

# The effect of depression on adherence to antihypertensive medications in elderly individuals with hypertension

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*This study was carried out to find the effect of depression on adherence to antihypertensive medications in elderly individuals with hypertension. The descriptive study population consisted of hypertensive individuals aged 65 years and older, who presented to one of the three Family Health Centers located in the provincial center of Erzincan. No sampling was attempted, and 350 people who met the inclusion criteria were included in the study. The study data were collected between May and September 2014 by face-to-face interviews using a descriptive questionnaire, the Medication Adherence Self-Efficacy Scale-Short Form for hypertensive patients, and the Geriatric Depression Scale. Depression was found in 57.1% of all the elderly in this study and in 72.6 % of those aged 80 years and older. A moderately significant negative correlation was found between depression and the mean medication adherence self-efficacy score. In conclusion, early diagnosis and treatment of depression symptoms is an important factor in the management and treatment of hypertension. For this reason, it is important for the nurse and other health professionals working in primary care to observe hypertensive elderly people for depression symptoms, to consider the effect of depression on adherence to medication in coping with the disease. (J Vasc Nurs 2018; ■:1-11)*

Aging is a process starting in the intrauterine period and lasting until the end of life, and 65 years of age is accepted as the beginning of old age in this process.<sup>1</sup> The Turkish Statistical Institute has reported that the ratio of the population aged 65 years and older has reached 8.2% in 2015.<sup>2</sup> Because old age is a process in which many physiological, psychological, and social changes are experienced, the prevalence of chronic diseases increases and older people need more medical treatment and care.<sup>3</sup> Emergence of chronic diseases usually occurs in periods of depression,<sup>4</sup> and one of the major causes of physical disorders and troubles in the elderly is depression.<sup>5</sup> Depression

in the elderly is an important mental disorder not treated in Turkey for not being sufficiently diagnosed. Studies by using the Geriatric Depression Scale (GDS) have shown that its prevalence is 16% in subjects aged 70<sup>6</sup> years and older and 62.2% in subjects aged 65 years and older.<sup>7</sup> Blood pressure, which otherwise is normal, starts to fluctuate in times of depression, and blood sugar deviates from its normal values. Many studies have shown that when depression accompanies heart attack, it can aggravate heart-related problems of patients and the risk of having another heart attack.<sup>4</sup> The result of a meta-analysis of prospective cohort studies has shown that depression is a major risk factor in developing high blood pressure.<sup>8</sup> As the elasticity of blood vessels diminishes at advanced ages, the prevalence of hypertension increases.<sup>9</sup> According to the data of the PatenT2 study, the prevalence of hypertension in Turkey is 67.9% in the 60–69 years age group, 85.2% in the 70–79 years age group, and 76.3% in those aged 80 years and older.<sup>10</sup> According to the Seventh Report of the Joint National Committee, hypertension occurs in more than two-third of individuals after the age of 65 years.<sup>11</sup> It has been reported to be 89% in a study conducted abroad with the geriatric population<sup>12</sup> and 52% in another study.<sup>13</sup> Promoting positive beliefs that hypertension can be controlled with treatment is important.<sup>14</sup> It is known that uncontrollable hypertension reduces longevity, decreases are seen in morbidity and mortality in severe and mild cases receiving treatment,<sup>15</sup> and many factors play a role in the inability to control hypertension.<sup>16</sup>

Nonadherence to medication appears to be a complicated problem involving various risk factors particularly in older people living alone.<sup>17</sup> A study performed with older hypertensive people living in communities reported lack of knowledge in 86% of the elderly, inadequate control of blood pressure in 67%, and nonadherence to treatment in 40%.<sup>18</sup> In another study

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carried out with hypertensive elderly, being aged 70 years and older and having a systolic blood pressure (SBP)  $\geq$  160 mm Hg was reported to be a major obstacle in achieving the targeted blood pressure.<sup>19</sup> One of the important factors in controlling blood pressure is a high level of adherence by patients to their antihypertensive treatment. Besides helping individuals adhere to medication and gain healthy lifestyle behaviors, as well as providing information about their diseases,<sup>20</sup> nurses also have the responsibility to provide health education to the elderly about recognizing depression symptoms and consultancy service in directing them to appropriate units. Depression, hypertension and drug compliance are important problems in the elderly. However, we have not encountered any study in our country that investigates the effect of depression on the adherence to antihypertensive medication.

It has been reported that this situation in which depressive symptoms lead to inadequate control of the blood pressure and development of hypertension-related complications should be considered during the treatment of depressive/hypertensive patients, and they should be approached more attentively and given extra care so that the side effects of antidepressants on the blood pressure are minimized.<sup>21</sup>

In view of the aforementioned information, answers to the following questions are sought in this study, which was carried out to reveal the effect of depression on adherence to antihypertensive medication in older hypertensive people.

