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Non-Adherence to Antihypertensive Medications amongst Geriatric Patients at Rural Health Centers in the Philippines: A Qualitative Study

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1.0 Introduction

1.1. Background of the Study

Hypertension, a widespread chronic condition often referred to as the "silent killer," poses a significant public health challenge worldwide. Among the most vulnerable demographic groups affected by hypertension are geriatric patients, whose risk of cardiovascular diseases and related complications is notably heightened. While the management of hypertension primarily relies on antihypertensive medications, studies indicate that non-adherence to prescribed medication regimens remains a pervasive issue, particularly among geriatric populations (Kleinsinger, 2018).

According to the statistics of WHO: World Health Organization (2019), Hypertension is a chronic condition that affects the heart and blood vessels. It is the leading cause of death worldwide, and it is especially prevalent in older adults. Antihypertensive medications are effective in controlling blood pressure and preventing complications, but many patients do not adhere to their medication regimens.

Non-adherence to antihypertensive medications is a major public health problem. It is estimated that up to half of all patients with hypertension do not take their medications as prescribed. This can lead to uncontrolled blood pressure, which increases the risk of heart attack, stroke, kidney failure, and other serious health problems.

Geriatric patients are at a particularly high risk of non-adherence to antihypertensive medications. This is due to a number of factors, including:

Cognitive impairment: Many older adults experience cognitive impairment, which can make it difficult to remember to take their medications.

Polypharmacy: Older adults are often prescribed multiple medications for different conditions, which can make it difficult to manage their medication regimens.

Cost: Antihypertensive medications can be expensive, and some older adults may not be able to afford them.

Lack of social support: older adults who live alone or have limited social support may be more likely to skip their medications.

The rural health centers in the Philippines play a crucial role in providing healthcare services to underserved communities, including geriatric patients. These centers serve as primary points of care and management for hypertension and other chronic diseases, making them pivotal in the battle against hypertension-related complications in rural areas.

1.2. Review of Related Literature

Kulkarni, et al. (2021) recognizes in their research that medication nonadherence represents a modifiable risk factor for patients with hypertension. Identification of nonadherent patients could have significant clinical and economic implications in the management of uncontrolled hypertension. They concluded that the rate of nonadherence in patients with hypertension was significantly impacted by sex and number of antihypertensive medications prescribed. This suggests that there may have a significant sociological factor when it comes to nonadherence and the number of medications prescribed.

Gutierrez, M. M., & Sakulbumrungsil, R. (2021) stated that diseases of the heart and vascular system are the leading cause of mortality in the Philippines, with the prevalence rate of 28% and control rate of 20%. Despite the medical innovation and proven efficacy of pharmacologic treatment, medication adherence is reported to be as low as 66%. This suggests the increasing threat of nonadherence through ranging ages even with medical advancements innovated through pharmacological field.

On the study "Hypertension and Drug Adherence in the Elderly", even with the evidence of sufficient evidence from clinical trials that treating elderly subjects with hypertension with antihypertensive medications, there exists partial or total nonadherence and it is recognized as a major issue in the long-term management of hypertension in all age categories. This study shows that drug adherence is significantly better in patients aged 65 to 80 years when

compared to younger hypertensive patients (<50 years). Whilst the older patients (>80 years), the prevalence of nonadherence does increase, therefore there is a direct correlational ratio of age and nonadherence. (Burnier, M., Polychronopoulou, E., & Wuerzner, G., 2020)

