The lack of relationship between reported self-care, and the factors that influence blood hypertension, in Costa Rican patients

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ABSTRACT

Hypertension is a major health problem worldwide, and its control depends on a good level of self-care, a subject that in Latin America has not been studied in university personnel. We wanted to know if factors known to affect the development of hypertension, also had a relationship with self-care in patients, and for this, we interviewed 80 hypertense university employees who visited the medical service of an university in Costa Rica from January 14, 2002 through December 15, 2008. They answered a questionnaire that we wrote based on the Morinsky and the Martin-Bayarre-Grau questionnaire. Age, sex, education, medical history, treatment and relationship with health personnel showed no association with the level of self-care reported by patients. In a 1-100 scale, the majority of patients scored between 75 and 90 points, indicating that they reported high levels of self-care. Our direct personal experience with these patients indicates that reported self-care is consistent with their hypertension control levels. This kind of study is not new in developed countries, but fills an important gap in our knowledge of health in Latin American university personnel.

KEY WORDS

Self-care, risk factors, hypertension.

RESUMEN

La hipertensión arterial es un problema de salud importante actualmente a nivel mundial, cuyo control depende de un buen nivel de autocuidado, tema que no ha sido estudiado en personal universitario de América Latina. Queríamos saber si los factores que se sabe favorecen la hipertensión arterial, tenían relación con el nivel de autocuidado en los pacientes. Entrevistamos para ello a 80 empleados universitarios hipertensos que consultaron el servicio médico de una universidad costarricense entre el 14 de enero de 2002 y el 15 de diciembre de 2008. Se les aplicó un Cuestionario de Evaluación de Adherencia Terapéutica en Pacientes Hipertensos, de elaboración propia a partir de la prueba de Morinsky y del cuestionario Martin-Bayarre-Grau. La edad, sexo, educación, historial médico, tratamiento y relación con el personal de salud no tuvieron asociación con el nivel de autocuidado informado por los pacientes. Dentro de una escala de 1 a 100, la mayoría de los pacientes obtuvo entre 75 y 90 puntos, lo que indica que reportan altos niveles de autocuidado. Nuestra experiencia con estos pacientes indica que el autocuidado que informan tener es coherente con los niveles de control de su hipertensión. Este tipo de estudio no es nuevo en países industrializados, pero llena un vacío importante en nuestro conocimiento de la salud en personal universitario latinoamericano.

PALABRAS CLAVE

Autocuidado, factores de riesgo, hipertensión arterial.

High blood pressure –or briefly, hypertension– is among the chronic diseases that produce the highest rates of morbidity and mortality in the world. It often is the main cause of consultation in medical service. Furthermore, its close relationship with heart disease has established hypertension as a life expectancy predictor, along with family history and age (Suárez et al. 2000).

Many of the developing countries in Latin America are changing their mortality and morbidity patterns. In the past, transmissible diseases were the main sanitary problem; but today, non-transmissible diseases are becoming more important (OPS 2007). This change reflects modifications of the traditional way of life (including eating habits) brought about by globalization. Despite the importance

of this change, the information available on the subject is relatively scarce (OPS 2007).

In Central America, the main factors associated with hypertension include weight, sex and lifestyle. In addition, it has been documented that the risk of hypertension is directly associated with increasing age (Cerrato & Zambrano 2009, OPS 2007).

In Costa Rica, 59% of the older population suffers from hypertension, and the female population is the most affected. Within this group, the main risk factors are: age over 70-years, high body mass index and family history. Other less determinant factors include having more than six years of formal education and consuming more than 3000 calories per day (Méndez-Chacón & Rosero-Bixby 2007).

Patients' self-care is very important in controlling hypertension, specially, adherence to therapy, which is the degree to which the person follows the medical recommendations about taking medication, following a food regime and changing lifestyle (World Health Organization 2004).

Improper self-care has been considered one of the biggest problems in patients with chronic diseases. For example, when medication is abandoned prematurely, it is not possible to evaluate the efficiency of treatment, the risk of developing other pathologies increases and the economic cost of care grows, because more resources must be used for the attention of chronic unbalanced diseases (Ortiz et al. 2007). Low adherence is a complex and pervasive problem that in extreme cases can reach 90% of cases (Márquez-Contreras & Figuera-Von Wichmann 2009).

