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Short communication

Impact of depression and anxiety in the elderly population on adherence trajectory to antihypertensive therapy

Elena Tosheva[1*], Gamze Salih[2], Slavcho Toshev[3], Renata Slaveska Raicki[4]

[1]*Zegin farm Prilep, Bl. Goce Delcev bb, 7500 Prilep, Republic of North Macedonia*
[2]*Sv.Vraci Kuzman and Damjan, St. Dejan Vojvoda 2, 6000 Ohrid, Republic of North Macedonia*
[3]*University Clinic of Cardiology, Faculty of Medicine, Ss. Cyril and Methodius University in Skopje, Majka Tereza 47, 1000 Skopje, Republic of North Macedonia*
[4]*Institute for Pharmaceutical Technology, Faculty of Pharmacy, Ss. Cyril and Methodius University in Skopje, Majka Tereza 47, 1000 Skopje, Republic of North Macedonia*

Introduction

Hypertension is a global health challenge, particularly among older individuals, where it emerges as a major risk factor for cardiovascular diseases associated with comorbidities (Osterberg and Blaschke, 2005).

Continuous adherence to antihypertensive therapy (AHTT) is essential for achieving controlled blood pressure levels and positive clinical outcomes; However, there is evidence of frequent ATTH adherent fluctuations, especially in the context of mental health conditions in elderly patients, such as depression and anxiety (Katon et al., 2005; Maidment et al., 2002). In the case of chronic diseases, patients have been shown to experience considerable difficulties in adhering both to recommended treatment plans and to their prescribed medications. Indeed, the average non-adherence rate of 30-50% among patients receiving pharmacotherapy consistently highlights a significant risk and a major challenge in the management of chronic diseases. The complexity of medication adherence is influenced by multiple factors of diverse origin, including patient-related barriers, medication-related factors and healthcare system-related determinants. The global increase in prevalence of hypertension was consistent and increased with age, affecting approximately 60% of individuals aged over 65 years and nearly 75% of those between 70 and 80 years of age.

The aim of this study is to examine the impact of depression and anxiety as predictors of adherence trajectories to AHTT in the elderly population from the Prilep region and surrounding areas.

Materials and methods

Design

A prospective longitudinal cohort study was conducted including 150 participants, aged ≥65 years, over a 6-month interval (from September 2025 to April 2026). Validated instruments were used to measure participants' mental health status and the adherence to prescribed AHTT.

Methods

Adherence to prescribed AHTT was measured using the Proportion of Days Covered (PDC) (Raebel et al., 2013). which calculates the percentage of days when antihypertensive medications were taken as prescribed. Depression and anxiety in participants were assessed using two appropriate scales: the PHQ-9 (Patient Health Questionnaire) for depression and

*elenatoseva1@gmail.com

GAD-7 (Generalized Anxiety Disorder) for anxiety. Group-Based Trajectory Modeling (GBTM) was used to identify and analyze different trajectories of adherence to AHTT. Multinomial Logistic Regression (MLR) was used to analyze and assess the role of psychiatric variables (PHQ-9 and GAD-7) as predictors.

Results and discussion

The result of oor study revealed present of different adherence trajectories to AHTT among participants. These adherence trajectories can be categorized in four categories such as:

• "High-stable" adherence trajectory (n=39) 26% when participant takes AHTT regularly

• "Moderate-declining" adherence trajectory (n=47) 31% when participant takes AHTT initially but loses interest over time as a result of predominant impact of depression, anxiety, or forgetfulness

• "Low-increasing" adherence trajectory (n=43) 29% when participant takes AHTT irregularly however, later on, improvements are noticed, and

• "Low-stable" adherence trajectory (n=21) 14% when constantly low adherence does not change.

Additionally, participants with high PHQ-9 scores (16-20) have shown twice the likelihood of belonging to the "Low-stable" adherence trajectory, while anxiety assessed through GAD-7 (starting at 9-11 and ending at 13-15) is associated with the "Moderate-declining" adherence trajectory.

In the case of "Moderate-declining" adherence trajectory, the participant is motivated at the beginning of AHTT but a subsequent loss of the interest is due to depression and anxiety, or forgetfulness. In the case of "low-increasing" adherence trajectory, it is shown that the participant usually requires some time for AHTT acceptance. During this period of adaptation, the provided consultation by physicians and pharmacists regarding the importance of regular medication intake, results in improved adherence. In the case of "low-stable" adherence trajectory, it is confirmed that the participant in continuum has problems with AHTT adherence, most often due to depression or anxiety. Therefore, in this case, a intensive intervention by healthcare professionals is undoubtedly required.

Conclusion

Depression and anxiety in elderly patients are significant predictors of unfavorable adherence trajectories to AHTT. The results of this study suggest that management of mental health conditions would significantly contribute to improving adherence trajectory to prescribed AHTT, and consequently to long-term and favorable health outcomes. Considering the well-established role and responsibility of pharmacists in patient healthcare, their contribution to AHTT is multifaceted and it can encompass several key aspects, including emphasizing the importance of regular and continuous adherence to prescribed AHTT and offering pharmaceutical care interventions.

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