KNOWLEDGE AND AWARENESS

OF ANALGESIC USE AMONG OUTPATIENTS IN

UNIVERSITI SAINS MALAYSIA

SITI RASHIDA BINTI SAHREL

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OF ANALGESIC USE AMONG OUTPATIENTS IN

UNIVERSITI SAINS MALAYSIA

by

SITI RASHIDA BINTI SAHREL

Dissertation submitted in partial fulfilment 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 Attitude of Analgesic Use Among Outpatient in Hospital Universiti Sains Malaysia” is the bona fide report of research work done by Ms Siti Rashida Binti Sahrel (Matric number: 152469) during the period from September 2023 to June 2024 under my supervision. I have read this dissertation, and that, in my opinion, it conforms to the acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation to be submit in partial fulfilment for the degree of Bachelor of Nursing (Honours).

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DECLARATION

I hereby declare that this is the result of my investigation, except where otherwise stated and duly acknowledge. I also declare that it has not been previously of concurrently submitted for any other degrees at Universiti Sains Malaysia or others institution. I grant Universiti Sains Malaysia the right to use the dissertation for teaching., research and promotional purpose.

ACKNOWLEDGEMENT

Firstly, I would like to sincerely thank and appreciate my supervisor, Nur Adibah Binti Solihin Sulaiman, and my co-supervisor Dr Norhasmah Mohd Zain, for helping me throughout the process of planning the research proposal until completing the dissertation. I am indeed in good luck that I was able to get a knowledgeable and helpful supervisor who gives me excellent supervision by responding to all my queries on time and providing suggestions promptly. Apart from that, she also helps a lot in preparing the dissertation to ensure that I was on the right track and did not delay my work.

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

KNOWLEDGE AND ATTITUDE OF ANALGESIC USE AMONG OUTPATIENT IN HOSPITAL UNIVERSITI SAINS MALAYSIA (HUSM)

ABSTRAK

Kebanyakkan komuniti pesakit luar mempunyai akses untuk memperolehi ubat analgesik terutamanya ubat analgesic yang dijual bebas. Kedua-dua ubatan analgesic yang ditetapkan dan tidak ditetapkan seharusnya diambil secara betul untuk mengelakkan daripada penyallahgunaan. Oleh itu, kajian ini bertujuan untuk menentukan pengetahuan dan sikap pengunaan analgesic dalam kalangan pesakit luar di Hospital Universiti Sains Malaysia (HUSM). Sebanyak 220 peserta dari komuniti pesakit luar di HUSM megambil bahagian dalam kajian ini dengan menjawab soal selidik yang ditadbir sendiri melalui soal selidik berbentuk fizikal. Kajian in merupakan salah satu bentuk kajian keratan rentas. Data yang telah dikumpulkan telah dianalisis mengunakan SPSS 27.0. Tahap pengetahuan dan tahap sikap pengunaan analgesik dikenal pasti mengunakan statistik deskriptif. Sementara itu, perkaitan antara ciri sociodemografi terpilih (umur, jantina, tahap pendidikan) dan tahap pengetahuan pengunan analgesik, dan perkaitan antara ciri sociodemografi terpilih (umur, jantina, tahap pendidikan) dan tahap sikap pengunaan analgesik dikenal pasti mengunakan Pearson Chi-Square. Tanpa diduga, kebanyakan komuniti pesakit luar di HUSM mempunyai tahap pengetahuan yang sederhana dan tahap sikap penggunaan analgesik yang sederhana dengan masing-masing 52.3% dan 46.4%. Walaubagaimanapun, faktor yang

mempengaruhi kekurangan pengetahuan dan sikap dalam kalangan komuniti pesakit luar tidak dapat dikenalpasti melalui kajian ini kerana kajian ini tidak menunjukkan perkaitan antara ciri sosiodemografi terpilih (umur, tahap pendidikan) dengan tahap pengetahuan penggunaan analgesik, mahupun tahap sikap penggunaan analgesik. Walaubagaimanapun, tindakan dan strategi yang wajar perlu dilaksanakan dengan segera untuk menyelesaikan isu ini dan justeru meningkatkan pengetahuan dan sikap penggunaan analgesik dalam kalangan komuniti pesakit luar supaya masyarakat lebih memahami dan mempunyai sikap yang baik terhadap penggunaan analgesik dan mengambilnya dengan cara yang betul.

