



Factors Affecting Medication Adherence among Elderly People with Chronic Illness in Surigao City

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ABSTRACT: A descriptive quantitative study in Surigao City, Philippines, investigated the factors affecting medication adherence in elderly individuals with chronic illnesses. The study involved 50 geriatric respondents to whom the researcher-made questionnaires adapted from the Morisky Medication Adherence Scale (MMAS-8) were administered. Most respondents exhibited a predominantly very high adherence level to their medication regimen, indicating overall satisfactory adherence. Various demographic factors such as age, gender, education, occupation, marital status, income, and clinical diagnosis did not significantly associate with adherence. Exploratory factor analysis identified four key factors affecting medication adherence namely: effectiveness of the medicine, desire to be treated, physician's good prescription, and influence of positive observations. The study recommends that healthcare providers should implement a continuous monitoring and evaluation process, facilitating adjustments and refinements based on evolving circumstances among the elderly population. Healthcare systems and policymakers should explore strategies to make medications more affordable and accessible, particularly for those with limited financial resources. Future research should delve deeper into each factor to gain a comprehensive understanding of medication adherence.

KEYWORDS: Chronic Illnesses, Descriptive Survey, Elderly, Healthcare, Medication Adherence, Surigao, Philippines.

INTRODUCTION

The global burden of chronic diseases has increased significantly due to longer life expectancy and population aging (Christensen et al., 2009). Chronic diseases, generally defined as long-lasting physical or mental disorders requiring continuous care, pose a threat to individuals' physical and social functioning, overall well-being, and the financial sustainability of healthcare systems (Bernell & Howard, 2016). The prevalence of chronic diseases has reached unprecedented levels in many populations, making them a significant public health concern.

Effective management of many chronic conditions necessitates the long-term use of medications. Failing to adhere to the prescribed treatment regimen can result in disease progression, complications, and heightened healthcare utilization. Healthcare providers can play a vital role in improving disease control and addressing barriers by actively monitoring medication adherence. This involves closely tracking how patients can follow the agreed-upon medication recommendations between themselves and their healthcare provider. Medication adherence is a critical component in the management of chronic diseases, and as such, public health initiatives have prioritized efforts to enhance adherence rates. Surprisingly, only half of individuals with chronic diseases adhere to their medication regimens as directed, underscoring the importance of addressing this issue (Sabaté, 2003).

The World Health Organization (WHO) emphasizes that patients' ability to adhere to treatment recommendations is influenced by multiple factors rather than a single one. These factors operate within five dimensions: social and economic, healthcare team and system-related, condition-related, therapy-related, and patient-related. These dimensions interact and magnify each other's impact. Certain factors contribute to intentional non-adherence, where patients consciously decide not to take their medication, often due to high costs. Other factors influence non-intentional non-adherence, such as forgetting to take medication, often related to mental comorbidity. The influence of these factors on adherence is recognized by the WHO (Peh et al., 2021). Medication adherence directly affects the efficacy of the treatment. When individuals do not follow their prescribed medication regimen, they may not achieve the desired therapeutic outcomes. Monitoring adherence allows healthcare providers to differentiate between non-adherence and medication inefficacy when assessing the reasons behind a lack of treatment response (Gast & Mathes, 2019).



Healthcare services in the Philippines are primarily driven by profit, making them expensive. Given that a significant portion of the population in the country is impoverished, healthcare often takes a backseat in their priorities, with basic needs such as food, shelter, and education taking precedence. Although PhilHealth insurance covers 76 percent of The costs, 49 percent of healthcare expenses still rely on out-of-pocket payments. This situation, coupled with rising healthcare costs and insufficient social protection measures, has led to the perception of illness as a catastrophic event, particularly among the most economically disadvantaged Filipino families (Gaston, 2015). Ischemic heart disease accounted for the most significant proportion of total deaths in 2021, contributing approximately 17.7 percent (155,775) of all registered deaths. Following closely were deaths caused by cerebrovascular diseases, including stroke, which accounted for around 9.8 percent (85,904) of the total. Despite the established effectiveness of pharmacologic treatment, medication adherence among patients has been reported to be as low as 66 percent. Although some publications discuss factors that impact adherence among Filipinos, there is currently a lack of comprehensive research evaluating these factors systematically (Gutierrez & Sakulbumrungsil, 2021).

Enhancing medication adherence involves a collaborative effort among healthcare providers, patients, and caregivers. Healthcare professionals have a crucial role in educating patients about the significance of adherence, providing clear medication instructions, and addressing any doubts or misunderstandings. Simplifying medication regimens and utilizing aids such as pill organizers or smartphone reminders can assist individuals in adhering to their prescribed medications. A solid patient-provider relationship based on trust and open communication can greatly influence medication adherence. By recognizing patients' unique requirements, preferences, and potential obstacles, healthcare providers can customize treatment plans to improve adherence and actively engage patients in their healthcare journey.

