KNOWLEDGE AND PRACTICE REGARDING MEDICATION USE AMONG ELDERLY WITH CHRONIC DISEASES IN FELDA TEMBANGAU 2, KEMAYAN, PAHANG

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KNOWLEDGE AND PRACTICE REGARDING MEDICATION USE

AMONG ELDERLY WITH CHRONIC DISEASES IN FELDA

TEMBANGAU 2, KEMAYAN, PAHANG

by

AINA NATASHA BINTI MOHD FARID

Dissertation submitted in partial fulfillment of the
requirements for the degree of
Bachelor in Nursing with Honours

August 2024

CERTIFICATE

This is to certify that the dissertation entitled "Knowledge and Practice regarding medication use among Elderly with chronic diseases in FELDA Tembangau 2, Kemayan, Pahang" is the bonafide record of research work done by Ms Aina Natasha Binti Mohd Farid during the period from October 2023 to August 2024 under my supervision. I have read this dissertation and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation to be submitted in partial fulfillment for the degree of Bachelor in Nursing with Honours.

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DECLARATION

I hereby declare that this dissertation titled "Knowledge and Practice regarding medication use among Elderly with chronic diseases in FELDA Tembangau 2, Kemayan, Pahang" is the result of my own investigations, except where otherwise stated and duly acknowledged. I also declare that it has not been previously or concurrently submitted as a whole for any other degrees at Universiti Sains Malaysia or other institutions. I grant Universiti Sains Malaysia the right to use the dissertation for teaching, research and promotional purposes.

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LIST OF ABBREVIATION

FELDA   : Federal Land Development Authority

SDA   : Social Development Assistant

IHD   : Ischemic Heart Disease

COPD   : Chronic Obstructive Pulmonary Disease

HBM   : Health Belief Model

Pengetahuan dan Praktis Terhadap Penggunaan Ubatan Dalam Kalangan Warga Emas Yang Mempunyai Penyakit Kronik di FELDA Tembangau 2, Kemayan, Pahang

ABSTRAK

Populasi warga emas, yang ditakrifkan sebagai mereka yang berumur 60 tahun ke atas, berhadapan dengan cabaran dalam menguruskan penyakit kronik akibat perubahan fisiologi, akses terhad kepada maklumat penjagaan kesihatan, dan halangan dalam memahami dan mematuhi rejimen ubat. Kajian ini bertujuan untuk mengetahui tahap pengetahuan dan praktis terhadap penggunaan ubatan dalam kalangan warga emas yang mempunyai penyakit kronik di FELDA Tembangau 2, Kemayan, Pahang dan untuk mengkaji perkaitan antara kedua-dua pembolehubah ini. Kajian soal selidik telah dijalankan melibatkan 94 individu warga emas dengan penyakit kronik menggunakan pensampelan bertujuan (purposive). Data tentang ciri sosio-demografi mereka, tahap pengetahuan, dan amalan mengenai penggunaan ubat-ubatan telah dikumpulkan melalui temuduga bersemuka dan berstruktur. Dapatan kajian mendapati majoriti responden menunjukkan pengetahuan cemerlang (94.7%) dan praktis cemerlang (94.7%) berkaitan penggunaan ubatan. Selain itu, hasil statistik mendapati tahap pengetahuan dan praktis, menunjukkan bahawa pengetahuan yang lebih tinggi dikaitkan dengan praktis yang lebih baik dalam pengurusan ubatan (r = 0.47, p ≤ 0.01). Kesimpulannya, kajian ini mungkin membantu menyumbang pemahaman yang lebih baik tentang pengetahuan dan praktis berkaitan penggunaan ubatan. Walau bagaimanapun, penyelidikan masa depan harus dilakukan di institusi yang berbeza dengan saiz sampel yang lebih besar untuk mempunyai keputusan umum.

Knowledge and Practice Regarding Medication Use Among Elderly with Chronic Diseases in FELDA Tembangau 2, Kemayan, Pahang

ABSTRACT

The elderly population, defined as those aged 60 and above, faces unique challenges in managing chronic diseases due to physiological changes, limited access to healthcare information, and barriers in understanding and adhering to medication regimens. The aim of this study was to determine the levels of knowledge and practice regarding medication use among elderly with chronic diseases in FELDA Tembangau 2, Kemayan, Pahang and to explore the correlation between these two variables. A cross sectional study was undertaken involving 94 elderly individuals with chronic diseases using purposive sampling. Data on their socio-demographic characteristics, levels of knowledge, and practices regarding medication use were collected through face to face and structured interviews. The findings revealed that the majority of respondents exhibited excellent knowledge (94.7%) and excellent practice (94.7%) regarding medication use. Additionally, a significant positive correlation ($r = 0.47$, $p \leq 0.01$) was found between knowledge and practice levels, indicating that higher knowledge is associated with better practices in medication management. In conclusion, this study might help contribute better understanding of knowledge and practice regarding medication use. However, future research should be done at a different institution with a larger sample size to have generalized results.