Hypertension is a multifactorial disease and often depends on multiple pharmacological combinations for control. However, health agencies have found that if the patient's self-care is low, no pharmacological treatment will be successful. Poor self-care causes a persistence of hypertension that can be erroneously interpreted as organism resistance to a particular treatment (Johnell et al. 2005), leading to an unnecessary change in the therapy.

Many of the factors involved in adherence and other aspects of self-care are not innate, so they must be learned or acquired during the early stages of treatment. Reaching a good level of self-care may result from an active commitment of the patient to controlling the disease (Ehremzweig 2007). This commitment is reinforced by an environment that facilitates an active lifestyle and a good diet, as well as by the support of social networks composed of family, friends and people from their working place (Holguín et al. 2006).

A previous study about the staff of a Costa Rican university found that women and men with hypertension do not differ significantly in personal characteristics, the environment where they live and work, or the relationship with doctors (Arce & Monge-Nájera 2009), but the factors that influence their level of self-care were not studied. In this article, we searched for associations among self-care, sex, occupation, academic level, disease history, opinion on hypertension and its treatment, degree of communication with their physicians and stress indicators in their homes. We selected these variables because they are known to affect the development of hypertension, and we wanted to see if they also had a relationship with self-care in patients (Arce & Monge-Nájera 2009).

METHODOLOGY

Data collection

We worked with the staff of one of the main Costa Rican universities. One of us (L.A.) read the medical records of everyone in the institution's staff (1 526 records from January 14, 2002 through December 15, 2008) and listed the 179 patients with hypertension. Blood pressure is measured in all patients that visit the clinic, even if they are not known to have blood pressure problems, and the measurement is done every time the patient is seen by a physician (the WHO standard procedure is followed).

The records indicated that only 179 of the patients suffered from hypertension, but some were no longer patients of the clinic and we were unable to interview them. Others did not accept, so the final sample consisted of 80 hypertense patients who agreed to participate in the study.

To keep the application homogeneous, the first author personally interviewed everyone of the 80 patients in the privacy and quiet of a clinical room. Each patient was interviewed individually with a *Questionnaire for the Evaluation of Therapeutic Adherence in Hypertense Patients* (Appendix 1) that we wrote based on the Morinsky test and on the Martin-Bayarre-Grau or "MBG" questionnaire (García et al. 2000, Martin et al. 2008). We wrote our own instrument because none of the above questionnaires covered by itself all the variables that we wanted to measure.

Statistical analysis

We constructed a self-care index composed of the sum of scores in the questionnaire (for each question: 1=low, 2=intermediate, 3=high self-care; maximal possible total score= 100 indicating patients that behaved in all aspects fully as recommended to control hypertension). To identify which of the factors listed in Appendix 1 were associa-

ted with the level of self-care, we used a logistic regression (STATA SE version 8 and JMP version 4).

Ethics

We followed all pertinent ethical guidelines described by Emanuel et al. (2000). Our study provides original and rigorously collected scientific information on a previously unknown subject (there are no previous studies on this population); the results can be used to improve health care in the studied institution and similar environments; we only interviewed patients who were properly informed about the study and accepted to participate and no individual identities are presented or can be identified from this sample that represents 5% of the total population (i.e. employees of that university). Furthermore, the project was approved by the University Research Division, which includes ethics among its criteria for approval; and no medical treatment was applied to any patients

whatsoever because this is an statistical study of replies to questionnaires.

RESULTS

The age range of the group (39 women, 41 men) was 22-66 years (mean 51 years) and all are residents of Costa Rica's Greater Metropolitan Area. Socioeconomic status and academic preparation were variable, from basic education (9 years) to full university education. Marital status: 44 patients were married, 20 single, 11 divorced and four in "free union".

