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Development and Cultural Adaptation Of the Spanish Version of the End Stage Renal Disease Adherence Questionnaire (SESRD-AQ)

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Abstract

We previously developed and validated the End-Stage Renal Disease Adherence Questionnaire (ESRD-AQ) to measure adherence behaviors (e.g., hemodialysis attendance, medication use, fluid restrictions, and diet) of patients on maintenance hemodialysis. To determine whether the ESRD-AQ can be used to measure adherence behaviors in non- English-speaking patients, we translated and adapted the ESRD-AQ into Spanish (SESRD-AQ) using forward and backward translation and cultural adaptation of the content. Validity and reliability were measured using item-level content validity indexes, intraclass correlation coefficients, and known-group analysis. All validity indices were within an acceptable range; strong test-retest stability existed across all items, with intraclass correlation coefficients ranging from 0.82 to 1.00. The developed SESRD-AQ is a valid assessment tool for use among Spanish-speaking patients on maintenance hemodialysis. This instrument refinement and validation process can be replicated with other maintenance hemodialysis population groups.

Keywords

ESRD-AQ; Spanish version of ESRD-AQ; reliability; validity

Patients on maintenance hemodialysis (HD) are expected to perform self-care behaviors (e.g., HD attendance, medication use, fluid restrictions, and diet) to reduce the widespread

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negative effects of poor adherence, such as increased co-morbidities, hospitalizations, health care costs, and mortality (Bame, Peterson, & Wry, 1993; Chiu et al., 2009; Denhaerynck et al., 2007; Kammerer, Garry, Hartigan, Carter, & Erlich, 2007; Kim & Evangelista, 2010; Kim, Evangelista, Phillips, Pavlish, & Kopple, 2010; Kugler, Vlaminc, Haverich, & Maes, 2005; Leggat et al., 1998; Morgan, 2000; Saran et al., 2003; Szczech et al., 2003; United States Renal Data System [USRDS], 2012). Ample research exists to better understand nonadherence behaviors of patients on maintenance HD (Denhaerynck et al., 2007; Kammerer et al., 2007; Kim & Evangelista, 2010). Most of these studies used self-report instruments or biological and biochemical markers to assess treatment adherence among patients on maintenance HD. However, research in this area has been limited by the lack of either well-validated self-report tools or universally accepted cutoff values for the biological and biochemical markers, leading to the wide variations in reported adherence rates (Denhaerynck et al., 2007; Kim et al., 2010).

To address this need, we developed and validated the End Stage Renal Disease Adherence Questionnaire (ESRD-AQ), a self-report instrument to assess treatment adherence behavior of patients on maintenance HD in the United States (Kim et al., 2010). However, our preliminary work did not address whether the ESRD-AQ could be used to measure adherence in different subgroups of patients with various racial groups, language, and/or culture.

Hispanic/Latino Americans are Americans with origins from the countries of Latin America; while the two terms are sometimes used interchangeably, “Hispanic” refers specifically to persons of Spanish-speaking origin or ancestry. Hispanics comprise the largest ethnic minority in the U.S., and the number of Hispanic Americans in the U.S. is expected to increase to as high as 31% by 2060 (U.S. Census Bureau, 2013); concurrently, the rates of Hispanic Americans suffering with chronic illness is anticipated to also rise. For example, research has shown that after adjusting for sociodemographic characteristics, Hispanic ethnicity was associated with an increased risk for end stage renal disease (ESRD) when compared with non-Hispanic white patients, which was attenuated after controlling for diabetes and insulin use. In 2012, about 14.4% of the total number of Americans living with ESRD were Hispanics; the number of Hispanics with ESRD on maintenance HD has also been increasing (USRDS, 2012). These increasing numbers support the need for culturally sensitive interventions that address the unique needs of Hispanics with ESRD on maintenance HD. Likewise, it is critical to have a tool that can measure adherence behaviors in this subgroup of patients suffering with ESRD (Kim et al., 2010). Thus, we translated and adapted the ESRD-AQ into Spanish as spoken in Latin American using forward and backward translation and cultural adaptation of the content. Translation was performed by the translators who were Hispanics; thus, Latin American Spanish was used for translation. In addition, we performed psychometric testing of the new instrument, which will be called the Spanish End-Stage Renal Disease Adherence Questionnaire (SESRD-AQ).