KNOWLEDGE AND ATTITUDE OF ANALGESIC USE AMONG OUTPATIENT IN HOSPITAL UNIVERSITI SAINS MALAYSIA (HUSM)

ABSTRACT

Most of the outpatient community has access to analgesic medication, especially over-the-counter analgesic medication. Both prescribed and non-prescribed analgesic medication should be consumed correctly to prevent it from being abuse. Therefore, this study aims to determine knowledge and attitude of analgesic use among outpatients in Hospital Universiti Sains Malaysia (HUSM). A total of 220 participants from outpatient community at HUSM were involved in this study by answering self-administered questionnaire through physical form of questionnaire send to them. This study is one of cross-sectional study. The collected data was analyzed through SPSS version 27.0. The level of knowledge and the level of attitude of analgesic use were identified using descriptive statistics. Meanwhile, the association between selected sociodemographic characteristic (age, gender, level of education) with level of knowledge of analgesic use, and association between sociodemographic characteristic (age, gander, level of education) with level of attitude of analgesic use were analyzed using Pearson Chi-Square. Unexpectedly, most of the outpatient community at HUSM have a fair level of knowledge and fair level of attitude of analgesic use with 52.3% and 46.4% respectively. However, the factor that influences lack of knowledge and attitude among outpatient community was not identified in this study as

it shows no association between selected sociodemographic characteristics (age, gender, level of education) with neither level of knowledge of analgesic use, nor level of attitude of analgesic use. Regardless of the finding, an appropriate actions and strategies should be taken immediately to solve these issues and improve the knowledge and the attitude of analgesic use among outpatient community setting so that the community have better understanding and having good attitude of analgesic use and consume it in correct ways.

Chapter 1: Introduction

1.1 Background of Study

Analgesic is a medication that relieves different types of pain. It is also known as painkillers or pain relievers. There are three types of analgesics which are non-opioid analgesic agents, opioid agents, and compound analgesics. Non-opioid analgesic agent is the most common form of analgesic. This includes a group of acetaminophen and nonsteroidal anti-inflammatory drugs (NSAIDs) such as ibuprofen, aspirin, naproxen, and etodolac. Next, opioid agents are used to alter the brain's perception of pain. It is also recognized as the most effective and widely used drug for severe pain management. Examples include morphine, tramadol, hydrocodone, and methadone. Meanwhile, compound analgesics are medications that contain both non-opioids and opioid agents. For example, co-codamol, co-codaprin, and co-dydramol (Ames, 2022).

There are various forms of analgesic including the oral type of medication like tablets and liquid form, in topical cream or gel, in the form of rectal suppositories, and injections (Ames, 2022). However, the main purpose of this drug is similar which is to reduce pain. The type of pain that can be relieved by consuming it includes pain through postsurgical pain, acute pain, and chronic pain like arthritis and cancer (Ames, 2022).

A study shows the most prescribed analgesic use by outpatient in public hospital settings in Malaysia from 2010 to 2016 is tramadol. The most common non-steroid anti-inflammatory drug (NSAIDs) are ketoprofen, diclofenac, and celecoxib, while morphine

and oxycodeno were the most opioids used. On top of that, Malaysia NSAIDs drug are among the most popular analgesics with easy to access (Awaluddin at el., 2017).

Taking non-opioids analgesic for short-term is associated with minimal risk but it must be taken correctly. The likelihood of encountering adverse effects increases when non-opioid analgesics are misused through high dosage or prolonged use. Non-opioids analgesics less likely cause addiction compared to opioids analgesic. Opioids analgesic can cause addiction and required prescription from the doctor (Ames, 2022).

In Malaysia, opioids such as heroin and morphine continue to be the main drug that cause abuse (Singh et al., 2013). However analgesic drugs such as paracetamol or commonly familiar with brand name Panadol is highly being misuse by Malaysian. It is reported that it is a common practice for individuals in Malaysia to casually consume pills as if they were sweets (Murugesan, 2022). In fact, many other NSAIDs drug and acetaminophen being abuse by certain individual without realizing it due to few factors including lack of awareness and their attitude.

Depending on the type of analgesic, it can be obtained by doctor's prescription or over-the-counter. The usage of any prescription drug without a doctor's prescription is considered misused. Consuming over-the-counter painkillers without following the correct dosage or taking them when pain is tolerable also consider misused (Murugesan, 2022).

1.2 Problem Statement

Analgesics is often used freely, resulting dependence and is thought to be the cause of chronic kidney disease in society during 1900s (WHO, 2002). Consuming analgesic drug is so common that the majority (>50%) of the patients use the drug several times a month (Halim et al., 2018).

