

Patient and Healthcare Factors as Predictive Factors to the Adherence to Treatment Regimens among Older Adults

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ABSTRACT

Non-compliance still exists as a global problem and patients should be closely monitored for treatment adherence. The study aims to determine if the patient and healthcare factors are predictive factors of adherence to treatment regimens among older adults. The study aims to investigate the adherence behavior among older adults and its associated factors in selected geriatric care facilities. This correlational study includes 200 geriatric patients using systematic and purposive random sampling in selected communities in Marikina City. The instrument tool includes determinants of health (DOH) and Treatment, Medication, Activity and Diet (TMAD) adherence survey tool. Using IBM Software Packages for Social Sciences (SPSS) version 5.0, the following statistical formulas were utilized: weighted mean ($\bar{x}$), standard deviation (SD), Pearson's product-moment correlation (r) and multiple regression. Most of the older adults who were respondents of the study perceived that personal factor ($\bar{x}=3.72$, $SD\pm0.496$) and healthcare factor ($\bar{x}=3.37$, $SD\pm0.68$) are strong determinants of adherence to treatment regimens. The findings of the study indicated that most of the respondents of the study have a high level of adherence behavior ($\bar{x}=2.55$, $SD\pm0.54$) to treatment regimens. Specifically, the results of the study revealed that the majority of the respondents of the study have a high level of adherence behavior to dietary regimen ($\bar{x}=2.54$, $SD\pm0.54$) and to medication regimen ($\bar{x}=2.84$, $SD\pm0.45$). Meanwhile, multiple regression analysis depicts that personal factor ($R^2=0.8351$; adjusted $R^2=0.8293$) and healthcare factor ($R^2=0.8720$; adjusted $R^2=0.8674$) have a high predicted R square and adjusted R square values, signifying that the said explanatory predictor variables are relevant and precise predictors of adherence behavior to treatment regimen among older adults. Older adult respondents perceived personal and healthcare factors as a very high and high determinants in the adherence behavior to treatment regimens, respectively. Older adults often adhere to treatment regimens. Patient and Healthcare Factors are strong predictors to adherence behavior to treatment regimen among older adults.

Keywords: geriatric nursing, aged, treatment adherence and compliance, patient compliance, health determinants

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INTRODUCTION

The geriatric population is more prone to various chronic and recurrent illnesses like diabetes mellitus, cardiovascular diseases, neurodegenerative illnesses, gastrointestinal, ocular, genitourinary, and respiratory disorders, etc., which may require chronic medication of multiple drugs¹. Patients possess one of the most enthralling behaviors when it comes to constancy to medication^{2,3}. It was cited that poor adherence to treatment of chronic diseases is a global problem with a striking magnitude. It is very definite that several patients undergo

hardships when it comes to adhering treatment recommendations⁴. Specifically, studies have reported that only 50% of the general population is estimated to adhere to their medications. Thus, the rates of adherence are generally low⁵. Non-compliance with treatment is one of the leading causes of treatment failure, and clinicians must determine the exact reason for non-compliance. Non-compliance still exists as a global problem and patients should be closely monitored for treatment adherence⁶. Poor compliance among older persons is a public health concern, as it accounts for adverse health outcomes,

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medication wastage with increased cost of healthcare, severely compromises the effectiveness of treatment and substantially worsens the disease with increased disability or death⁷. The fact that many people do not adhere to their prescribed regimens cannot be ignored or minimized. Non-adherence to prescribed therapy has been the subject of many studies. Principally, the study results remain unresolved and the primary determinant has not yet been distinguished. Older adults act not only as recipients of care but as partners to successful aging^{8,9}. Older adults are empowered with a challenge to develop effective health strategies to minimize vulnerability set by aging^{10,11}. Improving adherence outcomes requires understanding and enhancing this sense of agency. The study aims to determine if the patient and healthcare factors are predictive factors of adherence to treatment regimens among older adults. The study aims to investigate the adherence behavior among older adults and its associated factors in selected geriatric care facilities.

2. MATERIALS AND METHODS

2.1 Research Design

The study used a regression analysis design that aims to explain if several explanatory variables can predict the outcomes of a response variable. Through this study, it determined if patient and healthcare system factors can be predictive factors of adherence behavior to treatment regimens among older adult residents in selected geriatric facilities in Marikina City. The predictive variable in the study includes patient and healthcare system factors (exogenous variables), while the outcome/criterion variable refers to the adherence behavior to treatment regimens (endogenous variable) among older adult residents.