If any patients behaved in all aspects (information, diet, exercise, medication and others) fully as recommended to control hypertension, they would obtain a total score of 100 points in the questionnaire. None did, but the self-care values were nevertheless high, with most patients scoring between 75 and 90 points (Fig. 1).
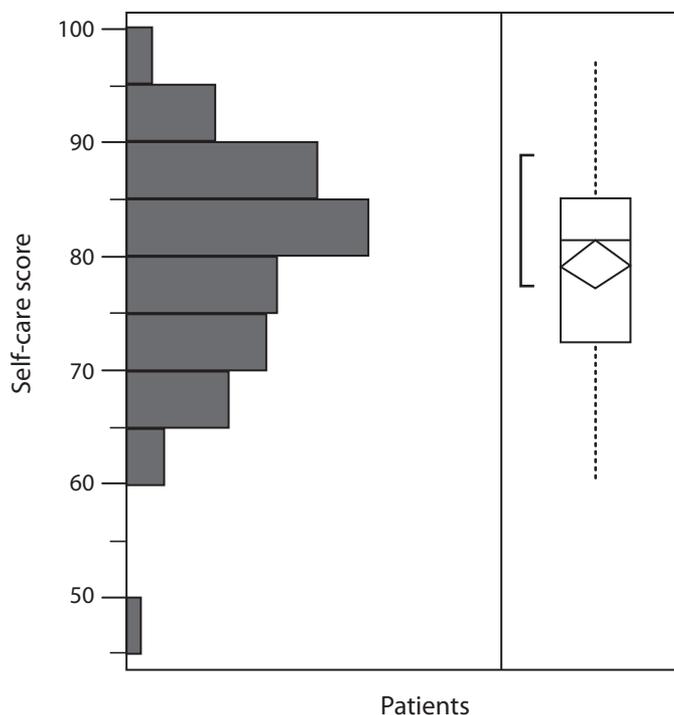
FIG. 1. Distribution of patients according to their self-care score. Scores under 45 points are not shown because all patients scored above that value.
N=80 patients, Mean=79 points, Standard Deviation=9 points.

The variables that we hypothesized to have a relationship with self-care were age, sex, marital status, education, home environment and level of communication with the physician about the dangers of hypertension and the efficacy and importance of medication and lifestyle. However, the regression analysis showed that none of them had a significant relationship with self-care. Parameter estimates and standard deviations for the main variables appear in Table 1. The complete list of variables can be readily extracted from Appendix 1.

DISCUSSION

Previous studies have shown that the lack of proper self-care is at the root of low levels in the control of blood hypertension. Those levels can be as low as 10-40 % (Márquez-Contreras & Figuera-Von Wichmann 2009). We used a different approach, by quantifying self-care instead of counting how many patients had their hypertension

TABLE 1
Results of analysis of association between self-care and several variables

Variable	Estimation	Standard deviation
Intercept	76,329641	4,841292
Adult age group	-1,485796	3,490205
Older age group	-0,834508	3,718503
Sex	0,1831229	1,194796
Marital status: Single	1,1306138	3,005746
Marital status: Married	3,0743824	2,687081
Marital status: Divorced	2,8706567	3,366242
Marital status: Widower	-5,70623	7,912637
Complete secondary education	-0,441001	3,634777
University: Full	4,0508935	5,500075
University: Incomplete	-2,270357	2,334664
Doctor properly explains importance of treatment	2,9650932	2,131736
Doctor properly explains how to follow treatment	1,8332381	1,53369

under control. Our finding was that self-care levels are generally high in this population of university employees. Possibly, this indicates that our patients are committed to controlling the disease and find the medical recommendations reasonably easy to follow. Other studies have found that self-care does not depend exclusively on the environment or social connections, but rather on the patients' commitment to the treatment as well as on its simplicity: patients report more compliance in single dose treatments than in treatments that require several dosages per day (Crespo et al. 2000, Bautista et al. 2003).

Our study shares a weakness with most other studies: frequently, the real levels of self-care are lower than the levels reported by patients (Márquez-Contreras & Figuera-Von Wichmann 2009). This is not the result of conscious lying, but a part of human nature when trying to remember duty fulfillment. Similarly, patients state that low fulfillment of treatment simply is the result of unconscious oversight (Crespo et al. 2000, Bautista et al. 2003). However, the experience of the first author after several years of personally measuring the blood pressure of the studied patients, indicates that in this case their report is reliable because, generally, they have their hypertension under control. An apparent weakness is the lack of a control group, but this is not the case because a control group would have to consist of patients who do not suffer hypertension, and it does not make sense to study self-care for hypertension in patients who do not have it. Thus, our approach is based on a powerful multivariate analysis of patients who have varying degrees of self-care.

The second finding of this study is the lack of association between self-care score and all the measured personal (sex, occupation, academic level, disease history, opinion on hypertension and its treatment, degree of communication with doctors) and environmental variables (stress indicators in their homes) known to influence the development of hypertension (Arce & Monge-Nájera 2009).