This research determined the factors affecting medication adherence among elderly people with chronic illnesses. It is essential to comprehend the factors that drive an older adult's medication adherence, as it is even more vital to identify the obstacles that hinder their adherence to their prescribed medication. The distinction of this study from previous ones lies in its focus on differences within the study population, sample size, design, study duration, socio-demographic characteristics of the respondents, the community's response to medication adherence, and its determination of factors influencing medication adherence within the local context, specifically within the rural area of Surigao del Norte. This research was conducted explicitly in Brgy. Mabua, Surigao del Norte. This study was undertaken due to the need for more research on medication adherence in the Philippines.

Conceptual Framework

This study explored the factors affecting medication adherence among elderly people with chronic illness in Surigao City. Thus, this study is anchored on the study of Kim (2011) entitled "Medication Adherence of Elderly with Hypertension and Diabetes-mellitus and Its Influencing Factors" in Korea, which provided details on non-adherence of elderly with hypertension and diabetes mellitus and its influencing factors. To explore non-adherence, elderly patients in Korea were surveyed using the Morisky Medication Adherence Scale (MMAS-8). Medication Adherence Scale is designed to predict medication-taking behavior and outcomes and explain the persistence of the patient's long-term continuation of therapy, which is a significant factor in managing chronic diseases. Also, the Medication Adherence Scale is designed to classify patients into a high/low continuum for knowledge and motivation. Thus, this study showed that medication adherence is an average of 4.66 with MMS (range 0-6), and only 78% of patients hold high motivation for medication adherence. However, 95.5% of patients hold high knowledge of medication adherence. This study revealed which factors influence high motivation of medication adherence. It proved that patients' participation in work, education level, participation in private health insurance, number of medications and medication frequency per day, pharmacists' explanation, and the experience of non-adherence due to cost are important factors in explaining the high motivation of medication adherence of elderly with hypertension and diabetes mellitus. Thus, medication adherence is a complex behavior influenced by multiple variables. Accordingly, identifying and addressing these factors can help improve medication adherence and enhance treatment outcomes. Healthcare providers can work with patients to develop personalized adherence strategies and address any barriers affecting their ability to adhere to their prescribed medications.

Furthermore, the following variables were also considered:

Age. It refers to the age of a person (or subject) of interest at last birthday (or relative to a specified, well-defined reference date);

Sex. It refers to the gender of an elderly (Male/Female);

Educational Attainment. It refers to the level of education that the elderly are assumed to have attained;



Occupation. It refers to the respondents means of earning a living;

Civil Status. It refers to whether the elderly is married, divorced, single, widowed, or in a common-law relationship;

Household Monthly Income. It refers to the earnings of everyone under the same roof with the elderly, whether they're related or not. Sources include wages, salaries, retirement income, investment income, Social Security benefits, and earnings from other income sources; and

Clinical diagnosis. It refers to the identified illness, ailment, or damage based on the patient's signs and symptoms, medical history, and physical examination.

The Morisky Medication Adherence Scale (MMAS-8) was adapted to assess the level of medication adherence among elderly individuals in Barangay Mabua, Surigao City. When patient scores higher on the scale, they are evaluated as more adherent. If they score lower on the scale, they are presumed to be struggling with non-adherence. Medication adherence is the extent to which patients take their medications as directed by their doctors or the extent to which a person's actions and behaviors adhere to the recommendations for treating their health and diseases. (Doggrell, 2010) included it as well in the elements that senior citizens with chronic illnesses in Barangay Mabua, Surigao City, believe affect medication adherence among elderly adults with chronic illnesses.

Research Objectives

This study determined the factors affecting medication adherence among elderly people with chronic illness in Surigao City. Specifically, the study determined:

1. The demographic profile of the respondents in terms of:

- 1.1 age;
- 1.2 sex;
- 1.3 educational attainment;

1.4 occupation;

- 1.5 civil status;
- 1.6 household monthly income; and
- 1.8 clinical diagnosis.

2. The level of adherence among elderly people with chronic illness.

3. The significant degree of variance in the level of medication adherence among elderly people with chronic illness when they are grouped according to profile.

