YANGON UNIVERSITY OF ECONOMICS
DEPARTMENT OF APPLIED ECONOMICS
MASTER OF PUBLIC ADMINISTRATION PROGRAMME

A STUDY ON KNOWLEDGE, BELIEF AND BEHAVIOR ON SELF-MEDICATION AMONG THE PATIENTS IN PUBLIC HOSPITALS

(Case Study in Yangon General Hospital)

AUNG ZIN
EMPA-5 (17th BATCH)

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A thesis submitted as a partial fulfillment towards the requirement for the degree of Master of Public Administration (MPA)

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ABSTRACT

Nowadays, self-medication is widely used and inappropriate use causes serious problems such as drug resistance, drug interactions, drug toxicity and or addiction. The study conducted to identify reason for self-medication among people, to assess the level of knowledge, belief and behavior on self-medication and to analyze the relationship between them and socio-economic characteristics of the people. Primary data was collected with structured questionnaires from first visited out-patients of Yangon General Hospital. Most of respondents use self-medication because of easily accessible, saving time and money and traditional behavior which is not related to the level of education and income. Among the respondents, it was found that 45% had the high level of knowledge, 51.8 % had high level of belief and 50.5% had high level of behavior on self-medication. And also indicated that the level of knowledge and belief have significant positive relationship with level of education. There was no association between level of behavior and level of knowledge and belief, but there was strong association between the level of knowledge and belief on self-medication.

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LIST OF ABBREVIATIONS

AEC	ASEAN Economic Community
ASEAN	Association of South East Asian Nations
CHE	Current Health Expenditure
ECM	European Chamber of Commerce in Myanmar
EPHS	Essential Package of Health Services
FDA	Food and Drugs Administration
GGE	General Government Expenditure
HE	Health Expenditure
IEC	Information, Education and Communication
MDG	Millennium Development Goals
MOHS	Ministry of Health and Sports
NHP	National Health Planning
OOPS	Out of Pocket Spending
OPD	Out-Patients Department
OTC	Over the Counter
SM	Self-medication
UN	United Nations
WHO	World Health Organization
WSMI	World Self-Medication Industry
YGH	Yangon General Hospital

CHAPTER I
INTRODUCTION

1.1 Rationale of the Study

In developing countries, essential drugs should be accessible and affordable with the appropriate information and communication according to target eight of the Millennium Development Goal (MDG) (UN, 2008). As stated, self-medication (SM) is one of the supporters for rational drug use. As defined by the World Health Organization and World-Self Medication Industry, Self-medication is one of the key aspects of primary health care (WHO, 1998) (WSMI, 2010). Thus, the choice and use of medications by the consumer to treat self-recognized illnesses or its symptoms, or use of previous medical prescription by the medical officer for recurring disease or symptom a chronic or the intermittent is defined as self-medication by WHO (WHO, 1998).

Self-medication is one of the key contributors for making essential drugs accessible and affordable in a developing country (UN, 2008). Self-administration of medications is one of the strategies to prevent diseases such as malaria and HIV/AIDS. It is an extremely spreading concept advocated by different groups throughout the world including the WHO. There are some recognized advantages of self-medication such as promoting a person's active role in his/her own health care, accessibility, direct and speedy access to treatment, economical advantage and self-reliance in preventing or relieving minor symptoms (WSMI, 2010). However, self-medication has serious problem if it is used inappropriately such as drug dependence, wasted medical resources, drug interactions, microbial resistance, drug toxicity and/or addiction (WHO, 2000).

Nowadays, drug resistance is becoming a worldwide problem, mainly in developing countries as a result of the availability and the use of antibiotics without prescription (Gupta, Bobhate, & Shrivastava, 2011) (Pagan, Ross, Yau, & Polsky, 2006) (Osemene & Lamikanra, 2012). Thus, new forms of resistant pathogens can

transmit between countries with ease and this considered as “nightmare bacteria” that “pose a catastrophic threat” to people in all countries (McGuire, 2014).

In both developed and developing countries, the practice of self-medication is common worldwide (Figueiras, Caamano, & Gestal-Otero, 2000) (Albarran & Zapata, 2008). In developing countries, self-medication using Over-The-Counter (OTC) drugs become familiar and preferred type of medical care. There is an estimation that in a year, out of all purchasers 92% used at least one-time OTC medicine and 55% have used more than one (Wertheimer & Serradell, 2008). In the South-East Asia region, self-medication is a gradually practiced phenomenon and the popularity is estimated to be within the range of 12.7 % to 95% (Oj, CF, & EF, 1991).

Like other developing countries, self-medication practice is prevalence in Myanmar as it is social acceptability and low cost of treatment. Despite there is no exact and credible evidence in Myanmar, there have been commonly practiced self-medication both in urban and rural areas due to different reasons. Especially, it may be more reliance on self-medication in areas that they are far from health care centers. In Myanmar, there is no need to provide medical prescription to purchase drugs from drug stores. People among in rural areas and among the lower social classes, rely on self-medication was paramount because modern health services provided by the government were not accessible and affordable (Thuzar & Aung, 2019). According to study of (Thuzar & Aung, 2019), 97.8% of respondent’s practices self-medication and 83.3% of them were dissatisfied with costs, waiting time and services given at the hospital or health care center. The finding indicated that self-medication practices were highly popular among Myanmar people.

Correct and proper self-medication is important to health care and to avoid disadvantages of self-medication including drug resistance and unnecessary causes of diseases such as communicable and non-communicable diseases. Therefore, it is interested to investigate the extent and pace of prevalence of self-medication among people, reasons for self-medication by people, level of knowledge on self-medication for usage, dose, inspection and so on; belief and behavior on self-medication by people. Moreover, it is essential to find out means and ways to legal and systematic use of self-medication with support to healthier life of people and promote economic development of the country.

1.2 Objective of the Study

The main objectives of the study are to identify reasons for self-medication among people, to assess the level of knowledge, belief and behavior on self-medication, and to analyze the relationship between socio-economic characteristics and the level of knowledge, beliefs and behavior on self-medication of patients.

1.3 Method of Study

This study used descriptive method with both primary and secondary data. A Total of 220 patients who visited first time to out-patient department of Yangon General Hospital were selected as sample and information were collected by using face to face interview with structured questionnaire. Secondary data and information were obtained from relevant books, research papers and reports of Ministry of Health and Sports (MOHS) and Food and Drug Administration (FDA).

