategies for promoting medication adherence in older African American kidney transplant recipients

Immunosuppressive medication nonadherence is a major problem among older kidney transplant recipients, in particular African American recipients, despite the severe consequences. This article provides an overview of interventions to enhance immunosuppressive medication adherence in older African American kidney transplant recipients. A culturally appropriate interventions model, developed by Tripp-Reimer and colleagues,¹ was selected because it is one of the few models that can guide healthcare providers in developing specific interventions targeted for a cultural group.

In addition, concepts of the model have been successfully used to guide interventions to alter diet, exercise, and weight in diverse cultural groups.²⁻⁹ I describe culturally appropriate interventions, including a discussion of when each would be the most and least appropriate, and suggest directions for future research to empirically test this approach as well as interventions.

Transplant rates have increased in older African Americans because kidney transplantation is the optimal treatment for end-stage kidney disease, enhancing quality of life, prolonging patients' lifespan, and reducing cost of care (Table 1).¹⁰⁻¹⁴ In 1999, 38% of the 2878 kidney transplantations performed in African Americans in the United States were with patients aged 50 years or older¹⁵; in 2004, this number increased to 45%.¹⁵

Taking immunosuppressive medications according to prescription is critical to survival of the transplanted kidney.¹⁶ Adherence, as defined by the World Health Organization, is "the extent to which a person's behavior (eg, taking medications, following a recommended diet, and/or executing lifestyle changes) corresponds with the agreed recommendations of a healthcare provider."^{17(p13)} Medication nonadherence

Table 1 Kidney transplantation in older African Americans by year and age¹⁵

Year	All ages		50-64 years		65 and older	
	No.	%	No.	%	No.	%
2004	3668	100	1335	36	334	9
2003	3517	100	1311	37	283	8
2002	3358	100	1187	35	249	7
2001	3281	100	1145	35	225	7
2000	3049	100	1022	34	200	7
1999	2878	100	934	32	165	6

may include not having the prescription filled, taking too much or not enough medication, failing to follow dosing intervals, not taking the medication for the duration of treatment, and taking medications that were not prescribed.¹⁸ Medication nonadherence, a prevalent problem in individuals with chronic illnesses, averages 20% to 30% when measured by electronic monitoring.¹⁹ Reported rates of medication nonadherence are similar, with adult kidney transplant recipients averaging about 25%.²⁰⁻²² Nonadherence in African American kidney transplant recipients has also been documented to be higher than in non-African Americans,²²⁻²⁸ with nonadherence rates as high as 35%.²³

Although the general medication adherence literature indicates that old age is not a risk factor for poor medication adherence, older kidney transplant recipients encounter many factors that are related to treatment nonadherence in the older adult general population, including multiple chronic illnesses; complex, long-term, and expensive medication regimens causing distressing side effects; social isolation; and changes in vision, memory, and manual dexterity.²⁹⁻³¹ Only 1 study³² has been published examining medication adherence in older kidney transplant recipients. Problems were found with taking immunosuppressive medications including difficulty in taking medications because of pill size, taste, and swallowing problems.

Older African Americans may encounter additional barriers to medication adherence such as low socioeconomic status. Low income is a direct and indirect barrier to accessing preventive and illness-related healthcare.¹ In a recent meta-analysis of demographic factors predicting poor medication adherence, low income was found to have a moderate negative effect.³³ Older African Americans may be unable to pay for the additional insurance to cover the gap between Medicare and actual healthcare costs, and they may be unable to afford the associated costs of care such as transportation to the transplant center for clinic appointments. Consequently, low socioeconomic status has been associated with nonadherence in African Americans.²⁷

Efforts to focus interventions have included systematic evaluation of medication adherence predictors in adult kidney transplant recipients.^{20,22,34,35} The most frequently measured factors in these studies were social support, depression, health locus of control, self-efficacy, and symptom distress. Unfortunately, these factors have had inconsistent predictive capacity. Additional studies have begun to explore correlates of poor medication adherence in African American kidney transplant recipients.²⁷ Weng and colleagues²⁷ examined medication adherence in 278 transplant recipients and found that African American race was associated with decreased adherence (odds ratio [OR], 0.43; 95% CI, 0.26 to 0.72; $P = .001$). However, after researchers adjusted for dosing frequency and transplant center, the association was diminished (OR, 0.65; 95% CI, 0.38 to 1.14; $P = .13$).²⁷

Nonadherence with immunosuppressive transplant medications can have severe consequences: it can lead to rejection, graft loss, return to dialysis, and, in extreme cases, death for kidney transplant recipients.^{20,36-39} In addition, poor outcomes following kidney transplantation are more common in African Americans.⁴⁰ Some evidence exists to support the contribution of poor adherence to these undesirable outcomes. Gaston and colleagues²⁴ found that those with chronic rejection and medication nonadherence were more likely to be African American than non-African American (77% vs 46%, $P = .003$).