4. The factors affecting medication adherence among patients with chronic illness.

METHODS

This study applied the descriptive quantitative research design employing the survey technique. 50 elderly individuals aged 60 years and older residing in Barangay Mabua, Surigao City, with at least one chronic non-communicable condition and receiving pharmacological treatment participated in the study through a convenience-purposive sampling method. A researcher-made survey questionnaire instrument was used to determine the factors affecting medication adherence among the respondents it was modified and validated by the experts and underwent reliability testing through Cronbach's alpha. The questionnaire included an informed consent section and factors affecting medication adherence in elderly people. The mean and standard deviation were used to determine the factors affecting medication adherence among elderly people with chronic illnesses. The frequency and percentage were used to determine the profile of the respondents. The analysis of variance was used to determine the significant degree of variance in the factors affecting medication adherence among patients with chronic illnesses when grouped according to their profile. The exploratory factor analysis was used to condense the data into a more concise set of summary variables and assess the findings to determine the structure of the relationship between the factors affecting medication adherence and the respondents' responses. Ethics in the conduct of this research were strongly considered for the academic integrity of this study. Ethical research practices in educational institutions are strongly followed since it is always the goal of educational research to contribute to the general welfare of the academic community and to generally create measurable information or data that will eventually add to the increase of human knowledge (Ederio, 2023) such as the essence depicted by this study.



RESULTS AND DISCUSSION

I – Profile Distribution of the Respondents

Table 1 shows the profile of the respondents in terms of age, sex, educational attainment, occupation, civil status, household monthly income, and clinical diagnosis.

Table 1. Profile Distribution of the Respondents

| Profile | f (n=50) | % |
|---------------------------------|----------|------|
| Age | | |
| 60-69 years old | 23 | 46.0 |
| 70 years old and above | 27 | 54.0 |
| Sex | | |
| Male | 21 | 42.0 |
| Female | 29 | 58.0 |
| Educational Attainment | | |
| Elementary Level | 13 | 26.0 |
| Elementary Graduate | 11 | 22.0 |
| High School Level | 14 | 28.0 |
| High School Graduate | 9 | 18.0 |
| College Level | 2 | 4.0 |
| College Graduate | 1 | 2.0 |
| Occupation | | |
| None | 14 | 28.0 |
| Housewife | 18 | 36.0 |
| Sari-sari Store Owner | 4 | 8.0 |
| Fisherman | 8 | 16.0 |
| Government Worker | 3 | 6.0 |
| Construction Worker | 1 | 2.0 |
| Others | 2 | 4.0 |
| Civil Status | | |
| Single | 1 | 2.0 |
| Married | 33 | 66.0 |
| Widowed | 16 | 32.0 |
| Household Monthly Income | | |
| Less than 10, 000 | 49 | 98.0 |
| 10, 001 to 20, 000 | 1 | 2.0 |
| Clinical Diagnosis | | |
| Hypertension | 15 | 36.4 |
| Arthritis | 1 | 4.5 |
| Diabetes | 2 | 6.8 |
| Others | 1 | 2.3 |
| 2 Chronic Diseases | 22 | 18.2 |
| 3 Chronic Diseases | 8 | 11.4 |
| 4 Chronic Diseases | 1 | 2.0 |



In terms of age, 27 (54.0%) of the respondents are aged 70 years and above, with 23 (46.0%) falling within the 60-69 years old category. In terms of sex, 29 (58.0%) of the respondents are female, surpassing the 21 (42.0%) males. This presentation underscores a slight majority of female respondents within the study sample. The provided percentages provide valuable insights into the gender composition of the surveyed population, emphasizing a predominance of females. Moreover, in terms of educational attainment, 14 (28.0%) of the respondents have reached the high school level, 13 (26.0%) completed the elementary level, 11 (22.0%) are elementary graduates, 9 (18.0%) are high school graduates, 2 (4.0%) have attained the college level, and 1 (2.0%) are college graduates. This data emphasizes the diverse educational backgrounds within the respondent pool, highlighting the prevalence of individuals with high school-level education and a spectrum of educational experiences among the respondents. Meanwhile, in terms of occupation, 18 (36.0%) of the respondents were housewives, and 14 (28.0%) had no specific occupation, indicating a substantial portion of the sample without a defined work role. Engaged in fishing, 8 (16.0%) of respondents contribute to this occupation, while 4 (8.0%) own sari-sari stores. Government positions account for 8 (6.0%) of the respondents' occupations, and 1 (2.0%) are vendors. Additionally, 2 (4.0%) fall under the category of "others," signifying a various role not covered by the specified categories. This data underscores the occupational diversity within the respondent group, reflecting a broad spectrum of roles and activities among the respondents. Furthermore, in terms of civil status, 33 (66.0%) of the respondents are married, 16 (32.0%) of the respondents are widowed, indicating a substantial proportion within the sample who have experienced the loss of a spouse, and 1 (2.0%) single individuals. This data provides valuable insight into the diverse marital statuses within the respondent group, revealing a most married individuals and a significant presence of widowed respondents. In terms of household monthly income, 49 (98.0%) of the respondents have a monthly income of less than 10,000 and only 1 (2.0%), falls in the range of 10,000 – 20,000. This information underscores the pronounced prevalence of respondents with lower household incomes in the study. The data suggests economic homogeneity within most of the respondent pool, with only a minor segment experiencing a relatively higher income. The provided percentages highlight the significant economic diversity within the respondent group, emphasizing the predominance of lower-income households in the sampled population. Lastly, in terms of clinical diagnosis, 15 (36.4%) of the respondents have hypertension, 22 (18.2 %) have two chronic illnesses, 8 (11.4%) have three chronic diseases, 2 (6.8%) have diabetes, 1(4.5%) and 1(2.3%) have arthritis and others. This detailed breakdown offers valuable insights into the prevalence and diversity of clinical diagnoses, highlighting the prominence of Hypertension and the multifaceted health conditions the surveyed population faces.

II – Medication Adherence of Elderly People with Chronic Illness in Surigao City

Table 2. Level of medication adherence of elderly people with chronic illness in Surigao City

| Indicators | M | SD | VR | I |
|---|------|------|----|-----|
| I follow my medication on time because my doctor prescribed it. | 3.84 | .548 | SA | VHA |
| I follow my medication so that I won't feel any painful symptoms of my chronic illness. | 3.78 | .418 | SA | VHA |
| I follow my medication since I feel no side effects other than its intended relief or positive effects it should give me. | 3.68 | .513 | SA | VHA |
| I take up my medication because it's just affordable and easy to buy around any pharmacy near our house | 3.20 | .639 | SA | VHA |
| I take my medicines because I want to live longer. | 3.72 | .454 | SA | VHA |
| I take my medicines because the internet and books said that it is effective. | 3.58 | .642 | SA | VHA |
| I take my medicines because I saw others with the same sickness improved after taking the same medicine. | 3.74 | .418 | SA | VHA |
| I take my medicine because my other family members who have the same illness take their medicines too. | 3.74 | .443 | SA | VHA |
| I take my medicines because I'm afraid of more complications. | 3.72 | .454 | SA | VHA |
| I take up my medication because my Doctor is convincing. | 3.86 | .351 | SA | VHA |



| | | | | |
|---|-------------|-------------|-----------|------------|
| I take up my medications since it's easy to follow and maintain. | 3.74 | .443 | SA | VHA |
| I take my medicines on time because I do not want to wait for the pain and other symptoms impair me. | 3.70 | .463 | SA | VHA |
| I take up my medications properly because I have family members who regularly assist and remind me. | 3.50 | .580 | SA | VHA |
| I take my medicines because I know that I'll be better with it always. | 3.74 | .443 | SA | VHA |
| I take my medicines because science says that it's effective. | 3.62 | .490 | SA | VHA |
| I take up my medications because it gives me relieving sensations allowing me to move properly. | 3.64 | .485 | SA | VHA |
| I take my medications since my medicines are just few and small which are easy to swallow. | 3.76 | .431 | SA | VHA |
| I take my medicines because the Doctor won't check me up again if I don't. | 3.70 | .463 | SA | VHA |
| I take up my medications because I don't want to be scolded by my family members if I don't. | 3.82 | .388 | SA | VHA |
| I take up my medications because I know that its more practical than being hospitalized for not taking medicines. | 3.80 | .404 | SA | VHA |
| range | 3.92 | .274 | SA | VHA |

| Scale | Interval | Verbal Response | Code | Interpretation | Code |
|-------|-----------|-------------------|------|----------------------|------|
| 4 | 3.25-4.00 | Strongly Agree | SA | Very High Adherence | VHA |
| 3 | 2.50-3.24 | Agree | A | High Adherence | HA |
| 2 | 1.75-2.49 | Disagree | D | Low Adherence | LA |
| 1 | 1.00-3.24 | Strongly Disagree | SD | Not Adherence at all | NA |

Table 2. provides an overview of the medication adherence levels among elderly individuals with chronic illnesses residing in Barangay Mabua, Surigao City. The findings suggest that, on average, the elderly respondents in Barangay Mabua exhibit a robust commitment to adhering to their prescribed medication regimens (M=3.92; SD=0.274; Strongly Agree; Very High Adherence). In line with the previous information, a study by Rodriguez et al. (2022) introduced a different perspective on defining high adherence. According to their findings, high adherence was determined as taking medications as prescribed at least 80% of the time. This 80% or more adherence threshold is considered crucial for achieving optimal therapeutic efficacy. It implies that for medications to work effectively, patients need to adhere to their prescribed regimens the majority of the time. However, it is essential to note that adherence rates may decline over time after the initial prescription is written or as barriers to adherence emerge or multiply. Factors such as forgetfulness, complexity of the medication regimen, side effects, cost of medications, and lack of social support can all contribute to decreased adherence rates. Recognizing and understanding these factors associated with low adherence is essential for healthcare providers to develop tailored interventions and support systems that address specific barriers and improve adherence rates.

Among the twenty indicators, the respondents strongly agreed and rated the highest on taking up medication because their doctors are convincing (M=3.86, SD=.351), all at a very high level of adherence. This implies that the respondents, on average, displayed a commendable trust in their physician's ability to provide treatment. According to Kerse et al.'s (2004), higher physician-patient concordance in primary care consultations leads to increased medication compliance. This is due to the shared decision-making between physicians and patients, fostering a collaborative and trusting relationship.

Meanwhile, the respondents said that they agreed taking up medication because it is just affordable and easy to buy around any pharmacy near the house (M=3.20, SD=.639). Despite its low rating compared to other indicators, the data still implied a high level of adherence among the respondents. These respondents are motivated to comply with their medication routines because of the cost-effectiveness and ease of access to medications available at nearby pharmacies. Accessibility to pharmacies and engagement



in medications can encourage better medication adherence, ultimately impacting patients' health outcomes regarding their prescribed treatments (Medvedeff, 2023). In addition, as individuals age, their physiological changes and potential comorbidities make them more vulnerable to experiencing unintended or undesirable effects of medication, commonly known as side effects. Late middle age and beyond is a critical period when the risk of encountering these drug-related side effects increases. Compared to their younger counterparts, older adults exhibit a heightened susceptibility to such effects, with a more than twofold higher likelihood of experiencing them. Moreover, these side effects tend to be more pronounced in older individuals, as they can significantly impact their quality of life, necessitate frequent visits to healthcare providers, and even result in hospitalization. Given the heightened risk and potential severity of side effects, it becomes essential to consider medication regimens for older adults carefully.

III – Degree of Difference in the Medication Adherence of Elderly People with Chronic Illness in Surigao City with Respect to Profile Variables

Table 3. Significant Degree of Variance in the Level of Medication Adherence of the Respondents when They are Grouped According to Profile

| Profile | Dependent Variable | Chi-square | df | p | Decision | Degree of Difference |
|------------------------|-------------------------------|------------|----|------|------------------|----------------------|
| Age | Level of Medication Adherence | .756 | 1 | .384 | Do not reject Ho | Not Significant |
| Sex | | .112 | 1 | .738 | Do not reject Ho | Not Significant |
| Educational Attainment | | 5.754 | 5 | .331 | Do not reject Ho | Not Significant |
| Occupation | | 1.774 | 5 | .879 | Do not reject Ho | Not Significant |
| Civil Status | | .203 | 2 | .904 | Do not reject Ho | Not Significant |
| Household | | .087 | 1 | .768 | Do not reject Ho | Not Significant |
| Monthly Income | | | | | | |
| Clinical Diagnosis | | 1.559 | 6 | .995 | Do not reject Ho | Not Significant |

Decision: Reject Ho: $p < 0.05$

Table 3 presents that there is no significant degree of difference in the level of adherence to medications of the elderly people with Chronic Illnesses in Barangay Mabua, Surigao City. This suggests that regardless of the profile or socio-demographic backgrounds of the respondents, their level of adherence does not vary and hence not influenced or defined by their profile or background. This revelation somewhat contrasts with the established finding of Kim (2011) that medication adherence is a complex behavior influenced by multiple variables. Kim (2011) revealed which factors influence high motivation for medication adherence. It proved that patients' participation in work, education level, participation in private health insurance, number of medications and medication frequency per day, pharmacists' explanation, and the experience of non-adherence due to cost are important factors in explaining the high motivation of medication adherence of elderly with hypertension and diabetes mellitus. Cultural, demographic, economic, political, and topographical differences could be the best reasons explaining these contrasting findings. The present study is conducted in a rural area in the semi-urbanized City of Surigao in the Philippines while Kim's (2011) study is conducted in Korea which is a more urbanized and economically advantaged country. Moreover, it is understood that Koreans enjoy more health benefits, especially for the elderly implying a great difference between the political aspects between the two nations.

IV – Factors Affecting Medication Adherence among Elderly People with Chronic Illness in Surigao City

Table 4. Factors Affecting Medication Adherence among Elderly People with Chronic Illness in Surigao City

| Items | Factors | | | | | | | |
|---|---------|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 15. I take my medicines because science says that it's effective. | .844 | | | | | | | |
| 8. I take my medicine because my other family members who have the same illness take their medicines too. | .732 | | | | | | | |



| | | | | | | | |
|--|------|------|------|------|------|-------|-------|
| 14. I take my medicines because I know that I'll be better with it always. | .607 | | | | | | |
| 18. I take my medicines because the Doctor won't check me up again if I don't. | | .806 | | | | | |
| 16. I take up my medications because it gives me relieving sensations allowing me to move properly | | .677 | | | | | |
| 4. I take up my medication because it's just affordable and easy to buy around any pharmacy near our house. | | | .828 | | | | |
| 5. I take my medicines because I want to live longer. | | | .676 | | | | |
| 6. I take my medicines because the internet and books said that it is effective. | | | .596 | | | | |
| 10. I take up my medication because my Doctor is convincing. | | | | .844 | | | |
| 11. I take up my medications since it's easy to follow and maintain. | | | | .782 | | | |
| 20. I take up my medications because I know that its more practical than being hospitalized for not taking medicines. | | | | | .818 | | |
| 7. I take my medicines because I saw others with the same sickness improved after taking the same medicine. | | | | | .732 | | |
| 17. I take my medications since my medicines are just few and small which are easy to swallow. | | | | | | .815 | |
| 12. I take my medicines on time because I do not want to wait for the pain and other symptoms impair me. | | | | | | -.587 | |
| 13. I take up my medications properly because I have family members who regularly assist and remind me, | | | | | | | .768 |
| 3. I follow my medication since I feel no side effects other than its intended relief or positive effects it should give me. | | | | | | | -.723 |
| 2. I follow my medication so that I won't feel any painful symptoms of my chronic illness. | | | | | | | .887 |

An Exploratory Factor Analysis (EFA) was conducted using principal component analysis and varimax rotation. The analysis involved setting a minimum factor loading criteria of 0.50 and assessing commonalities to ensure acceptable levels of explanation. The results indicated that all commonalities were over 0.50. Barlett's test of sphericity was used to assess the significance of the correlation matrix, and the results were deemed significant, indicating suitability for factor analysis. The Kaiser-Meyer-Olkin measure of sampling adequacy (MSA) was reported, and the factor solution derived from the analysis identified eight factors, explaining 69.432% of the variation in the data. However, three items failed to load significantly on any dimension and were subsequently removed from further analysis. The EFA was then repeated without these items, with the eight dimensions explaining 75.023% of the variance among the items. The factors identified aligned with the theoretical proposition of the research, and specific items contributing to each factor, such as the effectiveness of the medicine, desire to be treated, physician's good prescription, and influence of positive observations, were detailed. The result of this factor analysis is presented in Table 4, which can be found in Appendix A. The following factors were identified:

The **first component** is primarily characterized by indicators related to the **effectiveness of the medicine**, consisting of indicators 15, 8, 14, 20, 7, and 2. It can be gleaned that indicators under the fifth and eighth columns are also related to the effectiveness of the medicine. Hence, the indicators were classified under the first component: indicator 15. I take my medicines because science says that they are effective. (.844) indicates a positive correlation between the respondents' understanding of the scientific efficacy of their medications and their adherence to the prescribed regimens. This was followed by indicator 8. I take my medicine because my other family members who have the same illness take their medicines, too. (.732), observing other family members adhering to their medication routines positively impacts the respondents' adherence behavior, and indicator 14. I take my



medicines because I know I will be better with them (.607), meaning respondents expressed a personal belief in the effectiveness of their medications for consistently improving their health. The data highlights varying degrees of influence on medication adherence, with an influential association with understanding the scientific efficacy of drugs, a slightly less strong association with familial influence, and a moderate association with personal beliefs in consistent medication effectiveness. Indicator 20, I take up my medications because I know that it is more practical than being hospitalized for not taking medicines (.818) suggests a strong positive correlation, indicating that respondents consider the practicality of medication adherence as a significant motivator, emphasizing the avoidance of hospitalization as a compelling reason to adhere to prescribed regimens. In comparison, Indicator 7, I take my medicines because I saw others with the same sickness improve after taking the same medicine, also scored high with a factor loading of .732. While not as strong as Indicator 20, this positive correlation implies that respondents are influenced by observing others with similar illnesses experiencing improvement after taking the same medication. Indicator 2, I follow my medication so that I will not feel any painful symptoms of my chronic illness, reveals a highly significant result with a substantial factor loading of .887.

These robust positive correlations suggest that respondents are profoundly motivated to adhere to their medication regimens in order to alleviate and prevent the experience of painful symptoms associated with their chronic illness. According to Kroenke (2016), symptoms are the impetus for approximately half of all ambulatory care office visits. Often, symptoms may be linked to an underlying chronic disease. The goals of clinical care for advanced chronic diseases that, by definition, are not amenable to cure are to slow disease progression and alleviate their manifestations. Symptoms represent the patient's subjective perception of disease manifestations. Therefore, identifying and alleviating symptoms are essential aspects of chronic disease management. Clinical decision-making for individuals with advanced diseases could be enhanced by understanding the range and frequency of symptoms experienced by those with various advanced chronic diseases. Although symptoms have been demonstrated to be highly prevalent in specific populations with advanced disease, little is known about the frequency and range of multiple symptoms in community-dwelling older persons with advanced chronic illnesses. The illness-related concerns may improve adherence and motivation to take medication as prescribed (Chen, 2014). Medication adherence may increase if patients have lived through the experience of their disease and its further negative impact on functional abilities (Pelaez et al., 2016).

The second component mainly consists of indicators associated with the desire to be treated, consisting of 18, 16, 4, 5, and 6. It can be inferred that the indicators in the third column are also associated with the effectiveness of the medicine. Therefore, these indicators will be categorized under the second component. It can be gleaned that indicator 18, I take my medicines because the doctor will not check me up again if I do not. (.806) scored higher, implying a robust positive correlation between the participant's adherence to medication regimens and the motivation derived from the doctor's expectation of continued medical check-ups. Respondents who feel that the doctor's follow-up is contingent on medication adherence are likelier to adhere to their prescribed regimens. On the flip side, indicator 16, I take my medications because they give me relieving sensations, allowing me to move properly. (.677) scored lower than indicator 18, which suggests a moderate positive correlation between the participant's adherence to medication regimens and the perceived relief and improved mobility associated with taking the medications. Indicator 4, I take up my medication because it is affordable and accessible to buy at any pharmacy near our house, scored the highest, boasting a substantial factor loading of .828. This suggests a robust positive correlation, indicating that respondents are significantly driven to adhere to their medication regimens due to the affordability and accessibility of medications from nearby pharmacies. Following closely Indicator 5, I take my medicines because I want to live longer, obtained a moderately high score with a factor loading of .676. This positive correlation signifies that the aspiration for a longer life is a notable motivator for respondents to adhere to their prescribed medications. Lastly, Indicator 6, I take my medicines because the internet and books said that it is effective, received the lowest score among the three, with a moderate factor loading of .596. Although not as strong as other factors, this positive correlation suggests that respondents are moderately influenced by information from external sources regarding the effectiveness of their medications. Iuga and McGuire (2014) underscore the importance of medication adherence and its associated benefits. They provide an overview of the extent of the adherence issue and delve into the mechanisms that explain how it positively influences healthcare costs. The focus is on chronic diseases such as diabetes and asthma, where the impact of adherence on costs is discussed in detail. By examining the relationship between adherence and healthcare costs, the authors aim to highlight the financial advantages of medication adherence and its potential positive impact on the economic burden in chronic diseases.



The third component primarily encompasses indicators that pertain to the physician's good prescription, consisting of indicators 10 and 11. Indicator 10, I take up my medication because my doctor is convincing, and I scored higher with a substantial factor loading of .844. This indicates a strong positive correlation, suggesting that respondents are significantly influenced by the persuasiveness of their doctors in adhering to their medication regimens. In contrast, Indicator 11, I take up my medications since it is easy to follow and maintain, also scored high with a factor loading of .782. While not as strong as Indicator 10, this positive correlation implies that respondents find ease of adherence as a convincing factor, although slightly less impactful than the influence of a persuasive doctor. In summary, the factor analysis underscores the considerable influence of a convincing doctor in motivating medication adherence, with the ease of following and maintaining the regimen playing a noteworthy but slightly lesser role in comparison. A study by Modig et al. (2012) revealed that the experiences the elderly respondents had regarding the receiving of medical information fell into two main categories: "Comfortable with information" or "Insecure with information." The elderly felt comfortable when they trusted their physician or their medication, received enough information from the prescriber, or knew how to find sufficient information by themselves.