Lack of knowledge related to analgesic medication in the community is one of the factors that led to analgesic misuse. A study was made in Tawau Hospital shows that 75.0% of the patients did not know the name of the ingredient of the painkillers that they had taken before. They were not aware of side effects (73.1%) and allergic reaction (64.8%) caused by painkillers. Majority of the respondents in the study (58.5%) state that they had not been informed regarding the side effect of painkillers by healthcare professionals (Cheah, 2018). Insufficient basic knowledge related to painkillers will contribute to bad habit of consuming them. However, another study is made among outpatient in pharmacy setting in Hospital Selama, Perak, Malaysia, related to their knowledge and attitude towards analgesic use. This study shows that patients with poor knowledge of analgesic use were equally likely as those who had good knowledge to be able to have a good attitude towards analgesic use (Paramalingam et al., 2021).

There are lack of data research regarding the knowledge and attitude of analgesic use among outpatient. Thus, this study is done to determine knowledge and attitude of analgesic use among outpatient in Hospital Universiti Sains Malaysia (HUSM). This study is significant to investigate the level of knowledge and attitude regarding analgesic use among outpatient community in HUSM. This study will improve their quality of life and improve the quality of nursing care.

1.3 Research Question

I. What is the level of knowledge of analgesic use among outpatient in Hospital Universiti Sains Malaysia (HUSM)?

II. What is the level of attitude of analgesic use among outpatient in Hospital Universiti Sains Malaysia (HUSM)?

III. Is there association between selected socio demographic characteristics (age, gender, and education level) with knowledge of analgesic use among outpatient in Hospital Universiti Sains Malaysia (HUSM)?

IV. Is there association between selected demographic characteristics (age, gender, and education level) with attitude of analgesic use among outpatient in Hospital Universiti Sains Malaysia (HUSM)?

1.4 Research Objective

Research objectives are divided into general and specific objectives.

1.4.1 General Objective

To determine the knowledge and attitude of analgesic use and the association between demographic characteristics with knowledge of analgesic use among outpatient in Hospital Universiti Sains Malaysia (HUSM).

1.4.2 Specific Objective

I. To identify level of knowledge of analgesic use among outpatient in Hospital Universiti Sains Malaysia (HUSM).
II. To identify the level of attitude of analgesic use among outpatient in Hospital Universiti Sains Malaysia (HUSM).
III. To determine the association of selected socio demographic characteristics (age, gender, and education level) with level of knowledge of analgesic use among outpatient in Hospital Universiti Sains Malaysia (HUSM).
IV. To determine association of selected socio demographic characteristics (age, gender, and education level) with level of attitude of analgesic use in Hospital Universiti Sains Malaysia (HUSM).

1.5 Hypothesis

Hypothesis H_0 : There is no significant association between selected socio demographic characteristics (age, gender, and education level) with knowledge of analgesic use among outpatient in Hospital Universiti Sains Malaysia (HUSM).

Hypothesis H_1 : There is significant association between selected socio demographic characteristics (age, gender, and education level) with knowledge of analgesic use among outpatient in Hospital Universiti Sains Malaysia (HUSM).

Hypothesis H_0 : There is no significant association between selected socio demographic characteristics (age, gender, and education level) with attitude of analgesic use among outpatient in Hospital Universiti Sains Malaysia (HUSM).

Hypothesis H_1 : There is significant association between selected socio demographic characteristics (age, gender, and education level) with attitude of analgesic use among outpatient in Hospital Universiti Sains Malaysia (HUSM).

1.6 Conceptual and Operation Definition

Table 1.1 Conceptual and Operation Definition

Operational Terms	Definition
Knowledge	Facts, information, and skills acquired though experience or education; the theoretical or practical understanding of a subject (Oxford Dictionary, 2019). In this study, it referred to the understanding of analgesic use among outpatient who visit Klinik Rawatan Keluarga (KRK) and pharmacy in Hospital Universiti Sains Malaysia (HUSM).
Attitude	A feeling or opinion about something or someone, or a way of having (Cambridge Dictionary, 2019). In this case it referred to the positive or negative opinions in term of analgesic use among outpatient in KRK and pharmacy in HUSM.

Analgesic	A type of drug that stops you from feeling pain (Cambridge Dictionary, 2019). In this case, the analgesic can be in verity form and obtained through doctor's prescription or over-the-counter depending on type of analgesic use.
Use	To put something such as a tool, skill, or building to a particular purpose (Cambridge Dictionary, 2019). In this study, it referred to the way of consuming analgesic which either correct or incorrect way among patients who visit Klinik Rawatan Keluarga (KRK) and pharmacy in Hospital Universiti Sains Malaysia (HUSM).
Misused	To use something in an unsuitable way or in a way that was not intended (Cambridge Dictionary, 2019). In this study, it referred to incorrect ways of consuming analgesic.
Outpatient	A person who goes to a hospital for treatment, but who does not stay any nights there (Cambridge Dictionary, 2019). In this case, it referred to outpatient in KRK and pharmacy in HUSM.