Methods

Translation of the ESRD-AQ Into Spanish

The original English version of the ESRD-AQ consists of 46 items divided into five sections to measure treatment adherence behaviors in four dimensions: HD attendance (14 items), medication use (9 items), fluid restrictions (10 items), and diet (8 items). The first section of the ESRDAQ asks about the patient's clinical history (5 items). Responses to the ESRD-AQ utilize a combination of Likert scales, multiple choice questions, and questions requiring binary responses (e.g., yes or no). A detailed description of instrument scoring is described elsewhere (Kim et al., 2010). Briefly, adherence-related item results were summed to obtain an overall adherence score; higher scores indicated better adherence behaviors.

The SESRD-AQ was generated by word-to-word translation of the English version of the ESRD-AQ. First, translation was conducted by a professional interpreter with expertise in health care and medical sciences. Second, the SESRD-AQ content was adapted to ensure cultural sensitivity and appropriateness (i.e., equivalence) through blind back-translation; each item was modified to account for the cultural-linguistic differences between English-speaking, Spanish-speaking, and Latin-American-Spanish-speaking individuals. An expert team consisting of two nephrologists, three hemodialysis nurses, and two renal dieticians who spoke both English and Spanish fluently and understood the Hispanic culture reviewed the tool. The final version of the SESRDAQ after forward-backward translation and cultural adaptation is shown in Table 1. The same scoring system was adapted as the original ESRDAQ (Kim et al., 2010).

Validating the Instrument: Use Of Content and Face Validities

The seven experts who spoke fluent English and Spanish were members of the interdisciplinary healthcare team with expertise in the care of patients on maintenance HD. To assess the content validity of the SESRD-AQ, each panelist was asked to review and evaluate each of the 46 items for content and conceptual relevance and adequacy of wording (Polit, Beck, & Owen, 2007). The experts scored each item using a 4-point Likert-type scale (1 = not relevant, 2 = somewhat relevant, 3 = quite relevant, and 4 = highly relevant). Five patients were also asked to evaluate the instrument's face validity; they were asked to identify items that were unclear or items that addressed adherence behaviors that were not sensitive to Hispanic Americans' culture or way of life.

Psychometric Testing Of the SESRD-AQ

The study protocol was reviewed and approved by the appropriate Institutional Review Boards prior to study initiation. Participants were recruited from eight dialysis centers in Los Angeles in January 2009 through the use of flyers describing the study. Patients who met the following inclusion criteria were eligible to participate in the study: 1) able to read, understand, speak, and write Spanish (i.e., Spanish is their native language); 2) diagnosis of ESRD and receiving maintenance HD for three months or longer; 3) HD sessions lasting three to four hours, three times per week; 4) 18 years of age or older; 5) independent with self-care activities (e.g., able to walk and eat without assistance); 6) lives in a home setting; and 7) able to give informed consent. Patients on peritoneal dialysis were excluded.

Statistical Analysis

All statistical analyses were performed using the SPSS (Version 15, SPSS Inc. Chicago, IL). Intraclass correlation coefficients (ICC) between frequencies of responses obtained from 10% of the sample were analyzed at two time points over a two-day period. The patients took part in the survey twice with a two day interval between the two test times. A two-day interval for test retest reliability may seem short, but we chose it because we wanted to avoid a possibility that participants' treatment adherence might be altered between tests when the interval was long. Further, two- to 14-day intervals have been accepted by previous researchers (Streiner & Norman, 2003). The content validity of the SESRD-AQ was evaluated using the content validity index (CVI) for each item (total 46 items) as described in our original study (Kim et al., 2010).

The construct validity of the instrument was assessed using a known-group analysis. The survey results from patients who were known to be adherent to the therapeutic regimen (hereafter referred to as "adherers") and patients who were known to not be adherent to the therapeutic regimen (hereafter referred to as "non-adherers"), and based on clinical parameters and adherence behaviors judged by healthcare workers, were compared. For a detailed description of the parameters, see Kim et al., 2010. Nonparametric *t*-tests (Mann-Whitney U) were employed to compare the two groups (known adherent group vs. known non-adherent group) (Creedy et al., 2003; Kim et al., 2010; Klem, Sybrandy, Wittens, & Bot, 2008).