CHAPTER 1: INTRODUCTION

1.1 Introduction

This study outlines the background of this quantitative study into knowledge and practice regarding medication use among elderly with chronic diseases in FELDA Tembangau 2, Kemayan Pahang. The rationale for the study, its aims, objectives, outcomes, methods and materials, and results and discussion. Definitions of key terms used throughout the proposal about knowledge and practice regarding medication use among elderly with chronic diseases will be provided in the definition of key terms before the introduction of this study.

1.2 Background of The Study

The United Nations considered everyone over the age of 60 to be an elderly person (Scherbov & Sanderson, n.d.). However, additional sociocultural indicators, such as family status (grandparents), physical appearance, or age-related health issues, are frequently used by families and communities to define age (Punnapurath et al., 2021). According to Cindy Mcdonald, aging was not an option and not for anyone. It is how gracefully we handle the process and how lucky we are, as the process handles us.

Punnapurath et al. state that there were more than 200 million persons over the age of 60, making up an increasing portion of the elderly population. Due to this reality, more people were being diagnosed with chronic degenerative diseases and were also being prescribed and ingesting more medications. It is difficult to offer the elderly safe and effective pharmacological therapy because of the rising drug used (Drenth-van Maanen, et al., 2020).

Aging was treated as a physiological issue, defined as the irreversible loss of physical and psychological abilities and a decrease in an organism's capacity to maintain homeostasis. Physiological changes that occur with aging can impact how the body absorbs, distributes, metabolizes, and removes medications. This makes medications problematic for the elderly (Ozkan et al., 2020). Increased body fat, decreased body water, decreased muscle mass, and altered renal, hepatic, and central nervous system function were only a few examples of these physiological alterations that raised the prevalence of chronic diseases among elderly (Stefanacci, 2022).

Hypertension, diabetes mellitus, bronchial asthma, coronary artery diseases, osteoarthritis, and kidney diseases were all chronic diseases that were frequently found in the elderly (Algameel, 2020). According to Dahal & Bista (2023), elderly must take medication for a long time. This can be challenging for them to take their medications and manage adverse effects. As the information regarding proper prescription, clinical pharmacology, and medication usage in the elderly has become crucial, adjusting the health systems with integral and interdisciplinary methods relevant to this demographic change is imperative.

1.3 Problem Statement

According to the previous study, researchers identified deficiencies and errors in the information of the elderly regarding medication use (Ozkan et al., 2020). Lee et al., 2021 express, that this happens because different from younger individuals, there were some barriers that the elderly have when trying to find and understand information about the safety of medications. The elderly were more likely to take multiple medications, whether over-the-counter, prescription, or complementary. Taking a variety of

medications at once might be confusing and result in non-adherence which could have adverse effects on the elderly. This raises concerns since the elderly were more likely not to adhere to their medication and may find it difficult to recognize the negative effects of the drugs that they choose to treat their symptoms (Varghese et al., 2023).

Other than that, Lee et al., 2021 state, that most elderly have a poor level of knowledge and limitations in finding, understanding, and comprehending information about drug safety. They frequently struggle to obtain knowledge via computers, smartphones, and the internet; also, they frequently struggle with hearing, vision, or other mental health issues that limit their ability to learn. Based on the previous study, a lot of elderly were using medication that was past its expiry date because they had trouble reading the label on the packaging (Lee et al., 2021, as cited in Lee, 2013). Therefore, identifying the level of knowledge among the elderly with chronic disease is important as baseline data to increase the knowledge of the elderly with chronic disease regarding medication use.

Additionally, Stewart et al., (2023) express that adherence to pharmaceutical regimens is crucial for managing long-term health conditions and preventing unfavorable outcomes in the elderly. However, it was noted in the literature that elderly with chronic diseases did not comply with medication regimens sufficiently. According to the previous study conducted with elderly hypertensive patients, participants' medication compliance was found to be modest (Ozkan et al., 2020). Ting et al., 2023 suggested, this problem must be reduced by changing the negative behaviors and increasing good practices regarding medication use. Given the issues, high knowledge and good practice are important to all elderly with chronic disease. This is to prevent medication errors and negative side effects.

Federal Land Development Authority, also referred to as FELDA was a rural area in Malaysia where all of the residents were farmers. This plantation tract was created in 1956 to eradicate poverty by cultivating rubber and oil palm (Che Wan Mansor et.al, 2021 as cited in Federal Land Development Authority, 2019). Chen et al, 2018 state, that accessing and utilizing reliable health information was difficult for people living in rural areas due to a variety of barriers, including distance, geography, inclement weather, a lack of money, and a lack of specialized medical services.

Besides that, rural residents have higher rates of premature morbidity and mortality from diseases like cancer, heart disease, and childhood obesity than urban residents do. They were more likely to participate in unhealthy behaviors and have lower access to use of preventive healthcare services which can lead to limitation of health information (Chen et al., 2018). Since the prevalence of limitations in health information and unhealthy behaviors toward the prevention of the disease was higher in rural areas, FELDA had been chosen as a setting for this study. Furthermore, according to a statistic provided by Social Development Assistant (SDA) FELDA Tembangau 2, the total number of elderly people aged 60 years old and above is 262 which is the second highest population (31%) leaving 7 % behind the population of 20 to 59 years old (Figure 1.1).