1.4 Scope and Limitations of the Study

This study was mainly focused on out-patients of Yangon General Hospital. Targeted respondents were patients visited first time to out-patient department of Yangon General Hospital. In that survey, seriously illness patients and health care personnel were excluded.

1.5 Organization of the Study

The study was organized into five chapters. Chapter 1 is introduction which includes rationale of the study, objectives of the study, method of the study, scope and limitations of the study and organization of the study. Chapter 2 prescribes literature review which shows the concept of self-medication, condition treated by self-medication, reasons for self-medication, advantages and disadvantages of self-medication, sources of information for self-medication and review on previous studies. Chapter 3 overviews on the health care system in Myanmar which includes Myanmar Health Care System, National Health Policy and Legislations, Myanmar Pharmaceutical Market, Myanmar Food and Drug Control Center. Chapter 4 is the survey analysis which investigated knowledge, beliefs and behaviors of the patients of Yangon General Hospital. The last chapter consists of the conclusion and recommendations for policy implication.

CHAPTER II
LITERATURE REVIEW

The nature and extent of self-medication is indeed different in various cultural backgrounds, and its socio-economic and educational impact may be greater than the impact of medical practice. Whether in economically deprived communities or economically privileged communities, self-medication is indeed a very common practice. There is no doubt that self-medication through non-prescription drugs is a growing trend of "self-care", which has positive and negative aspects (Hughes, McElnay, & Fleming, 2001).

The popularity of self-medication has strongly increased throughout the world. There are reports showing that up to 80% of all drugs are purchased without any prescription in developing countries, (Gore & Madhavan, 1994) which is substantiated by reports that (Divya, Bharatesh, Vasudeva, & Varalakshmi, 2016) (Gupta, Bobhate, & Shrivastava, 2011) (Wijesinghe, Jayakody, & Seneviratne, 2012) the prevalence of self-medication in developing countries is in the range of 12.7% to 95%.

Antibiotics and potentially habit-forming medicines are easily accessible in every pharmacy sells without prescription in many developing countries. Along with poor awareness and absence of a good primary health care system coupled with cost issues cause the general public to purchase drugs from private health institutions and stores without prescription (Chang & Trived, 2003). Self-medication is associated with risks such as misdiagnosis, use of excessive drug dosage, prolonged duration of use, wastage of resources, and increased resistance to pathogens (Kiyingi & Lauwo, 1993). Further there is an increase in the promotion of self-medication products, which has enhanced consumer and patient awareness of the availability of products (WHO, 1994). Although these drawbacks, self-medication is crucial component of primary care.

Decreasing the burden on delivering health care and do not need medical attention for minor symptoms treatment and ailments are some advantages of self-medication. However, there must be explored on some critical issues of self-medication before presenting its potential benefits. Any self-medication product should be safe to

use. But there should be aware that self-medication is not suitable to use for any delay in diagnosis and treatment of disease (Abosede, 1984).

Self-medication makes customers a lot of health aware, reduces treatment burden on tending facilities and curtails the value and time of getting access to treatment. However, it increases risk such as wrong diagnosis, drug interactions, drug resistance, poly pharmacy and adverse drug reactions (Eticha & Mesfin, 2014).

In addition, the problem of self-medication is posed because there is some degree of clinical lack of control, due to the fact that most the patient does not provide history of their self-medication certainly in medications which they are being taken, such as (analgesics, antipyretics, local anesthetics, etc.), and stops take certain precautionary measures. This behavior induces the irrational use of medications and the problems derived from it that medical officers must face every day (Ruiz, 2010).

2.1 Concept of Self-Medication

The use of medication (modern/traditional) without consulting a physician either for prescription diagnosis or surveillance of treatment is defined as self-medication (Hughes, McElnay, & Fleming, 2001).

Self-medication is defined as the individual use the medications for treatments, and or/ substances without a medical description. Self-medication is the most popular way of self-care, which is defined as the personal preservation of health through prevention and self-treatment of aliments (Ryan, Wilson, Taylor, & Greenfield, 2009).

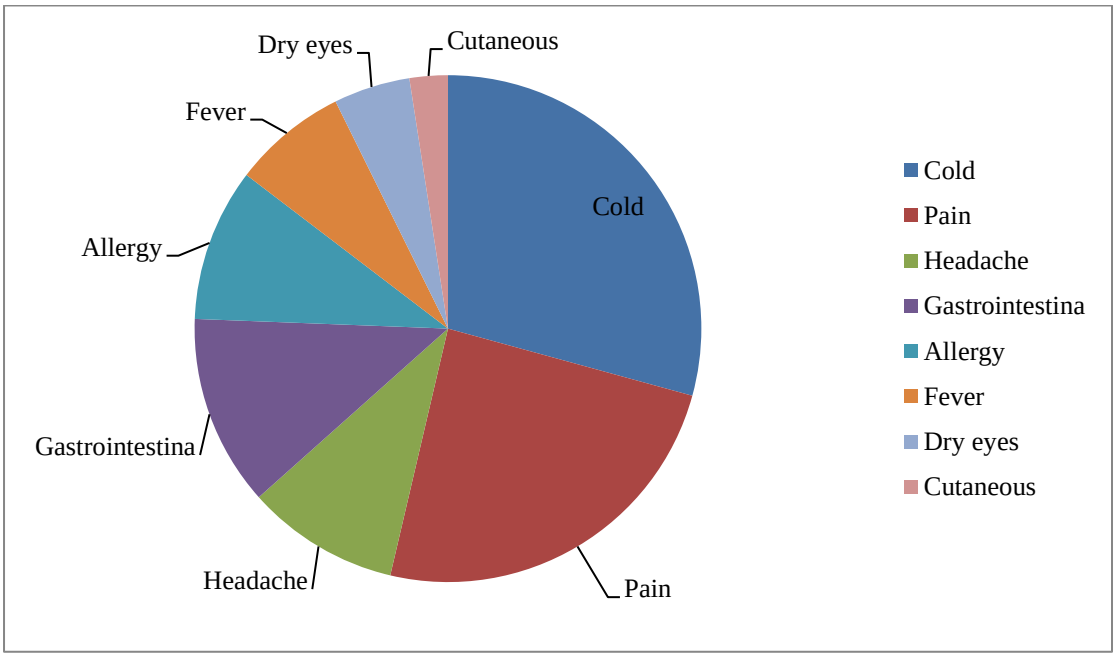
According to World Health Organization (WHO), self-medication is defined as the selection and use of medicines by individuals or a member of the individual's family without physician's order to treat self-recognized or self-diagnosed conditions (WHO, 1998).