Results

Study Participants

Fifty-two patients (mean age of 64.95 ± 11.88 and an average HD vintage of 41.65 ± 37.42 months) provided informed consent and completed the SESRD-AQ. The average completion time was 25 to 40 minutes. Fifty-five percent (55%) of the participants were from Mexico, and 25%, 20%, 6%, and 4% were from El Salvador, Guatemala, South America, and Cuba, respectively. The sociodemographic and clinical characteristics of the study participants, including adherence to hemodialysis attendance, medication use, fluid restrictions, and diet, are shown in Table 2. The primary causes of kidney failure included diabetes mellitus (40.4%), hypertension (26.9%), glomerulonephritis (7.7%), and others (e.g., congenital anomalies and polycystic kidney disease).

Validity of SESRD-AQ

The item-level content validities for the 46 items ranged between 0.97 and 0.99, which resulted in the average of I-CVI of 0.98 (see Table 3). The construct validity was established by comparing the mean scores from the items directly measuring adherence behaviors on four different areas of treatment adherence (the item numbers 14, 17, 18, 26, 31, and 46) between adherers and non-adherers. The results indicate that the SESRDAQ clearly distinguished adherers and non-adherers ($p = < 0.001 \sim 0.028$) (see Table 4). However, there were no differences in mean scores on the questions related to perceptions and understanding levels of patients on four adherence behaviors between adherers and non-adherers (see Table 5).

Reliability of SESRD-AQ

As shown in Table 6, strong test-retest stability existed across all items of the ESRD-AQ, with ICCs ranging from 0.82 to 1.00. Internal consistency reliability (Cronbach's alpha) was not assessed due to lack of homogeneous items in the questionnaire

Discussion

The ESRD-AQ was the first self-administered instrument to assess four important components of adherence behaviors of patients requiring maintenance HD (i.e., HD attendance, medication use, fluid restrictions, and diet). The original ESRD-AQ was translated and culturally adapted for Hispanics with ESRD on maintenance HD using a rigorous methodological process supported by researchers who have developed tools to measure adherence behaviors. The new instrument, the SESRD-AQ, was then tested in a representative sample of Hispanic Americans with ESRD on maintenance HD using the same approach described in our original study (Kim et al., 2010). Translation of a questionnaire is not easy because it should not only be linguistically equivalent, but also conceptually comparable to the original instrument. Thus, the translated instrument might end up threatening the validity and reliability of the measurement. There are several ways to deal with the problems of translation of the original measurement instruments. One of these is to perform forward and back-translation of the instrument, but this can lead to unnatural wording of questions because procedures pay more attention to the grammatical interpretations than context and implication (van der Vijver & Leung, 1997).

Another approach in translating the original instrument is a committee approach, which requires a group of translators, translation reviewers, and translation adjudicators (Harkness, 2003). Both of the proposed procedures might be costly in terms of time and efforts, but reasonable. We also adopted a similar approach to translate the ESRD-AQ because the forward and back-translation was conducted, and a group of experts were involved in the whole translation process. Further, each item was modified to account for the cultural-linguistic differences among English-speaking-, Spanish-speaking-, and Latin-American-Spanish-speaking individuals. For example, question number 2 in the ESRD-AQ, "*Have you ever had chronic peritoneal dialysis treatment?*" was translated into "*¿Ha tenido en alguna ocasión tratamiento de diálisis peritoneal crónica?*" "*Recibido*" ("have you ever had" in English) could be a literal translation, but "*tenido*" was chosen because it would be better suited to the Spanish context and accepted by more Spanish-speaking persons despite the slight regional difference. In addition, question number 4 in the ESRD-AQ, "*transportation*" in English was decided to translate into "*transporte*" instead of "*transportacion*" in Spanish because "*transporte*" is commonly recognized mostly in Latin America. After these processes, we thought the SESRD-AQ could also be used in any Spanish-speaking region, although the initial target application population for the SESRD-AQ was Hispanics. We acknowledge this will require further verification, but this was the reason we decided to call this new instrument the SESRD-AQ.