Macalinao, D. et al. (2023) discuss the occupational hazards faced by workers, particularly healthcare workers, which can negatively impact their physical, mental, and social health. It highlights the significance of high blood pressure (HBP) as a risk factor for cardiovascular disease and mortality among the working population. The study suggests that healthcare workers with hypertension may have better awareness of its causes and complications, as well as prevention and treatment methods. However, it notes a lack of studies on the adherence of Filipino healthcare workers to their antihypertensive medication. The primary reasons for non-adherence are identified as disruptions in treatment and missed medical appointments, mainly due to the asymptomatic nature of hypertension and the difficulty in understanding the importance of continuous treatment.
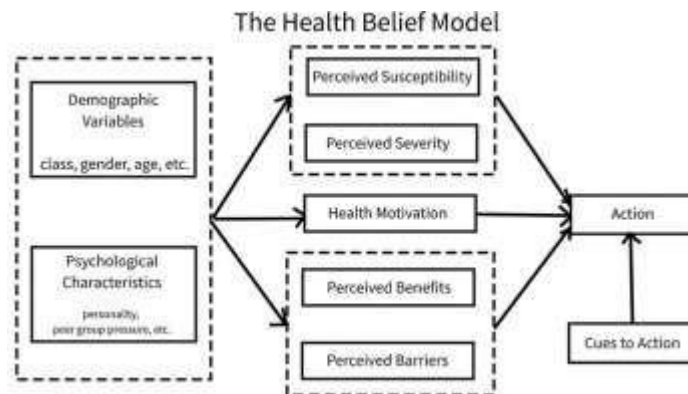
1.3. Theoretical Framework

Figure I. The Health Belief Model (HBM)

This graphical representation or framework serves as the study's theoretical foundation. The HBM is a model that clarifies how people choose their health-related behaviors. According to the concept, people are more likely to adopt healthy habits if they think they are prone to health problems, that these problems are significant, that acting will be beneficial and will not be costly, and that they can do so.
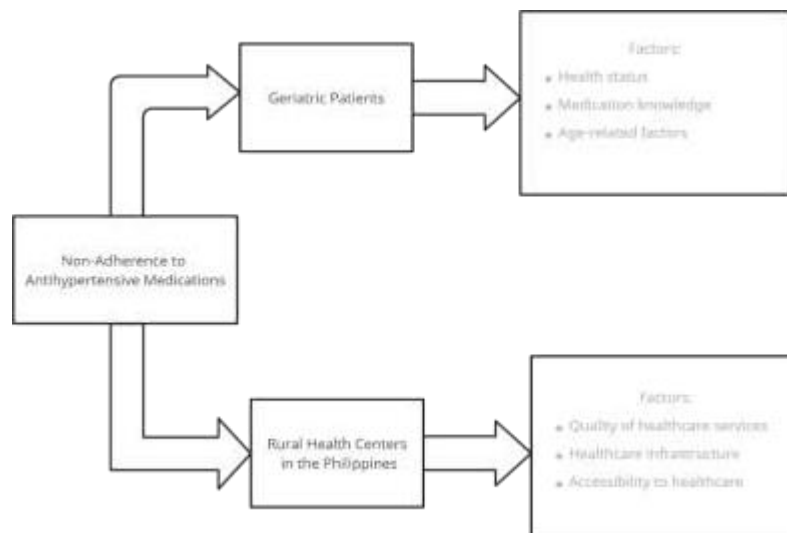
1.4. Conceptual Framework

Figure II. Medication adherence Framework

This study explores various factors influencing medication adherence, including age-related health considerations and patients' knowledge, with a focus on understanding "Non-Adherence to Antihypertensive Medications" among "Geriatric Patients" receiving healthcare services at a "Rural Health Center." The research intends to provide a thorough knowledge of medication adherence patterns in the context of senior patients in a rural healthcare environment by looking at these components, shedding light on the intricate interaction of factors that contribute to non-adherence.

1.5. Statement of the Problem

Non-adherence to antihypertensive medications among geriatric patients is a prevalent and concerning issue, particularly in rural healthcare settings. This study aims to investigate the prevalence and factors associated with non-adherence to antihypertensive medications among geriatric patients at a rural health center in the Philippines.

Geriatric patients are particularly vulnerable to non-adherence due to age-related factors, health status, and medication knowledge gaps. The rural healthcare setting poses additional challenges, including limited accessibility to healthcare services, variable quality of care, and potential infrastructure constraints.

This study will address the following research questions:

1. What is the experience of the participants while taking medications for high blood pressure?

2. What is the prevalence of non-adherence to antihypertensive medications among geriatric patients at a rural health center in the Philippines?

3. What are the factors associated with non-adherence to antihypertensive medications among geriatric patients in this setting?

4. How do age-related factors, health status, and medication knowledge influence adherence patterns?

5. What role do accessibility, quality, and infrastructure of healthcare services play in medication adherence among geriatric patients?