1.7 Significance of Study

Analgesic medication is essential to counter acute, moderate, or even severe pain. Managing pain is a must because pain is the human 5th vital sign and required immediate treatment when situation required it. World Health Organization (WHO) proposed the WHO analgesic ladder in 1986 to help community having adequate knowledge about pain (Leung, 2012). Even though this alternative was made but many people were unaware of the importance of having knowledge related to analgesic medication. Therefore, analgesic misuse occurs and if it continues and normalizes, many people will experience analgesic abuse without realizing it. The problem gradually worsening such as a high tendency of having kidney failure.

There are many studies done to determine the knowledge of use analgesic drugs yet not many studies focusing on outpatient as their targeted population. Therefore, this study aid to determine the level of knowledge of outpatient community and their attitude about analgesic use specifically at Hospital Universiti Sains Malaysia (HUSM). Hopefully, this study will provide opportunities for health care providers as a reference to construct better and more effective interventions in conducting health education among community in the future. Besides, may this study become helpful towards targeted community by enhancing their knowledge of analgesic use. Not to forget, may the health care facility be getting benefits from this study by knowing the problem and situation of their patient. This will open a door for improvement in healthcare facilities by contribute more holistic care.

Chapter 2: Literature Review

2.1 Introduction

This chapter reviewed the current literature of knowledge and attitude of analgesic use among outpatient in Hospital Universiti Sains Malaysia (HUSM). Besides, this chapter also provides general information about definition of analgesic, analgesic misuse, knowledge, and attitude towards analgesic use. The details about association between selected sociodemographic characteristics (age, gender, and education level) with level of knowledge of analgesic use among outpatient in HUSM, and association between selected sociodemographic characteristics (age, gender, and education level) with level of attitude level of analgesic use among outpatient in HUSM also reviewed in this chapter. This chapter also explains the conceptual framework where the Health Belief Model (HBM) was chosen to guide this study.

2.2 Analgesic

Analgesic or well known as painkiller or pain reliever, is medication that helps to reduce verity type of pain including mild pain, moderate pain, and severe pain (Ames, 2022). This analgesic medication is available in verity form and can be obtained through prescription by doctor or without prescription by doctor depend on type of analgesic. Analgesic medication without doctor's prescription can be obtained via over-the-counter (OTC) and it is the most easy way to buy.

There are three types of analgesics which are non-opioid analgesic agents, opioid agents, and compound analgesics. Non-opioid analgesic agent is the most common form of analgesic. This includes a group of acetaminophen and nonsteroidal anti-inflammatory drugs (NSAIDs) such as ibuprofen, aspirin, naproxen, and etodolac. Next, opioid agents are used to alter the brain's perception of pain. It is also recognized as the most effective and widely used drug for severe pain management. Examples include morphine, tramadol, hydrocodone, and methadone. Meanwhile, compound analgesics are medications that contain both non-opioids and opioid agents. For example, co-codamol, co-codaprin, and co-dydramol (Ames, 2022).

2. 3 Analgesic Misuse

Generally, substance misuse is a medical term used to describe a pattern of using substance or drug that causes significant problems or distress. Substance use disorder, as a recognized medical brain disorder (Hopkins Medicine), refers to the use of illegal substances or the misuse of legal substances such as misuse of prescription medication. Over-the-counter (OTC) medication selling eighty-five percent of analgesics and a study found that 37% of patients who received a prescription for analgesic were taking OTC medication for pain simultaneously (Abbott et al., 1998). Epidemiological studies of OTC analgesic use began in 1960s and 70s when an epidemic of kidney failure become obvious among many Western countries. This situation happens due to the sky rock of consumption of OTC analgesics during the decade following World War II (Abbott et al., 1998). World widely, paracetamol is one of the most used OTC medications (Raja et al., 2020). This medication is non-opioids medication which has lesser potential to be abused yet highly being misuse.

2.4 Knowledge towards Analgesic Use

Knowledge related to analgesic medication is important for every individual to help them understand the purpose of consuming analgesic medication properly. Good knowledge will help them build a concrete self-awareness and thus will prevent misuse of analgesic medication among them. A study that done in pharmacy x Batam city, Indonesia, and the result of the study shows that majority (44%) of patient's knowledge level related to usage of analgesic medication are sufficient (Trisna et al., 2023).

Additionally, a lack of knowledge about proper use of analgesics may increase the risk of developing toxicity and potentially dangerous adverse effects if they administer the medication incorrectly or fail to recognize how the medication administered (Paramalingan et al., 2021). According to Raja (2020), lack of awareness about correct consumption of analgesic subject pertinent to serious side effect. In his study, one-third of study participants were not interested in reading the analgesic leaflet before use which may lead to them taking higher dosage strength to cover their intensive pain. Furthermore, 81% of participants reported that there's no sufficient awareness about analgesic in community.