When we administered the translated version, the SESRD-AQ, for the survey, we found all validity indices of the SESRD-AQ were within an acceptable range; strong test-retest stability existed across all items. Of note, the reliability and validity of the SESRD-AQ were

quite similar to the original version (see Tables 3 to 6). This may suggest that the ESRD-AQ can be used regardless of language or culture as long as translation is accurate. Data reported by the Dialysis Outcomes and Practice Patterns Study (DOPPS) revealed significant differences in the patterns of non-adherence among patients in Europe, Japan, and the U.S. (Saran et al., 2003). For instance, the non-adherence rate to dialysis was highest in the U.S., but the non-adherence rate to fluid restriction was highest in Japan. Although the meaning of these findings is not clear, this implicates that undefined cultural or practice pattern contributors might have influenced treatment adherence (Saran et al., 2003). These suggest that a culturally modified instrument prepared using the study participants' own language might be absolutely needed to answer these kinds of questions.

Between 2000 and 2010, the Hispanic population grew by 43% in the U.S., which was four times the growth in the total population at 10% (Ennis, Rios-Vargas, & Albert, 2011). Given the rapid growth of the Hispanic population in the U.S., the SESRD-AQ could be a valuable instrument to address culturally sensitive issues in terms of treatment adherence of patients on maintenance HD, which might adversely influence healthcare outcomes in this population. Translating and adapting a questionnaire developed using one language for use in another might result in some changes in the wording, format, and mode of administration, but these processes may contribute to the development of a culturally relevant instrument. If the similar approach is taken, the ESRD-AQ could be used anywhere in the world.

Conclusions

Data from the current study support the use of the SESRD-AQ as a valid and reliable tool to measure adherence behaviors in a sample of Spanish-speaking patients with ESRD on maintenance HD. Additional testing and evaluation of the SESRD-AQ in a larger sample are needed to validate the tool. However, our study provides support that the instrument refinement and validation process can be replicated with other maintenance HD population groups.

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Cultural Adaptation

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Goal

To provide an overview of the instrument refinement and validation process of the Spanish version of the End Stage Renal Disease Adherence Questionnaire (SESRD-AQ).

Objectives

1. Describe the End Stage Renal Disease Adherence Questionnaire (ESRD-AQ).
2. Discuss ways the ESRD-AQ could be used to measure adherence in different subgroups of patients with various racial groups, languages, and/or cultures.