Therefore, the objective of this study is to determine knowledge and practice regarding medication use among elderly with chronic diseases in FELDA Tembangau 2, Kemayan, Pahang.

Amount of people in Felda Tembangau 2 according to age

- 0 - 6 (11%)
- 7 - 12 (10%)
- 13 - 17 (6%)
- 18 - 19 (14%)
- 20 - 59 (38%)
- 60 and above (31%)

Legend:
- 0-6
- 7-12
- 13-17
- 18-19
- 20-59
- 60 and above

Total of population: 848
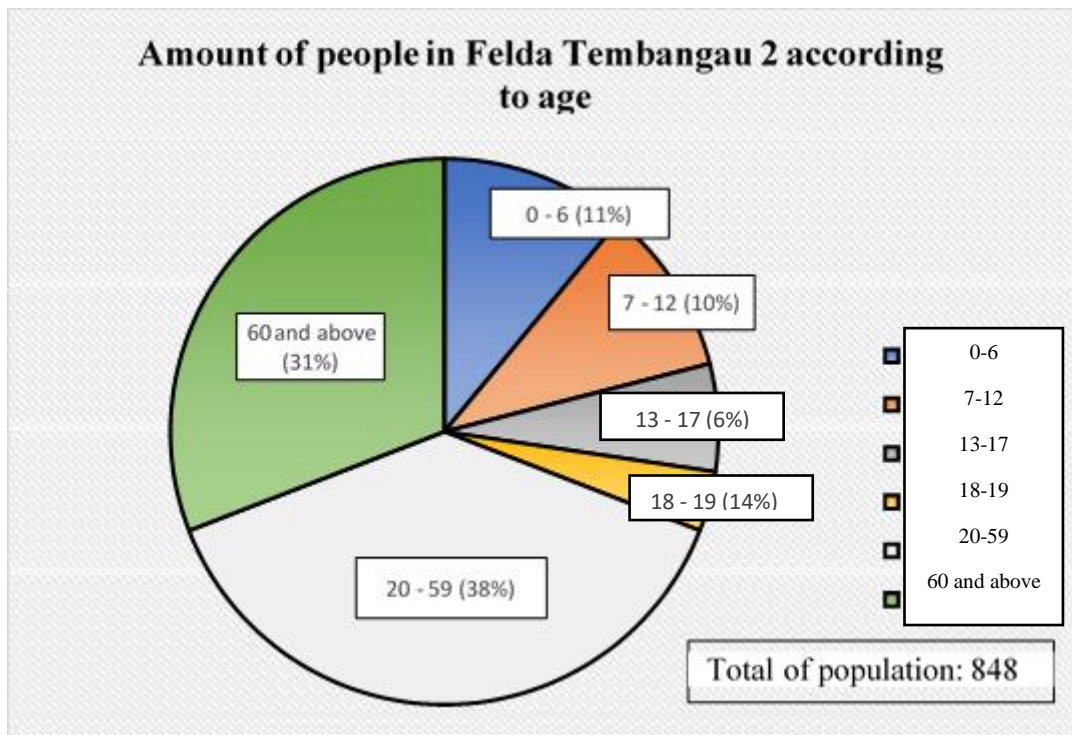
Figure 1.1: Statistics of FELDA Tembangau 2 population

1.4 Research Question

1. What is the level of knowledge regarding medication use among elderly with chronic disease in FELDA Tembangau 2, Kemayan Pahang?

2. What is the level of practice regarding medication use among elderly with chronic disease in FELDA Tembangau 2, Kemayan Pahang?

3. Is there any correlation between the level of knowledge and level of practice among elderly with chronic diseases regarding medication use in FELDA Tembangau 2, Kemayan Pahang?

1.5 Research Objectives

Research objectives describe what researchers expect to achieve at the end of the research project or study (Ryan, 2022).

1.5.1 General Objectives

The general objective of this study is to determine knowledge and practice regarding medication use among elderly with chronic diseases in FELDA Tembangau 2, Kemayan, Pahang.

1.5.2 Specific Objectives

The following specific objectives of this study are:

1. To determine the level of knowledge regarding medication use among elderly with chronic diseases in FELDA Tembangau 2, Kemayan Pahang.

2. To determine the level of practice regarding medication use among elderly with chronic diseases in FELDA Tembangau 2, Kemayan Pahang.

3. To identify the correlation between level of knowledge and level of practice among elderly with chronic diseases regarding medication use in FELDA Tembangau 2, Kemayan Pahang.

1.6 Research Hypothesis

H_0: There is no significant correlation between the level of knowledge and level of practice among elderly with chronic diseases regarding medication use in FELDA Tembangau 2, Kemayan, Pahang.

H_A: There is a significant correlation between the level of knowledge and the level of practice among elderly with chronic diseases regarding medication use in FELDA Tembangau 2, Kemayan, Pahang.

