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Psychosocial Determinants of the Intention to Take Oral Antihypertensive Drugs: A Cross-sectional Study*

Theme: Chronic Care.

Contribution to the subject: The results of this study can support the development of behavioral approaches conducted by nurses and by an inter-professional team to improve medication adherence in individuals with systemic arterial hypertension. The findings signal the importance of nurses to pay attention to the predictors of the behavior and beliefs of patients about their medication, their ability to self-administer (forgetfulness) and have access to medications, taking into account socioeconomic and cultural factors in medication adherence. It is recognized that the intervening factors in the behavioral intention to take antihypertensive pills are restricted to a specific population and with their regional values, which can limit the generalization of the findings. Additional research studies are needed to understand the behavioral beliefs, the subjective norm, and the perceived behavioral control in taking antihypertensive drugs in other regions.

ABSTRACT

Objective: To identify the psychosocial predictors that influence the behavioral intention to take oral antihypertensive drugs. **Materials and methods:** A cross-sectional study, based on the theory of planned behavior. A questionnaire constructed and validated was applied to 220 individuals with systemic arterial hypertension in outpatient follow-up at a public hospital. The chi-square and Fisher's exact tests, Spearman's correlation and multiple logistic regression were used for data analysis. **Results:** The participants presented a high intention of taking antihypertensive drugs. The behavioral beliefs ($\beta = 0.0432$; $p = 0.0364$), subjective norm ($\beta = -1.5708$; $p < 0.01$) and

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perceived behavioral control (ß = 2.2809; p = 0.0028) explained the behavioral intention in 33 %. **Conclusions:** The behavioral beliefs, the subjective norm, and the perceived behavioral control are significant psychosocial predictors of taking antihypertensive drugs and must be valued, individually and jointly, in the health actions targeted at this population.

KEYWORDS (Source: DeCS)

Hypertension; antihypertensive agents; treatment adherence and compliance; social theory; nursing.

*Determinantes psicosociales de la intención de tomar antihipertensivos orales: estudio transversal**

RESUMEN

Objetivo: identificar los predictores psicosociales que influyen la intención comportamental de tomar los antihipertensivos orales. **Materiales y métodos:** estudio transversal, fundamentado en la teoría de la conducta planeada. Se aplicó un cuestionario construido y validado a 220 individuos con hipertensión arterial sistémica en seguimiento ambulatorio en un hospital público. Se emplearon las pruebas de Cui-cuadrado y exacto de Fisher, correlación de Spearman y regresión logística múltiple para analizar los datos. **Resultados:** los participantes presentaron alta intención de tomar los antihipertensivos. Las creencias comportamentales (ß = 0,0432; p = 0,0364), la norma subjetiva (ß = -1,5708; p < 0,01) y el control comportamental percibido (ß = 2,2809; p = 0,0028) explicaron la intención comportamental en el 33 %. **Conclusiones:** creencias comportamentales, norma subjetiva y control comportamental percibido son predictores psicosociales significativos de la tomada de los antihipertensivos y deben valorarse, de forma individual y conjunta, en las acciones de salud hacia esta población.

PALABRAS CLAVE (Fonte: DecS)

Hipertensión; antihipertensivos; cumplimiento y adherencia al tratamiento; intención; teoría social; enfermería.

* El artículo es resultado de la tesis de doctorado "Determinantes psicossociais do uso de anti-hipertensivos orais: instrumento de medida e tecnologias motivacionais" ("Determinantes psicosociales del uso de antihipertensivos orales: instrumento de medida y tecnologías motivacionales"), en el marco del Programa de Posgrado en Enfermería de la Universidade Federal da Paraíba. https://sig-arq.ufpb.br/arquivos/20190770885c54181015136a6f29d9b01/TESE_-_TACIANA_DA_COSTA_FARIAS_ALMEIDA.pdf

*Determinantes psicossociais da intenção de tomar anti-hipertensivos orais: estudo transversal**

RESUMO

Objetivo: identificar os preditores psicossociais que influenciam a intenção comportamental de tomar os anti-hipertensivos orais. **Materiais e métodos:** estudo transversal, fundamentado na teoria do comportamento planejado. Aplicou-se um questionário construído e validado a 220 indivíduos com hipertensão arterial sistêmica em acompanhamento ambulatorial em um hospital público. Utilizaram-se os testes qui-quadrado e exato de Fisher, correlação de Spearman e regressão logística múltipla para as análises dos dados. **Resultados:** os participantes apresentaram alta intenção de tomar os anti-hipertensivos. As crenças comportamentais ($\beta = 0,0432$; $p = 0,0364$), a norma subjetiva ($\beta = -1,5708$; $p < 0,01$) e o controle comportamental percebido ($\beta = 2,2809$; $p = 0,0028$) explicaram a intenção comportamental em 33 %. **Conclusões:** crenças comportamentais, norma subjetiva e controle comportamental percebido são preditores psicossociais significativos da tomada dos anti-hipertensivos e devem ser valorizados, de forma individual e conjunta, nas ações de saúde direcionadas a essa população.