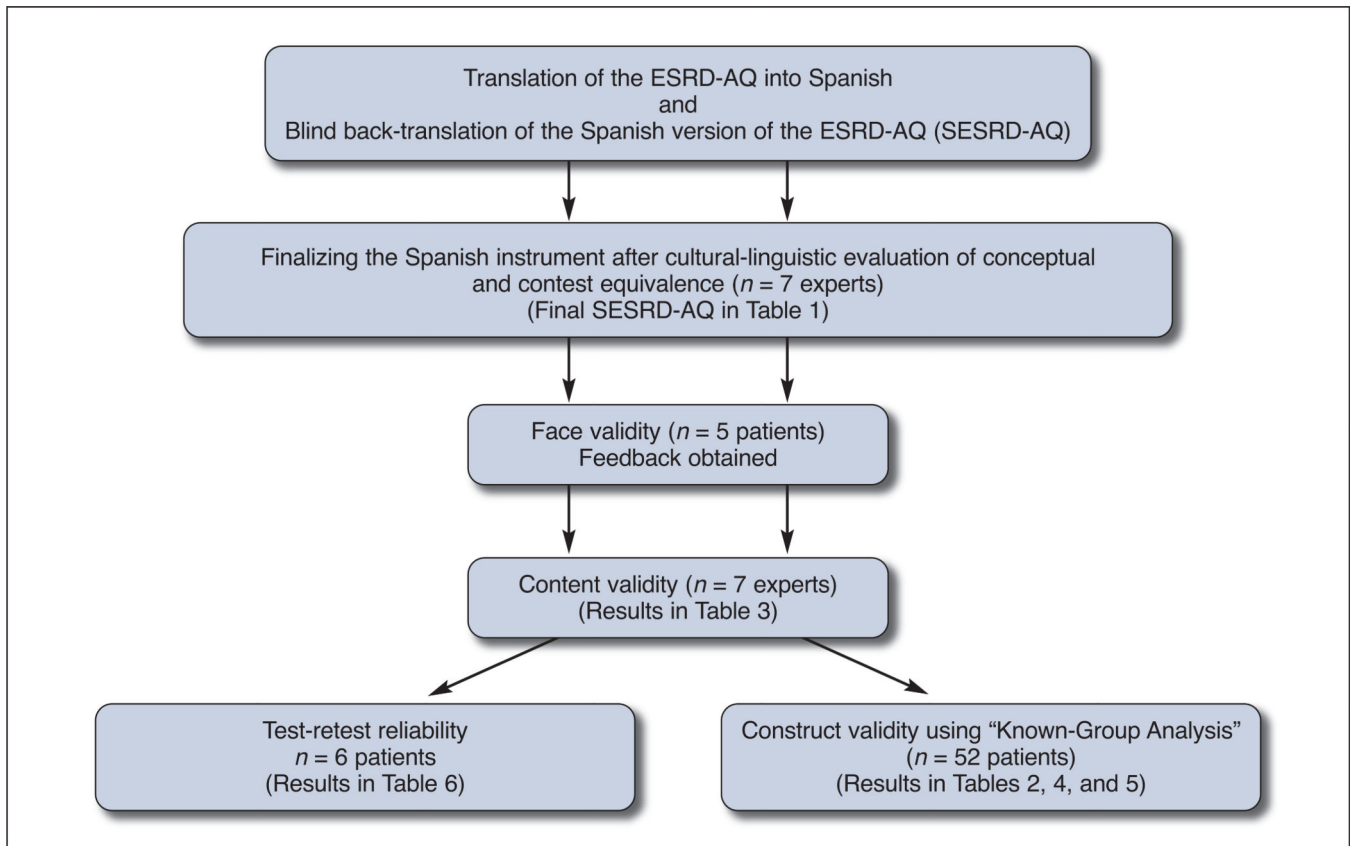


Figure 1.
Process for Developing and Validating the Spanish End-Stage Renal Disease – Adherence
Questionnaire (SESRD-AQ)

Table 1

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The Spanish Version of the ESRD-AQ (SESRD-AQ) Cuestionario de Adherencia para la Enfermedad Renal Crónica de Fase Final

Este cuestionario le pide su opinión acerca de cómo cumple con su cita de tratamiento de diálisis y acerca de las recomendaciones médicas relacionadas con medicamentos, dieta y consumo de líquidos. Esta información nos ayudará a entender si usted tiene dificultad en cumplir con su tratamiento de diálisis, régimen de medicamentos, restricción en el consumo de líquidos, y recomendaciones dietéticas. Por favor conteste cada pregunta marcando la casilla que corresponde. Si usted tiene duda acerca de cómo contestar, por favor elija la mejor respuesta que corresponda para usted.

Nota: Los números entre paréntesis son los códigos de respuesta.

I. Información General

1. ¿Cuándo comenzó o volvió a comenzar su tratamiento con hemodiálisis? Fecha de comienzo: ____/____/____
Mes/Año
(Si volvió a comenzar hemodiálisis fecha: ____/____/____)
Mes/Año
2. ¿Ha tenido en alguna ocasión tratamiento de diálisis peritoneal crónica? No⁽¹⁾
 Sí⁽²⁾ (Por favor conteste a continuación)
He tenido diálisis peritoneal del ____/____/____ al ____/____/____
Mes / Año Mes / Año
3. ¿Tuvo algún trasplante renal? No⁽¹⁾
 Sí⁽²⁾ (Por favor conteste a continuación)
Tuve una vez un trasplante renal del ____/____/____ al ____/____/____
Mes/Año Mes/Año
 O
 Tuve un trasplante renal dos veces del ____/____/____ al ____/____/____
Mes/Año Mes/Año
y del ____/____/____ al ____/____/____
Mes/Año Mes/Año
Si se sometió a más de dos trasplantes renales, por favor escriba las fechas de los dos últimos trasplantes en los espacios anteriores.
4. ¿Qué tipo de transporte usa para ir al centro de diálisis? Transporte personal⁽¹⁾
 Autobús⁽²⁾
 Taxi⁽³⁾
 Van de transporte médico⁽⁴⁾
 Otro⁽⁵⁾ (Especifique) _____
5. ¿Quién le/a acompaña al centro de diálisis? Voy solo/a⁽¹⁾
 Padre/Madre⁽²⁾
 Esposo/esposa⁽³⁾
 Hijo/a⁽⁴⁾
 Amigo/a⁽⁵⁾
 Otra persona⁽⁶⁾ (Especifique) _____

II. Tratamiento de Hemodiálisis

6. ¿Cuántos días a la semana recibe tratamiento de hemodiálisis? 2 días o menos⁽¹⁾
 3 días⁽²⁾
 4 días⁽³⁾
 Mas de 4 días⁽⁴⁾
 Mas de 5 días⁽⁵⁾
7. ¿Cuántas horas dura cada uno de sus tratamientos de diálisis? Menos de 3 horas⁽¹⁾
 3 horas⁽²⁾
 3 horas y 15 minutos⁽³⁾
 3 horas y 30 minutos⁽⁴⁾
 3 horas y 45 minutos⁽⁵⁾
 4 horas⁽⁶⁾
 Más de 4 horas⁽⁷⁾
 Otro⁽⁸⁾ (Especifique las horas) _____
8. ¿Le viene bien su cita para el tratamiento de diálisis? (Por favor elija la mejor respuesta para usted.) Sí⁽¹⁾
 No, debido a que tengo que venir al centro de diálisis muy temprano⁽²⁾
 No, debido a que tengo que venir al centro de diálisis demasiado tarde⁽³⁾
 No, debido a mi horario de trabajo⁽⁴⁾
 No, debido a que es mi hora de comer y me da hambre durante el tratamiento con diálisis⁽⁵⁾
 No, debido a que es hora para mi medicamento y tengo que tomar

Table 2

Sociodemographic Data of Study Participants: Adherers vs. Non-Adherers (N = 52)

Adherence Area	All N = 52	Hemodialysis A(n)/B(n) = 48/4		Medication Use A(n)/B(n) = 49/3		Fluid Restrictions A(n)/B(n) = 49/3		Diet A(n)/B(n) = 42/10	
		A n (%)	B n (%)	A n (%)	B n (%)	A n (%)	B n (%)	A n (%)	B n (%)
Descriptor									
Age (Mean ± SD)	46.33 ± 12.54	46.69 ± 12.72	42.00 ± 10.61	45.88 ± 12.76	53.67 ± 4.16	46.22 ± 12.52	48.00 ± 15.72	45.81 ± 13.32	48.50 ± 8.77
Gender									
Male	28 (53.8)	26 (54.2)	2 (50.0)	26 (53.1)	2 (66.7)	27 (55.1)	1 (33.3)	24 (57.1)	4 (40.0)
Female	24 (46.2)	22 (45.8)	2 (50.0)	23 (46.9)	1 (33.3)	22 (44.9)	2 (66.7)	24 (42.9)	6 (60.0)
Education Level									
Less than high school or high school graduate	49 (94.2)	46 (95.8)	4 (100.0)	46 (93.9)	3 (100.0)	46 (93.9)	3 (100.0)	39 (92.9)	10 (100.0)
Some college	2 (3.9)	2 (4.2)	0 (0.0)	2 (4.1)	0 (0.0)	2 (4.1)	0 (0.0)	2 (4.8)	0 (0.0)
College graduate and higher	1 (1.9)	1 (2.1)	0 (0.0)	1 (2.0)	0 (0.0)	1 (2.0)	0 (0.0)	1 (2.4)	0 (0.0)
Marital Status									
Never married	22 (42.3)	19 (39.6)	3 (75.0)	21 (42.9)	1 (33.3)	22 (44.9)	2 (66.7)	18 (42.9)	4 (40.0)
Married	19 (36.5)	18 (37.5)	1 (25.0)	18 (36.7)	1 (33.3)	17 (34.7)	0 (0.0)	14 (33.3)	5 (50.0)
Living with partner	6 (11.5)	6 (12.5)	0 (0.0)	6 (12.2)	0 (0.0)	5 (10.2)	1 (33.3)	5 (11.9)	5 (10.0)
Separated, divorced, widowed	5 (9.6)	5 (10.4)	0 (0.0)	4 (8.1)	1 (33.3)	3 (6.1)	0 (0.0)	5 (11.9)	0 (0.0)
Current Employment									
Yes	13 (25.0)	12 (25.0)	1 (25.0)	13 (26.5)	0 (0.0)	13 (26.5)	3 (100.0)	11 (26.2)	2 (20.0)
No	39 (75.0)	36 (75.0)	3 (75.0)	36 (73.5)	3 (100.0)	36 (73.5)	0 (0.0)	31 (73.8)	8 (80.0)
Causes of Kidney Failure									
Diabetes	21 (40.4)	21 (43.8)	0 (0.0)	18 (36.7)	3 (100.0)	19 (38.8)	2 (66.7)	16 (38.1)	5 (50.0)
Hypertension	14 (26.9)	11 (22.9)	3 (75.0)	14 (28.6)	0 (0.0)	14 (28.6)	0 (0.0)	12 (28.6)	2 (20.0)
GNP	4 (7.7)	4 (8.3)	0 (0.0)	4 (8.2)	0 (0.0)	4 (8.2)	0 (0.0)	4 (9.5)	0 (0.0)
Others	13 (25.0)	12 (25.0)	1 (25.0)	13 (26.5)	0 (0.0)	12 (24.4)	1 (33.3)	10 (23.8)	3 (30.0)
Maintenance HD Vintage (Mean ± SD)	55.64 ± 43.78	50.29 ± 40.57	93.75 ± 66.75	56.31 ± 43.68	10.0 ± 7.2	55.31 ± 44.56	26.33 ± 5.86	56.17 ± 47.22	43.00 ± 23.45