Prevention is better than cure. Taking analgesic medication should not give serious harm effect to patient when taking is correctly. Without knowledge, patients will not know proper ways of consuming it and intentionally or unintentionally misuse it. According to Raja (2020), he suggests that public education on medication use and safety through education campaigns done to bring positive changes in imperative. It can be delivered through well-distribution primary healthcare facilities in the cities.

2.5 Attitude towards Analgesic Use

The Mayday Fund Survey exanimated the attitude of 1,004 adults in the United States of America's communities towards pain and analgesic in general. The survey finding indicated that American frequently tolerate pain and prefer to suffer through it rather than taking analgesic (Bostrom, 1997). In the study made in Rafha and Riyadh, Saudi Arabia, 74% of respondents are aware that analgesic consume will accompanied by side effect. However, about 20% of respondents reported that they were unable to stop themselves from consuming analgesic even though the pain is mild. On top of that, 12% to 36% of respondents always and sometimes, respectively, consume more than one type of analgesic medication to relieve pain. Out of 237 participants, 10% of them was reported the occurrence of side effect of taking this analgesic medication. This result from this study shows that poor attitude towards analgesic (Raja et al., 2020). Taking prescribe medication without Doctor's prescription is consider misuse, and taking over-the-counter analgesic medication but taking it incorrectly and when pain is tolerable is also consider misuse (Murugesan, 2022).

Another study related to analgesic use is done among outpatient in pharmacy setting at Hospital, Selama, Perak, Malaysia. The result in this study is more positive where 31.6% of respondents are neutral that all over-the-counter analgesics can be taken with prescribed medication. The result shows mild misconception in patient attitude towards analgesic use. The attitude and perception towards analgesic use are satisfactory (Paramalingam et al. 2021).

2.6 Association between Selected Socio-demographic Characteristics

Socio demographic characteristic may influence knowledge and attitude of community toward analgesic misuse. The socio demographic characteristic that going to be focus in this study in only three which are;

- Age

  According to Paramalingam et al., (2021), young people have higher rate of consuming analgesic medication than other age groups. However, a statistic of prevalence of prescription opioid analgesic use among adult in united state in year 2013 to 2016 shows that the percentage of adult who use prescription analgesic increased with age, from 3.2% among young adult age 20 to 39 years old, to 7.5% among middle age adults 40 to 59 years old, and to 9.6% among adult age 60 and over (Frenk et al., 2019).

- Gender

  According to Raja et al. (2020) study, majority of his participant were female. The study's result shows significant consumption differences between men and women. This may indicate that women consume more analgesic medication compared to men consistent with previous study results by several authors. Others evidence that indicated women consume more analgesic than men is there are many theories underpinning that women are more consumer analgesic such as 'social support' and

'stress' theories. Besides that, due to biological difference related to woman reproductive life and use of analgesic medication to reduce menstrual pain, it significantly influences the gap in analgesic consumption between these two genders. Furthermore, due to culture belief that men should tolerate greater pain than women may influence less of consumption of analgesic among men.

- Educational Level

Malaysian commonly will have basic level of education which is Sijil Pelajaran Malaysia (SPM) level. In certain case, some people will have lower education level than SPM, and some are continuing their study to higher level of education. A study of depression, anxiety, and stress among student in Selangor, Malaysia, shows that 53.9% of students have moderate to severe depression, 66.2% of students have anxiety, and 44.6% of students that participate in that study experience stress (Wong et. al., 2023). According to Raja et al. (2020), he mentions in his study that patient with highly educated reported have higher consumption of analgesic medication prior to increase in stress that they face during study or during work. Besides, it also related to higher monthly income to purchase analgesic. Another study reported that educational level was the most significant predictor of non-prescription analgesic use (Paramalingam et. at., 2021).

2.7 Conceptual Framework of the Study

Health belief model (HBM) is a tool that scientists use to try to predict health behavior. In this study, HBM will be use as conceptual framework in guiding this study. HBM is an instrument develop in 1950s by group of social psychologists Godfrey Hochbaum, Irwan Rosenstock, and Rosenstock and Kirschtat (Ghorbani-Dehbalaei et al., 2021). This model is based on theory that person's willingness to change their health behavior primarily comes from their health perceptions. Nowadays, this model had been improved over time and been used in explaining health-related behavior. There are six components in HBM which are perceived susceptibility, perceived severity, perceived benefits, perceived barriers, Cue to action and self-efficacy.