PALAVRAS-CHAVE (Fonte: DeCS)

Hipertensão; anti-hipertensivos; cooperação e adesão ao tratamento; intenção; teoria social; enfermagem.

* Este artigo é resultado da tese de doutorado intitulada "Determinantes psicossociais do uso de anti-hipertensivos orais: instrumento de medida e tecnologias motivacionais", no âmbito do Programa de Pós-Graduação em Enfermagem da Universidade Federal da Paraíba. https://sig-arq.ufpb.br/arquivos/20190770885c54181015136a6f29d9b01/TESE_-_TACIANA_DA_COSTA_FARIAS_ALMEIDA.pdf

Introduction

Adherence to medication and the behavior related to taking prescription drugs are a challenge for the treatment of Systemic Arterial Hypertension (SAH) (1-2). Adherence to treatment is a complex area of health behavior and little is known about what actually influences its performance, since sociodemographic factors, beliefs and experiences can intervene in this behavior (3-4).

The Theory of Planned Behavior (TPB) states that intention (motivation) is a precursor of behavior and, since people have a sufficient degree of real control over behavior, they are expected to fulfill their intentions when the opportunity arises. Intention is composed of three determinants: *attitude*, consisting of the behavioral beliefs combined with the probable or expected outcomes in relation to the performance of the behavior; *subjective norm*, formed by the normative beliefs that are based on the evaluation of the opinion of social referents regarding the performance or not of the behavior and the consideration in agreeing or not with it; *perceived behavioral control*, formed by the control beliefs, which correspond to the individual's perception of the perceived practicalities or difficulties in carrying out the behavior (5).

In addition to the theoretical components of the TPB, variables can be included to understand health-related behaviors. Past behavior is an aspect that guides future responses when considering well-practiced behaviors in constant and recurring contexts, such as taking antihypertensive pills daily. In general, people tend to form conscious and favorable intentions about acts that they have frequently performed in the past, redundancy is worth here; thus, when associated with the frequency of performance and combined with the other determinants of the TPB, past behavior tends to be a good predictor of behavior, being able to mediate well-practiced or repeated behavioral intentions, since previous experiences can also interfere with behavioral intention (5-6).

The behavioral intention that involves the act of taking the prescribed pill can be influenced by factors that may be beyond the control of the individual, such as the ability to access the medications, their psychosocial and health characteristics (7), beliefs regarding the treatment, health knowledge, recognition of the need for medication (8-9), understanding of the practicalities and difficulties in managing the disease and stable marital status (1). Other factors such as ignorance of the benefits and adverse effects of the medication and ineffective communication with the team that prescribes care are described as causes of low adherence to drug therapy (1, 7-9).

There are international studies (10-12) based on the TPB that have identified the determinants of the behavioral intention of individuals with SAH to take antihypertensive pills. It is observed that none of the aforementioned studies addressed past behavior as an additional variable for the adherence to taking antihypertensives. In the Brazilian context, there is no knowledge of studies that have used the TPB to understand the determinants of the behavior of taking antihypertensive drugs.

Thus, in order to understand the behavioral intention of taking antihypertensive pills, it is relevant to study it based on theoretical assumptions of the TPB, considering the cultural valuation, beliefs and experiences of the individual, in order to improve medication adherence and health outcomes. In this sense, the present study aimed to identify the psychosocial factors that influence the behavioral intention to take oral antihypertensives.

Materials and methods

Study type and locus

A descriptive, cross-sectional and quantitative study, carried out in a cardiology outpatient clinic of a public hospital linked to the Unified Health System of the state of Paraíba, Brazil, in March and April 2019. The institution is a reference for teaching, research and assistance with medium- and high-complexity procedures.

Population and sample

Sample calculation was performed considering the 32.5 % prevalence of SAH (13) and the mean number of monthly visits made at the cardiology outpatient clinic of the study site (514 consultations performed by cardiologists). A 95 % confidence index and a 5 % sampling error were adopted, which resulted in a sample of 205 individuals with systemic arterial hypertension. The sample was selected for convenience, during the data collection period stipulated for the research.