1.7 Conceptual and Operational Definition

Item	Conceptual Definition	Operational Definition
Knowledge	The information, comprehension, and abilities acquired from education or experience (Oxford Learner Dictionaries, 2023).	In this research, knowledge is related to elderly with chronic diseases toward their medication habits.
Practice	Regularly taking part in an activity or training regimen to enhance one's proficiency (Oxford Learners Dictionaries.com, 2023).	In this research, the practice is related to the regular behavior of elderly while taking medication based on the knowledge that they acquired.
Medication	Whether prescribed or over the counter, a drug is taken to prevent or treat a disease (Oxford Learners Dictionaries, 2023).	In this research, medication refers to pharmacological therapy provided by the Doctor for elderly with chronic disease to treat a disease.
Elderly	The term elderly relates to the people who are old (Oxford Learners Dictionaries, 2023).	In this research, elderly is related to individuals with chronic disease aged 60 years and above in FELDA Tembangau 2.
Chronic Disease	A general definition of a chronic disease is a condition that lasts for a year or longer and requires continuous medical care (*About Chronic Diseases*, 2023).	In this research, chronic diseases are related to diseases diagnosed by doctors that last more than three months.

1.8 Significant of the Study

The elderly were hospitalized five to seven times on average, which raises the possibility of prescription errors and unfavorable drug reactions. Prescription errors can be prevented by giving the elderly precise medication instructions, which is crucial to improving their understanding of the prescription regimen (T et al., 2022). To decrease medication errors, elderly must be knowledgeable and apply good practice to the medications that are prescribed.

The findings and benefits of this study are to decrease the difficulties in medication use in the elderly and promote compliance toward medication use. This is because, if they have good knowledge about the medication they take such as knowing a drug's name, intended use, side effects, dosage, and specific instructions, it will make elderly more understanding of their prescription and increase the level of trust in its consumption (Mekonnen & Gelayee, 2020).

Planning and evaluating medication use in elderly, as well as educating them and their families on medication use, effects, and adverse effects, are important tasks for healthcare professionals (Ozkan et al., 2020). Therefore, this study was evaluated to determine the knowledge, and practice of elderly with chronic illnesses when it comes to using medications. We believe that this study will add to the body of literature to identify elderly knowledge and practice to raise awareness of medication usage and offer elderly rational medication use.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

This chapter provides a general review of the literature regarding the level of knowledge and practice regarding medication use among the elderly with chronic diseases. The general findings of the literature review will be presented in a few sections with the key terms of the research. The recent articles and related issues were included in this chapter. The chosen conceptual framework to guide this proposed study is discussed.

2.2 Overview of the Elderly

The overview of the elderly comprises of definition and prevalence and the elderly process.

2.2.1 Definition and prevalence of elderly

The Government of Malaysia's Portal 2023 defined senior people, or the elderly as individuals those 60 years of age and older. This concept was consistent with the definition provided in Vienna in 1982 during the World Assembly on Ageing. 771 million individuals worldwide were 65 years of age or older in 2022, making up about 10% of the world's population. With its current rate of growth, this segment was predicted to reach 16% by 2050 and 24% by 2100 (Lu, 2023). In Malaysia, the proportion of the population over 65 years old was 7.2% in 2022, up from 7% the year before. The aging of Malaysia's population was a significant pressure, with the most recent statistics indicating that this could occur as early as 2030 (Statista, 2022).

2.2.2 Elderly Process

Early adulthood marks the start of the slow, ongoing process of natural change known as aging. Many body processes start to progressively deteriorate in the early middle years of life. Normal aging-related changes increase a person's risk of developing specific conditions. People can occasionally take steps to make up for these adjustments (Stefanacci, 2022).

Furthermore, Stefanacci, (2022) suggested that functional loss associated with age can occasionally be confused with functional decline associated with a condition. For example, a modest deterioration in mental performance with advancing age was almost ubiquitous and was regarded as typical aging. This degradation includes a shorter attention span, greater forgetfulness, and greater difficulty picking up new skills, including languages.

Amarya et al., (2018) suggested that growing older was a normal process. Each person must go through this stage of life at their rate and time. Aging, seen in a larger sense, is a reflection of all the changes that occur during life. One begins to alter from birth as one matures, grows, and develops. Growing older is exciting to the young. People start to notice age-related changes, such as wrinkles on their skin, graying hair, and a noticeable physical decline when they are middle-aged. Not even the most physically fit and healthiest people can avoid these changes. Physical and functional impairments appear gradually and steadily, leading to a rise in dependency as people age.