2.2 Locale, Sample and Sampling Technique

The study was conducted at a local community in Marikina City, which is situated in Barangays San Roque and Calumpang, District 1, Marikina City, Metro Manila 1110.

The researcher utilized the G-power analysis software package to compute the necessary sample size needed for the study. Using “a priori”, with effect size is 0.15. Using the level of significance error prob of 0.05, the estimated β error probability is 0.80, while the actual power is 0.80. With this, the total computed sample size is 85 older adult patients as study respondents

The respondents were selected using systematic random sampling. Here, a sample list of older adults was provided by/asked from the local town hall. Such a sample list is needed in order to choose every N^{th} case of the given population using computer-generated software applications. Older adults were selected in a random order at a regular interval, thus omitting the chance of bias in sample selection. Afterward, the researcher requested local officials to accompany the researcher in locating and recruiting the pre-selected respondents.

The following are the inclusion and exclusion criteria for

selecting the respondents of the study. The inclusion criteria includes: a) those older adults who have signed the informed consent, b) those older adults who can understand English and Tagalog language, c) those older adults who are prescribed maintenance medication, and d) those older adults who are diagnosed with a pre-existing medical condition. Meanwhile, the exclusion criteria are: a) those older adults who have not completed the survey form, b) those older adults who are currently admitted to a hospital or health care institutions, c) those older adults who are bedridden, debilitated and with physical impairments, and d) those older adults who are diagnosed with terminal illness.

2.4 Research Instruments

The survey questionnaire was utilized as the research instrument. The data collected from the respondents correspond to their opinion, perception, attitude and practice. The first survey questionnaire is Determinants of Health tool by the primary author which includes statements that pertained to the selected determinants of health, patient and healthcare system factors. The researcher utilized the Agreement Likert Scale on the selected determinants of health. The respondents indicate the degree of agreement or disagreement on each statement (Polit, 2008). In here, 5 denotes strongly agree, 4 represents agreement, 3 designates undecided, 2 signifies disagreement, and 1 indicates strongly disagree. A checklist-type of survey questionnaire was utilized. The respondents have to check the columns which correspond to their attitude, perception and practice. The content of the survey tool underwent content validation by experts. The statistician measured the alpha coefficient reliability and yielded a Cronbach's alpha result of 0.78. This denotes that the said survey questionnaire as a research instrument tool was valid and reliable.

The proponent also utilized the self-developed tool by the primary author entitled Treatment, Medication, Activity and Diet (TMAD) Adherence tool. This 20-item TMAD adherence instrument determines the level of adherence of hypertensive patients to their treatment, medication, activity and dietary regimens. The said tool corresponds to the attitude, behavior, practices, and tradition of the hypertensive patients into their adherence to the treatment regimen. The contents of the said TMAD tool were validated by five (5) expert Faculty/Nursing educators of the University of Santo Tomas (UST) College of Nursing. The said tool was tested for reliability after 15 pre-hypertensive patients participated in the pilot study. The tool was measured by a statistician and was considered valid, reliable and was found to have a Cronbach alpha coefficient reliability of 0.872.

2.5 Data Collection

A letter of permission to conduct a study was given to the local official of the research locale. Appropriate authorities granted official approval in the study to be conducted. The researcher abided with the Declaration of Helsinki of the 1975, as revised in 1983 which served as the guiding framework to maintain the highest standards

of ethics in conducting research to human subjects. After the approval, the proponents began screening respondents who are eligible and who met the inclusion criteria. Next, the researchers secured informed consent to those who were chosen as respondents of the study. Here, the researchers explained the possible risks, benefits, vulnerability implications, compensation and rights to participate/withdraw in the study. It also answered the questions and provide some clarifications raised by the respondents of the study. Subsequently, the researcher started collecting data/information a using survey questionnaire as the research instrument. The sample questionnaires were given to older adults and were answered by the participants in about 7 to 10 minutes only. It was conducted in the month of July 2023. Afterward, data were collected, tallied, collated, and analyzed.

