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Medication Adherence among Older People with Chronic Diseases in a Suburban District in Malaysia's East Coast

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ABSTRACT

Older adults are vulnerable to multiple chronic conditions and polypharmacy, increasing the risk of medication non-adherence. This study evaluates medication adherence among older patients with chronic diseases in a suburban district in Malaysia. The study also investigates the association between adherence with age, gender, and quantity of medication prescribed. A cross-sectional study was conducted in January 2023, involving older patients aged ≥60 years in nine villages in the Dun Hulu Besut, Terengganu. Medication adherence was assessed using the Malaysia Medication Adherence Assessment Tool (MyMAAT), and statistical analysis included descriptive statistics and Fisher's Exact Test for associations. Of 40 participants, 15% showed good adherence (MyMAAT score ≥54), while 85% had moderate/poor adherence. Age, gender, and medication number were not significantly associated with adherence. Low medication adherence was prevalent, indicating the need for interventions by healthcare professionals, particularly community pharmacists, to improve adherence and treatment outcomes for older patients.

Keywords: Chronic diseases, elderly, community pharmacists, medication adherence, polypharmacy

INTRODUCTION

The aging population is a global and national phenomenon. By 2030, the number of people aged 60 years or older is projected to exceed 2 billion globally (He et al., 2020). In Malaysia, this demographic is rapidly growing, representing 10.4% of the population in 2022 (mampu.gov.my). Older individuals are more likely to experience

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non-communicable diseases (NCDs), which account for 71% of deaths worldwide, primarily in low- and middle-income countries (Chobe et al., 2022). Managing multimorbidity often results in polypharmacy, increasing the risk of medication non-adherence (Woodford & George, 2007). Community pharmacists play a crucial role in improving adherence through medication reviews and personalized interventions (Ministry of Health Malaysia, 2023). This study aims to assess medication adherence in elderly patients and evaluate its association with demographic and clinical factors.

METHODS

This cross-sectional study was conducted in January 2023 in nine villages within Dun Hulu Besut, Malaysia. This study was approved by the Universiti Sultan Zainal Abidin Human Research Ethics Committee (UniSZA/UHREC/2023/491). The study targeted elderly patients aged ≥60 years with at least one chronic condition. A convenient sampling method was used, with 40 participants recruited from a list provided by village authorities based on inclusion criteria. Informed consent was obtained, and face-to-face interviews were conducted using the MyMAAT questionnaire through the pharmacist-led home medication review. The pharmacists involved have been trained before the data collection. Responses were scored on a 5-point Likert scale, with adherence classified as good (score ≥54) or moderate/poor (score <54) (Hatah et al., 2020). Data were analyzed using IBM SPSS version 25, employing Fisher's Exact Test to evaluate associations between adherence and variables such as age, gender, and number of medications prescribed.

RESULTS

Demographic Characteristics

The study included 40 participants (60% female, 40% male), with a mean age of 70.6 years (SD = 7.2). More than half of the participants (57.5%) were aged ≥70 years. Table 1 summarizes the demographic data.

Table 1
Demographic characteristics of participants (N=40)

Variable	Mean (SD)	Frequency (Percentage, %)
Age (years old)	70.6 (7.2)	
60-69		17 (42.5)
≥70		23 (57.5)
Gender		
Male		24(60)
Female		16(40)
Education Level		
Primary School		40 (100)
Secondary School		0 (0)
Degree		0 (0)
Master		0 (0)
PhD		0 (0)
Current diagnosis		
Diabetes Mellitus		18
HPT		16
Hyperlipidemia		15
IHD		6
Gout		3
Gastric		2
Seizure		2
COPD		2
Chronic kidney disease		1

Clinical Characteristics

Participants were prescribed an average of 4.23 medications (SD = 2.42), with the number of medications ranging from 1 to 9 (Table 2).

Table 2
Number of medications prescribed

Variable	Mean (SD)	Min.	Max.
Number of Medications	4.23 (2.42)	1	9

Note. Min. = minimum; Max. = maximum

Medication Adherence

Overall, 85% of participants exhibited moderate/poor adherence, while only 15% showed good adherence (Table 3). Table 4 presents adherence scores across various MyMAAT constructs, indicating barriers to adherence related to medication-taking behavior, perceived utility, and self-efficacy.