The fourth component primarily consists of indicators that pertain to the influence of positive observation, consisting of indicators 17, 12, 13, and 3. The indicators in the seventh column are inferred to be related to the influence of positive observations. As a result, they will be assigned to the fourth component. Indicator 17. I take my medications since my medicines are just few and small which are easy to swallow, scoring higher with a notable factor loading of .815. This indicates a strong positive correlation, suggesting that participants are significantly influenced by observing positive outcomes in others with similar illnesses who have improved after taking the same medication. On the other hand, Indicator 12. I take my medicines on time because I do not want to wait for the pain and other symptoms impair me, scored lower with a substantial factor loading of .587. This implies a slightly stronger positive correlation compared to Indicator 17, indicating that participants find the ease of swallowing few and small medicines compelling motivators for adherence. Indicator 13. I take up my medications properly because I have family members who regularly assist and remind me, scored higher with a significant factor loading of .815. This strong positive correlation suggests that participants are notably influenced by the assistance and reminders from family members, emphasizing the crucial role that familial support plays in motivating proper medication adherence. In comparison, Indicator 3, I follow my medication since I feel no side effects other than its intended relief or positive effects it should give me, also scored high with a substantial factor loading of .723, emphasizing that respondents are motivated by the absence of side effects, focusing on the medication's intended relief or positive effects. Family and social support were important for many patients because they helped control illness. This support was expressed in terms of accompaniment and not helping in the administration of drugs. Sometimes, this support came from patients in similar situations. In a study conducted by Dolce et al. (2016), they discovered that adherence to pharmacologic regimens was poor in Alabama. More than half of the study's sample of patients with COPD reported missing or skipping doses of their medication. In addition, approximately half of the patients reported using more than the prescribed number of drugs during times of distress. This phenomenon, often referred to as "emotional or situational overuse," occurs when individuals self-adjust their medication intake beyond the prescribed dosage during periods of heightened stress or emotional distress.

CONCLUSION AND RECOMMENDATIONS

Based on the findings of the study, the study found that the variables age, sex, educational attainment, occupation, civil status, household monthly income, and clinical diagnosis were not influential factors in determining the level of medication adherence among the respondents. These demographic and clinical characteristics did not significantly impact how well the respondents adhered to their prescribed medication regimens. Moreover, as per the study's findings, medication adherence also underscores the effectiveness of healthcare interventions, such as patient education, healthcare provider communication, and access to healthcare resources, in promoting adherence among the elderly. These interventions have contributed to the respondents' understanding of medication adherence's importance and ability to incorporate it into their daily routine. The identified factors affecting medication adherence among elderly individuals with chronic illnesses in Surigao City encompass a comprehensive range of influences. These factors include the effectiveness of the medicine, desire to be treated, physician's good prescription, and influence of positive observations. Additionally, the significance of this study lies in its contribution to the understanding of medication adherence among the elderly population. By examining various factors related to medication adherence and assessing the level of adherence among the respondents, the study provided valuable insights into the behavior and practices of elderly



individuals in managing their medications. Lastly, the purpose of this study is to investigate and contribute to the knowledge base on medication adherence among the elderly and inform the development of interventions and strategies to promote better adherence and improve health outcomes in this population.

Moreover, based on the study's findings, researchers recommend sustaining healthcare interventions to promote medication adherence among elderly individuals with chronic illnesses in Surigao City. The effectiveness of existing strategies became apparent through the positive outcomes demonstrated within the targeted population. This recommendation acknowledges the ongoing necessity for these interventions to address the multifaceted factors influencing medication adherence among the elderly. To ensure their effectiveness, the researchers stress the importance of continuous monitoring and evaluation, facilitating adjustments and refinements based on evolving circumstances. Furthermore, the significance of resource allocation, urging the sustained commitment of financial, human, and infrastructural resources to optimize the delivery and impact of these healthcare interventions. This approach highlights the importance of a comprehensive, multidisciplinary strategy involving collaboration among healthcare professionals, community organizations, and other stakeholders. In essence, maintaining healthcare interventions aligns with my recognition of these measures' positive impact on promoting medication adherence, ultimately contributing to the overall health and well-being of elderly individuals with chronic illnesses in Surigao City.

Furthermore, policymakers are urged to reshape healthcare strategies for medication adherence among Surigao City's elderly, considering the study's insightful findings. Given that age, sex, education, occupation, income, and clinical diagnosis were not significant factors, policies should pivot towards proven interventions like robust patient education, enhanced healthcare provider communication, and improved access to healthcare resources. Investing in accessible and informative patient education programs, incentivizing healthcare providers to improve communication skills, and expanding healthcare resources can empower the elderly.

Lastly, this study can serve as a foundation for future researchers interested in further exploring this topic. Based on the identified facilitators and barriers to adherence, it is recommended that future studies delve deeper into each factor to understand their impact on medication adherence comprehensively. Exploring interventions and strategies that address the barriers identified in this study can help further enhance medication adherence among the elderly population. This study sets the stage for further research and encourages researchers to continue investigating this critical area of healthcare.

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