According to WHO, patient use drugs or medicines for self- treatment diseases or symptoms, use previously-prescribed medication and take medical prescribed from unlicensed traditional and /or health staffs (WHO, 2000).

2.2 Condition Treated by Self-Medication

World-wide, customers normally reach for self-care product to assist them solve their common health issues that fever, body pains, stomach upset, diarrhea, vomiting, cough, and respiratory tract infections because it is easier, more cost-effective, time-saving, or the problem may seem too trivial to necessitate making an appointment with a healthcare professional and in other cases, they may have limited or no other options. There is a wide variety of conditions, given in Figure (2.1). Medicines for pain killers, cough and cold remedies, anti-allergy med, vitamins, energy drugs are OTC drugs which are commonly use for the treatment of common health problems but excessive using them can cause to serious side-effects and adverse reactions. Generally, consumers want to utilize private pharmacies rather than public facilities for self-medication (Goel, Ross-Degnan, Berman, & Soumerai, 1996).

Figure (2.1) Patient Preferences for OTC drugs



Source: Goud, Kumar & Ramesh, 2014

2.3 Reasons for Self-Medication

The most common reasons for self-medication were the illness were not too serious to see a doctor, the long waiting time to be seen by doctors and avoiding the cost of doctors' visits (Yousef, Al-Bakri, Bustanji, & Wazaify, 2008). There are different reasons for self-medication practice like to encourage for self-care, sympathy for family members in sickness, absence of health services, poverty, ignorance,

misbelief, excessive advertisements of drugs, and availability of drugs in establishments other than pharmacies (Li & Wang, 2005).

People practice self-medication due to lack of or poor health facilities, lack of healthcare workers, poor service delivery, ineffective health education and promotion strategies and limited training of healthcare workers (Abdulraheem, Adegboye, & Fatiregun, 2016). According to Kurniawan, Posangi and Rampengan, dissatisfaction with hospital workers' attitudes, long waiting queues to receive medical assistance, poor quality of the provided care and long-distance travel to health care centers are the factors which influence on self-medication (Kurniawan, Posangi, & Rampengan, 2017).

According to (Jain, Malvi, & Purviya, 2011), common reasons for self-medication due to the lack of time, high consultant fee of physician, quick relief, no family support. Wider availability of medicine, greater choice of treatments, ease of access and self-reliance in preventing or reliving minor symptoms or condition and financial constraint are some other reasons of self-medication.

Most common reasons for self-medication are described Table (2.1) (Jain, Malvi, & Purviya, 2011).

Table (2.1) Most Common Reasons for Self-Medication

Most Common Reasons	Remarks
Extreme poverty	Poor people do not want to go to the hospital because they cannot afford medicine or hospital bills. Therefore, they would rather go to the pharmacy to save costs for health.
Ignorance	Many people are unaware side effects of drugs; therefore, appropriate advice from qualified personnel is required before use, but people's ignorance of adverse drug reactions causes severe problems.
Lack of easy excess to some prescribed drugs	Sometimes people have to go a long way to get prescription drugs. Therefore, they would rather choose a more easily accessible alternative.
Quackery	There are many unqualified people who serve as health professionals, who are willing to prescribe medicine and make self-medication worse.
Lack of proper enforcement of existing laws	On drugs procurement in most developing countries.
Wrong attitude of people	Many people lack proper medical service as they don't have enough time or too busy and so they prefer self-medication.
Weak health system	Many people lose faith in weak health system.
Alternative medicine	This is another big problem. Many traditional and alternative medical practitioners make money by deceiving people.
Religious misconception	Nowadays, the proliferation of ideologies in various religious houses has some negative effects on health. Some people have some misunderstandings that prevent them from seeking proper medical services. An example of these people is refusing to go to the

	hospital because they are told not to inject or take drugs.

Source: Jain, Malvis & Purviya, 2011

2.4 Advantages and Disadvantages of Self-Medication

2.4.1 Advantages of Self-Medication

The benefit of self-medication is that consumers will choose the medicine that suits them according to their preferences. Usually, it will be selected for the symptoms and conditions, those users think are troublesome and require medical treatment. But it cannot prove the justification of consulting a doctor or physician. If the condition fails to response, persists or becomes more serious, should seek professional medical help. Therefore, good self-medication should provide individual consumers with:

1. Use the drug as recommended in the instruction for safety;
2. Wider availability of medicines;
3. Reliability and safety: the individual will often choose a product which experience has shown to be suitable. The scope and duration of self-medication can be kept within safe limits by appropriate selection of approved indications, labeling texts, dosage strengths and forms, and package sizes;
4. Risk can be acceptable although medications used for a longer duration, at a higher dose, or somewhat differently than recommended in the instructions
5. Greater choice of treatment;
6. An active player in his or her own health care;
7. Self-reliance to prevent or relieve minor symptoms or conditions;
8. Quick and direct access to treatment;
9. Economy as the reduction number of medical consultations;
10. Efficacy: i.e. a remedy of great effectiveness;
11. Educational opportunities on specific health issues and
12. Convenience.

According to WHO, good self-medication can also bring benefits, such as saving scarce medical resources to avoid wasting due to minor illnesses, reducing the cost of community-funded health care programs (including prescription compensation systems), and reducing the absence from work for minor symptoms at the community level (WHO, 2000).

2.4.2 Disadvantages of Self-Medication

In specific, the normal user will usually have no specialized knowledge of the principles of pharmacology or therapy, or of the specific characteristics of the medicinal product used which cause in certain potential risks for the individual consumer. Self-medication has a number of potential risks as listed below.

1. Food and drug interactions;
2. Incorrect choice of therapy;
3. Failure to recognize special pharmacological risks;
4. Rare but severe adverse effects;
5. Failure to provide current self-medication to the physician (risk of double medication or harmful interaction);
6. Excessively prolonged use;
7. Failure to remember on self-diagnose contraindications, interactions, warnings and precautions;
8. Risk of dependence and abuse;
9. Risks at work or in sport;
10. Failure to seek appropriate medical advice promptly;
11. Failure to recognize or report adverse drug reactions
12. Incorrect route or manner of administration;
13. Inadequate or excessive dosage

According to WHO, inappropriate self-medication may lead to increased disease and wasteful public expenditures caused by the drugs at the community level. It is important to realize that many of these risks are not unique to self-medication: they can also occur in prescription-only medicines, especially if the patient consults several doctors about the disease or lacks consultation during treatment. When choosing the types of drugs that can be used for self-medication, the goal should be to take advantage of the benefits mentioned above and minimize the risks (WHO, 2000).

2.5 Sources of Information for Self-Medication

In least developed countries, most disease outbreaks are treated with self-medication. Whether living in developing or developed countries, the sources of information are similar. Most of common sources are getting from the elderly person in family and pharmacist from drug store because they can provide good help to assess

symptoms and spend time explaining how to use the medicines properly and may purchase drugs based on previous medical advice.

A study indicated that the private sector pharmacy salesmen (including pharmacists) are the most common source of information reported by about 74.0% of respondents and (50.8%) of respondents reported experiences or knowledge from previous episodes. Health staff were the least common source of information, reported by only (9.6%) of respondents. Other sources of information about medications were relatives/friends, the Internet and advertisements (Alghanim & Alomar, 2015).

2.6 Reviews on Previous Studies

Aung Myint, 1999 conducted a cross-sectional survey among 400 health-decision-makers in "Yardaw" village near Mandalay in Myanmar to find out the factors affecting self-medication of Myanmar villagers. The study indicated that there were more male health-decision makers and most of the respondents were married and had primary education only. 97.8% of respondents were practiced self-medication and 75.8% of respondents had positive attitudes towards self-medication. High perceived needs were seen in 78.2% of respondents while 83.3% of them were dissatisfied with health services. The results indicated that there was highly associated self-medication practice with knowledge, attitudes, reference group supports and perceived. Except the household income, there was no significant association between socio-economic factors and self-medication. Based on the findings of this study, people should be reoriented to do responsible self-medication. Health education was essential to increase the level of knowledge, to change the negative attitudes and to correct false beliefs. Provision of supports, promotion of traditional medicines, reduction of health-related costs and improving the quality of services were mandatory (Myint, 1999).

Another study on self-medication practices in Khartoum State, Sudan was conducted in 2016. Information was collected from a sample of 1,200 respondents which were selected from all three cities of Khartoum State using a multistage stratified clustered sampling. The result showed 81.8% of respondents used medicines including herbs without a medical consultation. Self-medication with proprietary medicines was least common with the middle age, the elderly and low level of education and primary and intermediate school. It also showed that self-medication was strongly associated with low and middle income but had not with gender. Moreover, the result showed that self-medication behavior with herbs was strongly associated with middle-age, female

gender and lowest income earners (Awad, Eltayeb, & Capps, Self-medication practices in Khartoum State, Sudan, 2006).

S.A Alghanim from Saudi Arabia carried out the study on the self-medication practice among patients in a public health care system to determine the prevalence and factors associated with self-medication practice. This was a community-based, cross-sectional survey and data was collected from 500 patients who visited primary health care centers in Riyadh. The result showed that, 35.4% of the respondents had self-medication practice in the last two weeks and respondents who were male, young, reporting inconvenient access, having poor health status or dissatisfied with health care were more likely to practice self-medication. He recommended through his study that in order to change the people's health seeking behavior and protect them from the potential risks of self-medications, there should be developed and organized more health education campaigns/trainings, strict registrations on drugs distribution from private pharmacies and increased and accessed of health care (Alghanim, 2009).

Another cross-sectional study was conducted in Delhi, India, to find out the prevalence and practice of self-medication practices in an urban area and data were collected from 236 persons by personal interviews using pretested questionnaire. According to the result, the prevalence of self-medication was 92.8% and was found to be practiced more among younger persons than older age and graduates and post graduates practiced self-medication more than others. The recommendation of this study was awareness on self-medication practice was required which will support patients decide on the appropriateness of self-medication (Kumar, Mangal, Yadav, Raut, & Singh, 2015).

The study on the prevalence and determinants of self-medication practice among selected households in Addis Ababa community was conducted in 2016 to assess the prevalence and determinants of self-medication practice in Addis Ababa. Data was collected from 604 sampled participants using pre-tested and validated questionnaire. The result showed that mildness of illness (47.4%) and previous knowledge about the drug (23.2%) were the two main reasons for self-medication. Moreover, among respondents there were statistically significant differences between who reported practicing self-medication based on income and had knowledge about appropriate self-mediation practice (Shafie, Mebrahtu, Muzeyin, Worku, & Aragon, 2018).

A study to assess self-medication practices and its associated factors among undergraduates of a private university in Nigeria was conducted in 2018. The study was conducted in five colleges in Nigeria with descriptive cross-sectional method and undergraduate students were target respondents. The result showed that 82% of the respondents admitted to self-medication practice and respondents advised the reason for self-medication were unfriendly attitude of healthcare workers which was 27.7%, lack of time to go to school clinic which was 26.7%, school clinic is too far from hostel which accounted 15.3% and drugs prescribed in the school clinic do not improve their health condition which was 15.3%. Moreover, it showed that self-medication practices had significantly associated with age, gender, college and year of study (Esan, et al., Assessment of Self-Medication Practices and Its Associated Factors among Undergraduates of a Private University in Nigeria, 2018).

A community based cross-sectional study was conducted on self-medication practices and associated factors among households at Gondar town, Northwest Ethiopia in 2018. The finding indicated among households at Gondar town, 50.2% had the prevalence of self-medication practices. The major contributor of self-medication practices were unmarried participants and the common reasons of self-medication were influenced by peer, poor perceived quality of health care services and access to pharmacy. It showed there were only some participants had knowledge on self-medication (Jember, Feleke, Debie, & Asrade, Self-medication practices and associated factors among households at Gondar town Northwest Ethiopia: a cross-sectional study, 2018).

Thuzar and Aung from Myanmar conducted a cross-sectional study using with structured questionnaires to 250 laborers to measure the popularity of self-medication and its influence on the labor force in Hlaing Thar Yar Township, Yangon, Myanmar. The result showed that 89.2% among the labor force had self-medication practice and the factors influenced self-medication practices were decision-making role for the treatment of illness, poor perception and poor social support. These findings indicated the need for health education intervention and training should be conducted to promote rational drug use among this labor force (Thuzar & Aung, 2019).

CHAPTER III
HEALTH CARE SYSTEM IN MYANMAR

This chapter presents overview of Myanmar health care system and briefly on National Health Policy and Legislations, Myanmar Pharmaceutical Market and Myanmar Food and Drugs Control Center.

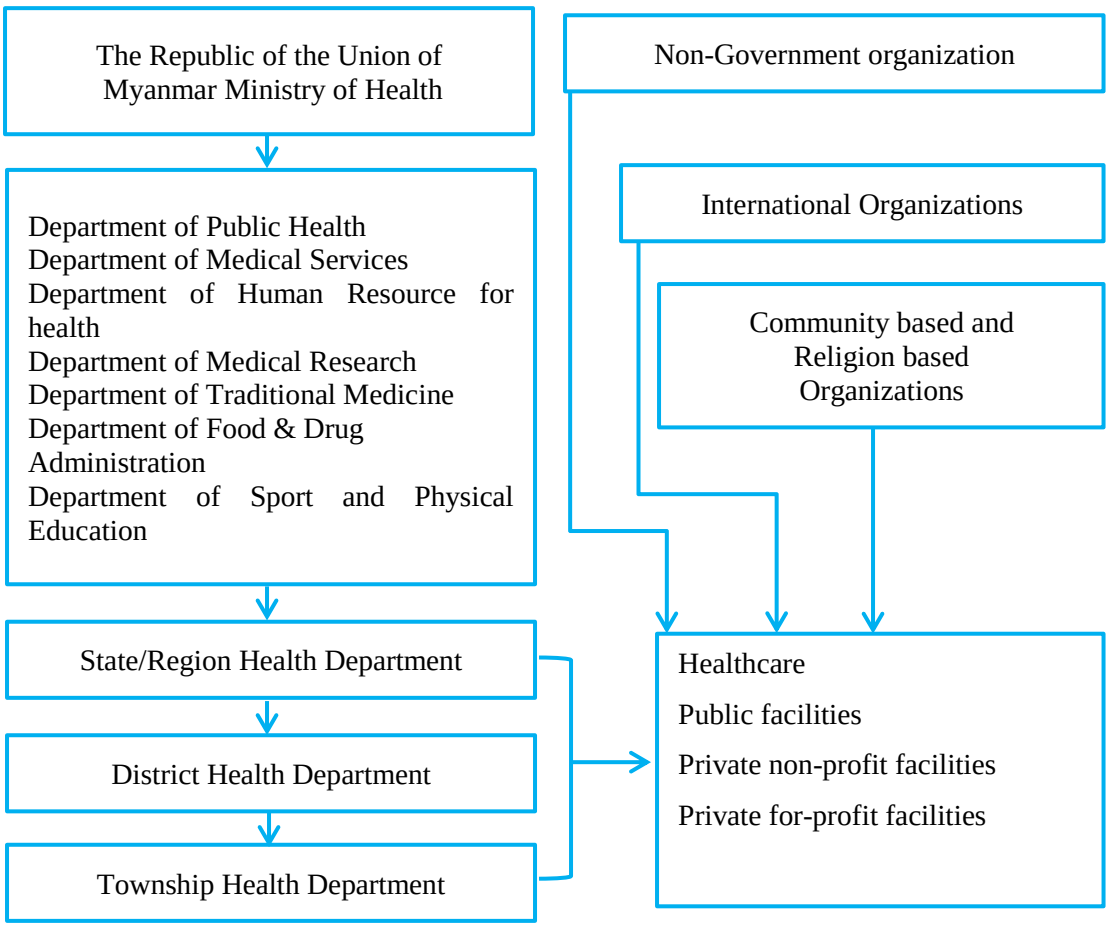
3.1 Myanmar Health Care System

Myanmar has a total population over 54 million of people as of 2020. Along with the increased population, there is needed to change and modernize within health care center. The healthcare system is administered by distribution between public and private sectors, in terms of supply and finance. However, all administrative functions are completely overseen by the Ministry of Health and Sports (MOHS) (Moore, 2020). The MOHS is the major player in the health sector as a governing agency as well as a provider of comprehensive health care services covering activities in promoting health, providing effective treatment, preventing diseases and rehabilitation to increase health status of population (ECM, 2017) .

The MOHS is organized with seven departments. The Department of Health is working mainly for basic health services and primary health care, environmental sanitation, maternal and child health, nutrition promotion, health education, school health, control and prevention of infectious diseases, outbreak investigations, disease surveillance and capacity building. The Department of Medical Services is mainly responsible to provide effective treatments and rehabilitation services. The Department of Health Profession Resource Development and Management is mainly working on production of all categories of health personnel except traditional medicine personnel, provide training. The Department of Medical Research is mainly responsible for national surveys and research for policy making and evidence- based medicine. The Department of Food and Drug Administration is working to make sure for safe drugs, food and medical equipment and cosmetics. The Department of Traditional Medicine is working to provide health care with traditional medicine and training of traditional

medicine personnel. The Department of Sports and Physical education is working to promote Union Spirit and patriotism by carry out sports activities, to attain Myanmar sports at international standard, to obtain the co-operation and encouragement of the public in order to increase the standard of sports, to train and nurture for the emergence of outstanding athletes by applying progressive and modern sports, techniques and methods, to emerge new generations of outstanding athletes and to recognize being outstanding in sports as a qualification (MOHS, 2017). Figure (3.1) describes the organization structure of Myanmar Health Care System.

Figure (3.1) Organization Structure of Myanmar Health Care System



Source: Health Industry Guide, 2018

In Myanmar, non-governmental organizations such as Myanmar Red Cross Society and Myanmar Maternal and Child Welfare Association also service in health sector in line with the national health policy. Locally acting community-based organizations, religion-based societies and nation-wide non-governmental organizations also provide and support health care services (Latt, et al., 2016)

The MOHS has planned and implemented activities with the purpose of ensuring health and longevity for the citizens. Through primary health care approach, the basic health staff provides promotive, curative, preventive and rehabilitative services to the grassroots level. To provide health care services to the rural community, health assistant, lady health workers and midwives are assigned at sub-rural health center or rural health care center. Patients who need special care are referred to Station Hospital, Township Hospital, District Hospital and to Specialist Hospital respectively. The state/regional health department is responsible at the state/regional level for state/regional planning, training and technical support, coordination, monitoring and evaluation of health services (MOHS, 2014). List of hospitals and health care centers under the MOHS is described in Table (3.1).

Table (3.1) List of Hospital and Health Care Center in Myanmar

No.	Region/State	Specialist Hospital	Training School	(500) Bedded	(300) Bedded	(200) bedded	(150) Bedded	(100) Bedded	(50) Bedded	(25) Bedded	(16) Bedded	Cottage hospital	Total Hospital	Total Permitted Bedded	Rural Health care center	Sub rural health care center
1	Kachin State	2		1		1		2	5	13		34	58	2144	68	308
2	Kayah State			1					1	5		10	17	835	29	120
3	Kayin State					1		3	2	7		25	38	1175	63	264
4	Chin State					2		2	4	1		21	30	1161	85	357
5	Sagaing Region			1	1	2		6	11	19		107	147	4537	250	1181
6	Tanintharyi Region					2		1	3	5		28	39	1223	49	244
7	Bago Region			2		1		3	10	14		82	112	3662	191	858
8	Magway Region		1			3		3	8	14		71	100	2954	188	887
9	Mandalay Region	11	2		1	3		3	16	9		67	112	8322	153	761
10	Mon State	1		1				2	4	3	1	29	41	1655	67	306
11	Rakhine State			1		1		4	8	4		53	71	2448	129	592
12	Yangon Region	14	3	2		4		1	12	10	4	33	83	11460	90	434
13	Shan State		2	1		2	2	6	16	35	4	99	167	5823	206	923
14	Ayeyarwady Region			1		5		2	10	12		100	130	4100	249	1299
15	Nay Pyi Taw	5	1		1	1		2	5	1		7	23	4137	32	166
	Total	**33**	**9**	**11**	**3**	**28**	**2**	**40**	**115**	**152**	**9**	**766**	**1168**	**55668**	**1849**	**8700**

Source: MOHS, 2020

Myanmar's health system is weak with various challenges in meeting the health needs of the population due to decades of neglect. Among ASEAN countries, Myanmar has the lowest life expectancy at birth (at 66.61 years), infant mortality rates (40.1 per 1,000 live births), the second highest maternity mortality ratio (178 per 100,000 live births) and under-five mortality (50.8 per 1,000 live births). Due to insufficient health workforce leads to poor and negatively affecting health care service delivery (MHDC, n.d.). The following table indicates the number of health workers in health care sector in Myanmar.

Table (3.2) Human Resources of Health Care in Public Sector in Myanmar for Year 2020 (Per 100,000 Populations)

No.	State/Region	Medical Doctors	Dental Surgeons	Nurses	Ladies Health Visitor and Midwives	Basic Health Service Professionals	
						Health Assistants	Public Health Supervisors
1	Ayeyarwady	9	1	27	39	5	24
2	Bago	11	1	31	41	6	26
3	Chin	20	3	112	128	11	100
4	Kachin	13	2	56	48	6	31
5	Kayah	30	6	135	98	13	67
6	Kayin	11	1	39	37	5	25
7	Magway	17	2	41	47	9	33
8	Mandalay	35	2	49	34	6	24
9	Mon	17	1	40	42	7	26
10	Nay Pyi Taw	43	8	84	37	4	24
11	Rakhine	7	1	26	33	5	26
12	Sagaing	13	2	31	42	5	27
13	Shan	9	2	125	116	15	62
14	Tanintharyi	15	1	42	40	5	25
15	Union	22	2	42	41	0	0
16	Yangon	53	2	53	45	5	26
	Total	**325**	**37**	**933**	**868**	**107**	**546**

Source: MOHS, 2020

In Myanmar, after the 2012 national elections, there are positive indications along with the changes in political system and administrative structures; the new government is undertaking reforms which include the health sector. There are remaining challenges for further improving health equity among its population. Between 1980 and 2011, there was increasing in some areas like life expectancy at birth for males and females, the child immunization coverage and declines mortality rates in infant and children under-5 years and maternal mortality ratio. Some progress has done towards achieving its Millennium Development Goals (Sein, et al., 2014).

The government was the main source of financing for the public health care but the household out-of-pocket payment has become the main source of financing after 1993 where the government introduced the cost sharing program. The Department of Health, one of the seven departments of MOHS, is the service provider and also takes the regulatory functions of the Ministry in protecting the health of the people. The network of hospitals and health centers (which extends down to village level) provides preventive and curative services ranging from primary to tertiary care. There are some challenges such as inadequate managerial capacity and the lack of proactive mind-set among health workers at local level (Sein, et al., 2014).

Regardless the institution types or provided entity or paying for the activity, national health expenditure covers all activities expenses with the purpose to restore, improve and nation health for nation and individual. Expenditure for public health services, capital for health care providers, others components of health-related, personal health services and health administrations are included in national health expenditure (MOHS, 2018).

In 2015, the total spending amount for health in Myanmar was approximately 4.7 %of GDP. The public shared 23% of total health spending or about 1.1 % of GDP, despite there was substantial increasing in government budgetary in health spending since fiscal year 2011/12. This was among the lowest compared to countries at a similar level of development (Teo & Cain, 2018). Health expenditure of Ministry of Health and Sports are shown as Table (3.3) (Htoo, 2020).

Table (3.3) Health Expenditure of Ministry of Health and Sports

Indicator	2005	2010	2015	2016	2017	2018
Current Health Expenditure (CHE)MMK in Million	285,089	725,943	3,779,032	3,795,582	4,201,705	2,366,962
Capital Expenditure (MMK in million)	7,988	26,661	345,841	312,821	327,610	148,540
Total health expenditure (CHE+HE) (MMK in million)	293,077	752,604	4,124,873	4,108,403	4,529,319	2,515,502
Per capita CHE (USD)	5,7	15.1	64.6	58.12	57.87	28.45
CHE as % of GDP	2.00%	1.80%	5.40%	4.80%	4.65%	5.0%
Capital Expenditure as % of GDP	0.10%	0.10%	0.50%	0.40%	0.40%	0.38%
General Government Health Expenditure as % of CHE	7.30%	9.80%	22.00%	16.00%	17.00%	20.10%
General Government Expenditure (GGE) as share of GDP	13.20%	14.60%	23.90%	21.33%	19.74%	20.38%
General Government Health Expenditure as share of General Government Expenditure	1.10%	1.20%	4.80%	3.60%	3.90%	2.50%
OOPs as % of CHE	82.50%	80.70%	70.50%	76.70%	75.70%	73.40%
External Health Expenditure as % of CHE	10.20%	9.40%	7.60%	9.00%	9.50%	9.20%

Source: National Health Account, 2020

The private sector was still the major source for health expenditures than public and external sources which accountings for 75% of total health expenditure for each year (MOHS, 2018). According to Myanmar government constraints on foreign agencies to operate in country and economic sanctions, Myanmar had limited aid flows

and overseas development assistance remains significantly lower than neighboring countries (World-Bank, 2012). With an expectation to increase in foreign aid and bring investment both in private and public sectors, Myanmar government lifted up for investment restriction to foreign companies. Foreign investment with 70% of ownership has been allowed to run clinics and hospitals (MOHS, 2014).

3.2 National Health Policy and Legislations

In 1993 with the initiation and guidance of the National Heath Committee, the National Health Policy was developed which has placed the Health for All goal as a main objective using Primary Health Care approach (MOHS, 1993).

The National Health Policies are as follows;

1. To increase the level of health of the country and promote the mental and physical well-being of the people with the objective of achieving "Health for All" goal by using primary healthcare approach.
2. To follow the guidelines of population policy.
3. To produce sufficient as well as efficient resources for health locally in the context of board frame work of long-term health development plan.
4. To follow the rule and regulations mentioned in the drug laws and by laws which are circulated in the country.
5. To augment the role of co-operatives, joint ventures, private sectors and non-governmental organizations in delivering of healthcare in view of the changing economic system.
6. To find and adopt alternative healthcare financing system.
7. To implement health activities in close collaboration with respected ministries in an integrated manner.
8. To circulate new rules and regulations in accordance with the prevailing health and health related conditions as and when necessary.
9. To consolidate and enhance environmental health activities including prevention and control of air and water pollution.
10. To promote national physical fitness by encouraging community participation, expansion of sports and physical education activities, supporting outstanding athletes and reviving traditional sports.
11. To encourage on medical research activities not only for prevailing health problems but also giving attention in conducting health system research.

12. To expand health service activities in rural and border areas to meet the overall health needs of the country.
13. To foresee any emerging health problem which cause a threat to the health and well-being of the people of Myanmar, so that preventive and curative measures can be initiated.
14. To strengthen the service and research activities of traditional medicine to international level and to involve in community's healthcare activities.
15. To strengthen national health development by collaborating with other countries.

In worldwide, public health law is the most important for the area of public health and the execution of public health powers and services. Its legal regulations cover environment sanitation such as control of the disposal of human and other wastes, some concerns for water purity and the hygiene of housing, a limited interest in food and milk sanitation and some incipient school health controls and communicable disease prevention. Public health programs support to improve public health not only by prohibiting harmful activities or conditions but also providing preventive and rehabilitative services to promote the health of the people. In terms of fulfilling the responsibility the government has enacted some health laws to improve and protect health of the citizens. Current majority health laws found to be related to the public health law enacted in 1972. Existing health laws can be categorized as health laws for promoting or protecting health of the people, health laws concerned with standard, quality and safety of care and laws relating to social organization (MOHS, 2014).

3.3 Myanmar Pharmaceutical Market

Pharmaceutical market in Myanmar is changing very rapidly and mostly compromises generic players. According to the ASEAN Economic Community (AEC), the investment of healthcare companies and the market expansion services providers are expected to increase since the country is free from the international sensation. Government is investing a lot on improving the access of medicines and treatment to the people of Myanmar and it also tries to upgrade the healthcare infrastructure of the country (Ghosh, Pandey & Soe, 2014).

Myanmar's pharmaceutical market has been grown and is continuing to increase by double digits. There is approximately 85% of local demand for over the counter medicines and health supplements in pharmaceutical market (DKSH, n.d.). One of the

main aspects for OTC growth is people are spending more on healthcare and take consideration on their own health. In 2017, pharmaceutical market size was $ 456 million and per capita pharmaceutical expenditure was $8.5. By the end of 2018, it was expected to reach $ 492 million with a growth of 7% (Pharmexcil, 2018). By 2023, the market is expected to reach US$1.2 billion and government initiated with high growth prospects (Chauhan, 2017). Under the supervision of Myanmar Pharmaceutical Industrial Enterprises of Ministry of Industry, there are three-stated owned pharmaceutical factories which located in Yangon, Pyin Oo Lwin and Kyaukse. These factories produce varieties of pharmaceutical products including capsule, tablet, lotion, oral liquids, ointments, injection, sterile products, biological products (vaccine and snake Antivenom) and infusion (MPM, n.d.). But there is a limitation of domestic pharmaceuticals productions and medical devices. Foreign brands still dominate in the market in terms of medical devices and equipment (ECM, 2017).

In Myanmar, both public and private sectors produce traditional medicines. The Department of Traditional Medicine is responsible for manufacturing in the public sector and own two pharmaceutical factories which produce twenty-one kinds of traditional medicine powders which are provided free of charge to be produced in public traditional medicine facilities and twelve kinds of traditional medicine drugs in tablet form are produced from factories for commercial purpose (MOHS, 2014).

According to Food and Drug Administration, there are 202 drug importers/ distributors and 10,000 drug stores and pharmacies (wholesale and retail) registered with FDA throughout out the country. India (USD181.5mn) was the main import source of pharmaceutical products in 2017, followed by Thailand (USD46.8mn), Indonesia (USD32.9mn), Singapore (USD5.2mn) and China (USD26.5mn). Myanmar also exports pharmaceuticals to some countries. In 2017, its top export markets were Malaysia (USD66, 331), Pakistan (USD25, 200), and Japan (USD16, 848) (Pharmexcil, 2018). But not all pharmaceutical importers provide essential drugs on the essential drug list of Department of Health. In general, people can easily access pharmaceutical products in pharmaceutical market without prescription (Sein, et al., 2014). There is only a small portion of pharmacy was operated by proper pharmacists and other drug stores were handled by other non-experts (MOHS, 2013).

3.4 Myanmar Food and Drug Control Center

The Food and Drug Administration (FDA) is one of the departments under the Ministry of Health and Sports which was established in 1995. The FDA headquarter is Naypyidaw, Myanmar, and FDA is organized with major five divisions: Administrative division, Drug Control division, Food Control division, Medical Device and Cosmetic Control division and Laboratory division. Major branches are located in Mandalay and Yangon. To expand control activities, there were established branches in other Regions and States. The Myanmar Food and Drug Board of Authority were created with the following aims.

1. To enable the public to use authentic quality, safe and effective drugs
2. To register drugs systematically
3. To systematically control and regulate on manufacture, export, import, storage, distribution and sale of food and drugs (MOHS, 2014).