Perceived susceptibility is the belief of an individual about probability to get sick. Perceived severity is the individual judgement of the seriousness of health condition. Perceived benefit is the belief of positive outcome of health behavior. Perceived barrier is referred to the belief of obstacles to performing a behavior and the negative expect of adopting a health behavior. Next, cue to action is internal and external factors that could trigger the health behavior. Lastly, perceived self-efficacy is refer to the level of a person's confidence in his or her ability to successfully perform a behavior (GhorbaniDehbalaei et al., 2021).

Socio-demographic variables including age, gender, and physiological characteristics will may indirectly influence the health behavior (Conner& Norman, 2015). In order to change health behavior of individual, the individual must perceive treat by current health condition which is perceived susceptibility and severity. The belief the health action will result in positive outcome which is perceived benefit and must be self-efficacy

to conquer the perceived barriers for health action to occur (Figure 2.1). Figure 2.2 shows the adaptation of conceptual framework from structure Health Belief Model (HBM) from Diagram 2.1 into this study.

Figure 2.1 Structure of the Health Belief Model (Glanz, Rimer, Viswanath, 2008)

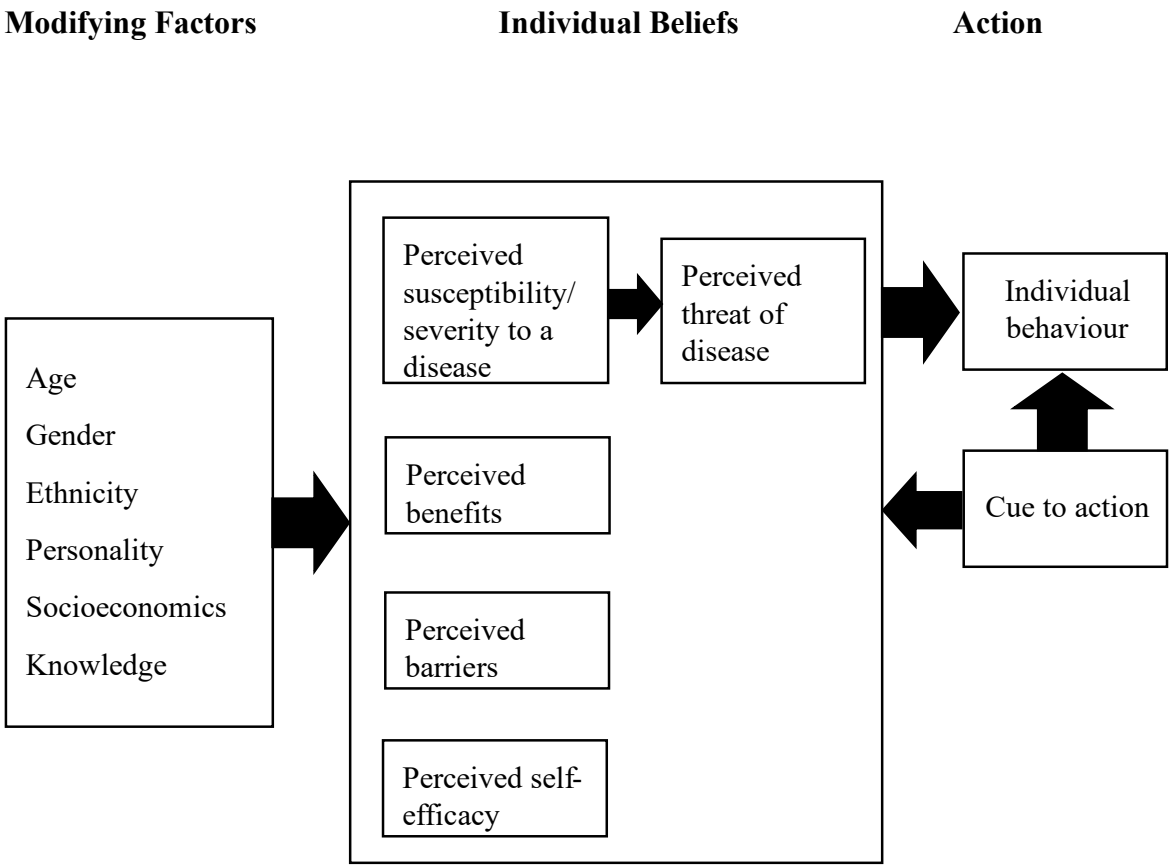
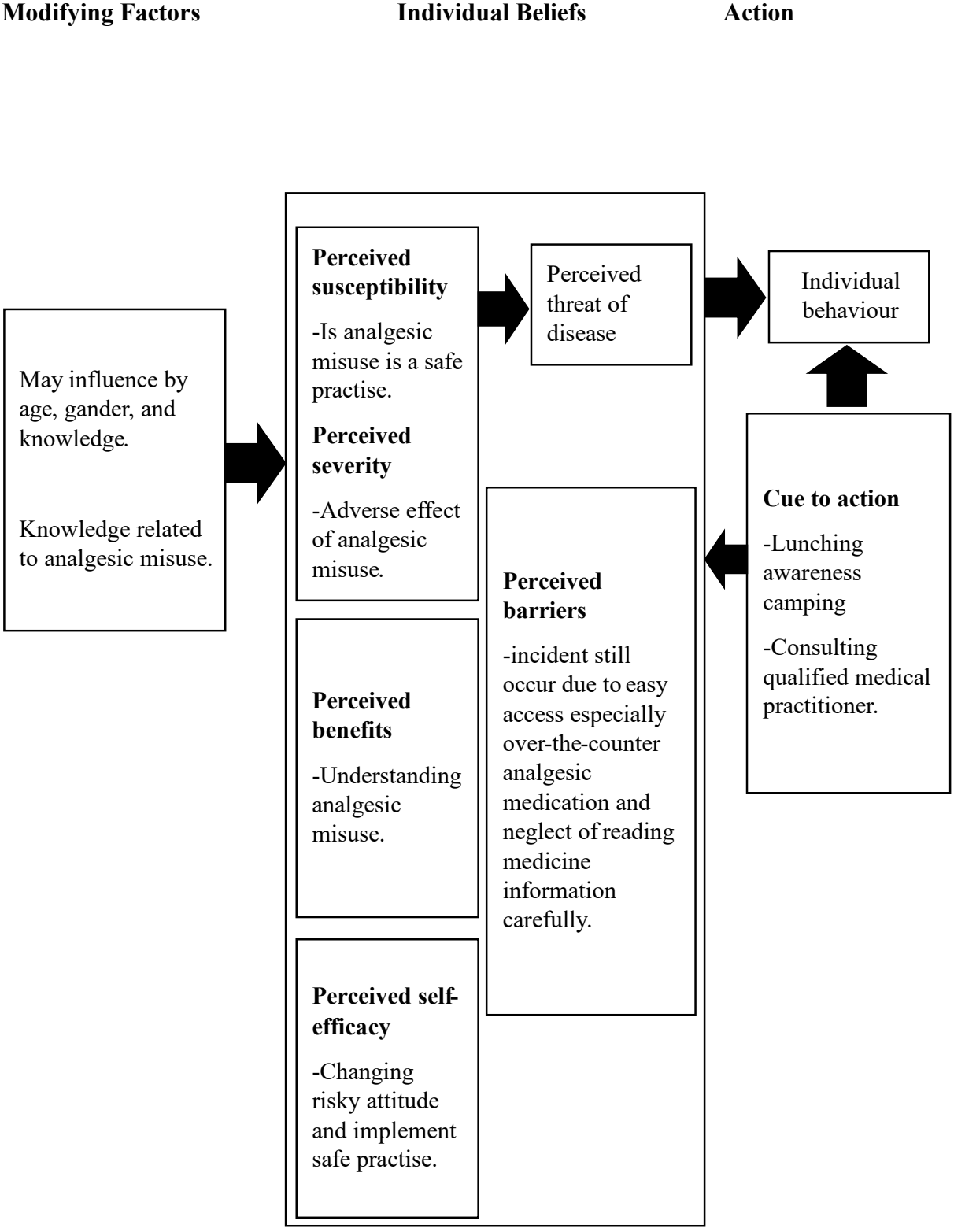