Intervention studies to enhance medication adherence in the general population have improved medication adherence incrementally. Roter and colleagues⁴¹ performed a meta-analysis of 153 studies of interventions to improve adherence. Depending on which intervention measure was used to evaluate medication adherence, the weighted mean effect sizes (r) were prescription refills 0.73 (16), blood/urine 0.24 (33), and pill counts 0.14 (35).⁴¹ The intervention studies that included affective, educational, and behavioral strategies were most effective.⁴¹ In a systematic review of randomized controlled trials, Haynes et al^{42(p6)} noted that 26 of 67 interventions from 57 studies indicated statistically significant increases in medication adherence for "long-term treatments." Eighteen interventions were associated with statistically significant improvement in outcomes. Effective interventions included multifaceted approaches. Another meta-analysis of 23 randomized controlled trials including a broad range of age groups was conducted by Peterson et al.⁴³ The authors described a small effect on increasing medication adherence from interventions ($Z_r = 0.09$; 95% CI = 0.05-0.13).⁴³

Russell and colleagues⁴⁴ recently completed a systematic review of intervention studies in which 57 randomized controlled trials of medication adherence interventions were summarized. Significantly greater

medication compliance in treatment subjects versus control subjects was found in 31 of the studies. Of the multiple study interventions, self-medication approaches and decreasing medication dosing frequency were most successful. The contribution of ethnicity to the complex problem of medication adherence, particularly in older adults, has not been well studied.⁴⁴

Cultural makeup influences an individual's illness response and resulting self-care treatment. Culture is defined as "a learned set of values, beliefs, norms, and patterns of behavior."^{1(p14)} When individuals seek treatment in the Western healthcare system, they experience a system of care based on the biomedical model. With its scientific foundations in molecular biology, disease from the biomedical model is the "deviation from the norm of measurable biological (somatic) variables."^{45(p130)} Engel^{45(p130)} noted that

the historical fact we have to face is that in modern Western society biomedicine not only has provided a basis for the scientific study of disease, it has also become our own culturally specific perspective about disease, that is, our folk model.

Social, behavioral, and psychological issues related to illness are not integral to the biomedical model. Barriers to care have been imposed for those of different cultures because of this model's approach.¹ The biomedical model has shaped the belief systems of healthcare providers about medication adherence; specifically, Tripp-Reimer and colleagues^{1(p14,15)} note that healthcare providers may perceive that "adherence failure is the patient's problem" and that healthcare providers should "elicit information about patients' logic of noncompliance and involve patients in problem solving to devise strategies to address patients' issues." Given that only incremental improvements have been made on medication adherence from intervention studies, healthcare providers and researchers must consider other possible influences such as culture on this critical health behavior.

Culturally Appropriate Interventions Model

Culturally appropriate interventions used by healthcare providers may be viewed along a continuum.¹ These interventions include culturally neutral, culturally sensitive, culturally innovative, and culturally transformative. Tripp-Reimer and colleagues¹ note that culturally neutral interventions involve standard practice. An example of this type of intervention, which does not differ across cultural groups, is using advanced cardiac life support for someone who has had a myocardial infarction.

Interventions that are culturally sensitive are the second type. Tripp-Reimer and colleagues^{1(p18)} describe this intervention as involving "standard approaches to

be culturally congruent by using bilingual/bicultural materials, incorporating ethnic preferences (eg, food patterns), and addressing issues of access (cost, hours, geographical proximity)."