2.6 Data Analysis

Using IBM Software Packages for Social Sciences (SPSS) version 5.0. Here, the following statistical formulas were utilized: weighted mean ($\bar{x}$) and standard deviation (SD) for descriptive statistics. Mean and standard deviation was utilized as statistical tools to get the average scores and measure the amount of variation/dispersion in a given data. This study aims to describe the patient and healthcare system as factors to adherence behavior among older adults and also to describe the adherence behavior to treatment regimens among older adults in the selected local community in Marikina City.

Meanwhile, Pearson's product-moment correlation (r) and multiple regression were utilized for inferential statistics. Multiple regression formulas analyze the relationship between multiple independent variables and their predicted outcomes. Thus, in this study, it validated if the patient and healthcare system factors are predictive of adherence behavior to treatment regimens among older adult residents in selected geriatric facilities in Marikina City.

2.7 Ethical Considerations

This study was guided by the Declaration of Helsinki, which provides a statement of ethical principles for medical research involving human subjects. Respondents' rights and protection were taken into consideration while conducting the study. Further, bioethical principles were observed, namely, justice, autonomy, fidelity, beneficence,

maleficence, and confidentiality. Informed consent was secured from all older adult patients who participated in the study. Participants of the study can withdraw freely anytime during the study and don't need to pay any fine. Collected data from the survey instrument tools was kept in strict privacy and confidentiality. The survey instruments was undergo some data collection plans and was stored in a sealed envelope placed in a cabinet and can only be accessed by the research proponent. The author declares that he has no conflict of interest in the study. Thus, it is ensured that there is no conflict of interest arising from familial, financial, proprietary, or study site.

3. RESULTS AND DISCUSSION

Table 1 outlines personal factors as an identified element contributing to adherence to treatment regimens among older adults in selected local communities in Marikina City. In totality, the findings of the study indicated that most of the older adults perceived personal factors as a very high determinant ($\bar{x}=3.72$, $SD\pm0.496$) in adherence behavior to treatment regimens. The findings of the study are supported by some research which state that patient factors such as old age, male gender, demographics, education level, physical ability, mental status, disease condition, knowledge, behavior/attitude, health belief, cognitive level and health literacy of patient were identified as various risk factors associated with adherence behavior to treatment regimens in elderly¹². Each of patient's individual characteristics is regarded as a predictor of adherence to therapy. Better education significantly improves treatment adherence and better health outcomes and play an important role in the rehabilitation of chronic diseases¹³. Behavior is a significant determinant associated with their adherence to treatment regimens. It is imperative that patients have an active participation and personal involvement in the treatment and management of their medical condition. Also, patients should be highly motivated to perform the desired behaviors. The presence of personal motivation, commitment and conviction increases the likelihood of a hypertensive patient to perform a desired behavior. A patient who understands his/her medical condition is an individual who is actively involved in arriving at sound health decisions. Definitely, this patient is the one who gives high importance to his/her medical treatment and treatment regimens.

Table 1. Personal Factor as an Identified Factor Contributing to the Adherence Behavior Among Older Adults

Statement	Mean	SD	Interpretation
A. PERSONAL FACTOR			
1. I actively participate and am personally involved in the treatment and management of my medical condition.	3.67	0.66	Very High
2. I am highly motivated to perform the desired behaviors and healthy lifestyles.	3.70	0.47	Very High
3. I am committed to carrying out a desired behavior that improves my health and prevents my condition.	3.70	0.47	Very High
4. I wholeheartedly accept that my medical condition is already a lifelong disease that needs to be managed.	3.70	0.47	Very High
5. I make favorable decisions concerning my health, medical condition and treatment.	3.63	0.56	Very High

6. I am aware of the reasons for strict adherence to therapeutic regimens.	3.73	0.45	Very High
7. I have a caring significant other who supports me throughout the course of my medical condition.	3.77	0.43	Very High
8. I consider the advice of my family, friends and neighbors in making decisions concerning my health.	3.73	0.45	Very High
9. I ask for God's help concerning my health and medical condition.	3.77	0.43	Very High
10. I follow my cultural beliefs and health practices, such as using herbal medicines and other alternative medicines to treat ailments.	3.63	0.67	Very High
11. I strongly believe that my age, gender and education affect my attitude towards a healthy lifestyle.	3.77	0.43	Very High
11. I strongly believe that my way of thinking, consciousness and physical body have a big contribution to my health.	3.77	0.43	Very High
12. I have a vast knowledge of different beliefs pertaining to my health.	3.63	0.61	Very High
13. I know how serious my illness is and how severe my physical condition is.	3.77	0.43	Very High
14. I am aware of the benefits and importance of adhering to therapeutic regimens.	3.80	0.48	Very High
TOTAL	3.72	0.496	VERY HIGH

Legend: 1.00 - 1.60 means **Very Low Determinant**, 1.61 - 2.20 reflects **Low Determinant**, 2.21 - 2.80 denotes **Moderate Determinant**, 2.81 - 3.40 implies **High Determinant**, and lastly 3.41 - 4.00 which is interpreted as **Very High Determinant**.

Table 2 presents the healthcare system factor as an identified factor contributing to the adherence behavior to treatment regimens among older adults in selected local communities in Marikina City. In totality, the findings of the study indicated that most of the older adult respondents perceived healthcare factors as a high determinant ($\bar{x}=3.37$, $SD\pm0.68$) in the adherence behavior to treatment regimens. This implies that the majority of the older adults strongly agree that complexity in treatment regimen, complex dosing schedule, health care providers, provider-patient trusting relationship, patient satisfaction, and various risk factors are associated with compliance to treatment regimens. According to recent literature, the identified health care system factors include complexity in treatment regimen, complicated dosing schedule, non-competent health care providers, weak provider-patient trusting relationship, low patient satisfaction, and numerous hazardous conditions linked to elderly's non-adherence. Health care factors play an interestingly important role in patients' adherence to medications. Hence, the involvement of older adults in health care decision making would be more likely to adhere to treatment regimens¹⁴. To promote adherence among the elderly, time and effort must be taken into consideration to assess all variables that may affect health behavior³. "Health services are a factor that affects the health of

individuals¹⁵. This determinant is necessary in order to effectively promote health and prevent illness. Further, maintaining patient's health is an ultimate nurses' role. Caring for patients with hypertension requires effective health education about the importance of medication, dietary and lifestyle modification compliance^{3,16}. Nurses are in critical positions must coordinate and integrated care for the effective delivery of healthcare services^{17,18}. The critical roles of nurses include awareness raising, public advocacy, public campaign, health literacy and health education¹⁹. It was also highlighted that healthcare system factors are situational or indirect influences that can be linked with healthcare adherence. There are different factors to consider which include aesthetic environmental features, technological advancement, modernized health facility/equipment and easy accessibility. Health is attributed not only to a single determinant but also to a combination of several determinants. Such factors are necessary for an individual to maintain his/ her own health. Furthermore, all factors are highly crucial and essential in sustaining older adults' level of adherence to the treatment regimen. Absence of one of these determinants may affect health care adherence. This, in turn, may lead to non-adherence of a hypertensive patient.

Table 2. Healthcare System Factor as an Identified Factor Contributing to the Adherence Behavior among Older Adults

Statement	Mean	SD	Interpretation
B. HEALTHCARE SYSTEM FACTOR			
1. I finish and complete the prescribed dosage, duration and course of my medications and treatments.	3.53	0.73	Very High
2. I am satisfied with the therapeutic effects of the prescribed medications and treatments on my overall health.	3.73	0.52	Very High
3. I finish and complete the prescribed dosage, duration and course of my medications and treatments.	3.77	0.50	Very High
4. I notice that my overall medical treatment is affordable and inexpensive	2.87	0.94	High
5. I consult a doctor first before I take medicines for my medical condition. I do not practice self-medication	3.63	0.61	Very High
6. I consider the health advice of my physician and nurses.	3.80	0.41	Very High
7. I perceive that health care personnel are skillful, caring and knowledgeable in the therapeutic management of my medical condition.	3.83	0.38	Very High
8. I experience quality health care services being rendered by health care professionals.	3.87	0.43	Very High
9. I have a good interpersonal relationship with my doctors and nurses.	3.83	0.38	Very High
10. I perceive that the hospitals, clinics and health centers are accessible and available.	3.57	0.68	Very High
11. I perceive that the health care facilities are modernized and the equipment is complete.	2.80	0.96	Moderate
12. I include a monthly budget and expenditure for my health and maintenance medications.	2.80	1.00	Moderate
13. I avail free health care services from health centers and other affordable services at government hospitals.	1.83	1.15	Low
14. My family members support me in the finances associated with my adherence to therapeutic regimens.	3.77	0.50	Very High
15. My prior experience influences my current attitude and behavior towards my health.	2.93	1.05	High
TOTAL	3.37	0.68	HIGH

Legend: 1.00 - 1.60 means **Very Low Determinant**, 1.61 - 2.20 reflects **Low Determinant**, 2.21 - 2.80 denotes **Moderate Determinant**, 2.81 - 3.40 implies **High Determinant**, and lastly 3.41 - 4.00 which is interpreted as **Very High Determinant**.

Table 3 depicts the adherence behavior to treatment regimens among older adults in selected local communities in Marikina City. In totality, the findings of the study indicated that most of the older adults have a high level of adherence behavior ($\bar{x}=2.55$, $SD\pm0.54$) to treatment regimens. Specifically, the results of the study revealed that the majority of the older adults have a high level of adherence behavior to dietary regimen ($\bar{x}=2.54$, $SD\pm0.54$). On the other hand, it was observed that respondents have moderate adherence to medication regimen ($\bar{x}=2.84$, $SD\pm0.45$). Meanwhile, respondents displayed very high level of adherence was observed with activity regimens ($\bar{x}=2.19$, $SD\pm0.71$) and treatment regimens ($\bar{x}=2.64$, $SD\pm0.53$), respectively. This is supported by the literature, which states that adherence to a treatment regimen usually requires that the person make one or more lifestyle changes to carry out and faithfully follow specific activities that promote and maintain health⁶. Common examples of adherent healthcare behaviors include taking prescribed medications, maintaining a healthy diet, increasing daily physical

activities and exercise, self-monitoring for signs and symptoms of illness, practicing specific hygienic measures, seeking periodic health evaluations, and performing other therapeutic and preventive measures⁵. Accordingly, the first line of defense in treating diseases is adherence to treatment regimens¹³. Comprehensive lifestyle modifications are important non-pharmacological interventions and recommended as primary and complementary treatments for chronic diseases in the clinical practice³. Such needs are important in the management of physical and medical care aspects²⁰. The adoption of structured and well-defined health protocols to meet educational opportunities and learning needs is vital²¹. Taking responsibility for oneself is the cornerstone for improving one's health condition. High level of wellness among individuals can be attained through a health-protecting behavior which is a behavior performed by people in maintaining their health, patients' compliance to medical treatments, and increased adherence to treatment regimens.

Table 3. The Adherence Behavior to Treatment Regimens among Older Adults

Statement	Mean	SD	Interpretation
A. THERAPEUTIC ADHERENCE			
1. I visit my physician for medical consultation and regular check-up.	2.50	0.57	Very High
2. I return to the scheduled day/date of my follow-up check-up.	2.70	0.47	Very High
3. I visit a nearby health center for medical consultation and regular check-up.	2.43	0.73	High
4. I adhere to all laboratory, radiologic and diagnostic procedures prescribed to me by my attending physician.	2.73	0.52	Very High
5. I adhere to the medical treatment, therapies and regimens in the management of my medical condition.	2.83	0.38	Very High
TOTAL	2.64	0.53	VERY HIGH
B. MEDICATION ADHERENCE			
6. I take the prescribed medications religiously.	2.83	0.46	Very High
7. I take the exact medication prescribed by my physician in the treatment of my medical condition.	2.77	0.50	Very High
8. I adhere to the prescribed time and frequency of my maintenance medication for my medical condition.	2.87	0.43	Very High
9. I adhere to the prescribed dosage of my maintenance medication for my medical condition.	2.87	0.43	Very High
10. I know exactly the reason, indication, and considerations of my maintenance medication.	2.87	0.43	Very High
TOTAL	2.84	0.45	VERY HIGH
C. ACTIVITY ADHERENCE			
11. I help in performing household chores.	2.50	0.82	High
12. I perform daily walking, brisk walking, dancing and other physical activities.	2.67	0.66	Very High
13. I perform running, jogging, climbing stairs and other strenuous activities.	2.33	0.84	High
14. I perform stretching, squatting, and flexibility exercises.	2.37	0.85	High
15. I perform ballroom dancing.	1.07	0.37	Very Low
TOTAL	2.19	0.71	MODERATE
D. DIET ADHERENCE			
16. I eat fruits and vegetables regularly.	3.00	0.00	Very High
12. I usually don't eat/consume foods high in salt/sodium.	2.10	0.61	Moderate
13. I usually don't eat/consume fatty, oily foods, and a high-cholesterol diet.	2.17	0.65	Moderate
14. I usually don't eat/consume foods high in sugar/sweets.	2.43	0.57	High
15. I eat/consume food high in vitamins, minerals and antioxidants.	3.00	0.00	Very High
TOTAL	2.54	0.45	HIGH
OVERALL TOTAL	2.55	0.54	HIGH

Legend: 1.00 - 1.40 means **Very Low Adherence**, 1.41 - 1.80 reflects **Low Adherence**, 1.81 - 2.20 denotes **Moderate Adherence**, 2.21 - 2.60 implies **High Adherence**, and lastly 2.61 - 3.00 which is interpreted as **Very High Adherence**.

Table 4 represents the personal and healthcare factors as predictive components of adherence behavior to treatment regimens among older adults. Based on the study findings, Pearson product-moment correlation coefficient (r) shows

a very strong positive correlation between personal factor and adherence behavior ($r = 0.9139$, $p = 0.011$) and healthcare factor and adherence behavior ($r = 0.9913$, $p = 0.041$). This implies the following hypotheses are drawn

using a 0.05 level of significance: 1) there is a statistically significant relationship between personal and adherence behavior to treatment regimens among older adults, and 2) there is a statistically significant relationship between healthcare factors and adherence behavior to treatment regimens among older adults. Meanwhile, the second table depicts the result of the use of multiple regression analysis in determining predictive factors. Accordingly, both personal factor ($R^2=0.8351$; adjusted $R^2=0.8293$) and healthcare factor ($R^2=0.8720$; adjusted $R^2=0.8674$) have high predicted R square and adjusted R square values that signify that the said explanatory predictor variables are relevant and precise predictors of adherence behavior to treatment regimen among older adults. Though the standard for a good R-squared value is 0.90 and a perfect value is 1.00, the result of this regression analysis is considered to be still high and acceptable (0.70 and above). Lastly, both personal factor ($p=0.0177$; standard error=0.1050) and healthcare factor ($p=0.0051$; standard error=0.0925) imply a strong predictive correlation to the adherence behavior to treatment regimens among older adults. This supports proposition number 1 of the proposed “Theory of Healthcare Adherence among Older Adults,”

Table 4. Personal and Healthcare Factors as Predictive Factors to The Adherence Behavior to Treatment Regimens Among Older Adults

Factors	Pearson (r)	p-value*	T statistics	Interpretation
Personal Factor and Treatment Regimens Adherence	0.9139	0.011	17.1409	Very strong positive correlation
Healthcare Factor and Treatment Regimens Adherence	0.9913	0.041	57.4105	Very strong positive correlation

*Significant if p value is <0.05

Factors	Multiple R	R square	Adjusted R	Standard Error	p-value
Personal Factor and Therapeutic Regimen Adherence	0.9138	0.8351	0.8293	0.1050	0.0177
Healthcare Factor and Therapeutic Regimen Adherence	0.9338	0.8720	0.8674	0.0925	0.0051

CONCLUSION AND RECOMMENDATIONS

Older adult respondents perceived personal and healthcare factors as a very high and high determinants in the adherence behavior to treatment regimens, respectively. Older adults often adhere to treatment regimens. Patient and Healthcare Factors are strong predictors to adherence behavior to treatment regimen among older adults.

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Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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which states that “Personal and Healthcare factors are contributing elements associated with compliance in elderly.” This study is supported by previous study findings, which state that the reasons for adherence and compliance behavior among older adults can be broadly classified into patient factors and health care system factors²². Both personal factors and healthcare factors were related to the significant improvement in the adherence to treatment regimens like drug affordability, health services accessibility, patient economic status, employment status, education, cognitive knowledge, income and family support. Accordingly, such factors make better contribution to their own illness management, improved patient’s functional condition or worst can result in poor health management and worse health outcomes¹³. Moreover, the study showed that knowledge, illness expectations, health workers and adherence were strongly associated with each other ($p < 0.05$). Knowledge promotes protective behaviors by buffering the negative effects of illness expectations. Essential health workers are also crucial to adherence to recommended behaviors among patients.

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