

# Factors determining acceptance of illness in patients with arterial hypertension and comorbidities

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## KEY WORDS

acceptance of illness, adherence, drug-related adverse events, hypertension

## ABSTRACT

**BACKGROUND** Hypertension is one of the most common chronic diseases. The need to undergo indefinite treatment combined with the risk of complications affecting the cardiovascular system impose significant psychological and somatic burden on the patient. Arterial hypertension (AH) is rarely an isolated disease and the most commonly observed comorbidities include metabolic disorders as well as clinically apparent complications associated with polypharmacy, which increases the risk of drug-induced adverse events.

**AIMS** The aim of the study was to determine factors that have an impact on illness acceptance in patients with AH.

**METHODS** The study included 532 patients diagnosed with AH. A standardized Acceptance of Illness Scale questionnaire and a questionnaire prepared by the authors were used. The Acceptance of Illness Scale allows to classify the illness acceptance as high (30–40 points), average (19–29 points), or low (8–18 points).

**RESULTS** A high level of illness acceptance was noted in 45% of participants and an average level in 46%. Patients with different levels of illness acceptance showed disparities in: duration of AH, number of cardiovascular and all diseases, frequency of mental disorders, and number of drugs taken. The number of cardiovascular diseases was significantly lower in patients with high levels of illness acceptance than in those with poor acceptance. Disease duration in patients with a high level of illness acceptance was significantly shorter than in patients with average acceptance.

**CONCLUSIONS** The level of illness acceptance is correlated with disease duration, number of diseases, and number of medications taken.

**INTRODUCTION** Elevated blood pressure is one of the leading causes of mortality worldwide. The incidence of arterial hypertension (AH) increases with age, and bearing in mind the current upward trend in life expectancy, an even further increase should be expected. It is estimated that over 900 million adults around the world have AH. According to forecast data, there will be approximately 1.5 billion affected people by 2025.<sup>1</sup> According to the latest edition of the NATPOL study conducted in 2011, approximately 32% of the adult population in Poland have AH.<sup>2</sup> In fact, the prevalence of the disease is extremely high throughout the world,

regardless of a given country's income. Arterial hypertension rarely occurs as an isolated disease and is often accompanied by metabolic disorders (type 2 diabetes, hypercholesterolemia, hyperuricemia, obesity) as well as organ-related complications in the cardiovascular system (ischemic heart disease, heart insufficiency) or the kidneys.<sup>3</sup>

Hypertension treatment includes lifestyle modifications and drug therapy. Patients with grade 1 hypertension may begin treatment with lifestyle modifications (limiting sodium and alcohol consumption, making dietary changes, reducing weight, engaging in regular physical

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## WHAT'S NEW?

Since arterial hypertension is a chronic and asymptomatic disease, it can adversely affect patients' acceptance of their illness and, consequently, cause a deterioration in their long-term compliance with medical advice. At the same time, in the vast majority of patients, arterial hypertension is not an isolated disease and is often accompanied by other comorbidities or organ insufficiency, which itself is a consequence of polypharmacy. In our study, we observed that the longer the duration of an illness, the less it was accepted by the patient. The level of disease acceptance is significantly lowered also by a greater number of comorbidities, received medications, and additionally in women, by the occurrence of drug-induced adverse events.

activity, quitting smoking). In the case of grade 2 and grade 3 hypertension, the European Society of Hypertension and European Society of Cardiology guidelines emphasize pharmacotherapy as the method of choice together with the implementation of lifestyle modifications.<sup>3</sup>

Chronic diseases force patients to make changes in many aspects of their lives and adapt to new conditions. Depending on their life experiences and psychological makeup, patients either assume the role of a sick person and accept their illness or deny their condition and reject the role of a patient.<sup>4</sup> A chronically ill person has to cope with a sense of loss and its consequences, including the loss of normal physical fitness, the loss of certain social roles, such as having to relinquish previous professional or family functions, and the loss of interpersonal contacts. These consequences are more serious in people who find it difficult to accept their new health status and are unable to cope with negative emotions,<sup>5</sup> which in turn has a significant impact on the quality of life of patients with AH.<sup>6</sup> By accepting their disease, patients are able to adapt to the limitations it imposes on them, maintain or regain their self-esteem and control over their life, as well as cultivate more positive emotions.<sup>7</sup>

The aim of the study was to determine those factors that shape acceptance of illness in patients with AH and comorbidities, with a particular emphasis on the possible role of drug-induced adverse events in lowering acceptance of illness.