Table 3
Percentage level of medication adherence

Level of Medication Adherence	Percentage (%)
Good	15.00
Moderate/Poor	85.00

Table 4
MyMAAT construct scores

Domain	Score (M±SD)
Patients' medication-taking behavior	13.45±4.5
Other	3.08±1.4
Perceived utility of the medications–benefits, costs, and efficacy	3.28±1.4
Perceived barriers to medication adherence	6.85±2.3
Perceived self-efficacy and social support	12±4.7

Association between Variables and Adherence

There was no significant association between adherence and age (p = 0.489), gender (p = 0.16), or the number of medications (p = 0.197) (Table 5).

Table 5
Association between adherence by age, gender, and number of medications

Variable	Level of Medication Adherence n (%)		P value *
	Good	Moderate to Poor	
Age (years old)			0.49
60-69	2 (33.3)	15 (44.1)	
≥70	4 (66.7)	19 (55.9)	
Gender			0.16
Female	2 (33.3)	22 (20.4)	
Male	4 (66.7)	12 (35.3)	
Number of medications			0.20
1-4	3 (33.3)	21 (61.8)	
≥5	4 (66.7)	13 (38.2)	

*Fisher's Exact Test

DISCUSSION

This study found that only 15% of elderly participants exhibited good medication adherence, with the majority showing moderate or poor adherence. This rate is lower than the adherence levels reported in similar studies, which range from 26% to 59% (Eijken et al., 2003). Factors such as cognitive decline and the complexity of medication regimens may contribute to non-adherence, particularly in rural settings (Woodham et al., 2018). Although age, gender, and the number of medications were not significantly associated with adherence, higher adherence was noted among participants prescribed five or more medications. This finding aligns with studies indicating that increased medical oversight may improve adherence (Kim et al., 2019).

CONCLUSION

The study reveals low adherence rates among elderly patients, underscoring the need for targeted interventions to improve medication compliance. Community pharmacists, through home medication reviews, can play a vital role in enhancing adherence and ensuring better therapeutic outcomes for elderly patients with chronic conditions. The use of convenience sampling in the study design represents a major limitation. Future research should consider more robust sampling methods to strengthen the generalizability of the results.

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REFERENCES

Chobe, M., Chobe, S., Dayama, S., Singh, A., Metri, K., Basa, J. R., & Raghuram, N. (2022). Prevalence of non-communicable diseases among urban elderly in six Indian states. *Cureus, 14*(10), Article e30123. https://doi.org/10.7759/cureus.30123

Eijken, M. V., Tsang, S., Wensing, M., Smet, P. A. G. M. D., & Grol, R. T. T. M. (2003). Interventions to improve medication compliance in older patients living in the community: A systematic review of the literature. *Drugs & Aging*, *20*(3), 229-240. https://doi.org/10.2165/00002512-200320030-00006.

Hatah, E., Rahim, N., Makmor-Bakry, M., Mohamed Shah, N., Mohamad, N., Ahmad, M., Haron, N. H., Hwe, C. S., Wah, A. T. M., Hasan, F., Rahmat, S. S., & Abdullah, N. (2020). Development and validation of Malaysia medication adherence assessment tool (MyMAAT) for diabetic patients. *PLoS One*, *15*(11), Article e0241909. https://doi.org/10.1371/journal.pone.0241909

He, W., Aboderin, I., & Adjaye-Gbewonyo, D. (2020). *Africa aging: 2020*. US Government Printing Office.

Kim, S. J., Kwon, O. D., Han, E. B., Lee, C. M., Oh, S. W., Joh, H. K., Oh, B., Kwon, H., Cho, B., Choi, H. C. (2019). Impact of number of medications on adherence. *Medicine*, 98(49), Article e17825. https://doi.org/10.1097/MD.0000000000017825

Ministry of Health Malaysia. (2023). *Home medication review protocol* (3rd ed.). Ministry of Health Malaysia.

Woodford, H. J., & George, J. (2007). Cognitive assessment in the elderly: A review of clinical methods. *QJM: An International Journal of Medicine*, *100*(8), 469-484. https://doi.org/10.1093/qjmed/hcm051

Woodham, N., Taneepanichskul, S., Somrongthong, R., & Auamkul, N. (2018). Medication adherence and associated factors among elderly hypertension patients with uncontrolled blood pressure in rural area, Northeast Thailand. *Journal of Health Research*, *32*(6), 449-458. https://doi.org/10.1108/JHR-11-2018-085