The individuals eligible to participate in the study were those diagnosed with SAH, aged 18 years old or older and on continuous and self-administered use of antihypertensive pills for at least six months (14). Those with some cognitive impairment confirmed in medical records were excluded.

Data collection

The individuals who waited for a medical consultation at the cardiology outpatient clinic during the data collection period and who met the aforementioned inclusion criteria were invited by the researchers to participate in the study.

A questionnaire built by the researchers was applied according to a survey of beliefs about the "taking antihypertensive pills" behavior. The items of direct and indirect measures were formulated according to the recommendations of the theoretical model of the TPB (5). The direct measures (past behavior, attitude, subjective norm, perceived behavioral control and intention) are global statements about the behavior under study. The indirect measures (behavioral, normative and control beliefs) are questions formulated based on a previous study that analyzed the beliefs expressed by individuals with arterial hypertension related to the drug treatment for SAH.

The measurement instrument developed focuses on the behavior of interest: taking the prescribed pills to control blood pressure in the following 30 days. It consists of 36 questions with a choice of answers in the form of a five-point Likert scale and bipolar adjectives of semantic differential, and was divided into two parts: the first included behavioral variables; and the second, questions for the sociodemographic and clinical characterization of the participants. Regarding its content, it was validated by specialists with experience in the theoretical model (one psychologist and five nurses), obtaining a content validity index of 0.90 for clarity and of 0.93 for the relevance of the items. Semantic validation was carried out with 30 individuals with SAH to assess the comprehension capacity and the clarity of the items. The instrument's internal consistency obtained a Cronbach's alpha of 0.82 (15). Examples of direct and indirect measures are presented below.

Past behavior assessed with a direct measure item: "In the past 30 days, I took all the pills to control high blood pressure, as prescribed by the doctor". Answer option: from "totally disagree" — 1 to "totally agree" — 5.

Attitude was measured with a direct measure item: "For me, taking all the pills prescribed to control high blood pressure in the next 30 days is…". Four bipolar adjectives were used on the answer scale: from "very unpleasant" to "very pleasant"; from "very harmful" to "very beneficial"; from "very useless" to "very useful"; and from "very difficult" to "very easy".

Behavioral beliefs (14 indirect measure items), which were measured by the product of each of the seven items of behavioral beliefs by the item corresponding to the evaluation of the results. As an example: "Taking all the high blood pressure pills as prescribed for the next 30 days will keep my pressure under control". The five-item scale answer options ranged from "very unlikely" — 1 to "very likely" — 5, with the result multiplied by the answer of its corresponding variable: "Keeping my blood pressure under control is…", with answers: from "very bad" — 1 to "very good" — 5 on the scale.

Subjective norm, measured directly by the following item: "Most people who are important to me think that I should take all the pills prescribed to control blood pressure in the next 30 days", with answers ranging from "strongly disagree" — 1 to "strongly agree" — 5.

Normative beliefs (eight indirect measure items), in which the products of four items were combined with four of motivation to fulfill the prescription of the corresponding referent. For example: "My children think I should take all the pills prescribed to control blood pressure in the next 30 days", with answer options ranging from "very unlikely" — 1 to "very likely" — 5, having as motivation measure to fulfill the corresponding item: "When it comes to taking all the pills prescribed to control my blood pressure, I do what my children think I should do", whose answers varied from "totally disagree" — 1 to "totally agree" — 5.

Perceived behavioral control, assessed by two direct measures: "I am confident that I can take all my prescribed pills to control blood pressure in the next 30 days", with a scale that ranged from "strongly disagree" —1 to "strongly agree" — 5; "Taking all the pills as prescribed to control blood pressure in the next 30 days depends on me", with answer variability similar to the item previously mentioned.

Control beliefs (eight indirect measure items), which were evaluated based on the product of four control belief items multiplied by four corresponding control perception items. As an example, we can mention the following: "I will receive all the pills prescribed to control my blood pressure for free in the next 30 days", with answers that ranged from" very unlikely" — 1 to" very likely" — 5, related to the "Free receipt of all the pills prescribed to control blood pressure will allow me to do the right treatment in the next 30 days" control perception item, with answers ranging from "totally disagree" — 1 to" totally agree" — 5.

Finally, the *behavioral intention* variable, measured by a direct measure item: "I intend to take all my pills prescribed to control high blood pressure in the next 30 days", with answer adjectives ranging from "very unlikely" — 1 to "very likely" — 5.

The second part of the instrument contains ten items related to sociodemographic and clinical data: age; gender; race/skin color; marital status; family arrangement; work situation; family income; schooling; class of antihypertensive medications in use; and blood pressure values measured in the office.

The scores of the instrument's constructs are calculated and evaluated separately. For the direct measures (past behavior, attitude, subjective norm, perceived behavioral control, and behavioral intention), the scores were obtained by the mean of the items; for the indirect measures, the product of the beliefs was calculated as follows: the higher the scores, the greater the motivation to carry out the behavior. Thus, the scores of the behavioral beliefs range from 55 to 175 (strength of behavioral belief × assessment of consequences); of the normative beliefs, from 8 to 100 (strength of normative belief × motivation to agree with the referent); and, of the control beliefs, from 28 to 76 (strength of control belief × control power).

The instrument integration time was approximately 15 minutes. In addition to answering the questionnaire, two measurements of the participants' blood pressure were taken with validated equipment of the Omron® brand, model HEM 7200 (16). The first measurement was taken at the beginning of the interview, and the second, at the end of the application of the data collection instrument. The mean of these measures was used to classify the pressure levels of the participants, according to Brazilian guidelines (13).

Data treatment and analysis

The data collected were tabulated and inserted into a Microsoft Excel® spreadsheet, with subsequent submission to descriptive and inferential statistical analysis using the R Software, and presented in table format. To analyze data normality data, the Anderson-Darling test was used. After applying the test, it was observed that the data did not follow normality ($p < 0.05$).

The sociodemographic and clinical data are presented using absolute and relative frequencies. The direct measures are presented by the median of the items; the indirect ones, by the product of the beliefs, according to the theoretical assumptions of the TPB. As part of the analysis, the higher the scores, the greater the intention to take oral antihypertensive drugs.

The correlations between the independent variables (attitude, behavioral beliefs, subjective norm, normative beliefs, perceived behavioral control, control beliefs, and past behavior) and the dependent variable (behavioral intention) were described by Spearman's correlation coefficients, since the data did not follow normality. The following correlation values are considered for this analysis: <0.4, weak; from ≥ 0.4 to < 0.5, moderate; ≥ 0.5, strong magnitude (17).

To analyze the variables that predict the behavioral intention to take antihypertensives, the multiple logistic regression model was used (17). To make the application of this statistical model feasible, the dependent variable assumed only two values, or rather, it is contained in a finite range of values, between 0 (has no intention) and 1 (has intention). Considering that, in this study, the assessment of behavioral intention was based on a Likert-type scale, with scores ranging from 1 to 5, for the value of 0 was adopted for "I have no intention" (≤ 3); and, for that of "I have intention" (≥ 4), the value of 1. Thus, the outcome under study, the behavioral intention to take the prescribed pills, started to present binary values: "I intend to take the antihypertensive pills" — 1 and "I have no intention of taking the antihypertensive pills" — 0.

The Wald test is obtained by comparing the maximum likelihood estimate of the parameter (ß) and the estimate of its standard error, being used to test whether the coefficient is not really significant when this test does not reject the null hypothesis. It was used to assess the significance of each variable for the model. The *backward* procedure was applied to initially incorporate all the variables; subsequently, in stages (*stepwise*), each one could or could not be deleted. In the final model, it was decided to maintain the variables that presented $p < 0.20$.

The chi-square test was applied to separately assess each independent variable in relation to the outcome variable. Nagelkerke's R^2, in a logistic regression, demonstrates the model's accuracy in predicting the observed value, and is the most suitable to measure the model presented, with values between 0 and 1. The closer to 1 (100%), the greater the explanatory power of the model, in relation to the set of variables and the outcome variable. *p*-values below 0.05 were adopted as statistically significant.

Ethical aspects

All the procedures were approved by the local Research Ethics Committee (No. 2,446,615/2017) and are in accordance with the national and international regulations for research involving human beings. The individuals who agreed to participate in the study signed the Free and Informed Consent Form.

Results

A sample of 220 individuals with SAH participated in the study. Table 1 presents their sociodemographic and clinical characteristics.

Table 2 shows the scores obtained from the investigated behavioral variables. The predominance of medians of 4.00 in the direct measure variables stands out. This indicates a high behavioral intention to carry out the behavior, measured by items of broader approaches. High intention was also identified in indirect measures (based on beliefs), which approached the maximum expected score for high intention, as well as the highest median score for past behavior.

In the analysis of the correlation between the scores of the independent variables (P_B, At, B_PB, NS, N_B, PBC, C_B) and the dependent one (BI), all showed a positive and significant correlation ($p < 0.01$) with the measure of intention behavioral having weak magnitude: $r < 0.4$ (P_B, At, B_PB, C_B), moderate magnitude: ≥ 0.4, $r < 0.5$ (SN, N_B), and strong magnitude: $r \geq 0.5$ (PBC) variability. That is, the higher the scores of the psychosocial determinants, the greater the individual's intention to take the antihypertensives (Table 3).

Multiple logistic regression was performed to relate the probability of individuals with SAH having the intention to take antihypertensives, conditioned to the probabilities of the determinants of the intention in their direct (past behavior, attitude, subjective norm, and perceived behavioral control) and indirect (behavioral beliefs, normative beliefs, and control beliefs) measures to influence it.

According to the values of ß, it was observed that the subjective norm variable (ß = -1.5708 and $p < 0.001$) presented a protective action regarding the behavioral intention of taking antihypertensive pills in this sample, that is, the "negative beta" indicated that, as the behavioral intention increased, the valuation of the opinion of

Table 1. Sociodemographic and clinical variables of individuals with systemic arterial hypertension. Campina Grande, Paraíba, Brazil, 2019 (n = 220)

Variables		n (%)	SBP n (%)	DBP n (%)
Age	< 60 years old	133 (60.45)		
	≥ 60 years old	87 (39.55)		
Gender	Male	32 (14.55)		
	Female	188 (85.45)		
Race/Skin color	White	69 (31.36)		
	Non-white	151 (68.64)		
Marital status	Single	39 (17.73)		
	Married	116 (52.73)		
	Widower/Widow	30 (13.64)		
	Divorced	35 (15.90)		
Family arrangement	Lives alone	20 (9.09)		
	Lives with relatives	200 (90.91)		
Work situation	Active	80 (36.36)		
	Inactive	140 (63.64)		
Family income*	None	05 (2.30)		
	< 1 minimum wage	29 (13.20)		
	1 minimum wage	85 (38.60)		
	1 to 3 minimum wages	80 (36.40)		
	> 3 minimum wages	21 (9.50)		
Schooling	≤ 8 years of study	114 (57.82)		
	> 8 years of study	106 (48.18)		
Class of medications in use	Angiotensin II receptor antagonists	151 (68.60)		
	Diuretic	130 (59.09)		
	Beta-blocker	53 (24.09)		
	ACEI II	40 (18.18)		
	Calcium channel blockers	38(17.27)		
	Vasodilators	07 (3.20)		
	Adrenergic inhibitors	05 (2.30)		
Classification of the blood pressure values**	Normal		55 (25.0)	104 (47.3)
	Pre-SAH		96 (43.6)	60 (27.3)
	Stage 1 SAH		48 (21.8)	43 (19.5)
	Stage 2 SAH		17 (7.7)	13 (5.9)
	Stage 3 SAH		04 (1.8)	

Source: Own elaboration.

*Brazilian minimum wage in 2019: R$ 998.00.

ACEI: Angiotensin-Converting Enzyme Inhibitors; SBP: Systolic Blood Pressure; DBP: Diastolic Blood Pressure.

* When SBP and DBP are in different categories, the greater value must be used for BP classification. Isolated systolic hypertension is considered if SBP ≥ 140 mmHg and DBP ≤ 90 mmHg, with classification in stages 1, 2 or 3.

the social referents decreased, which contributes to autonomy and self-confidence in the intention to carry out the behavior. The behavioral beliefs (ß = 0.0432 and p = 0.0364) and perceived behavioral control (ß = 2.2809 and p = 0.0028) variables positively influenced this intention, since the valuesof ß approached 1, and the *p*-valuesshowed statistical significance (Table 4).

Table 2. Statistical description of the scores of the direct and indirect variables of the Theory of Planned Behavior. Campina Grande, Paraíba, Brazil, 2019 (n = 220)

Variable (abbreviation)	Possible variation	Median	Interquartile range
Attitude (At)	1-5	4.00	3.75-4.5
Behavioral beliefs (BB_PB)	55-127	114.00	103.5-124
Subjective Norm (SN)	1-5	4.00	4-5
Normative Beliefs (N_B)	8-100	64.00	48-75
Perceived Behavioral Control (PBC)	1-5	4.00	4-5
Control Beliefs (C_B)	28-76	54.50	47.75-64
Behavioral Intention (BI)	1-5	4.00	4-5
Past Behavior (P_B)	1-5	4.50	4-5

Source: Own elaboration.

Table 3. Spearman's correlation coefficients between the scores of the Theory of Planned Behavior. Campina Grande, Paraíba, Brazil, 2019 (n = 220)

Variables	P_B	At	B_PB	SN	N_B	PBC	C_B	BI
P_B	1.00	0.24**	0.03	0.07	0.19	0.24**	0.10	0.29**
At		1.00	0.45**	0.34**	0.34**	0.43**	0.17*	0.30**
B_PB			1.00	0.39**	0.36**	0.53**	0.23**	0.38**
SN				1.00	0.49**	0.47**	0.28**	0.48**
N_B					1.00	0.45**	0.33**	0.44**
PBC						1.00	0.31**	0.57**
C_B							1.00	0.31**

Source: Own elaboration.

Key: *p*-values: *p < 0.05 **p < 0.01.

Table 4. Multiple logistic regression to define the predictors of the behavioral intention to take the prescribed pills in order to control high blood pressure. Campina Grande, Paraíba, Brazil, 2019 (n = 220)

Variables	β	p-value	Exp (β)	95 % CI for Exp (β)	
				Lower	Upper
Wald's test	0.7860	0.3752	-	-	-
Past behavior	0.5142	0.0767	1.6724	0.64	4.41
Attitude	- 1.3441	0.0686	0.2608	0.02	3.04
Behavioral beliefs	0.0432	0.0364	1.3041	1.05	1.92
Subjective norm	- 1.5708	< 0.001	0.2079	0.04	0.97
Normative beliefs	0.0406	0.0500	1.0414	0.97	1.12
Perceived behavioral control	2.2809	0.0028	9.7857	1.79	121.58
Control beliefs	0.0256	0.1318	0.9619	0.88	1.05
Chi-square test	-	0.9763	-	-	-
Nagelkerke's R^2	0.33				

Source: Own elaboration.

Legends: ß = Estimates of the equation parameters; p-value < 0.05 (significant); Exp (ß): OR; CI: 95 % Confidence interval for OR; Chi-square test < 0.05 (significant).

Nagelkerke's R^2 presented a value of 0.33, which demonstrates that 33% of the behavioral intention to take the pills prescribed to control arterial hypertension in this sample can be explained by the model chosen for the analysis.

Discussion

The present study verified a predominance of a high score of the behavioral intention of female individuals with SAH to take the pills prescribed to control the disease, a finding that is significantly and positively influenced by the behavioral beliefs and perceived behavioral control, having the subjective norm as a protective action factor.

As for the assessment of the behavioral intention to take the prescribed pills to control arterial hypertension, there was a high intention evidenced by the predominance of high medians in all constructs and closed interquartile ranges. In analogy to the indirect variables, greater variability of answers was observed, which is consistent with the participants' beliefs and opinions, which are supported by their values and experiences, despite being inserted in

the same context. These findings reinforce the importance of strategies aimed at valuing aspects related to the subjective and individual beliefs of each user with systemic arterial hypertension (7).

Regarding the interrelationship between the scores of behavioral intention and its determinants (independent variables), a significant and positive correlation was observed between them, ranging from weak (P_B, At, B_PB and C_B), moderate (SN and N_B) to strong (PBC) correlation magnitude. These findings differ from studies carried out internationally (10-12). One of the possible reasons is the use of only direct measures by the studies cited, and that, in this survey, indirect measures were included, which were built based on the beliefs of the individuals with SAH inserted in the study context (18). The comparisons in relation to the international studies are based on the incipience of national studies on the studied behavior, which hinders comparisons in similar contexts.

Since the direct measure of the PBC is specifically associated with the individual control power, safeguarding the individual's autonomy in carrying out the studied behavior ("I am confident that I can take the pills", "Taking the pills depends on me"), a strong correlation and prediction were verified analyzed by the logistic regression model (Spearman's rô = 0.57, ß = 2.2809, p = 0.0028), with the intention of carrying out the treatment, since confidence and security in carrying out the treatment directly interfere in the intention of its realization and, consequently, in the execution of the action.

Although these findings corroborate previous studies (10-12), it should be noted that cultural differences can negatively influence the patients' beliefs about medication and their perceptions of the treatment. The difference in generation, family composition and religion can also create variability in the beliefs and behaviors (7). Thus, understanding the mechanisms that affect taking antihypertensives or not, depending on the regionalization of the study and on the sociopsychocultural aspects that involve behavior, is of great importance in the effective management of systemic arterial hypertension, making it important to point out that interventions directed to the attitude, subjective norm and perceived behavioral control should result in more adherence to the medications prescribed (11).

In addition, considering that most of the participants present a sociodemographic profile of being married, female and living with someone, added to the high intention of carrying out the studied behavior, the valuation of the opinions of social referents did not interfere in the behavioral intention since, the greater it was, the lower was the relevance attributed by the participants to the opinions of social referents (subjective norm — ß = -1.5708, $p < 0.001$).

This finding is significant and relevant, as it shows an aspect of conscious self-care essentially related to the female gender, added to the independence and autonomy of their individual care actions, even in view of the cultural context in which they live, differing from a study that showed the value of subjective norm with the aim of improving adherence to the SAH treatment (19). Considering that the research sample was predominantly constituted by women, studies are needed that evaluate both the intention and its determinants in the male population, for purposes of knowledge and comparisons, as well as the interference of this variable in adherence to the treatment since, in this study, only the intention to carry out the behavior was analyzed, without applying adherence scales.

In this study, past behavior, added to the constructs of the TPB, was a factor that significantly contributed to the intention to take the medications, presenting a positive correlation with attitude, behavioral beliefs and perceived behavioral control, even if weak. That is, processes of self-perception and cognitive consistency can produce influences on the psychosocial determinants, which are consistent with the frequency of past performance. More frequent past behaviors are likely to produce more favorable attitudes, positive perceptions of regulatory pressure and greater control, and these factors can then contribute to favorable intentions (6). Thus, it becomes relevant to understand the past behavior of the individuals who use antihypertensive pills, considering the other constructs of the TPB, in order to value them and intervene in these aspects, evaluating those who can positively contribute in conducting the treatment.

It was observed that the B_PB, SN and PBC predictive variables explained the BI in 33 % (Nagelkerke's $R^2 = 0.33$ %), a result that partially differs from studies in which At and PBC explained the BI in 47.8 % (10); At, SN and PBC explained the BI in 43 % (12); and At, SN and PBC explained the BI in 61.9 % (11). These results show how much the components of the TPB can behave in different manners, when considering the context, beliefs and regional sociodemographic differences, associated with the items used in the questionnaires (direct or indirect measures), which can differ for each location (5).

The importance of the *behavioral beliefs* (advantages and disadvantages), *subjective norm* (positive and negative social referents) and *perceived behavioral control* (practicalities and difficulties) psychosocial determinants in the analysis of the *behavioral intention* of individuals with SAH to take antihypertensives becomes relevant, since these constructs proportionally, directly and inversely influence the behavioral intention to carry out this behavior, either individually or when analyzed together. This result corroborates other studies that analyzed intention in different contexts (10-12).

Perceived behavioral control, a construct of the TPB that showed better association with HF in isolation (Spearman's rô $=$ 0.57, $p < 0.001$) or jointly ($ß = 2.2809$, $p = 0.0028$), is the predictor variable of the BI that assesses how much control the individual has over a certain behavior, as well as the perception of the practicalities and difficulties found to perform it (5). When elaborating the indirect HF measures for this construct, the beliefs (18) highlighted the ease of acquiring the pills free of charge, the act of taking the pills with water, and the low cost of the drugs; pondering the difficulties, forgetfulness of the time to take them and when there is the need to buy them stood out. Purchasing pills for free and forgetting the times to take them were also important findings when surveying the beliefs of individuals with diabetes *mellitus* and cardiovascular diseases (7).

The interpretation of a person with SAH about perceived control in relation to drug treatment can affect their decision to take the medications and adhere to the prescription. This suggests that the control power and the beliefs in the practicalities and difficulties in taking antihypertensives can specifically influence the therapeutic regime (3). Therefore, health professionals must schedule interventions based on this control power, as well as on the negative beliefs related to the difficulties encountered in taking the prescribed pills and stimulating aspects associated with the practicalities, in order to improve adherence to the proposed treatment and, in turn, quality of life.

When considering that the PBC explains the BI of taking antihypertensives and that, among the difficulties encountered by the hypertensive individuals to take them, there is forgetfulness (7, 18-19), the professionals involved with these patients must encourage them to set alarms to remember to take the pills, ask relatives to remember them, so that, in that way, the behavior of taking the drugs as prescribed is improved (3, 10).

The cost of the medications and the fact of having to buy them promote non-adherent decisions (3). In this study, inactive individuals in their work activities predominated, with incomes of a minimum wage and uncontrolled blood pressure levels ($p < 0.001$), since most of the values were at pre-hypertension (SBP $=$ 121-139 mmHg) and normal (DBP $\leq$ 80 mmHg) levels, classifying them as isolated hypertension (13).

Governmental actions must be promoted in order to improve access to these medications free of charge, so that they are accessible to the population, so as to keep the disease under control and reduce the number of health problems, which incurs in a greater number of specialized consultations, urgency/emergency assistance, hospitalizations, disabilities and health costs.

Non-adherence to drug treatment for chronic diseases is a remaining, complex and multifaceted problem, influenced by different sociodemographic and economic characteristics, behavioral and cognitive problems, medication complexity, and social support systems (7). On the other hand, intentional non-adherence in chronic diseases, which includes non-adherence due to lack of access to medication, seems reversible and subject to interventions that address treatment-related barriers (2). Thus, patient-centered approaches must be implemented in the daily clinical practice, since the patients' health beliefs, experiences and behaviors influence medication taking.

Motivational interviewing, patient-centered prescription and emotional support can improve medication adherence, making it possible to manage the emotional state, motivation and confidence among individuals with SAH and health professionals (1, 3). In this sense, during the daily clinical practice, health professionals must explore these determinants of behavioral intention, focusing on beliefs, experiences involved with past behavior, and the preferences of their patients, emphasizing the overcoming of barriers, in order to motivate them adhere to the prescribed treatment.

It is also necessary to encourage and value the positive behavioral beliefs ($ß = 0.0432$, $p = 0.0364$), and to propose strategies to reverse the negative ones; stimulate the subjective norm as a positive factor for a high behavioral intention ($ß = -1.5708$, $p < 0.001$), since the latter variable presented an inverse relationship with the intention, which explains that, although the person presents important social references, their self-confidence in the treatment is greater than the opinion of third parties; in addition, encouraging perceived behavioral control ($ß = 2.2809$,

$p = 0.0028$), since the interference of these constructs in the behavioral intention listed for the study was significant in its determination and explanation.

Although past behavior has not shown statistical significance in this regression model, it addresses the actions that people have frequently performed in the past, so redundancy is worth in this case (6). This construct, added to the other TPB variables, was one of the predictors that presented a significant correlation to the intention of taking antihypertensives, and the frequency with which the past behavior was carried out can explain the judgments of perceived control, in such a way that acts performed with high frequency are judged under the individual's domain (5). Bearing in mind that taking antihypertensive pills is a volitional behavior carried out with high frequency (daily) in everyday life and, as the patient recognizes the practicalities and difficulties of doing it, these two predictors form conscious intentions and must be considered in the construction of health-related actions in order to achieve the prescribed objective.

In this context, the nurse can make a significant difference to improve medication adherence among the patients (1, 7). It is necessary to bear in mind that the intervening aspects in taking antihypertensives found in this study — motivational interview/consultation (1, 3, 7); technologies that aim to send text messages with reminders of taking the medications and educational texts sent by smartphones (9, 21-23); the Remedy at Home program (24); and telephone contacts with home visits (25-26) — are strategies that can be implemented to improve and motivate adherence to the behavior under study.

The results obtained are relevant when providing the nurse with the psychosocial variables that influence the decision of taking of oral antihypertensives. As a proposal for future research, an experimental intervention study is suggested in order to ascertain the effect of persuasive messages in modulating behavioral intention to strengthen and self-manage the use of antihypertensive, which would reveal the potential theoretical-practical implications for the Nursing science.

As a limitation of the study, the use of a convenience sample is pointed out, as well as the fact that the data reflects a single institution in Northeast Brazil. Therefore, it is recommended that additional multicenter research studies be developed, especially in the Brazilian context, in order to refute or corroborate the results achieved.

Conclusions

The results obtained allow us to conclude that the psychosocial determinants of behavioral intention described by the TPB, together with past behavior, are significantly related to behavioral intention, acting as influencers in the behavior of taking oral antihypertensives by individuals with SAH. The influence of the behavioral beliefs, the subjective norm and perceived behavioral control on the explanatory variability of this behavioral intention was highlighted.

These psychosocial determinants must be assessed, individually and jointly, by the health team, in order to understand the determinants that can influence low adherence to treatment. These assessments allow for interventions based on contextual factors, with the purpose of improving the behavior of taking oral antihypertensives and the consequent adherence to the treatment.

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