**Methods** The study group included patients with AH under long-term care at the 1st Department of Cardiology, Interventional Electrophysiology and Arterial Hypertension of the University Hospital in Kraków. We included patients hospitalized in our department or followed at the outpatient hypertension department from December 2019 to December 2020. The study group included 532 patients with AH of whom 314 (59%) were women.

The inclusion criteria for the study were as follows: older than 18 years of age, diagnosis of AH, disease duration exceeding 1 year, and signed informed consent to participate in the study.

The exclusion criteria were as follows: younger than 18 years of age, lack of patient consent, dementia acute enough to prevent a participant from filling in the questionnaires.

Participation in the study was voluntary, and each participant was informed about its purpose and methods as well as the possibility of withdrawing at any stage. The study was approved by the Bioethical Committee of Jagiellonian University (no. 1072.6120.261.2017).

The Acceptance of Illness Scale (AIS) and a questionnaire designed by the authors were used in the study. The Acceptance of Illness Scale includes 8 statements describing the consequences of poor health. These come down to a recognition of the limitations imposed by the disease, lack of self-sufficiency, sense of dependence on other people, especially the patient's family, and lower self-esteem. Each participant was awarded a score ranging from 8 to 40 points. The lower the score, the worse their acceptance of their disease. Based on the AIS, 3 levels of disease acceptance were determined as follows: 8 to 18 points denoted a low level of illness acceptance; 19 to 29 points, average acceptance; and 30 to 40 points, high acceptance.

The survey assessing the patient's social situation and clinical data included 22 questions. Comorbidities reported by the patient were confirmed by medical records. The next part of the survey focused on adverse drug reactions in patients with hypertension. The structured history of current or past drug-related adverse events was completed by the patient. The patient's compliance with their doctor's instructions was assessed on the basis of the patient's own declared regular intake of prescribed medications. The completeness of the survey was verified by members of the research team.

**Statistical analysis** The analysis was performed using the R statistical software, version 3.5.1 (R Foundation for Statistical Computing; <http://cran.r-project.org>). The normality of the distribution of quantitative variables was checked by the Shapiro–Wilk test and a visual assessment of the histograms. Nominal data are presented as numbers with percentages. Ordinal data are presented as medians with interquartile ranges (IQRs), and quantitative variables as means (SD) with a distribution close to normal or medians (IQRs) in other cases. Comparisons between groups with regard to individual parameters were made using the following: the  $\chi^2$  test or the Fisher exact test for nominal variables as well as the *t* test, the Mann–Whitney test, analysis of variance, and the Kruskal–Wallis test for ordinal and quantitative variables, where appropriate. When significant differences were found in the Kruskal–Wallis test, the Dunn post hoc test with Bonferroni correction was used. The significance level was set at a *P* value of 0.05.

**TABLE 1** Characteristics of the study population

Parameter	Total (n = 532)	Women (n = 312)	Men (n = 220)	P value
Age, y	59.95 (13.52)	61.55 (12.76)	57.69 (14.27)	0.001
Weight, kg	77.5 (68–90)	72 (65–82)	85 (75.75–98)	<0.001
Height, cm	168.6 (9.23)	163.58 (7.22)	175.71 (6.76)	<0.001
BMI, kg/m <sup>2</sup>	27.28 (24.45–30.86)	26.85 (24.22–30.83)	27.49 (24.69–30.89)	0.25
Duration of hypertension, y	10 (5–18)	10 (5–20)	10 (5–15)	0.12
Duration of treatment in hypertension outpatient clinic, y	5 (2–10)	5 (2–10)	6 (3–10)	0.32

Data are presented as mean (SD) or median (interquartile range).