We hoped to find an association because that would be the start of a search for a cause-effect relationship. If we knew which variables caused good levels of self-care, we could manage them to improve the life of these patients. However, our statistical technique did not find any associations. Other studies on self-care (Bardorf et al. 2006, Freedom et al. 2007) have focused on different variables, mainly family support and some not very clear "internal resources" that are considered important for long-term control of hypertension (Rivas et al. 2008). Future studies of this population should be based on the same variables that have been found to be important by other authors (Crespo et al. 2000, Palacín et al. 2002, Holguín et al. 2008). We also recommend a study of the psychological factors

that result in a high level of self-care (Choo et al. 2001, La Rosa et al. 2007) but insist on the finding that in the population that we studied, self-care is satisfactory at the moment of the study.

ACKNOWLEDGMENTS

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Article edited by Vanessa Nielsen-Muñoz

APPENDIX 1

Questionnaire for the Evaluation of Therapeutic Adherence in Hypertense Patients

CUESTIONARIO DE EVALUACIÓN DE ADHERENCIA TERAPÉUTICA EN PACIENTES HIPERTENSOS (con presión alta)

(basado y adaptado del test de Morinsky y del cuestionario MBG)

Estimado funcionario:

Un saludo cordial. Se le solicita su colaboración para el estudio que se está realizando con pacientes hipertensos de las oficinas centrales de la institución. Nuestro objetivo es elaborar un registro, lo más detallado posible, de las personas hipertensas y determinar las acciones por tomar con el fin de mejorar la atención a esta población de acuerdo a sus necesidades.

La herramienta para recoger la información se divide en dos partes: una de datos personales y otra, relacionada propiamente con el tratamiento de hipertensión arterial (presión alta).

Cabe anotar que la información que usted proporcione será tratada con absoluta confidencialidad y los resultados serán dados a conocer en forma grupal.

A continuación le solicitamos que complete el siguiente cuestionario.

1

II. Relacionadas con la hipertensión

4. ¿Hace cuántos años se le diagnosticó hipertensión?

( ) Menos de un año
( ) De 1 a 5 años
( ) De 6 a 10 años
( ) De 11 a 15 años
( ) De 16 a 20 años
( ) Más de 20 años

5. De las indicaciones que aparecen a continuación, marque con una (X), la o las que le ha recomendado su médico.

( ) Dieta sin sal o baja en sal
( ) No consumir grasa animal
( ) Realizar ejercicio físico
(   )   Otras   (indique   cual)
....

6. ¿Considera usted que la hipertensión puede curarse?

( ) Si
( ) No

7. ¿Recibe usted algún tratamiento médico?

( ) Si
( ) No

En caso afirmativo indique cual tratamiento y las dosis diarias:

Medicamento.....................
Dosis.............................
Medicamento.....................
Dosis.............................
Medicamento.....................
Dosis.............................

3

I. DATOS PERSONALES

NOMBRE:.....................................
...

SEXO: Femenino.......... Masculino..............
FECHA   DE   NACIMIENTO:..................
EDAD:.....................

ESTADO CIVIL:
Soltero(a)( ) Casado(a)( ) Divorciado(a)( ) Viudo(a) ( ) Unión libre ( )

PESO:..............   ESTATURA:..............
Índice de Masa Corporal (IMC, PESO/TALLA^2) (USO DEL PERSONAL DE SALUD)..........

1. Nivel educativo:

Primaria: Completa ( )   Incompleta ( )
Secundaria: Completa ( )   Incompleta ( )
Universitaria: Completa ( )   Incompleta ( )

2. Ocupación y dependencia donde labora:

Administrativo   ( )
Profesional   ( )
Pre-universitario   ( )
Técnico   ( )
Personal de apoyo*   ( )
Pensionado   ( )
*misceláneos, guardas, chóferes.