Specific Objectives:

To address the identified problems, this study aims to achieve the following specific objectives:

1. Determine the Prevalence of Non-Adherence:

Objective 1: To assess the extent of non-adherence to antihypertensive medications among geriatric patients at the rural health center in the Philippines.

2. Identify Factors Contributing to Non-Adherence:

Objective 2: To identify and analyze socio-demographic factors, healthcare access barriers, and health-related variables associated with non-adherence among geriatric patients.

3. Evaluate the Impact of Non-Adherence on Blood Pressure Control:

Objective 3: To examine the correlation between non-adherence to antihypertensive medications and blood pressure levels among geriatric patients.

4. Explore Patient Perceptions and Beliefs Regarding Medication Adherence:

Objective 4: To qualitatively explore the attitudes, beliefs, and perceived barriers related to medication adherence through interviews or surveys with geriatric patients.

5. Assess the Quality of Healthcare Services at the Rural Health Center:

Objective 5: To evaluate the healthcare services provided at the rural health center and their role in medication adherence.

6. Propose Recommendations for Improving Medication Adherence:

Objective 6: To propose evidence-based recommendations and interventions aimed at enhancing medication adherence among geriatric patients in rural healthcare settings.

1.6. Hypotheses

*Hypothesis for **Objective 1**:* The prevalence of non-adherence to antihypertensive medications among geriatric patients at the rural health center in the Philippines is higher than the national average for this age group.

*Hypothesis for **Objective 2**:* Socio-demographic factors such as lower income and education levels are associated with a higher likelihood of non-adherence to antihypertensive medications among geriatric patients.

*Hypothesis for **Objective 3**:* Geriatric patients who are non-adherent to antihypertensive medications have higher average blood pressure readings compared to those who adhere to their medication regimens.

*Hypothesis for **Objective 4**:* Patients' beliefs and attitudes towards their antihypertensive medications significantly influence their adherence behavior, with those perceiving medication as more beneficial being more likely to adhere.

*Hypothesis for **Objective 5**:* The quality and accessibility of healthcare services at the rural health center, including medication counseling and monitoring, are associated with higher rates of medication adherence among geriatric patients.

Hypothesis for **Objective 6***:* Implementing targeted interventions and educational programs at the rural health center will lead to an increase in medication adherence among geriatric patients.

1.7. Definition of Variables

1. Independent Variables:

Demographic Variables: Includes age, gender, marital status, and education level.

Socio-Economic Variables: Includes income, employment status, and household size.

Healthcare-Related Variables: These may include access to healthcare services, insurance status, and distance to the health center.

2. Dependent Variables:

Medication Adherence: It can be defined using a validated scale or measure that the researchers hypothesize for their interview.

1.8. Scope and Limitations of the Study

This research is conducted in the province of Bulacan, Philippines, with a specific focus by the researchers in six areas: Malolos, Plaridel, Guiguinto, Bocaue, Pandi, and Santa Maria's rural health centers. We define "Rural Health Centers" to be a public and government-mandated healthcare providers for the people e.g., Hospitals, Barangay Clinics, etc. The specificity of the mandated centers is chosen for the benefit of the researchers to conduct and collect data smoothly, as long as it is located within the province. The study's target population consists of geriatric patients aged 60 years and above (Senior Citizens) who have been diagnosed with hypertension and have received antihypertensive medications at these selected rural hospitals. The research follows a retrospective approach, utilizing historical medical records and patient interviews to investigate non-adherence to antihypertensive medications among geriatric patients over a defined time frame, preferably the past five years. The qualified medications the researchers will allow to be considered for antihypertension are Losartan, Amlodipine, Enalapril, and more to mention.

Several limitations need to be acknowledged in this research. Firstly, the availability and completeness of historical medical records may vary across hospitals, potentially affecting the comprehensiveness of the data analysis. Second, obtaining cooperation for patient interviews, especially among geriatric patients who may have cognitive impairments or health issues, poses challenges in accurately assessing medication adherence behavior. Furthermore, the study's findings may be specific to the selected rural hospitals in Bulacan and may not be entirely generalizable to other regions or settings, given the unique characteristics of rural healthcare contexts.

To address these limitations, researchers should implement careful data collection and analysis techniques. Ensuring translation and cultural sensitivity in patient interviews can help overcome language and cultural barriers. Additionally, efforts to minimize selection bias in convenience sampling for interviews are crucial. While the study's retrospective nature limits its ability to establish causal relationships, it offers valuable insights into associations and trends related to medication adherence among geriatric patients in rural healthcare settings.

2.0 Methodology

2.1. Study Design

The research design for this study is a qualitative approach, this design underscores the importance of listening to the voices of those who grapple with the complex interplay of factors contributing to medication non-adherence. The qualitative component of the study involves in-depth interviews with geriatric patients receiving care at the selected rural health center. These interviews provide a qualitative lens through which researchers can explore the underlying factors contributing to medication non-adherence. Qualitative research allows for the collection of rich, nuanced data, including patients' personal experiences, perceptions, and barriers related to medication-taking behavior. By conducting interviews, researchers gain insights into the reasons behind non-adherence, uncover patients' beliefs and attitudes toward medication, and explore the impact of sociocultural factors on their adherence.

2.2. Research Locale

The research will be conducted in six areas: Malolos, Plaridel, Guiguinto, Bocaue, Pandi, and Santa Maria's rural health centers, located in Bulacan, Philippines. This rural health center was selected due to its significance as a primary healthcare provider for the surrounding community, particularly geriatric patients with hypertension.

2.3. Subjects or Participants

The study focuses on geriatric patients aged 60 and above who have been diagnosed with hypertension and are receiving antihypertensive medications. The inclusion criteria encompass patients with a confirmed hypertension diagnosis and a prescription history of antihypertensive medications at the health center. Convenience sampling will be employed to select eligible participants from the health center's records.

2.4. Instruments

Qualitative Data: It will be gathered through semi-structured interviews. An interview guide will be developed to explore patients' perceptions, experiences, and barriers related to medication adherence. The guide will cover topics such as medication-taking behavior, beliefs about hypertension, experiences with healthcare providers, and socio-cultural factors influencing adherence. Examples of qualitative questions:

1. Can you describe your experiences with taking antihypertensive medications? What factors influence your adherence to your medication regimen?

2. How do you feel about the overall effectiveness of your antihypertensive medications in controlling your blood pressure? Do you have any concerns or questions about your medications?

3. How do your beliefs about healthcare and medications influence your decision-making regarding antihypertensive medications? What factors shape your trust in healthcare providers?

4. What concerns do you have about the potential side effects of antihypertensive medications? How do these concerns impact your willingness to take your medications as prescribed?

5. Is there anything else you'd like to share about your experiences with medication adherence and healthcare services?

6. Do you have any recommendations or suggestions for improving medication adherence and healthcare support?

7. Are there specific challenges you've encountered that you believe need attention?

8. Please provide any additional information or insights you think are crucial for enhancing healthcare for geriatric patients in rural areas.

9. Are there any particular services or interventions you believe would be beneficial for patients like you?

10. What are your overall impressions of the quality of healthcare services at your rural health center?

2.5. Data Collection

In-depth surveys and interviews will be conducted with a subset of patients who meet the inclusion criteria. Participants will be approached at the health center, and informed consent will be obtained. Surveys and Interviews will be written and collected for transcription analysis.

2.6. Data Analysis

Qualitative data will be analyzed thematically. Transcribed interviews will be coded to identify recurring themes related to medication adherence behavior, barriers, and patient perspectives. Thematic analysis will provide rich insights into the qualitative data. As for the Quantitative data, researchers will use descriptive statistics to provide a clear overview of adherence patterns and related factors among geriatric patients.

2.7. Ethical Consideration

Informed consent: All participants should be given the opportunity to provide informed consent before participating in the study. This means that they should be informed about the purpose of the study, the risks and benefits of participation, and their right to withdraw from the study at any time.

Confidentiality: Participants' confidentiality should be protected at all times. This means that their personal information should not be shared with anyone outside of the research team without their consent.

Privacy: Participants' privacy should also be protected. This means that they should be informed about how their data will be collected and used, and they should have the right to access their data and correct any inaccuracies.

Potential harm: The potential for harm to participants should be minimized. This means that the risks of participating in the study should be outweighed by the benefits.

Risks and benefits: Participants should be informed about the potential risks and benefits of participating in the study. This includes the possibility of emotional distress, stigma, and discrimination.

Withdrawal: Participants should have the right to withdraw from the study at any time without penalty.

Data security: Data collected from participants should be kept secure and confidential. This means that the data should be encrypted and stored in a secure location.

Researcher responsibility: Researchers have a responsibility to protect the rights and welfare of their participants. This includes ensuring that participants are informed about the study, that their confidentiality is protected, and that any potential harm is minimized.

3.0 Results

3.1 Introduction

This chapter describes the analysis of data followed by a discussion of the research findings. The findings relate to the research questions that guided the study. Data were analyzed to identify, describe, and explore the underlying factors contributing to medication non-adherence. Data obtained from the interview questionnaires, completed by 12 patients (N=12), a 100% response rate, as the population is used through a convenient sampling method as every patient available in the area was accommodated.

The interview questions comprised the conceptual framework that the researchers use as their basis to answer the objective of the study, which is to 1. *Determine the Prevalence of Non-Adherence*, 2. *Identify Factors Contributing to Non-Adherence*, 3. *Evaluate the Impact of Non-Adherence on Blood Pressure Control*, 4. *Explore Patient Perceptions and Beliefs Regarding Medication Adherence*, 5. *Assess the Quality of Healthcare Services at the Rural Health Center*, and 6. *The proposed Recommendations for Improving Medication Adherence*.

3.2 Categorization and Reliability of Each Question to the Objective

By grouping questions based on these factors, you can gain a more targeted understanding of the various aspects influencing medication adherence among geriatric patients in rural areas.

Health Status:

Question 2: This question explores the individual's subjective assessment of the effectiveness of their medications in controlling blood pressure, directly related to their health status.

Question 4: Focuses on concerns about potential side effects, which can impact the individual's willingness to adhere to the medication regimen, affecting their health status.

Question 10: Gathers impressions of the quality of healthcare services, indirectly reflecting the impact on health status.

Medication Knowledge:

Question 1: Explores experiences with taking antihypertensive medications, directly related to the individual's understanding and knowledge about their medication.

Question 3: Investigate how beliefs about healthcare and medications influence decision-making, reflecting the individual's knowledge and understanding of their medication.

Quality of Healthcare Services:

Question 5: Seeks additional information about experiences with medication adherence and healthcare services, providing insights into the perceived quality of healthcare services.

Question 8: Asks for additional information or insights crucial for enhancing healthcare, contributing to the assessment of the quality of healthcare services.

Healthcare Infrastructure:

Question 9: Explores the individual's perceptions about services or interventions that would be beneficial, indirectly addressing the healthcare infrastructure needed to support medication adherence.

Accessibility to Healthcare:

Question 6: Asks for recommendations or suggestions for improving medication adherence and healthcare support, touching upon the accessibility of healthcare services.

Question 7: Explores specific challenges encountered, which could include issues related to the accessibility of healthcare services.

3.3 Patients' Demographic Analysis

The study includes a diverse group of geriatric participants, more particularly thirteen patients (N=13) as shown in *Table 1*, with ages ranging from 61 to 71 years. The gender distribution is balanced, comprising both males and females. Education levels vary among participants, covering a range from less than high school to post-graduate education. In terms of antihypertensive medications, all interviewed patients are taking between 1 to 3 medications, such as Losartan and Amlodipine. Hypertensive complications are also noted, with participants experiencing a range of 0 to 2 complications, such as Peripheral Artery Disease (PAD), Heart Disease, Vision Problems, and Stroke.

*Table 1. (**Abbreviation:** < High School = Less than High School)*

Geriatric Patient	Age	Gender	Education Level	Number of Antihypertensive medications	Number of Hypertensive Complications
1	65	Male	< High School	2	2
2	62	Male	Some College	1	0
3	68	Female	Bachelor's	3	1
4	70	Female	High School	3	1
5	61	Male	High School	2	0
6	63	Female	College	1	1
7	66	Male	Post-Grad	3	2
8	64	Male	High School	1	1
9	67	Female	Bachelor's	2	1
10	68	Male	Some College	1	1
11	71	Female	< High School	3	2
12	61	Female	High School	1	1
13	60	Male	<High School	2	2

3.4 Patients' Interview Analysis

Three main themes emerged from the patients' interviews. *Figure 1.* Represents all the identified themes and their subclauses from the interviews. The researchers have discovered that there are significant similarities between their answers and the given set of hypotheses of the study.

Figure 1. Barriers to Antihypertensive Medication Adherence
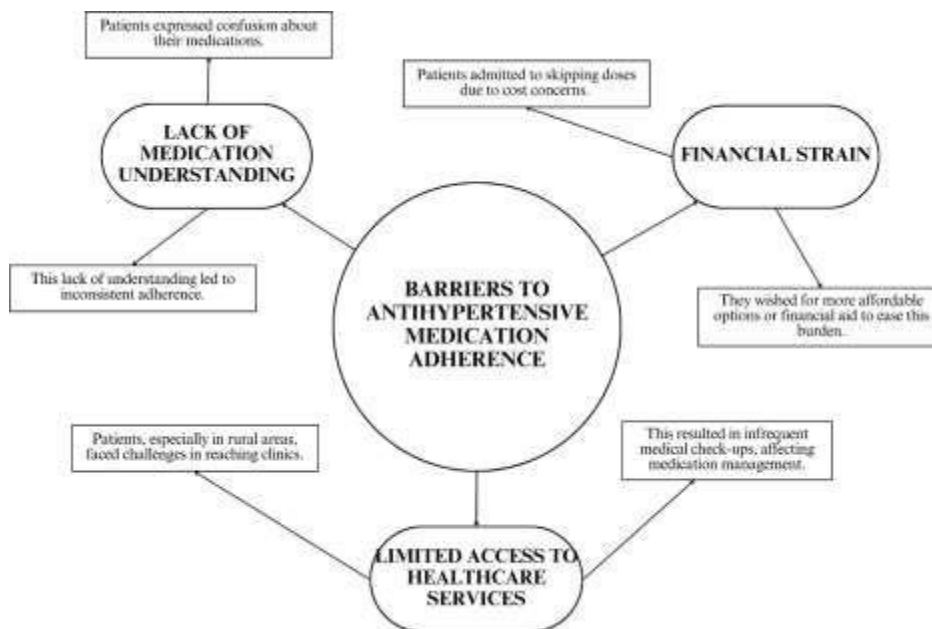
The participants/patients were accommodated by the researchers, explaining not only what was already explained in the interview questionnaire but also addressed it to them clearly and were insisted to be open to ask any questions and clarifications to the interviewer/researcher at any given moment. The questions were asked and explained in languages (English, Tagalog, or Both) that would suffice their utmost understanding of the question and concept of the study to collect as raw and honest data as possible by the researchers. With that in mind, the transcription of the answers by the patients was translated to the English language for formality purposes of the study, as the real answers collected were carefully transcribed and translated to keep the context of their answers as accurate and precise as intended by the patients to prevent any misunderstanding and inaccuracy for the researcher's study. However, the researchers have taken into consideration the nature of the study's methodology and demographics to be a qualitative interview for geriatric patients, which consequentially leads them to pick and choose the necessary answers within the bounds of the topic and not the unnecessary.

3.4.1 Lack of Medication Understanding

Patients emphasized the need for better information about their medications. They wanted more than just assurances that the medication would "cure" them. This highlights a desire for a deeper understanding of their treatment.

"I am concerned about the potential side effects of my antihypertensive medications, especially the long-term effects. I try to talk to my doctor about my concerns, but I don't always feel like I get satisfactory answers" [GP3] **(Abbreviation: GP3 = Geriatric Patient 3)**

"Very scary at most times because I'm not an expert in this field, even though I've had it for years. I'm still not confident enough to say that I'm as informed about my health condition" [GP8]

"Even the Internet gives me different answers to the same question about my medicine [...] there are more capable doctors out there on the Internet sometimes than here in our area in Bulacan" [GP11]

The geriatric patients' responses underscore a significant gap in their understanding of antihypertensive medications, revealing a strong desire for more comprehensive information beyond mere assurances of efficacy. This emphasizes the pressing need for healthcare providers to foster deeper communication, offering detailed explanations of medication purpose, and potential side effects, and addressing long-term concerns. The recurrent theme of fear, particularly regarding potential long-term side effects, highlights the complexity patients face in grasping their health conditions, reinforcing the vital role of patient education. The patients' proactive approach to seeking information online reflects a trend, yet the inconsistency of online sources emphasizes the importance of healthcare providers guiding patients toward reliable information. These findings indicate an opportunity for targeted interventions, focusing on enhancing patient education and ensuring the accessibility of trustworthy health information, particularly in rural areas like Bulacan.

3.4.2 Financial Strain

Patients expressed financial strain as a prominent factor in medication non-adherence, revealing the multifaceted challenges they face in managing their health. The cost of antihypertensive medications often becomes a burden, impacting their ability to consistently adhere to prescribed regimens.

"Even with PhilHealth, the expenses still add up. I sometimes skip doses to make the medicine last longer, I think it's fine, but it does sometimes worry me" [GP1]

"I wish there were more affordable options for hypertension medications. It's frustrating when you have to sacrifice other necessities just to afford your pills." [GP9]

"I have to choose between buying my medication or providing for my family [...] It's a difficult decision because I know my health is at stake, but sometimes I have to prioritize putting food on the table." [GP5]

These patient narratives illustrate the pervasive financial strain, where individuals are forced to make difficult choices between medication adherence and fulfilling basic needs. The struggle to afford medications, despite health insurance coverage, highlights the need for targeted interventions to address the economic barriers faced by geriatric patients in rural areas like Bulacan.

"[...] it's like what I've been always saying, just because Bulacan is a rural area shouldn't mean that the healthcare opportunities are scarce, governments should help us, infrastructures are acceptable to be old and not equal to the urban areas, but the health of the people here should be prioritized too, medicine pricing should not be as expensive as those back in cities like Makati or Pasay" [GP7]

The statement underscores the need for government support to prioritize the health of individuals in rural communities, as provided by GP7. The reference to aging infrastructure suggests an acknowledgment of resource disparities between rural and urban areas. The mention of medicine pricing reflects concerns about the financial burden on residents, advocating for more affordable healthcare options. This perspective aligns with broader discussions on health equity and calls for interventions to bridge the healthcare gap between rural and urban settings.

3.4.3 Limited Access to Healthcare Services

The theme of limited access to healthcare services emerged as a crucial factor influencing medication adherence among geriatric patients. Geographic and logistical challenges contribute to difficulties in obtaining regular medical support and prescriptions.

"There are times when the health center is too crowded, and I don't have the patience to wait for hours. So, I end up missing appointments and running out of medication." [GP4]

"The health center has limited staff, and it's not open on weekends. It's inconvenient for us who have other things to do during the weekdays." [GP10]

"Even if the private hospitals are available, there should be better healthcare providers in the government-owned and local areas like the barangay clinics too, but in 2023 its quality is the same as during the Marcos Regime" [GP2]

These insights underscore the need for strategies to improve healthcare accessibility in rural areas, considering the unique challenges posed by geography and limited resources. Targeted interventions may involve mobile clinics, extended hours, or community outreach programs to enhance healthcare availability for geriatric populations in rural places like this.

3.5 Patients' Individual Characteristics

Numerous patient variables, such as age, socioeconomic status, educational attainment, and employment have been identified as significant impediments to medical adherence. Even with the geriatric demographic, there are boundaries of perception, a significant difference in the ages closest to 70. They perceived that older individuals tend to adhere to their maintenance than younger adults. However, some patients felt otherwise.

"The older we are, the more careful we should be, that's why as much as I possibly could, I come go to my appointments." [GP10]

"I always forget my medication, because it's also with older age, I have other medications too, and when there is no one like my guardian to take care of me, even at least for my medicines, I forget." [GP11]

Although the Philippine government has a program called the PhilHealth Z-Card that provides free or discounted medicines for senior citizens. The Z-Card covers a wide range of medicines, including antihypertensives. Patients from deprived socioeconomic backgrounds found it difficult to pay for their medicines, leading to non-adherence.