**TABLE 2** Comorbidities in the study population

Comorbidities associated with hypertension	Total (n = 532)	Women (n = 312)	Men (n = 220)	P value
Coronary heart disease	69 (13)	33 (10.6)	36 (16.4)	0.07
Heart failure	29 (5.5)	13 (4.2)	16 (7.3)	0.17
Atrial fibrillation	51 (9.6)	21 (6.7)	30 (13.6)	0.01
Endocrine disorders	95 (17.9)	76 (24.4)	19 (8.6)	<0.001
Respiratory diseases	59 (11.1)	35 (11.2)	24 (10.9)	>0.99
Mental disorders	20 (3.8)	13 (4.2)	7 (3.2)	0.72

Data are presented as number (percentage) of patients. Comparisons between men and women were made using the  $\chi^2$  test or the Fisher exact test.

**RESULTS** The study group included 532 persons, of whom 59% were women and 41% men. The mean (SD) age of the study group was 59.95 (13.52) years ( $P = 0.001$ ). A difference in body weight and height depending on sex was also observed ( $P < 0.001$  for both parameters). The median (IQR) duration of hypertension treatment for the group as a whole was 10 (5–18) years, while the duration of treatment in the hypertension department was 5 (2–10) years (TABLE 1).

The most common comorbidities were disorders of the endocrine system (18% of the entire group), coronary heart disease (13%), and respiratory diseases (11%). Atrial fibrillation was observed more frequently in men than in women (14% and 7%, respectively;  $P = 0.01$ ), and endocrine disorders occurred in women more often than in men (24% and 9%, respectively;  $P < 0.001$ ; TABLE 2).

A total of 96% of respondents, both women and men, reported taking cardiovascular medications; 94% reported taking at least a single antihypertensive drug. The median (IQR) number of antihypertensive pills taken by respondents was 2 (1–3) (TABLE 3).

A high level of illness acceptance was noted in 242 participants (45%), average in 244 (46%), and low in 46 (9%). Patients with different levels of illness acceptance showed disparities

in the following parameters: duration of AH ( $P < 0.001$ ), number of cardiovascular diseases ( $P = 0.02$ ), number of all diseases ( $P < 0.001$ ), frequency of mental disorders (mainly anxiety and depressive disorders;  $P = 0.05$ ), and the number of drugs taken ( $P = 0.008$ ), including the number of noncardiovascular drugs ( $P = 0.004$ ). The post hoc analysis revealed that disease duration in patients with a high level of illness acceptance was markedly shorter (median, 8 years) than in patients with an average level of illness acceptance (median, 10 years;  $P < 0.001$ ). The number of cardiovascular diseases was lower in patients with a high level of acceptance (median, 1) than in those with poor acceptance (median, 2;  $P = 0.03$ ). Furthermore, people with a high level of acceptance of their illness had fewer diseases overall (median, 2) than those with average (median, 3;  $P < 0.001$ ), or poor disease acceptance (median, 4;  $P < 0.001$ ). Mental disorders were less common among patients with a high level of illness acceptance (2%) than those with average illness acceptance (6%;  $P = 0.03$ ). Patients with a high level of illness acceptance also took fewer noncardiovascular drugs than patients with average levels (median, 0 and 1, respectively;  $P = 0.002$ , for both comparisons), and also took fewer medications in general (median, 4 and median, 5, respectively;  $P = 0.005$ ; TABLE 4). In women, there was