The third type, culturally innovative interventions, is actively integrated into the cultural domains of beliefs, norms, or cultural themes.¹ The existing symbols of the culture are used to support interventions.¹

The fourth type, culturally transformative interventions, involves social activism. These interventions incorporate system level changes that include a power shift to community partnership and ownership.¹

Culturally Appropriate Interventions

The first step in designing culturally appropriate immunosuppressive medication adherence interventions in older African Americans must involve assessment of the patient's interpretation of the meaning of the illness, using representational models such as the explanatory models of illness⁴⁶ or the common sense model.⁴⁷ These models posit that illness beliefs guide an individual's health behaviors.

An ethnographic study⁴⁸ of 41 older African American and white women with diabetes and their physicians examined the relationship between causal explanations of diabetes and dietary adherence. Etiology of the disease was more strongly associated with adherence than were sociodemographic factors. In addition, those patients who cited disease etiologies that were inconsistent with the biomedical model had better diet adherence than those who attributed the cause of their diabetes to biomedical reasons. In another ethnographic study⁴⁹ of 60 African American women with hypertension, patients' illness representations were significantly related to adherence with antihypertension medications. Consequently, exploring the older African American kidney transplant patient's context of illness may impart significant insight to the healthcare provider into immunosuppressive medication taking behavior. Table 2 delineates the culturally appropriate model and suggested interventions.

Cultural Assessment

Cultural assessment is the first step in designing culturally appropriate interventions. Implementation of the cultural assessment process is appropriate for all specialized populations and minorities. The healthcare provider's assessment should include asking specific questions in a nonthreatening way to determine the meaning of medications in the life of the person, eliciting who is involved in the process of obtaining the medications (eg, reordering, setting up), and determining the dose and frequency of medications.¹ Individual learning styles should be assessed to determine whether culturally unique styles should be incorporated into interventions (eg, oral tradition, group activities,

Table 2 Culturally appropriate intervention model¹

Culturally appropriate interventions continuum	Interventionist	Interventions
Culturally neutral	Healthcare provider	Standard practice
Culturally sensitive	Healthcare provider	Assessing personal meaning of the illness Adapting education materials Involving healthcare providers of similar age and ethnicity Assessing use of folk remedies Intervening to enhance access (cost, transportation, and proximity of care)
Culturally innovative	Healthcare provider	Involving family and church members in care Developing collaborative projects between governmental organizations and minority and church organizations
Culturally transformative	Cultural group members	Collaborating with transplant recipient organizations and state governments to create and disseminate culturally appropriate information Involving members on boards of transplant organizations Providing formative feedback in the development and implementation of policy issues Implementing crucial problem-solving interventions related to transplantation at the local level

community leaders).¹ To understand the patient's explanatory model, Kleinman and colleagues^{50(p256)} suggest the following questions:

(1) What do you think has caused your problem? (2) Why do you think it started when it did? (3) What do you think your sickness does to you? (4) How severe is your sickness? Will it have a short or long course? (5) What kind of treatment do you think you should receive?

Kleinman et al^{50(p256)} also suggest questions to evaluate the patient's treatment goals and the illness meaning including "(6) What are the most important results you hope to receive from this treatment? (7) What are the chief problems your sickness has caused for you? (8) What do you fear most about your sickness?" The patient should be involved with developing interventions to elicit the desired behavior. If the patient is nonadherent, information should be obtained from the patient about the "logic" behind the behavior.¹

Culturally Sensitive Interventions

Culturally sensitive interventions for older African American kidney transplant recipients must begin with education and training of those who provide care to this vulnerable group. Coursework in undergraduate and graduate programs of healthcare providers must include appreciation and understanding of important issues related to care of minority and older individuals. For example, the John A. Hartford-Atlantic Foundation is addressing the shortage of nursing leaders in geriatric nursing and research through its "Building Academic Geriatric Nursing Capacity" program.⁵¹

Collaboration on multidisciplinary projects using a problem-based learning approach is essential. Providing an opportunity for students to listen to the story of an older African American kidney transplant recipient can affect appreciation and empathy for these issues. African American culture values the tradition of storytelling.⁵² Education and training approaches must include how to use interpreters, conduct cultural assessments, use culturally appropriate levels of interventions, use culturally appropriate educational approaches, and design culturally appropriate community projects.¹

Patient-focused adherence interventions involve educational and/or behavioral approaches. Educational interventions can be delivered in a written or verbal format by healthcare providers and can occur individually or in groups. Such interventions may be supported by telephone, audiovisual equipment, or computer.¹⁸ Before and after kidney transplantation, education materials are readily available both in the scholarly literature and on transplant Web sites.⁵³

Most transplant centers have formal patient education processes that frequently involve group teaching. However, these approaches should be adapted for older African American patients. Stefanich and colleagues⁵⁴ suggest that existing educational programs should be assessed and altered to enhance cultural sensitivity. The transplant educational materials and teaching formats should be expanded to include evidence-based teaching strategies for successful medication-taking outcomes in older African American transplant recipients. These patients must be involved to offer input and guidance to create culturally tailored educational programs. Stefanich and colleagues provide guidance for culturally sensitive intervention

development. Gathering information from the target population through surveys and focus groups as the materials are adapted is critical. Photographs and stories of older African American transplant patients and their families should be incorporated into the teaching materials, and the language should include common dialect understood by the target group.

Behavioral interventions include self-monitoring, using cues (eg, alarms, pillboxes), associating new behaviors with existing ones, and using positive reinforcement and patient contracting.¹⁸ For example, in a 12-month comparative study⁵⁵ of 109 white, African American, and Hispanic women evaluating interventions (eg, pillbox, electronic monitoring) to improve medication adherence, investigators found that electronic monitoring or pillbox use significantly improved medication compliance at 9 and 12 months in African American women from baseline. In addition, Stefanich and colleagues⁵⁴ used culturally sensitive incentives to help reinforce behavior change in a group of Alaskan Native women. Although this study was completed with a different cultural group, the methods provide guidance for developing interventions with African Americans.

Stevenson⁵⁶ notes that healthcare providers must consider specific issues when conducting interventions with older individuals, including underdosing of the intervention (eg, too long or too short), overcoming negative attitudes toward the intervention, increasing time to conduct cognitive interventions, adding motivation to the protocol, and matching the protocol to the older individual (eg, not too strong or too weak). Stevenson notes that successful intervention must be introduced thoughtfully, instructions may need to be repeated several times, equipment should be simple, and the environment should be carefully considered when working with older individuals.⁵⁶

Ethnic congruence between healthcare providers and patients could improve medication adherence. Brangman⁵⁷ notes that even though there is little empirical evidence on how age, ethnicity, or gender differences influence the patient-provider relationship, these most certainly have great potential to affect trust and mutual respect, which in turn could influence medication nonadherence. Therefore, open communication and integration of a multidisciplinary team enhance communication and focus on the patient when designing culturally sensitive interventions.⁵⁴ Involving the entire transplant team including physicians, advanced practice nurses, nurses, social workers, financial advisers, clinical pharmacists, and clergy will increase the success of interventions to enhance medication adherence. Involving ethnically similar healthcare providers should be the goal when possible.

Ethnic self-care preferences also must be considered when educating older African Americans about

medication adherence. Home and folk remedies frequently used by African Americans include

teas, herbs, warm medicated compresses for chest colds; cotton balls in nostrils to protect against cold winds; [and] advice/prescription from folk healers who are stable, respected, and powerful resources. Magic or voodoo is also used in rural areas.^{58(p42)}

The use of folk remedies by older African Americans must be assessed for their potential to interact with immunosuppressive medications. When interactions between folk remedies and immunosuppressive medication increase side effects, patients may decrease the dose or stop taking the immunosuppressive medication.⁵⁹ Use of folk remedies has been documented to be low in older African Americans with diabetes, but has not been evaluated in kidney transplant recipients.⁶⁰

Access to care including cost of expensive immunosuppressive medications must be addressed when planning interventions. Eighty percent of the cost of immunosuppressive medications for kidney transplant recipients age 65 years or older are covered by Medicare for the life of the kidney. However, with the high cost of immunosuppressive medications, many patients must seek additional coverage. Older patients, particularly African Americans, may have limited financial reserves because of many years of discrimination and low wages. Involving a knowledgeable and experienced transplant social worker, preferably an older African American social worker, could increase adherence by establishing trust and enhancing communication. Compassionate care programs offered by the drug industry can assist with medication coverage. State-sponsored programs, such as the Missouri Kidney Program, also can assist with the purchase of immunosuppressive medications.⁶¹

Obtaining and maintaining timely and reliable transportation to the transplant center is a critical intervention to enhance access to care. Two essential appointments in the management of older African American kidney transplant recipients are those for transplant team assessment and laboratory/immunosuppressive medication blood draws. Because these recipients may have lower socioeconomic status and limited resources for transportation, involving the transplant social worker in securing desirable transportation is vital to immunosuppressive adherence. Early identification of undesirable immunosuppressive serum levels or side effects can lead to appropriate adjustments without jeopardizing adherence behaviors. Undesirable immunosuppressive side effects have been shown to lead to nonadherence.⁵⁹ Side effects of immunosuppressive therapy have been documented to be a concern of older kidney transplant recipients.³²

Enhancing geographical proximity of the older African American kidney transplant population to expert transplantation assessment and treatment is a worthy intervention goal. Because immunosuppressive therapy management requires frequent transplant team assessment and blood draws, transplantation telehealth may be an option to enhance access. Telehealth, also called telemedicine, telecare, online health, and e-health, is defined as “the use of information and communication technologies to deliver healthcare services at a distance.”^{62(p286)} The main benefits of telehealth for other populations have been increased access to health services, cost-effectiveness, enhanced educational opportunities, improved health outcomes, better quality of care, better quality of life, and enhanced social support.⁶³ Telehealth outreach clinics managed by advanced practice nurse are currently being evaluated in rural areas.

Culturally sensitive interventions to enhance immunosuppressive medication adherence in older African American kidney transplant recipients include assessing personal meaning of the illness, adapting education materials, involving healthcare providers of similar age and ethnicity, assessing use of folk remedies, and intervening to enhance access (cost, transportation, and proximity). Except for the telehealth intervention, culturally sensitive interventions are appropriate at all times when the healthcare provider is interacting with the older African American kidney transplant recipient.

At the individual level, the healthcare provider can assess the meaning of the situation and use this information to build the therapeutic alliance needed to bridge the collaborative efforts that must be in place for successful outcomes, including immunosuppressive medication adherence. Healthcare providers must treat this population in an understandable oral and/or written manner and with respect and appreciation of the unique culture. Activities related to food and folk remedies should be considered when discussing medication behavior. All efforts to provide access to medications and transportation must be provided to this population.

Culturally Innovative Interventions

Culturally innovative interventions to enhance immunosuppressive medication adherence in African American kidney transplant recipients must tap into the social marketing network that currently exists in this ethnic group. Family is often part of an important network.⁵⁸ The standard of care for pretransplant evaluation is thorough assessment of family support. Consequently, the older African American kidney transplant recipient’s support system must be in place and functional before he or she undergoes transplantation. One intervention strategy to enhance medication adher-

ence involves engaging 1 or more family members in offering support and encouragement. Social support has been explored as a predictor of medication-taking behavior in kidney transplant recipients.³² Family members’ involvement could include attending transplant team clinic appointments where medication type, dosage, and frequency changes are made by the transplant team on the basis of goals for optimum serum drug levels. Family members also could take the lead in setting up the older recipient’s medications, using behavioral strategies such as placing the filled pillbox on the kitchen table where meals are eaten or next to the toothbrush so that established behaviors are associated with medication taking.

African Americans use the church and its members for social support.⁵⁸ Consequently, church members could be incorporated into culturally innovative interventions. For example, support persons from the patient’s church could be engaged to assist with medication setup, documentation of medication taking on pertinent self-care records, and making phone call reminders for medication taking. Church members could also be recruited to accompany the patient to transplant team clinic appointments. A church support group could be organized.

Because the numbers of kidney transplant recipients may be fairly small within a single parish, the nurse or advanced practice nurse could lead a group of older African Americans with chronic illnesses such as hypertension, diabetes, heart disease, and kidney transplantation to discuss health issues, including medications.⁶⁴ Empirically tested methods for improving medication adherence might be discussed, including behavioral interventions (ie, self-monitoring, cueing, associating new behaviors with old ones, positive reinforcement, and contracting—a written agreement between patient and provider on goals).¹⁸ Decreasing dosing frequency and hospital-based self-medication programs has been shown to improve medication adherence in older chronically ill persons.⁴⁴ The success of these interventions in other populations compels the healthcare provider to use them with older kidney transplant recipients.

A culturally innovative intervention called the National Minority Organ/Tissue Transplant Education Program is currently being conducted.⁶⁵ This is a collaborative effort between the National Institutes of Health’s Office of Research on Minority Health and the National Institute of Diabetes and Digestive and Kidney Diseases. It is the first national program specifically designed to empower minority communities to become involved in education activities. Although the goal of this initiative is to increase the number of minority organ donors and transplant recipients and to reduce the incidence of conditions such as diabetes and hypertension that can lead to organ failure, this same model can be

used to address other minority transplant issues, such as immunosuppressive medication adherence. The initiative is currently in place in 15 sites across the country, with a target audience of African American, Hispanic/Latino, Native American, Asian, Pacific Islander, and Alaskan Native populations.

Another example of a culturally innovative intervention is a national effort by the US Department of Health and Human Services to collaborate with the Congress of National Black Churches to educate its members about organ, tissue, and bone marrow donation.⁶⁵ A national Sabbath awareness day is incorporated to highlight this issue. Again, the program can be used as a model to address other issues that African American transplant recipients experience.

Culturally innovative interventions to enhance immunosuppressive medication adherence in older African American kidney transplant recipients include involving family and church members in care and developing collaborative projects between governmental organizations and minority and church organizations. Culturally innovative interventions involving social support by family and church friends can be implemented when these support people are involved in the life of the recipient. If these support groups are not available because of atheism or family member death, the healthcare provider must explore other options for support, such as a local volunteer service or a dialysis center organization.

Culturally Transformative Interventions

Culturally transformative interventions involve change at the highest level of the system. At this most difficult level of change the community takes ownership of the change.¹ The outcome is a social system change involving a power shift from healthcare providers to the previously oppressed group.¹ These interventions involve strategies that first identify hidden power relations and then partner with communities to alter aspects of the basic social structure.¹

Most culturally transformative interventions among African American transplant recipients have focused on efforts to increase organ donation. However, these efforts can be used as a model for older African American transplant recipients to address other post-transplant issues. The culturally transformative activities, much like the culturally innovative interventions, continue to occur through transplant organizations in which empowered African Americans members are involved as community partners and take ownership of the issues.

Most of the transplant recipient organizations have active lobby initiatives. Consequently, subgroups have developed within existing transplant organizations to focus specifically on African American transplantation issues. For example, the Transplant Recipients

International Organization, an independent, not-for-profit organization committed to improving the quality of life of transplant candidates, recipients, their families, and the families of organ and tissue donors, provides a discussion board on which minority issues can be addressed.⁶⁶ Another example of a culturally transformative intervention by which the community is taking ownership of the intervention is the involvement of African Americans, particularly older African Americans, on the board of directors of transplant organizations; these positions may be as lay, healthcare provider, or policy members.

Another example of a culturally transformative intervention is an online resource developed by members of the African American community in Illinois called "African American Community Guidebook."⁶⁷ This resource includes photos, personal stories, and experiences of African American transplant recipients. In addition, information regarding the waiting list, organ donation procedures, and associated costs is presented in a question-and-answer format.

Policy change related to payment for transplant medications is also culturally transformative. When the proposed regulations of the Medicare Modernization Act were published in August 2004, the Centers for Medicare and Medicaid conducted a series of activities to obtain opinion from individuals and organizations. Because low-income individuals will be affected by the act, transplant organizations, which have minority representation, provided public comment before its implementation. The Act was signed into law by President Bush in December 2003. Since then, transplant providers and recipients have continued to examine how this law will affect transplant recipients obtaining immunosuppressive medications.⁶⁸ Involvement by older African Americans in the formulation of and public comment on this law is considered a culturally transformative intervention. The power is being shifted to the previously oppressed group.

The final example of a culturally transformative intervention could occur at the local level. Older African Americans could, through their local American Association of Retired Persons and/or their church, collaborate with their local pharmacies to have all medications, including costly immunosuppressive medications, included in a refill reminder call system. Access could be enhanced by having the pharmacies routinely telephone or mail individuals to remind them that their medication refills are due.

Culturally transformative interventions to enhance immunosuppressive medication adherence in older African American kidney transplant recipients include older individuals collaborating with transplant recipient organizations and state governments to create and disseminate culturally appropriate information, becoming members of the boards of transplant organizations,

providing formative feedback in the development and implementation of policy issues, and working at the local level to implement crucial problem solving interventions. Many of the barriers that leave the older African American kidney transplant recipient at risk for medication adherence problems are also barriers to involvement in culturally transformative interventions. For example, the boards of healthcare organizations are typically composed of professional and business leaders. Older African American kidney transplant recipients may be excluded because of low socioeconomic status. Consequently, if older patients are not active in local, government, or minority organizations, then those who are involved must seek out the older individuals for their input. The transplant professional must be the liaison between this population and those groups that can benefit from their involvement.

Future Research

Broad opportunities exist for development of medication adherence research studies with diverse age and cultural groups using varied methodological approaches. Ethnographic studies, in which the culture of the group is considered, must be undertaken. The unique contribution of demographics (eg, age and gender) and predictors of medication adherence must be explored. The proposed culturally appropriate interventions tailored to African American kidney transplant patients' cognitive representations of illness must be evaluated to improve transplant-related outcomes. All components of the intervention from cultural assessment approaches to evidence-based teaching strategies tailored for older African American kidney transplant patients should be systematically assessed using randomized controlled designs. Particular attention should be given to intervention intensity and duration. Multidisciplinary research teams involving researchers of diverse cultural backgrounds should be the norm. Because the culturally appropriate interventions model incorporates preferences, symbols, and systems that are unique to the cultural group, this model may be used to design culturally appropriate interventions across other cultural groups targeting diverse health behavior change.

Conclusion

This article has described the growing problem of immunosuppressive medication nonadherence in kidney transplant recipients, specifically focusing on the vulnerable older African American recipient. Using a model developed by Tripp-Reimer and colleagues, culturally responsive interventions were described including when each would be the most and least appropriate. Moving these interventions forward into practice and testing their effectiveness for improving adherence in older African American kidney transplant recipients is a worthy practice and a research goal for nursing.

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CE Test Test ID 4000-J45: Culturally Responsive Interventions to Enhance Immunosuppressive Medication Adherence in Older African American Kidney Transplant Recipients

Learning objectives: 1. Discuss issues related to medication nonadherence in kidney transplant recipients 2. Identify factors affecting medication nonadherence in older African American kidney transplant recipients 3. Describe strategies for promoting medication adherence in older African American kidney transplant recipients

1. African Americans aged 50 years and older account for what percentage of kidney transplantations in the United States?

- a. 45%
- b. 35%
- c. 25%
- d. 15%

2. African Americans aged 65 years and older account for what percentage of kidney transplantations in the United States?

- a. 2%
- b. 4%
- c. 6%
- d. 9%

3. What is the reported rate of medication nonadherence in adult kidney transplant recipients?

- a. 10%
- b. 15%
- c. 20%
- d. 25%

4. Which one of the following factors has *not* been found to cause difficulty in taking immunosuppressive medications?

- a. Pill size
- b. Taste
- c. Number of pills
- d. Swallowing problems

5. Which one of the following factors is a direct and indirect barrier to accessing preventive and illness-related healthcare?

- a. Age
- b. Race
- c. Sex
- d. Low income

6. Which measurement strategy has *not* been used to evaluate medication adherence in intervention studies?

- a. Prescription refills
- b. Verbal reports
- c. Blood/urine drug levels
- d. Pill counts

7. Which of the following culturally appropriate interventions incorporates assessing personal meaning of the illness?

- a. Culturally neutral
- b. Culturally sensitive
- c. Culturally innovative
- d. Culturally transformative

8. Which of the following culturally appropriate interventions corresponds to standard practice?

- a. Culturally neutral
- b. Culturally sensitive
- c. Culturally innovative
- d. Culturally transformative

9. Which of the following culturally appropriate interventions incorporates involving family and church members in care?

- a. Culturally neutral
- b. Culturally sensitive
- c. Culturally innovative
- d. Culturally transformative

10. Which of the following culturally appropriate interventions incorporates involving members on boards of transplant organizations?

- a. Culturally neutral
- b. Culturally sensitive
- c. Culturally innovative
- d. Culturally transformative

11. What percentage of the cost of immunosuppressive medications for kidney transplant recipients aged 65 years and older is covered by Medicare for the life of the kidney?

- a. 50%
- b. 60%
- c. 70%
- d. 80%

12. A telephone medication refill reminder initiative is an example of what type of intervention to enhance immunosuppression medication adherence?

- a. Culturally neutral
- b. Culturally sensitive
- c. Culturally innovative
- d. Culturally transformative

Test answers: Mark only one box for your answer to each question. You may photocopy this form.

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