In addition, the majority of chronic illnesses and ailments were more common as people age. The five disorders with the highest prevalence among persons over 85 were osteoarthritis (54.0%), osteoporosis (36.9%), ischemic heart disease (IHD) [42.0%], hypertension (83.4%), and chronic obstructive pulmonary disease (COPD) [27.3%]. The

conditions with the biggest increases were hypertension, diabetes, asthma, cancer, and osteoporosis (Public, 2020). In conclusion, an increase in aging will alter physiological and psychological changes. This circumstance makes it harder for elderly to take their pills and increases the number of medications they take, which could result in unwanted side effects and drug interactions (Ozkan et al., 2020)

2.3 Elderly Individual's Knowledge of medication Use

Knowledge was the information, comprehension, and abilities acquired from education or experience (Oxford Learner Dictionaries, 2023). In this research, knowledge was related to elderly with chronic diseases toward their medication use such as antidiabetics, medication for the cardiovascular system, gastroprotective medications, analgesics, thyroid medications, antidepressant or sleeping pills, anti-cholesterol medications, medication for the respiratory system, and vitamin or mineral supplement (Ozkan et al., 2020; Shah et al., 2020).

A previous study in other countries conducted by Ozkan et al (2020) shows that 75% of elderly individuals in Turkey claim not to have received any training on drug use, and 82.3% claim not to be aware of the negative effects of drugs. Potential errors including overdosing and forgetting dosages, drug interactions, and adverse effects have increased as the number of prescriptions prescribed to elderly has increased. This could be explained that elderly knowledge regarding drug use was incomplete and inaccurate. Because of this, it is advised that medical professionals assess the level of knowledge of elderly individuals regarding drug use during every health check-up, offer to counsel to elderly as needed and take the necessary steps to ensure that elderly no longer experience

issues like forgetting to take their medications or being unable to access them (Ozkan et al, 2020).

Another study in Gondar, Northwest Ethiopia conducted by Mekonnen & Gelayee, (2020) shows that the majority of respondents said they were "missing the doses" (54.5%), did not know "how to take medications" (80.6%), and did not know "what to do if side effects occur with medications" (53.5%). Furthermore, 51.2% of respondents accurately stated the names of their current prescriptions, 54.2% understood the rationale behind taking the medications, and 77.6% knew how to take them. However, only 5.7% of the respondents could provide a general explanation of the precise mode of action of their drugs. This investigation has proven that most respondents did not take their prescriptions as prescribed and their understanding of oral chronic drugs was inadequate. They recognized that one major issue that persists in many nations was the lack of understanding regarding chronic drugs (Mekonnen & Gelayee, 2020).

2.4 Elderly Individual's Practice of Medication Use

According to Oxford Learners Dictionaries.com, 2023, practice was regularly taking part in an activity or training regimen to enhance one's proficiency. In this research, the practice was related to the regular behavior of elderly while taking medication based on the knowledge that they acquired (Lee et al., 2021). For example, ask the pharmacist about the medication use, consult with the pharmacist regarding the side effects, and properly keep the medication (Lee et al., 2021).

Elderly can experience both positive and negative practices toward medication use. Based on a previous study in Korea conducted by Lee et al., (2021), it was found that while taking medication, elderly followed good practices with a mean of 4.56 and a

standard deviation of 0.98; yet, they perceived unfavorable drug reactions less frequently with mean 2.56 and standard deviation 1.23.

Furthermore, in a related study, which involved adult participants, it was found that over half of the participants followed safe medication use practices, such as reading medication prospectuses and taking prescribed medications as directed. However, nearly half of the participants said they did not seek medical attention when they had health issues. These findings indicate that adults of all ages were more mindful of their medicine use than people in their later years (Turkish Journal of Public Health, 2014, Ozkan et al.,2020). Besides that, another study in Pakistan conducted by Shah et al, (2020) shows that of the 215 individuals who self-medicated, 186 (86.5%) reported that their symptoms decreased, and just one (25.6%) reported adverse medication reactions. Of the 215 practitioners, the majority (103, or 47.9%) self-medicated based on recommendations from friends, 52 (24.2%) did so on the advice of family members, and 38 (17.7%) did so on the advice of a community pharmacist. 20 (9.3%) of them based on prior experience, and 6 (2.8%) based on knowledge gained from the internet and opinions from other sources. Out of 327 respondents, 129 (39.4%) recommended medications to others on their own, whereas 184 (56.2%) discouraged others against self-medicating. This could be explained by the fact that the low level of practice regarding medication use was shown in this study.

2.5 Correlation between level of knowledge and level of practice among elderly regarding medication use

Based on one previous study in Gondar, Ethiopia, shows that there were positive significant differences in knowledge and practice. Good medication knowledge scores were significantly correlated with medication adherence. The results showed that more than 60% of the respondents had low adherence and had difficulty remembering their medications. These results were consistent with previous studies. Low education was identified as a risk factor for the lack of medication-related knowledge. Similar findings were highlighted in other studies. Logistic regressions showed that knowledgeable patients are ten times more likely to have high medication adherence. Specifically, respondents having knowledge about the name of their medications, how to take them, what to do if a dose was missed, and what to do if side effects occurred were shown to have a significant correlation with greater medication adherence.

Other than that, based on one previous study in Korea conducted by Lee et al., (2021), statistical significance was found between knowledge and practice regarding regular medication safety use. The findings confirmed the outcomes of Hope's study, which examined the relationships between knowledge, and practice of patients with congestive heart failure and demonstrated that the subjects' medication use behaviours improved after receiving the necessary education. Knowledge about the safe use of medications positively affected practice. Numerous research studies have demonstrated that elderly people frequently do not know the dosage, directions for use, or adverse effects of their medications; yet, the majority of them were aware of their intended use. It is well recognized that a person's practice around the use of medications was greatly influenced by their knowledge and experience.