Figure 2.2 Conceptual Framework adopted from Health Belief Model (HBM)



Chapter 3: Methodology or Materials and Methods

3.1 Introduction

This chapter will further explain the research design which was cross-sectional design and justification for choosing this approach was described. Description of the study population and setting, sampling plan, participant selection criteria, sample size determination, instrumentation, variables and data collection plan were written. The final section explained the method for data analyzed, ethical consideration and expected research outcome.

3.2 Research Design

In this study, cross-sectional study was used. Cross-sectional study was a descriptive study, data were collected on the whole population at a single point of time to examine variables of interest (Saleh, 2018). This allows the researcher to measure the outcome and the exposure of the respondents at the same time based on the researcher's objective. The researcher's objective was to determine the level of knowledge and level of attitude of analgesic use among outpatient in Hospital Universiti Sains Malaysia (HUSM). Besides, the objective was also to associate between selected socio-demographic characteristics (age, gender, and education level) with the level of knowledge of analgesic use in Hospital Universiti Sains Malaysia (HUSM) and the association between selected socio-demographic characteristics (age, gender, and education level) with the level of attitude of analgesic use in HUSM.

3.3 Research Location

The Klinik Rawatan Keluarga (KRK) and pharmacy in Hospital Universiti Sains Malaysia were chosen as the locations to conduct the study. KRK and the pharmacy were open every weekday except public holidays. Patients who visit KRK will usually have TCA from the doctor meanwhile patients who visit the pharmacy to receive medication prescribed by the doctor.

3.4 Research Duration

The study took 12 months started from September 2023 until June 2024 as attached in Appendix D.

3.5 Research Population

The target population of this study was patients in the age range 18 years old to 60 years old who visited Klinik Rawatan Keluarga (KRK) and the pharmacy in Hospital University Sains Malaysia (HUSM).

3.6 Research Criteria

3.6.1 Inclusion Criteria

Specific requirements for eligibility in this study of each subject must be:

- Patients aged 18 years old to 60 years old who visit Klinik Rawatan Keluarga (KRK) or pharmacy in Hospital Universiti Sains Malaysia (HUSM)

- Able to give responses in Bahasa Melayu

3.6.2 Exclusion Criteria

The subject was excluded from this study if they:

- Have intellectual disability (mental retardation)

3.7 Sampling Plan

3.7.1 Sampling Method

Convenience sampling or known as availability sampling was applied to recruit respondents for this study. It was the method used to recruit members of the target population who were available at the moment were approached. Once the member of the targeted population shows consent, the investigation proceeds.

3.7.2 Sampling Size Estimate

The sample size for this proposed study was determined by calculating the sample size for each research objective. Then, the exact sample size was finalized by considering the one with the largest number. The sample size for the first and second objectives was calculated by using the single population proportion formula and double proportion formula.

The estimation sample for objectives 1 and 2 was calculated by using the simple population proportion formula.

$$\mathbf{n= (}z/\Delta)^2\ p\ (1\text{-}p)$$

n = Sample size

p = Anticipated population proportion

z = Value of standard normal distribution =1.64

Δ = Precision = 0.05

Objective	*p*-estimate proportion	n	Non-response rate 10%
Objective 1: To investigate level of knowledge of analgesic use among outpatient in Hospital Universiti Sains Malaysia (HUSM).	*p*= 0.44 Refer to a sufficient level of knowledge related to use of analgesic self-medication by Trisna M et al., (2023)	265	292
Objective 2: To investigate level of attitude of analgesic use among outpatient in Hospital	*p*=0.32 Refer to good attitude related to misconception towards analgesic use by	220	242

Universiti Sains Malaysia (HUSM).	Paramalingam et al., (2021).		

For objective 3, the sample size for association of socio-demographic data was calculated by using a double proportion formula.

$$n = \frac{p_1(1 - p_1) + p_2(1 - p_2)(z\alpha + z\beta)^2}{(p1 - p2)2}$$

n = Sample size

p = Anticipated population proportion

$z\alpha$ = 1.96 (a=0.05)

$z\beta$ = 0.84 (80% power)

<table>
<tr><th>Objective</th><th>p-estimate proportion</th><th>n</th><th>Non-response rate 10%</th></tr>
<tr><td>Objective 3: To determine association between selected socio demographic characteristics (age, gender, and level of education) with level of knowledge of analgesic use among outpatient in Hospital Universiti Sains Malaysia (HUSM).</td><td><table><tr><td>P- estimate population 1</td><td>P- estimate population 2</td></tr><tr><td>P_1= 0.68</td><td>P_2= 0.32</td></tr></table>p_1 value refer to basic education level among outpatient by previous study by Paramalingam

et al., (2021).</td><td>26</td><td>29</td></tr>
<tr><td>Objective 4: To determine the association of selected socio demographic characteristics (age, gander, and education level) with level of attitude of analgesic</td><td><table><tr><td>P- estimate population 1</td><td>P- estimate population 2</td></tr><tr><td>P_1= 0.54</td><td>P_2= 0.37</td></tr></table>Both p_1 value refer to positive attitude and belief based on gander (female = 0.54), (male</td><td>24</td><td>27</td></tr>
</table>

use among outpatient in Hospital Universiti Sains Malaysia (HUSM).	= 0.37) by previous study by Al Essa et al., (2018).		

Finally, sample size from objective 1 was chosen as the final sample size. The sample size from objective 1 was 292.

3.8 Research Instrument

This study used a structured, self-administered questionnaire to collect data from respondents.

3.8.1 Research Instrument

The instrument used in this study was a structured self-administered questionnaire which was adapted and reviewed from a previous study. The permission for the questionnaire used in this study was granted by the original author (Paramalingam et al., 2021) (Appendix B). The instrument consists of three sections: