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Original Article

Beliefs of individuals with systemic arterial hypertension related to drug treatment

Crenças de indivíduos com hipertensão arterial sistêmica relacionadas ao tratamento medicamentoso

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Objective: to analyze behavioral, normative and control beliefs related to drug treatment for hypertension. **Methods:** cross-sectional study, based on the Planned Behavior Theory, conducted with 28 people on continuous use of antihypertensive drugs, in outpatient follow-up. A form with six open questions was used, applied by structured and individual interviews, audio recorded and submitted to content analysis. **Results:** among the behavioral beliefs, blood pressure control stood out as the main advantage, and unpleasant symptoms stood out as a disadvantage. Regarding normative beliefs, the most cited positive social references were the children. As for control beliefs, acquiring for free and forgetting the time to take them were pointed as the main ease and difficulty, respectively. **Conclusion:** the analysis of beliefs allowed the elucidation of those that may positively or negatively influence the behavior of "taking the prescribed pills for the control of hypertension", target of different interventions in health services.
Descriptors: Hypertension; Patient Compliance; Behavior; Social Theory; Nursing.

Objetivo: analisar as crenças comportamentais, normativas e de controle relacionadas ao tratamento medicamentoso para hipertensão arterial. **Métodos:** estudo transversal, fundamentado na Teoria do Comportamento Planejado, realizado com 28 pessoas em uso contínuo de anti-hipertensivos, em acompanhamento ambulatorial. Utilizou-se de formulário com seis perguntas abertas, aplicado por entrevistas estruturadas e individuais, gravadas em áudio e submetidas à análise de conteúdo. **Resultados:** entre as crenças comportamentais, o controle da pressão arterial destacou-se como principal vantagem, e os sintomas desagradáveis sobressaíram como desvantagem. Com relação às crenças normativas, os referentes sociais positivos mais citados foram os filhos. Quanto às crenças de controle, adquirir gratuitamente e esquecer do horário de tomá-los foram apontados como principais facilidade e dificuldade, respectivamente. **Conclusão:** a análise das crenças permitiu a elucidação daquelas que podem influenciar positiva ou negativamente o comportamento "tomar os comprimidos prescritos para o controle da hipertensão", alvo de diferentes intervenções em serviços de saúde.
Descritores: Hipertensão; Cooperação do Paciente; Comportamento; Teoria Social; Enfermagem.

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Introduction

Systemic arterial hypertension is a cardiovascular disease and an important risk factor for it. Poor adhesion to hypertension treatment may favor increased morbidity and mortality rates for this disease. Among the factors related to this low adhesion, the use of over-the-counter medications or dose and time errors are described as detrimental elements for blood pressure control, which makes disease control morbidity and mortality a challenge for the public health system[1-2].

Non-adhesion to treatment, behavior studied in health, may be associated with the manifestation of irrational and rational beliefs, cognitive factors, lack of information about the risks of non-adhesion or decreased behavioral and coping skills[3-4].

In this context, in the study of health behaviors, the Theory of Planned Behavior has been employed to understand, explain and predict phenomena in specific contexts. In general, it considers that behavior is established by intention to act and perception of control[5].

Intention, one of the immediate precedents of behavior, is determined by three variables: attitude, formed by behavioral beliefs, which reflects the advantages and disadvantages of performing behavior; subjective norms, constituted by normative beliefs, social referents that approve or disapprove of the effectiveness of behavior; and perceived behavioral control, composed of control beliefs, which identify ease and difficulties to perform the behavior[5].

Therefore, to predict behavioral intention, based on the concepts of attitude, subjective norm and perceived behavioral control, the elucidation of salient beliefs in relation to the phenomenon investigated becomes paramount.

Outstanding beliefs are the most frequent, that is, mentioned most often and originated from the universe and common subject in relation to defined behavior. In this scope, the behavior of interest for the study was defined as: taking the prescribed pills to control hypertension within the next 30 days, which covers the target elements, action, context and time, according to the assumptions of the adopted theoretical framework[5-6].

When investigating the state of the art, previous studies were found in the Brazilian scenario related to patients' beliefs about systemic arterial hypertension, globally to treatment[4,7-8]. However, studies aimed at identifying the beliefs of individuals with hypertension about the behavior of taking the prescribed pills to control it, in light of the theoretical framework adopted in this study, are incipient. In accordance with the complexity of the behavior of adhesion to drug treatment, the relevance of this study is justified.

Moreover, it is considered healthy for health professionals who assist individuals with systemic arterial hypertension to know and address factors inherent to treatment beliefs, especially regarding the behavior of taking antihypertensive drugs, since non-adhesion makes effective management of the disease impossible.

Given the above, the objective was to analyze the behavioral, normative and control beliefs related to drug treatment for hypertension.

Methods

Descriptive, cross-sectional study, guided by the Theory of Planned Behavior, conducted in a cardiology outpatient clinic of a university hospital in a municipality in the countryside of Paraíba State, Brazil.

According to the Theory of Planned Behavior, there is no requirement regarding the minimum number of respondents to elucidate salient beliefs about the behavior to be investigated. However, the criterion of data saturation[6] must be respected, that is, when new information is no longer obtained, redundancy of responses, data collection should be interrupted.

Thus, in this survey, the saturation of the responses was achieved with the statements of 28 participants. The convenience sample consisted of indi-

viduals who met the inclusion criteria: age ≥18 years, diagnosed with systemic arterial hypertension, in continuous use of oral antihypertensive drugs for at least six months and in outpatient follow-up. People with systemic arterial hypertension who had their pill administration managed by caregiver and had cognitive barriers recorded in the medical chart were not included. There were no refusals to participate in the study, and all invited participants were entered consecutively.

Data were obtained from December 2017 to January 2018, using two instruments, elaborated by the researchers, evaluated by members of the study group and chronic diseases. The instruments were submitted to evaluation and pretest[6] by five people with systemic arterial hypertension to assess comprehension and make the necessary adjustments. The first directed to the sociodemographic and clinical characterization, contained the variables age, sex, with whom they live, education and family income, classification stage of systemic arterial hypertension, according to the VII Brazilian Guidelines for Hypertension[9], time of diagnosis and antihypertensive medications in use.

The second, a form with six open questions, two for each type of belief (positive/negative), elaborated according to the assumptions of the Planned Behavior Theory[5], applied through individual structured interview, in a private environment at the research site, recorded on smartphone, in offline mode. The data collection procedure lasted an average of ten minutes.

In order to survey behavioral beliefs, the following questions were asked: In your opinion, what are the advantages/disadvantages of taking the prescribed pills to control hypertension in the next 30 days? For normative beliefs, the question was: what do you think are the important people to you who think you should/should not take the prescribed pills to control hypertension within the next 30 days? Finally, for the control beliefs, the question was: what do you think are the easiness/difficulties that you find to take the prescribed pills for the control of arterial hypertension in the next 30 days?

Regarding behavioral beliefs about taking oral antihypertensive drugs as prescribed, over the next 30 days, the interviews were fully transcribed by the principal investigator in the Microsoft Office Word 2013 software, version 15.0®, and subsequently subjected to descriptive and content analysis, based on theory recommendations[5-6]. To ensure anonymity, the speeches were identified with the letter "h", referring to the word hypertensive, followed by the number at the end of the speeches, according to the sequence of interviews.

Data analysis followed the steps: exploration of the material, in order to identify the constructs of the theory studied; grouping of responses in each construct according to participants' statements; accounting for the frequency of emissions, highlighting the salient or most frequent modal beliefs.

To identify which beliefs would be included, we used the criteria proposed by the Planned Behavior Theory, which classifies as salient modal beliefs those that exceed a certain frequency and total at least 75.0% of the beliefs issued[5-6]. For this study, the grouping of beliefs occurred from the accounting of emissions, and those issued at least five times were selected and, together, totaled 75.0% or more of the beliefs.

The study complied with national and international standards for research involving human subjects. It was approved by the Research Ethics Committee of a University Hospital in the countryside of the State of Paraíba, Brazil, according to Opinion nº 2,446,615/2017.

Results

Twenty-eight people with systemic arterial hypertension participated, with a predominance of females 23 (82.1%), mean age of 55 years and education of eight years of study; 24 (85.7%) lived with family members and monthly family income ranging from one to three minimum wages.

The time since diagnosis ranged from six mon-

ths to 21 years, considering the criterion adopted by the VII Brazilian Guidelines for Hypertension, the blood pressure values classified the participants as Optimal Blood Pressure, four (14.3%); Normal, three (10.7%); Borderline, four (14.3%); hypertension Stage I, two (7.1%); hypertension Stage II, two (7.1%); and isolated systolic hypertension, 13 (46.4%).

Regarding the use of drugs to control systemic arterial hypertension, the following classes of antihypertensive drugs were highlighted: angiotensin II receptor antagonists, 20 (71.9%); diuretics, 17 (60.7%); calcium channel blockers, 10 (35.7%); beta blocker, nine (32.1%); angiotensin II converting enzyme inhibitors, five (17.9%); adrenergic inhibitors, one (3.6%); and vasodilators, one (3.6%).

In order to explore the beliefs issued, the analysis categories were organized according to the predefined Constructs of Planned Behavior Theory (behavioral beliefs, normative beliefs and control beliefs) and emission frequencies, as evidenced in the following statements.

Behavioral Beliefs

Among the advantages (n=46), it was highlighted the control of blood pressure, 17 (37.0%); avoid complications and death, nine (19.6%); feeling good, eight (17.4%), avoiding symptoms of the disease (headache, leg pain and feeling sick), seven (15.2%); and provide security and tranquility regarding my health, five (10.8%).

The statements revealed that from the beliefs emerged the importance of adhesion to the researched behavior. *I think it at least improves and controls my blood pressure, and it's a factor in not having another disease, you know? ...in this case, a heart attack or something like that and die* (h5). *Thus, I feel safer and reassured about my health...* (h8). *After taking the medicine, captopril, in this case, I reduced 50.0% of the headaches I felt, I was always sick ...nausea* (feeling sick), *various symptoms, but after taking, regulated my blood pressure a lot and my well-being* (h19).

Regarding the disadvantages (n=37) pointed out, the adverse effects (discomfort, agony, stomach pain, decreased libido, irritability, frequent bathroom and cough) were evidenced, 11 (29.7%) and also because the treatment is for life, which causes dependence, five (13.5%), as can be evidenced in the statements. *It often decreases libido, you see?... irritability... and that one has to have that time set for the rest of your life...* (h1). *So, the stomach discomfort I feel... I have a great stomach discomfort, by the way, I've even told the doctor. I feel an agony, understand?* (h2). *Sometimes I feel agony... it's not every time no, it's sometimes* (h3). *Because if you forget or not take* (dependent), *it* (blood pressure) *goes up and we start to feel sick* (h7). *I think it's bad. Every day has to be this routine. It is a total dependence* (h14). *Captopril sometimes gives a lot of cough, which is a symptom that many people say it does ...and that bothers them* (h19). *It's because we go to the bathroom a lot* (h25).

And 12 (34.2%) beliefs were issued regarding no disadvantage due to the use of antihypertensive drugs.

Normative Beliefs

In analogy to the positive referents (n=52), participants highlighted children, 17 (37.2%); husband/wife, eight (17.0%); doctors, seven (14.9%); and family, seven (14.9%), as the social referents who approved the taking of antihypertensive, as evidenced in the statements. *They are my children* (laughs). *Yeah, they keep asking, mom don't forget ...* (h3). *There's my husband, he's very careful, you know* (laughs)*?* (h11). *My family only* (h11). *The Doctors..., I always get a complaint when the blood pressure is high* (h13).

In the participants' statements, 27 (93.0%) reported that there was no negative social referent, that is, they disapproved of taking antihypertensive drugs to treat hypertension. *No one ever spoke* (h1). *No. So far no one has ever said that* (h4). It was found that only one subject, 0.7%, reported that the neighbor encouraged him, negatively, not to perform the treatment.

Control Beliefs

Regarding the factors that facilitated (n=44) the taking of antihypertensive drugs, they pointed out: purchase the pills free of charge, 14 (31.8%); taking the tablets (put in mouth with water and swallow), 11 (25.0%); and low cost of medicines, 10 (22.8%). The

statements revealed these beliefs of control. *I already have the pill ready, just ingest with water* (h1). *I have to buy, there is no free. But, it's not too expensive, it's affordable. You can buy it, thank God* (h2). *It's easy to take, as we get free. Receive at the post...* (h7).

Regarding those who made it difficult (n=32) to take the pills, eight (25.0%) reported to have forgotten the time and five (15.6%) the need to buy. *Time, so I have the set times, sometimes when I sleep a little longer, I lose the time ... but, she* (the doctor) *said now that I can, so automatically eat, eat it, I didn't know* (h1). *The difficulty sometimes is to buy when it is missing ... always missing* (h24).

And 15 (46.8%) beliefs were issued regarding to no difficulty in using antihypertensive drugs.

Discussion

As a limitation for the study, it is noteworthy that the results are restricted to the collected sample. Therefore, the findings cannot be extended to all individuals with systemic arterial hypertension, and it is not possible to generalize the beliefs regarding the proposed objective.

For nursing practice, the elucidated beliefs will serve as a support for structuring a psychometric scale to evaluate the determinant factors of behavioral intention in performing the studied behavior. The obtained results will contribute to the elaboration of motivational strategies, from the regional context, in order to positively influence the taking of antihypertensive drugs, benefiting the adhesion to drug therapy.

It is understood that the investigated sample knew the advantages of adhesion to the prescribed treatment, even though they had uncontrolled blood pressure levels, since a small proportion of individuals had blood pressure values classified as optimal or normal. It is noteworthy that the control of systemic arterial hypertension is made by pharmacological and non-pharmacological measures[9], and it cannot be inferred that the lack of control of blood pressure levels has a direct relationship with the taking of antihypertensive drugs incorrectly.

Positive behavioral beliefs were found to be the concern of people with systemic arterial hypertension to maintain blood pressure control, to avoid complications and death, to feel good, to avoid symptoms and safety in relation to health. These findings are consistent and related to the consequences of the effect of the drug in use, results that corroborate a study with African Americans in the United States[10].

Studies conducted in China, Chile and the United States[2-3,11] also identified, among negative behavioral beliefs, disadvantages in relation to the adverse effects of drugs and the chronicity of treatment, postponing it for a long period of life which may cause addiction. It is important to know these beliefs in order to minimize their appreciation, considering that the advantages should outweigh the disadvantages of treatment.

Among the perceived or real adverse effects induced by medications, they were elucidated as discomfort, agony, stomach pain, decreased libido, irritability, frequent bathroom or cough, also identified in other previous studies[11-12]. Importantly, many of these adverse effects may not be directly related to the use of antihypertensive drugs, but to uncontrolled blood pressure[8], which may be related to ineffective disease control.

It is important that the healthcare professional involved in assisting the individual with systemic arterial hypertension knows the medications in use, as well as the adverse effects of drugs and the symptoms of uncontrolled blood pressure in order to guide people with hypertension in relation to the possible adverse effects reported, which may not be directly related to the antihypertensive intake[9].

Namely, polyuria is one of the adverse effects of drugs in the diuretic class, a drug widely used by the investigated participants. Drugs of this class may also cause weakness, cramps, hypovolemia and erectile dysfunction[9]. Knowledge of the action of these drugs enables the user to better take management, avoiding taking it at times that make it difficult to go to the bathroom more often, complaint reported by participants, facilitating use and adhesion to treatment.

Despite the libido alteration, an adverse effect that may be related to erectile dysfunction, caused

by the use of diuretic, centrally acting alpha-agonists, beta blockers[9], is another important point described in other studies[11-12], whose male subjects reported how medication use affects sexual functioning, resulting in subsequent challenges to affective relationships and visions of masculinity.

Dry cough was also reported by respondents as an unpleasant effect that disrupts socialization, as it stands out in the literature as the main side effect of antihypertensive agents in the angiotensin-converting enzyme inhibitor class and affects 5.0 to 20.0% of patients with hypertension[9].

Therefore, it is important for interprofessional team members to be aware of negative behavioral beliefs about taking antihypertensive medications and to guide individuals with systemic arterial hypertension about the therapy instituted, as well as the possibility of changes in prescribing when any of these adverse effects are present, since when the person with hypertension overestimates negative beliefs to positive beliefs, there is greater conditioning to treatment abandonment or poor adhesion, which leads to unfavorable outcomes of the disease[1].

Being dependent on treatment, once not following it, may lead to symptoms and complications of the disease, is also perceived as a disadvantage of treatment, a finding also identified in studies conducted in other countries[3,11-12]. The results point to the need of programming individualized and/or group strategies in which health care technologies can be tested and implemented for this population in order to suppress this barrier and boost adhesion to oral antihypertensive drugs, considering the importance of treatment for health management and perception of quality of life.

Regarding normative beliefs, positive social referents, children and spouse, physician and family, in general, are considered as motivational agents for taking antihypertensive drugs. It is understood that having a social support network that involves the importance of treatment is substantial in the care and monitoring of individuals with hypertension[3], since social support and family value help the person with hypertension to follow the treatment, and should be considered when developing action strategies to improve adhesion to antihypertensive treatment[2,11].

Being around the family promotes positive results regarding adhesion to antihypertensive drugs, since the family plays a motivating role in the follow-up of therapy. Encouraging physician adhesion and family approval generate feelings of gratitude in people with systemic arterial hypertension, as these people are considered as important support agents for well-being and healthy health choices[3,11].

National research that used the Theory of Planned Behavior to identify beliefs related to adhesion to oral antidiabetic treatment showed children, spouse, physician and nursing staff as positive social referents to medication adhesion[13]. Data that partially corroborate the findings of this study since the nursing staff was not reported.

This fact can be explained, in particular, to the locus where the study was developed, in which only the medical professional acted in the clinical follow-up of patients with systemic arterial hypertension. Thus, the need to incorporate the nurse in outpatient care offered to individuals with systemic arterial hypertension is pointed out, since the nursing consultation is an action instrument that allows the survey of factors that interfere in the process of adhesion to anti-hypertensive treatment related to biopsychosocial aspects, beliefs and knowledge about the disease, habits, lifestyle and treatment[4].

In agreeing with this assertion, strategies developed in the clinical practice of nurses, such as home visits[14], telephone contacts[15] and sending text messages[16], have shown satisfactory results in adherence to drug treatment and may constitute as an adjunctive tool in the therapeutic approach in order to reverse negative beliefs into positive ones and boost adhesion to antihypertensive treatment.

The absence of negative referents is emphasized, that is, people who disapprove the studied behavior. The only reported issue was related to people outside the family and/or health team, in this case a neighbor. Thus, it is important to reinforce the links

between people who are important for the individual with hypertension, especially in the moments of institution and changes in therapies, since they are people who care about this clientele and can positively score on the prescribed action[1].

In a study conducted in Brazil[13], it was found that among the facilities issued by participants to perform antidiabetic treatment was to purchase the pills free of charge, which coincides with the policy of accessibility to drugs for the treatment of chronic diseases, free or low cost in the country. In addition to this belief, it was identified the ease of taking it with water, a belief not mentioned in a study.

Public policies, such as the Programa Remédio em Casa (Remedies at Home Program), make it easier to have the medication free of charge and have full access to antihypertensive medications, which contributes to medication adhesion[17]. This initiative favors and motivates therapeutic follow-up, noting that most hypertensive individuals are users of the Unified Health System, who have low education and income, which becomes easy when it is accessible free or at low cost.

Among the difficulties found in taking antihypertensive drugs were: when there is a need to buy and forget to take drugs, factors also reported in previous studies[4,10,12]. These findings reflect the weakness in the policy of dispensing essential drugs to maintain the clinical stability of systematic arterial hypertension. It is emphasized that the need to buy them constitutes a barrier to therapeutic adhesion[4] and, therefore, non-adhesion to the prescribed treatment, a factor related to the low income of most of the individuals investigated.

As in studies conducted in Brazil and Jamaica[4,12], forgetting to take drugs was a relevant difficulty in relation to the treatment of hypertension. Although it is considered a cognitive factor inherent to the subjectivity of each individual, when people understand that it is negatively interfering with treatment, strategies can be used to improve it, such as asking for help from the social support network (positive referents) [2,11] or use artifacts to remember to take, such as reminders placed in visible places, audible alarms, mobile apps, and more.

The use of motivating strategies, using innovative technologies, focusing on individual needs, promoting social support, reminders guided by informative and encouraging messages related to the importance of taking the tablets, supported by smartphones, should be thought, built and applied to this population, in order to encourage adhesion to treatment and face obstacles and, consequently, improve the health management of individuals with hypertension[18].

Conclusion

The beliefs of individuals with systemic arterial hypertension about the drug treatment that stood out were: blood pressure control, unpleasant drug symptoms, children as positive social references, free medication acquisition and forgetting to take them.

The findings may support the development of strategies to revert negative beliefs to positive ones, in order to enhance adhesion to drug therapy and favor the control of hypertension, a chronic disease whose progressive progress in recent years has led to major cardiovascular complications and death.

Collaborations

Almeida TCF and Oliveira SHS collaborated in the project design, data analysis and interpretation and approval of the final version to be published. Sousa MM, Pessoa MSA, Sousa LS and Gouveia BLA cooperated with the writing of the article, relevant critical review of the intellectual content and approval of the final version to be published.

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