2.6 Theoretical and Conceptual Framework of the study
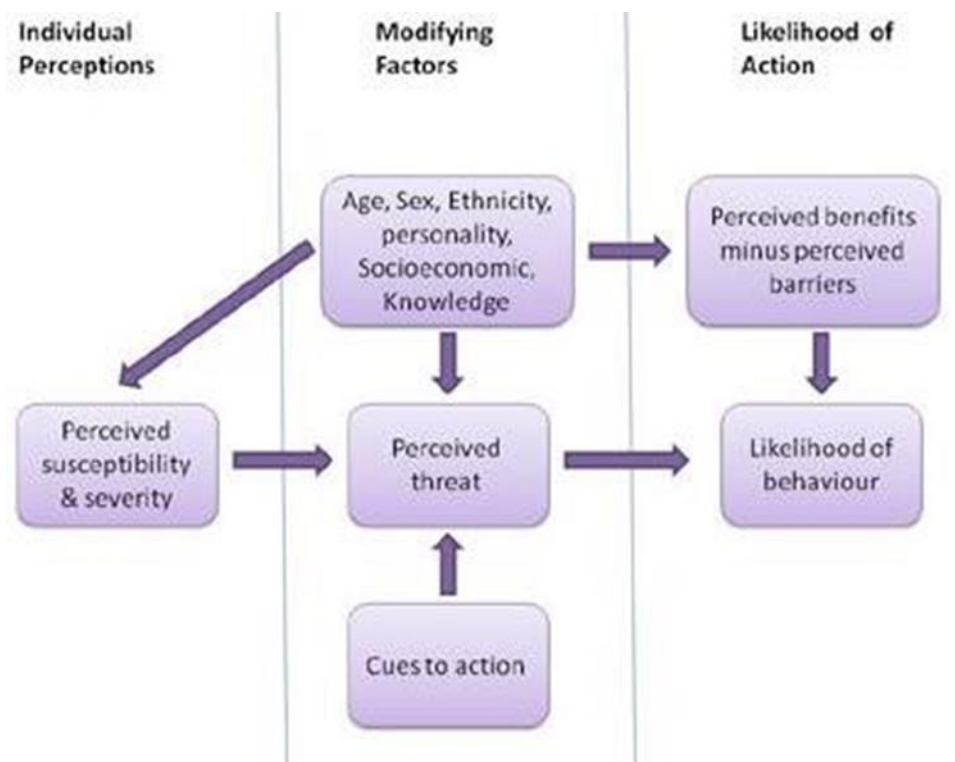
Figure 2.1: The Health Belief Model by Hochbaum, Rosenstock and Kegels (1950s)

The Health Belief Model (HBM) was one of the finest models utilized to promote appropriate, accurate, and successful drug usage in elderly. It is a model for creating, embracing, and putting into practice healthy behaviors. When an illness or other circumstance poses a threat to health, as well as when patients stand to benefit from preventative actions, the HBM can promote the protection of health behaviors (Zeliha Cengiz & Meral Özkan, 2022).

Perceived severity, perceived benefits, perceived vulnerability, and influencing factors were all determined by the HBM about screening behavior. As a result, the HBM can be used to assess an individual's motivation, self-efficacy, and health domain

predictive characteristics. Additionally, educational interventions can be used to empower individuals to engage in screening behaviors (Zeliha Cengiz & Meral Özkan, 2022).

An individual must believe they were being treated for their current health condition, which they perceive to be vulnerable to and severe, believe the health action will have a positive outcome, which they perceive to be a benefit, and have the self-confidence to overcome the perceived obstacles for the health action to take place. HBM can examine if it moderates the relationship between the level of knowledge and the level of practice regarding medication use. This exploratory study will be conducted to identify factors that impact knowledge regarding medication use and the practice regarding medication use among elderly with chronic disease. For the outcome, the participants will give either good or poor practice regarding medication use.

INDIVIDUAL PERCEPTIONS

NON-MODIFYING FACTORS

LIKELIHOOD OF ACTION

Knowledge of medication use

Perceived barriers to take action because of low level of knowledge of medication use

Practice of Medication use

Practices a good Medication Use

Perceived susceptibility/ seriousness of Medication Error
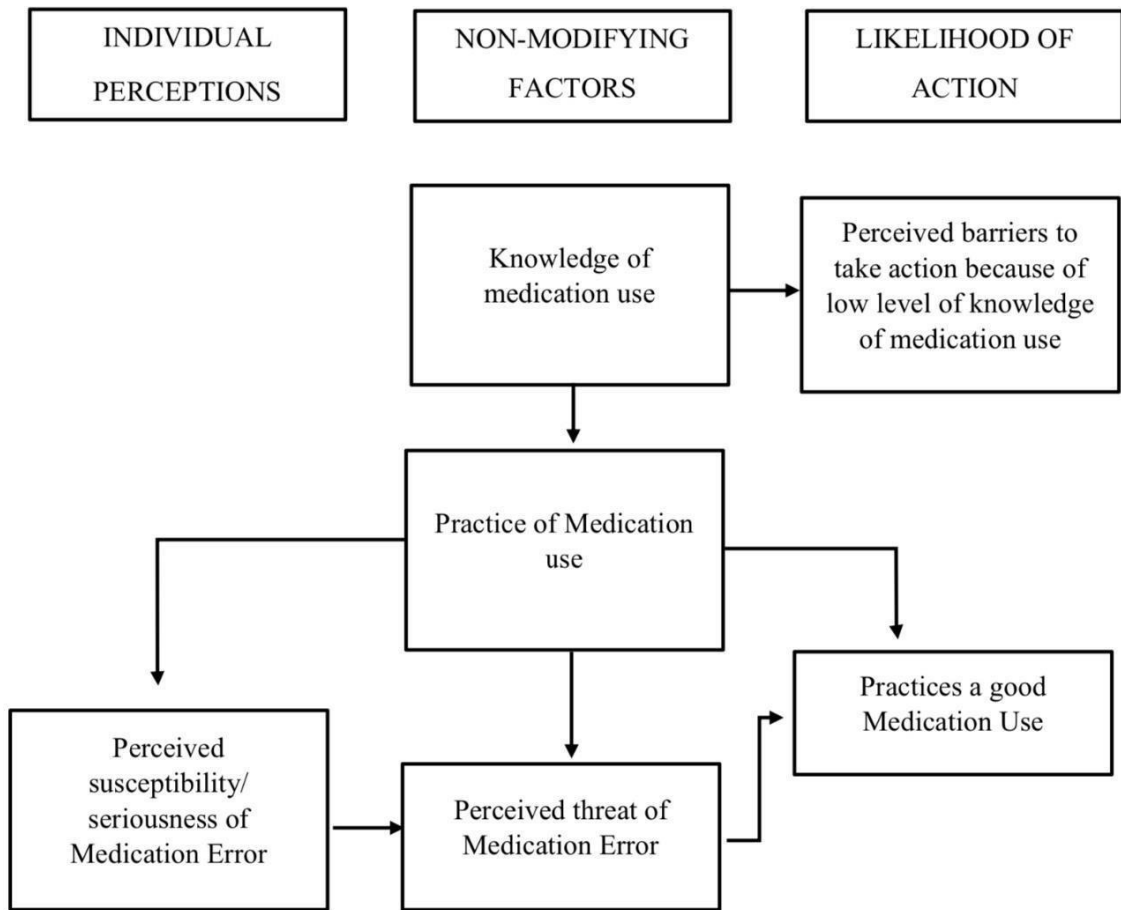
Perceived threat of Medication Error

Figure 2.2: Practice of Medication Use Framework adapted from The Health Belief

Model by Hochbaum, Rosenstock, and Kegels (1950s)

CHAPTER 3: METHODOLOGY & METHODS

3.1 Introduction

This chapter outlines how the study was carried out including the methodology and methods used. A flow chart of the study is provided within this report. Along with the methodologies and approach used, the actual process of carrying out the study will be described, such as research design, population and study setting, sample and sample selection. It also detailed ethical considerations and the method that was used in the analysis.

3.2 Research Design

The research design selected for this study was a cross-sectional study using a questionnaire to assess the level of knowledge and practice regarding medication use among elderly with chronic disease in FELDA Tembangau 2, Kemayan, Pahang.

3.3 Study setting and population

In order to propose the objective of the study, the target population was elderly with chronic disease who lived in FELDA Tembangau 2, Kemayan, Pahang. The total number of the elderly with chronic disease was 94. The population meets the inclusion and exclusion criteria.

3.4 Sampling Plan

3.4.1 Inclusion and exclusion criteria

The Inclusion Criteria

a. Elderly aged 60 years old and above and lived in FELDA Tembangau 2, Kemayan, Pahang.

b. Have chronic disease.

c. Taking medication that was prescribed by the doctor.

The Exclusion Criteria

a. Loss of consciousness or having cognitive impairment.

b. Not able to understand and speak Malay.

3.4.2 Sample size estimation

The sample size was calculated for each objective. The reasonable sample size was taken as the study sample size. Objectives 1 and 2 were calculated by using Web tools of statistics and sample size from Apkpure application (https://m.apkpure.com/statistics-and-sample-size/thaithanhtruc.info.stat/download).

Estimate a proportion in finite population

$$n \geq \frac{N Z^2_{1-\alpha/2} p(1-p)}{d^2(N-1) + Z^2_{1-\alpha/2} p(1-p)}$$

Where,

n = Sample size

α = Alpha

p = Estimated proportion of an attribute that is present in the population

d = Estimation Error

z = Value of standard normal distribution = 1.96

N= Population Size

Objective 1: To determine the level of knowledge regarding medication, use among elderly with chronic diseases in FELDA Tembangau 2, Kemayan Pahang.