**TABLE 3** Pharmacotherapy used in the study population

Pharmacotherapy	Total (n = 532)	Women (n = 312)	Men (n = 220)	P value
<b>Main classes of medications</b>				
Cardiovascular drugs	508 (95.5)	298 (95.5)	210 (95.5)	>0.99
Respiratory drugs	22 (4.1)	12 (3.8)	10 (4.5)	0.86
Nervous system drugs	17 (3.2)	7 (2.2)	10 (4.5)	0.22
Psychotropic drugs	20 (3.8)	11 (3.5)	9 (4.1)	0.92
Dermatological drugs	2 (0.4)	1 (0.3)	1 (0.5)	>0.99
Anti-diabetic drugs	140 (26.3)	78 (25)	62 (28.2)	0.47
Rheumatologic drugs (glucocorticoids, biological medications)	12 (2.3)	11 (3.5)	1 (0.5)	0.02
Other medications	143 (26.9)	92 (29.5)	51 (23.2)	0.13
Total number of medications taken	5 (3–7)	5 (3–6)	5 (3–7)	0.31
<b>Main classes of cardiovascular drugs</b>				
Number of cardiovascular drugs	4 (3–5)	4 (2–5)	4 (3–5)	0.13
Hypertensive drugs (any)	500 (94)	292 (93.6)	208 (94.5)	0.79
ACE inhibitors	282 (53)	163 (52.2)	119 (54.1)	0.74
β-Blockers	331 (62.2)	194 (62.2)	137 (62.3)	>0.99
Angiotensin receptor blockers	111 (20.9)	74 (23.7)	37 (16.8)	0.07
Calcium channel blockers	223 (41.9)	129 (41.3)	94 (42.7)	0.82
Diuretics	277 (52.1)	157 (50.3)	120 (54.5)	0.38
Other hypertensive drugs	129 (24.2)	69 (22.1)	60 (27.3)	0.21
Number of hypertensive drugs	3 (2–4)	3 (2–3)	3 (2–4)	0.29
Number of hypertensive pills	2 (1–3)	2 (1–3)	2 (1–3)	0.95
Cardiovascular nonhypertensive drugs (any)	363 (68.2)	210 (67.3)	153 (69.5)	0.65
Antiplatelet agents	75 (14.1)	29 (9.3)	46 (20.9)	<0.001
Anticoagulants	57 (10.7)	29 (9.3)	28 (12.7)	0.26
Statins	243 (45.7)	135 (43.3)	108 (49.1)	0.22
Other cardiovascular agents	225 (42.3)	137 (43.9)	88 (40)	0.42
Number of cardiovascular nonhypertensive drugs	1 (0–2)	1 (0–2)	1 (0–2)	0.16
Number of cardiovascular nonhypertensive pills	1 (0–2)	1 (0–2)	1 (0–2)	0.16

Data are presented as number (percentage) of patients or median (interquartile range). Comparisons between men and women were made using the  $\chi^2$  test, Fisher exact test, or the Mann–Whitney test.

Abbreviations: ACE, angiotensin-converting enzyme

a difference with regard to the impact of disease duration ( $P < 0.001$ ; **FIGURE 1A**), number of diseases overall ( $P < 0.001$ ), and number of side effects ( $P = 0.05$ ) on the level of illness acceptance. The post hoc analysis showed that women with a high level of illness acceptance had a shorter disease duration (median, 8 years) than those with an average (median duration, 10 years;  $P < 0.001$ ) or poor level (median duration, 10 years;  $P = 0.04$ ). Women with a high level of illness acceptance had fewer diseases overall (median, 3) compared with those with an average and poor level (median, 3 in both groups;  $P < 0.001$  and  $P = 0.02$ , respectively). Moreover, women with a high level

of illness acceptance experienced fewer side effects (median, 0) than those with average levels (median, 0;  $P = 0.02$ ).

In men, there was a difference in illness acceptance levels in relation to the following parameters: disease duration ( $P = 0.04$ ), number of cardiovascular diseases ( $P = 0.02$ ), number of diseases overall ( $P < 0.001$ ), number of medications taken ( $P = 0.011$ ), including noncardiovascular drugs ( $P = 0.04$ ), and declared compliance with medical advice ( $P = 0.05$ ). The post hoc analysis showed that disease duration was shorter in men with a high level of illness acceptance (median, 9.5 years) than in those with

**TABLE 4** An analysis of illness acceptance in the study population as a whole

Entire group		Acceptance of illness			P value	P value (post hoc test)
		High (n = 242)	Average (n = 244)	Low (n = 46)		
Sex	Female	142 (58.7)	147 (60.2)	23 (50)	0.43	-
	Male	100 (41.3)	97 (39.8)	23 (50)		
Age, y, mean (SD)		58.86 (14.15)	60.48 (12.96)	62.91 (12.71)	0.13	-
Duration of arterial hypertension, y		8 (5–13.75) <sup>a</sup>	10 (6–20) <sup>a</sup>	10 (6.25–18)	<0.001	a: <0.001
Number of cardiovascular diseases		1 (1–2) <sup>a</sup>	2 (1–2)	2 (1–3) <sup>a</sup>	0.02	a: 0.03
Number of all diseases		2 (2–4) <sup>a,b</sup>	3 (2–5) <sup>a</sup>	4 (2.25–6) <sup>b</sup>	<0.001	a: <0.001; b: <0.001
Mental disorders		4 (1.7) <sup>a</sup>	14 (5.7) <sup>a</sup>	2 (4.3)	0.046	a: 0.03
Number of cardiovascular drugs		4 (2–5)	4 (3–5)	4 (3–5)	0.38	
Number of noncardiovascular drugs		0 (0–1) <sup>a</sup>	1 (0–2) <sup>a</sup>	1 (0–2)	0.004	a: 0.002
Number of all medications		4 (3–6) <sup>a</sup>	5 (3–7) <sup>a</sup>	5 (3.25–7)	0.008	a: 0.005
Number of hypertensive drugs		3 (2–4)	3 (2–3.25)	3 (2–3)	0.95	-
Number of hypertensive pills		2 (1–3)	2 (1–3)	2 (1.25–3)	0.15	-
Number of cardiovascular nonhypertensive drugs		1 (0–2)	1 (0–2)	1 (1–2)	0.09	-
Number of cardiovascular nonhypertensive pills		1 (0–2)	1 (0–2)	1 (1–2)	0.09	-
Number of nontolerated medications		0 (0–1)	0 (0–1)	0 (0–1)	0.09	-
Drug intolerance		70 (28.9)	93 (38.1)	15 (32.6)	0.1	-
Number of adverse effects		0 (0–1)	0 (0–2)	0 (0–1)	0.06	-
Adverse effects		69 (28.5)	93 (38.1)	15 (32.6)	0.08	-
Compliance with medical advice		235 (97.1)	230 (94.3)	43 (93.5)	0.25	-

Data are presented as number (percentage) of patients or median (interquartile range) unless indicated otherwise. The group comparisons were based on the  $\chi^2$  test or Fisher exact test in the case of nominal data and on the analysis of variance or the Kruskal–Wallis test for quantitative data.

average levels (median, 10 years;  $P = 0.02$ ). Men with a high level of illness acceptance had fewer illnesses overall (median, 2) than those with average and poor levels (median, 4 in both groups;  $P < 0.001$  for both comparisons; **FIGURE 1B**). Men with a high level of illness acceptance had fewer cardiovascular diseases (median, 1) than those with poor levels (median, 2;  $P = 0.02$ ). Moreover, men who accepted their illness took fewer medications and noncardiovascular drugs overall (median, 4 and median, 0, respectively) than those with average levels of acceptance (median, 6 and median, 1, respectively;  $P = 0.004$  and  $P = 0.02$ ). Finally, men with a high level of illness acceptance (98%) declared that they complied with medical advice far more frequently than those with poor acceptance of their illness (87%;  $P = 0.05$ ).

A total of 34% of respondents (40% of women and 25% of men) experienced drug intolerance, and 8% of women and 5% of men did not tolerate any kind of hypertensive medication ( $P < 0.001$ ). The number of medications that women could not tolerate ranged from 0 to 8, and in men it ranged from 0 to 4. A difference was thus observed between the sexes with regard to the number of drugs that patients could not tolerate ( $P < 0.001$ ) (**TABLE 5**).

**DISCUSSION** Despite numerous guidelines on the management of hypertension, studies both in patients with hypertension and the general population indicate that more than half of all patients with hypertension remain untreated or are inadequately treated, that is, they have not reached their target blood pressure values. One of the significant causes of insufficient blood pressure control is poor compliance with pharmacotherapy (nonadherence), and this issue is prevalent in 30% to 50% of patients with hypertension.<sup>8,9</sup> Importantly, many patients make the conscious decision to stop taking any medications. A better understanding by the patient, including knowledge of factors that have an impact on acceptance of the disease and its treatment, may translate into a long-term improvement in ensuring effective pharmacological treatment of AH.

Our study showed an inverse relationship between illness acceptance and the duration of AH. It was demonstrated that high illness acceptance in men is associated with a more frequent and regular compliance with medical advice, as declared by the patients. People with high illness acceptance have fewer diseases overall. A correlation was likewise observed between high disease acceptance and fewer medications taken.

**TABLE 5** Drug intolerance in the study population

Intolerance of following medications		Total (n = 532)	Women (n = 312)	Men (n = 220)	P value
Intolerance of any kind of medication		178 (33.5)	124 (39.7)	54 (24.5)	<0.001
Intolerance of any kind of antihypertensive medication		37 (7)	26 (8.3)	11 (5)	<0.001
Number of medications not tolerated by the patients	0	354 (66.5)	188 (60.3)	166 (75.5)	<0.001
	1–2	136 (25.6)	93 (29.8)	43 (19.5)	–
	3–5	40 (7.5)	29 (9.3)	11 (5)	–
	>5	2 (0.4)	2 (0.6)	0 (0)	–
<b>Intolerance of cardiovascular agents</b>					
ACE inhibitors		11 (2.1)	8 (2.6)	3 (1.4)	0.54
β-Blockers		9 (1.7)	7 (2.2)	2 (0.9)	0.32
Sartans		6 (1.1)	4 (1.3)	2 (0.9)	>0.99
Calcium channel blockers		12 (2.3)	7 (2.2)	5 (2.3)	>0.99
Diuretics		7 (1.3)	4 (1.3)	3 (1.4)	>0.99
Other hypertensive medications		13 (2.4)	9 (2.9)	4 (1.8)	0.57
Anticoagulants		6 (1.1)	3 (1)	3 (1.4)	0.7
Statins		6 (1.1)	5 (1.6)	1 (0.5)	0.409
Other cardiovascular drugs		15 (2.8)	10 (3.2)	5 (2.3)	0.603
<b>Drug intolerance (other medications)</b>					
Analgesics		30 (5.6)	26 (8.3)	4 (1.8)	0.001
Other medications		116 (21.8)	78 (25)	38 (17.3)	0.04

Data are presented as number (percentage) of patients. Comparisons between men and women were made using the  $\chi^2$  test, the Fisher exact test, or the Mann–Whitney test.

Abbreviations: see TABLE 3

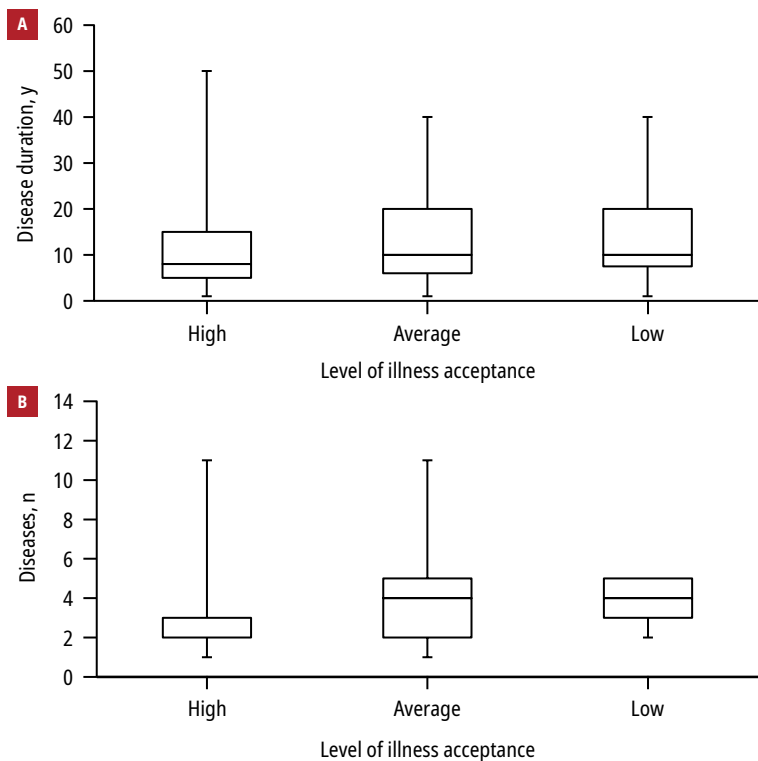
Moreover, in women, we found a relationship between poor illness acceptance and a higher incidence of drug-induced adverse events.

In a systematic review of 53 studies on patients' understanding of hypertension and their experiences with AH treatment, Marshall et al<sup>10</sup> showed that in questionnaires, respondents with this disease often chose statements which indicated that they were unaware of the chronic nature of hypertension, and often paid special attention to the risk of drug-related adverse events. Our results confirm a correlation between greater acceptance of AH and shorter disease duration. In addition, we observed lower levels of illness acceptance in women who had experienced adverse drug-induced events. This does indicate, however, that patients with AH should be continuously educated about their disease. In addition to the information they receive when hypertension is first diagnosed and pharmacotherapy begins, a patient should be informed once more during their next contact with a physician about the chronic nature of the disease and the need to continue taking medications. Several-year-long follow-up of patients with hypertension has shown that the longer the duration of the disease, the less likely the patient is to search for information about AH themselves, and hence

the physician assumes a proportionally greater role as a source of information on the disease.<sup>11</sup>

The relationship between the occurrence of adverse effects and poor illness acceptance observed in women may be the result of an emotion-focused stress coping strategy seen in patients with AH, which may also translate into selective use of medications, and as a result, poorer compliance with medical advice.<sup>12,13</sup> There are no data on differences between the sexes in terms of how patients with hypertension cope with stress. However, population studies have revealed that health-related quality of life is lower in women with hypertension than in men of the same age.<sup>14,15</sup> The key to ensure an effective relationship between a physician and patient is appropriately selected antihypertensive treatment that does not produce adverse effects. Each time a patient visits a cardiology clinic, the physician should ask the patient how he/she is tolerating the medications prescribed.

In our study, we noted a correlation between a higher level of illness acceptance in patients with AH and greater compliance with medical advice. In another study in a similar sample size, it was also demonstrated that among hypertensive patients with high compliance rates, there was a higher proportion of patients with high



**FIGURE 1** Distribution of disease duration and the level of illness acceptance in women (A) and distribution of the number of all diseases and the level of illness acceptance in men (B). The boxes show the interquartile range (IQR) with the horizontal bars inside the boxes indicating the medians. The lower and upper ends of the boxes are the first and third quartiles. The upper whisker extends from the top of the box to the largest value, and the bottom whisker extends from the bottom of the box to the smallest value.

levels of disease acceptance than patients with low adherence rates.<sup>16</sup> In this study group, it was shown that a lower number of drugs used is associated with better illness acceptance and a shorter duration of AH, which was in accordance with our results.<sup>16</sup>

In another study, Schmidt et al<sup>17</sup> identified the demographic and clinical factors that resulted in more frequent patient noncompliance with medical advice. Similarly to our study, the existence of numerous comorbidities was one reason for patients' less frequent use of medications.

We found that a higher number of comorbidities and a higher number of medications taken to treat those comorbidities have a negative impact on the level of illness acceptance in patients, which may translate into poorer compliance with medical advice. A meta-analysis conducted by Foot et al<sup>18</sup> demonstrated that patients with more advanced cardiovascular disease, such as a history of stroke or coronary artery bypass grafting, often express concern about the number of drugs they are prescribed and possible adverse effects, without experiencing any clear improvement in their well-being as a result of pharmacotherapy. On the other hand, a meta-analysis of over 25 000 patients revealed that fewer concerns about treatment translates into better compliance with medical advice.<sup>19</sup> Based

on our experience, men with high levels of illness acceptance were much more likely to declare that they complied with medical advice and take their prescribed medications regularly. A study by Qiu et al<sup>20</sup> similarly showed a positive correlation between illness acceptance and pro-health behavior in terms of the nonpharmacological and pharmacological management of AH.

**Conclusions** Based on our results, it can be stated that shorter duration of AH is associated with a higher level of illness acceptance. Moreover, we demonstrated a correlation between the level of illness acceptance and the number of diseases that a patient has overall. The fewer diseases, the higher the level of illness acceptance. Also, the fewer medications taken, the higher the level of illness acceptance. The occurrence of drug-induced side effects has a negative impact on illness acceptance in women. High levels of illness acceptance in men with hypertension are associated with more frequent compliance with medical advice. Lastly, there is no relationship between illness acceptance and patients' age or sex.

## ARTICLE INFORMATION

**CONFLICT OF INTEREST** None declared.

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