### Study questions

1. Do the descriptive characteristics of the elderly affect depression?
2. Do the descriptive characteristics of the elderly affect adherence to antihypertensive medication?
3. Does depression affect adherence to antihypertensive medication in the elderly?
4. Is there a relationship between the scores of depression and adherence to medication?

## MATERIALS AND METHOD

### Design

This descriptive study was conducted in the Family Healthcare Centers (FHCs) in the central districts of Karaağaç, İnönü, and Mimar Sinan in the province of Erzincan between May 2014 and September 2014. The study population consisted of individuals aged 65 years and older who presented for any indication of the FHCs. Recruitment continued until the sample size of 350 was met based on the power calculation.

### Participants

The inclusion criteria are as follows: 1) being 65 years of age and older, 2) having diagnosed with essential hypertension and started antihypertensive treatment at least a year ago, and 3) agreeing to take part in the study.

The exclusion criteria are as follows: 1) having any physical disorder (hearing and/or speaking disorders), 2) mental disability, 3) mental disorder (depression and psychotic disorder), or 4) cancer.

### Outcomes and measures

**Instruments.** The data were collected using a descriptive questionnaire, the GDS, and the Medication Adherence Self-Efficacy Scale-Short Form (MASES-SF). The blood pressure, height, and weight measurements of the patients were taken.

The descriptive questionnaire consisted of 12 questions in total, nine to inquire the sociodemographic characteristics of the patients (age, gender, education, marital status, perceived income level, availability of social support, perceived health, solitary living, and accompanying diseases) and three to inquire their hypertension (date of receiving hypertension diagnosis, years of using medication due to hypertension, and number of antihypertensive medications used daily).

The GDS was developed by Yesavage et al.<sup>22</sup> in 1983 and was tested for validity and reliability by Ertan and associates in 1997.<sup>23</sup> It is a self-report depression scale for older population consisting of 30 questions, which are to be answered as yes/no, on how the person has felt in life in the past week. The lowest score obtained from the scale is 0 and the highest 30; with scores 0–10 meaning “no depression”, 11–13 meaning “possible depression”, and a score equal to or above 14 meaning “definite depression.”<sup>23</sup> When calculating the GDS score, 1 point is given to each “no” answer and 0 point to each “yes” answer to the questions 1, 2, 7, 9, 15, 19, 21, 27, 29, and 30 and 1 point to each “yes” answer and 0 point to each “no” answer to the questions 3–6, 8, 10–14, 16–18, 20, 22–26, and 28.<sup>22,23</sup> The Cronbach’s alpha coefficient was 0.92 in the validity and reliability study of Ertan et al.,<sup>23</sup> whereas it was found as 0.86 in the present study.

The MASES-SF was revised and tested for validity and reliability by Fernandez et al.<sup>24</sup> The scale was tested for validity and reliability in our country by Hacıhasanoğlu et al.<sup>25</sup> Questioning the factors affecting the regular use of antihypertensive medications by hypertensive patients, the scale consists of 13 expressions assessing the self-efficacy/confidence level of the individual in agreeing with these expressions. Scoring is from 1 to 4, and the lowest score obtained from the scale is 13 and the highest being 52. Higher scores indicate better adherence to the antihypertensive drug therapy. The Cronbach’s alpha coefficient of the scale was 0.92, and we found it as 0.95 for this study.

Arterial blood pressure measurements were performed after letting the older hypertensive patients rest for 10–15 minutes by taking their systolic and diastolic blood pressures from the right arm in a sitting position. After a 5–10 minutes break, a second measurement was performed, and the average of the two measurements was recorded. Care was taken to prevent the patients from smoking and taking caffeine (coffee, coke) within 30 minutes before the measurements. An ERKA brand (Perfect Anaroid Model, Serial No: 09008298) sphygmomanometer was used in all patients for these measurements. Based on Korotkoff sounds, the systolic blood pressures (SBP) and diastolic blood pressure (DBP) values were recorded. Controlled blood pressure was defined as SBP < 150 mm Hg and DBP < 90 mm Hg. Controlled values were taken as SBP < 140 mm Hg and DBP < 90 mm Hg for the elderly who had diabetes alongside hypertension.<sup>26</sup>

**Data collection.** The study data were collected between May and September 2014 through face-to-face interviews after a certain sequence in the waiting rooms of Karaağaç, İnönü, and Mimar Sinan FHCs during 2–3 days of the weeks in which the investigators were available. The forms were completed in 20–25 minutes on average.

### Statistical analyses

In the analysis of data, the descriptive characteristics were given as numbers, percentages, and means. The Shapiro-Wilk test was

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