Note: A = adherers, B = non-adherers, SD = standard deviation, GNP = glomerulonephritis, MHD = maintenance hemodialysis.

Table 3

Content Validities of ESRD-AQ (Expert N = 7)

ESRD-AQ Area (Item Number)	Item Numbers in Agreement	Numbers of Expert in Agreement	Item Number in Disagreement	Numbers of Expert in Disagreement	I-CVI
General Information (No. 1 to 5)	No. 1 to 4	7	No. 5	1	0.97
Hemodialysis Attendance (No. 6 to 19)	No. 6 to 8	7	No. 9	1	0.99
Medication Use (No. 20 to 28)	No. 21 to 28	7	No. 20	1	0.98
Fluid Restrictions (No. 29 to 38)	No. 30 to 38	7	No. 29	1	0.99
Diet (No. 39 to 46)	No. 40 to 46	7	No. 39	1	0.98
Average I-CVI					0.98

Notes: Experts in disagreement = rated 1 (not relevant) or 2 (somewhat relevant), experts in agreement = rated 3 (quite relevant) or 4 (highly relevant), I-CVI = item-level content validity index.

Table 4Construct Validity Using Known Group Analysis (Adherent Group Vs. Non-Adherent Group; $N = 52$)

Item Number/ Treatment Behavior	A(n)/B(n)	Mann- Whitney U	Z	p-value
14/Hemodialysis attendance	48/4	24.000	-6.119	< 0.001
17/Shortening hemodialysis	48/4	33.000	-3.902	< 0.001
18/Duration of shortening hemodialysis	48/4	30.000	-3.822	< 0.001
26/Adherence to medication use	49/3	0.000	-3.817	< 0.001
31/Adherence to fluid restrictions	49/3	17.000	-2.444	0.015
46/Adherence to diet	42/10	118.000	-2.279	0.023

Notes: A = adherers, B = non-adherers.

Table 5Participants' Perception Levels of Adherence Behaviors Between Adherers and Non-Adherers ($N = 52$)

Item Number/Perceived Importance of Adherence	A(n)/B(n)	Mann-Whitney U	Z	p-Value
11/Perception related to hemodialysis attendance	48/4	94.000	-0.094	0.925
12/Understanding level on importance of hemodialysis	48/4	88.000	-0.321	0.748
22/Perception related to medication use	49/3	46.500	-1.284	0.199
23/Understanding level on importance of medication use	49/3	54.000	-1.020	0.308
32/Perception related to fluid restrictions	49/3	52.500	-0.972	0.331
33/Understanding level on importance of fluid restrictions	49/3	61.500	-0.531	0.596
41/Perception related to diet	42/10	140.000	-1.844	0.065
42/Understanding level on importance of dietary recommendation	42/10	200.000	-0.263	0.792

Note: A = adherers, B = non-adherers.

Table 6

Intra-Class Correlation (ICC) Analysis ($N = 6$)

ICC	95% Confidence Interval		F Test			
	Lower Bound	Upper Bound	F-Value	df1	df2	sig.
0.967	0.819	0.995	60.000	5	6	< 0.001