"Medication is expensive because I am jobless, and I can no longer fend for myself." [GP4]

"Here in Bulacan, especially in these parts, the rural, where it's far from the main town, there are too many requirements for us senior citizens just to have the healthcare provided by the government. My income is very low, so it should meet the requirements, but it hasn't been processed yet." [GP8]

3.6 Patients' Perceptions, Attitudes, and Behavior

Aside from the other factors influencing medication adherence like lack of knowledge, unfavorable attitudes, and opinions regarding hypertension and its management are also major influencers for their non-adherence. They have indicated that they find it difficult that the process of taking care of hypertension is forever, therefore giving them the opportunity to doubt the medicine and not take it at all as instructed.

"Once you start taking these medicines, like mine Enalapril, Losartan, and others, you cannot stop it, your body will get used to it, and that's it, no escape. […] It's hard to process that this will go on forever." [GP3]

"Before the pandemic, I didn't take any medicines at all, sometimes Biogesic when I had flu, but not the same like this, where daily maintenance is required, it's all new to me, so sometimes I don't initially think of it as one of my priorities" [GP5]

Medication adherence was significantly influenced by patients' opinions of the efficacy of their medications. Few patients had unfavorable opinions of the efficacy of the treatment and believed that it was solely intended to benefit pharmaceutical companies rather than enhance patient outcomes.

"Despite having used every tablet, I believe they are worthless. It's ineffective to me, If only my sons and daughters weren't so insistent on making me take them, I would've thrown them away because it's not worth the price." [GP13]

"The Pharmaceutical Industry does not want to assist people because maintaining them in their current state generates annual profits in the billions of dollars. They lose all of this money if they cure you." [GP9]

4. Discussions

The geriatric patients in Bulacan express a clear gap in understanding antihypertensive medications, revealing a desire for more than surface-level assurances of efficacy. The fear of potential side effects, especially in the long term, underscores the complexity patients face in grasping their health conditions. This emphasizes the need for targeted interventions to enhance patient education, ensuring comprehensive information is provided by healthcare providers. The patients' inclination to seek information online, despite its inconsistency, suggests an opportunity for healthcare providers to guide patients toward reliable sources.

Financial strain emerges as a prominent barrier to medication adherence among geriatric patients. Despite health insurance coverage, patients face the burden of medication costs, leading to difficult choices between adherence and fulfilling basic needs. The call for government support to prioritize healthcare in rural areas aligns with broader discussions on health equity, emphasizing the need for affordable healthcare options.

Limited access to healthcare services poses a significant challenge, influenced by geographic and logistical barriers. Patients cite crowded health centers and limited operating hours as obstacles to regular medical support. The call for better healthcare providers in government-owned and local areas highlights the need for infrastructure improvements. Strategies such as mobile clinics or extended hours may enhance healthcare availability for geriatric populations in rural areas.

Various patient variables, including age, socioeconomic status, and educational attainment, are identified as significant impediments to medical adherence. While older individuals tend to adhere more, socioeconomic challenges, bureaucratic processes, and stringent requirements hinder access to

government healthcare programs. Financial struggles and the inability to meet program requirements contribute to non-adherence, emphasizing the need for streamlined processes for senior citizens.

Patients' perceptions, attitudes, and behaviors significantly influence medication adherence. The understanding that hypertension management is a lifelong commitment creates doubt and resistance. Unfavorable opinions about the efficacy of medications, fueled by suspicions of pharmaceutical motives, contribute to non-adherence. Understanding these psychological aspects is crucial for designing interventions that address not only the physical but also the emotional and cognitive aspects of medication adherence.

In summary, the findings underscore the multifaceted nature of barriers to medication adherence among geriatric patients in rural areas. Targeted interventions should encompass comprehensive patient education, financial support, infrastructure improvements, and psychological support to address the unique challenges faced by this population. The intersection of socioeconomic factors, patient perceptions, and healthcare access highlights the need for a holistic approach to improve medication adherence in rural geriatric populations.

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