3. Es usted hipertenso?

( ) Si   ( ) No

2

AUTOCUIDADO

ENUNCIADOS	S	CS	AV	CN	N	NA
11. Ingiere los medicamentos en el horario establecido.						
12. Toma las dosis indicadas por su médico.						
13. Cumple las indicaciones relacionadas con la dieta.						
14. Asiste a las consultas de seguimiento programadas.						
15. Realiza los ejercicios físicos indicados.						
16. Acomoda sus horarios de medicación a las actividades de su vida diaria.						
17. Decide con su médico, de manera conjunta, el tratamiento a seguir.						
18. Cumple el tratamiento sin la supervisión de su familia o amigos.						
19. Cumple con el tratamiento sin realizar grandes esfuerzos.						
20. Utiliza recordatorios que le faciliten la ejecución del tratamiento.						
21. ¿Analiza con su médico la mejor forma para cumplir el tratamiento?						
22. Tiene la posibilidad de manifestar su aceptación al tratamiento prescrito por su médico.						
23. Deja de tomar el medicamento cuando se siente bien.						
24. Realiza el control de la presión arterial al menos una vez al mes.						
25. Consulta con su médico cuando su tratamiento le provoca efectos secundarios.						
26. Indica usted que es hipertenso cuando recibe atención médica en otro lugar.						

5

Medicamento...
Dosis...

Medicamento...
Dosis...

Medicamento...
Dosis...

8. ¿Fuma? (en caso afirmativo anote cuantos cigarrillos al día)

( ) Sí
( ) No

9. ¿Toma licor? (en caso afirmativo anote la frecuencia y la cantidad que consume)

( ) Sí
( ) No

10. Siente que su médico le explica con claridad:

( ) La importancia del tratamiento.
( ) El modo de seguir su tratamiento.
( ) Su problema de hipertensión.
( ) No explica nada.

A continuación, usted encontrará una serie de enunciados relacionados con su tratamiento de hipertensión. Para cada enunciado, marque con una (X) la casilla que corresponda a su situación particular.

El significado de la frecuencia es el siguiente:

S: SIEMPRE
CS: CASI SIEMPRE
AV: A VECES
CN: CASI NUNCA
N: NUNCA
NA: NO APLICA

4

□ Bien, le entiendo todo perfectamente.

7. Siente que su médico le explica la importancia del tratamiento:
   □ No (pase a la pregunta 8).
   □ Sí (de las siguientes opciones marque la que considere representa su situación)
   ○ Mal, no le entiendo o me asusta.
   ○ Lo hace de manera regular, no entiendo bien o siento algo de temor.
   ○ Bien, le entiendo todo perfectamente.

8. Siente que su médico le explica la importancia de seguir al pie de la letra el tratamiento.
   □ No (pase a la pregunta 9).
   □ Sí (de las siguientes opciones marque la que considere representa su situación)
   ○ Mal, no le entiendo o me asusta.
   ○ Lo hace de manera regular, no entiendo bien o siento algo de temor.
   ○ Bien, le entiendo todo perfectamente.

9. Le parece que el tratamiento que se le mandó:
   □ Tiene demasiados tipos de pastilla que tomar.
   □ Requiere tomar pastillas demasiadas veces al día.
   □ Está bien en cuanto a cantidad de pastillas y tomas.

10. Cree que seguir el tratamiento al pie de la letra:
   □ Es bueno, pero no imprescindible porque funciona incluso si se saltan algunas dosis.
   □ Vale la pena seguirlo al pie de la letra.

7

CUESTIONARIO DE EVALUACIÓN DE ADHERENCIA TERAPÉUTICA EN PACIENTES HIPERTENSOS, PARTE II

1. En su casa disfruta de:
   □ Mucho espacio, se mueve libremente.
   □ Espacio mediano.
   □ Muy poco espacio, hay hacinamiento.

2. En su barrio los problemas de criminalidad y drogas son:
   □ Pocos.
   □ Medianos.
   □ Grandes.

3. Participa en actividades deportivas o recreativas tales como: clubes, actividades de la iglesia, grupos deportivos, etc.:
   □ No.
   □ Sí (indicar cuáles).
   ....
   ....

4. En su barrio el ruido de vehículos es:
   □ Poco.
   □ Normal.
   □ Excesivo.

5. Las zonas verdes donde usted vive son:
   □ Pocas o nulas.
   □ Suficientes.
   □ Abundantes, tengo muchas plantas a la vista.

6. Siente que su médico le explica su problema de hipertensión:
   □ No (pase a la pregunta 7).
   □ Sí (de las siguientes opciones marque la que considere representa su situación)
   □ Mal, no le entiendo o me asusta.
   □ Lo hace de manera regular, no entiendo bien o siento algo de temor.