Calculation:

Hence, the minimal sample size needed for the first objective in this study was 71 and after considering 10% of drop out, the calculated sample size was 78 elderly with chronic disease who fulfilled the inclusion and exclusion criteria.

Objective 2: To determine the level of practice regarding medication, use among elderly with chronic diseases in FELDA Tembangau 2, Kemayan Pahang.

Calculation:

Therefore, the minimal sample size needed for the second objective in this study was 71. After considering the 10% dropout, the calculated sample size was 78 elderly with chronic disease who fulfilled the inclusion and exclusion criteria.

Objective 3: To identify the correlation between the level of knowledge and level of practice among elderly with chronic diseases in FELDA Tembangau 2, Kemayan Pahang.

The total number of samples needed to assess whether a correlation coefficient deviates from zero. The correlation sample size was calculated using web tools at UCSF (https://sample-size.net/correlation-sample-size/). The title article from the previous study was "Knowledge, Attitude, and Practice Survey on Medication Safety in Korean Older Adults: An Analysis of an Ageing Society". This study shows significant differences ($p < 0.05$) were observed between the level of knowledge towards the elderly and practice.

Table 3.1: Correlation among knowledge and practice regarding medication use

Correlation	Knowledge	Practice
Knowledge	1	-
Practice	0.440	1

Calculation:

α (two-tailed) = 0.05   Threshold probability for rejecting the null hypothesis. Type I error rate.

β = 0.20   Probability of failing to reject the null hypothesis under the alternative hypothesis. Type II error rate.

r = 0.30   The expected correlation coefficient.

Calculate

The standard normal deviate for $\alpha = Z_\alpha = 1.9600$
The standard normal deviate for $\beta = Z_\beta = 0.8416$
$C = 0.5 * \ln[(1+r)/(1-r)] = 0.3095$

Total sample size $= N = [(Z_\alpha + Z_\beta)/C]^2 + 3 = $ **85**

Hence, the minimal sample size needed for the third objective in this study was 85 and after considering 10% dropout, the calculated sample size is 94 participants who fulfilled the inclusion and exclusion criteria. In conclusion, based on the third estimated sample size, the largest sample size was selected in this study to fulfill analyses all of the objectives that can be achieved, which is 94 elderly who fulfilled the inclusion and exclusion criteria.

3.4.3 Sampling Method

The study used a purposive sampling method. This technique was used to choose a certain set of people or units for study. Not at random, but "on purpose," participants were selected. (What Is Purposive Sampling? Technique, Examples, and FAQs, n.d.).

3.5 Instrumentation

3.5.1 Instrument

Data were collected by the use of a self-administered questionnaire consisting of three sections, sections A, B and C. Section A consists of 11 closed-ended questions associated with socio demographic information. Section B consists of 10 closed-ended questions related to knowledge regarding medication used, while section C includes 7 questions that used 5-point Likert scale type of questions that are associated with the practice regarding medication use.

Section A: Socio-Demographic Information

The questionnaire on sociodemographic data consisted of eleven items age, gender, disease duration, duration of medication use, disease diagnosed by the doctor, information about the disease, frequency of staying in hospital, type of medication used, frequency of medication used, number of medications used, and education about medication use from healthcare professionals.

Section B: Knowledge regarding medication use

This section represents elderly knowledge regarding medication used and consists of 10 questions. All of the questions were adopted from a public-domain questionnaire from the Korean Pharmaceutical Association (Lee et al., 2021). This questionnaire was adopted because it is appropriate and does meet the research objectives of this study. To measure the knowledge score, a 5-point Likert scale ranging from 1 to 5 was used. This measurement is suitable because it can measure knowledge score, ease the respondent to complete the survey, and does not take a lot of time for the respondent to complete the survey (Williams, 2020).

Section C: Practice regarding medication use

This section represents elderly practice regarding medication use and consists of 7 questions. Same as section B, all of the questions to determine the level of practice were adopted from public domain questionnaires from the Korean Pharmaceutical Association (Lee et al., 2021). A 5-point Likert scale ranging from 1 to 5 will be used to measure the level of practice.

3.5.2 Translation of instrument

The original questionnaires were developed in English version and need to be translated into Bahasa Malaysia to enable the participants to understand the questions. The questionnaires in sections A, B, and C have already been translated by the forward-backwards translation method. The forward-translated instrument will be then back-translated from Malay to English by the bilingual translator from Language Centre and Literacies, Health Campus Universiti Sains Malaysia. This is to ensure the accuracy of the translation.

3.5.3 Validation and reliability of instrument

When creating a research instrument, validity and reliability are two crucial factors to take into account to guarantee the accuracy and measurement of the data gathered for the study. Validity is the reliability of a research study's findings in predicting actual outcomes among people who behave similarly outside of the study (Patino & Ferreira, 2018) while reliability, or the accuracy of an instrument, is the second criterion for evaluating the quality of a quantitative study. In other words, reliability is the ability of research procedures to produce consistent results over time (Reliability in Research: Definition and Assessment Types | Indeed.com, 2022).