FDA's functions include controlling the safety and quality of foods, drugs, medical devices and cosmetics issued in the country. FDA is also responsible for issuing GMP certificates, import and export recommendations, and import and export health certificates for local food manufacturing companies. FDA's drug control activities include new product sales licenses, changes to existing licenses, quality control laboratory testing, adverse drug reaction monitoring, manufacturers and wholesalers' Good Manufacturing Practice inspection and licensing, law enforcement activities, drug promotion and advertising. FDA issues medical device notifications and import recommendations, as well as cosmetics notifications. FDA connects and works with the Custom Department, the Directorate of Trade and the Myanmar Police Force (MOHS, 2014).

Whether a product should be regulated as a drug depends on the claims the manufacturer makes for the product on the product labels, leaflet or promotion materials. Claims that relate to the mitigation or treatment of disease entail that the product be regulated as a drug (DFDA, 2018).

CHAPTER IV
SURVEY ANALYSIS

This chapter presents the findings generated by descriptive statistical analysis of the survey data. The socio-economic characteristics of the respondents and their responses on questions regarding knowledge, belief, and behavior are depicted with relevant tables and figures. Frequency and percentages are used to report and explained in the results to be able to meet the objectives of study. In this chapter, background socio-economic characteristics and health related factors of the respondents are presented at first with descriptive statistics such as appropriate figures and tables. Then, the relationship between study variables and background socio-economic characteristics are described with chi square tests.

4.1 Survey Profile

This survey is conducted at the Yangon General Hospital which is 2,000 bedded and Tertiary Care Teaching Hospital with 36 wards and departments. This hospital is located in La Thar Township, Yangon with smooth transportation and good public amenities. Out-patient department includes general, specialists and investigation facilities such as imaging and lab. Patients can visit to OPD of YGH for new or follow up cases. Patients from OPD are referred to respective wards for further treatment if it is necessary.

4.2 Survey Design

In this study, a descriptive analysis is used to assess the knowledge, belief and behavior of patients visited first time to the OPD of Yangon General Hospital. Total of 220 patients is selected as sample and the data is collected by using structured questionnaire which includes four parts. The first part contains 10 questions to access socio-economics characteristics of respondents and the second part consists of 9 questions for health related factors of the respondents. The third part consists of 6 questions which focus on knowledge about self-medication related to usage of self-

medication, possible risks of self-medication and complication of self-medication. The fourth part emphasizes on belief toward self-medication which includes 5-point likert scale 12 questions. The final part of the questionnaire has 6 questions to assess the respondent's self-medication behavior.

4.3 Survey Results

4.3.1 Socio-Economic Characteristics of Respondents

Socio-economic characteristics of respondents such as age, sex, marital status, education, occupation and total monthly income are presented as shown in Table (4.1).

Table (4.1) Socio-Economic Characteristics of Respondents

Particular	Number of Respondents	Percentage
Age (years)		
18-30	27	12.27
31-50	85	38.64
>50	108	49.09
Sex		
Male	96	43.6
Female	124	56.4
Race		
Bamar	181	82.3
Other	39	17.7
Religion		
Buddhist	188	85.45
Other	32	14.55
Marital Status		
Married	115	52.27
Single	53	24.09
Separated/ widow/widower	34	15.45
Divorced	18	8.19
Education		
Illiterate	7	3.18

Table (4.1) Socio-Economic Characteristics of Respondents (Contd.)

Particular	Number of Respondents	Percentage
Primary education level and below	45	20.46
Middle education level	54	27
High school education level	49	19.82
University/ Graduate	65	29.54
Occupation		
Dependents	44	20
Government Staff	28	12.73
Wage Workers	23	10.45
Own Business	97	44.09
Company Staff	17	7.73
Retired Persons	11	5
Total Family Income		
<300000	89	40.45
300000-600000	66	30
>600000	65	29.55
Family size		
<3 members	14	6.36
3-5 members	133	60.46
6-12 members	73	33.18
Type of family		
Nuclear family	159	72.27
Extended Family	61	27.73

Source: Survey Result, 2020

Among respondents, participants of age over the 50 years old are main contributor of the study and it is 108(49.09%) which is followed by the age group 31-50 for 85 (38.64%) and the 18-30 age group with 27(12.27%) respectively. Female respondents are more presented than their male counterparts: which is (56.4%) and (43.6%). Most of respondents are married which is 52.27% of total respondents then it is followed by single which is 24.09%. Approximately one third of respondents

(29.54%) graduate while the illiterate accounts for (3.18%). The respondents are largely occupied in own business, depended and government staff with 97(44.09%), 44(20%) and 28(12.73%) respectively. The largest percentage of the respondents (40.45%) receive monthly income below 3 lakhs while (30%) of respondents get between 3 lakhs and 6 lakhs and (29.55%) of respondents get over 6 lakhs.

4.3.2 Health Care Behavior of Respondents

Concerning respondent's choice, when their family members ill, it is found that 179 (81.4%) of respondents use self-medication to acute and 158 (71.82%) of respondents go to clinic and 124 (56.36%) go to government hospitals and visit to specialists are 81 (36.82%). Only 6 (2.7%) respondents go to the traditional practitioners.

Table (4.2) Treatment of Respondents When Unhealthy Condition

Particular	Number of Respondents	Percentage
Self-medication	179	81.4
Going to clinic	158	71.82
Going to Government Hospital	124	56.36
Consult with Specialist	81	36.82
Going to Traditional Clinic / Practitioner	6	2.7

Source: Survey Result, 2020

4.3.3 Proximity to Health Care Center and Chemist

The time spent to the nearest health center and chemists from the respondent's home are presented in Table (4.3).

Table (4.3) Proximity to Health Center and Chemist

Time spent	Less than 15 min		Between 15-30 min		Over 30 min	
	Number of Respondents	(%)	Number of Respondents	(%)	Number of Respondents	(%)
To the Health Center	87	39.55	115	52.27	18	8.18

To the Chemist	89	40.45	112	55.45	9	4.1

Source: Survey Result, 2020

According to the Table (4.3), the distance from their home to health care center 40% of respondents take less than 15 minutes, 52% take between 15-30 minutes and 8% take over 30 minutes respectively. It is found that the distance from their home to the chemist, 55% of respondents take between 15- 30 minutes, 40 % take less than 15 minutes and 4% take over 30 minutes respectively.

4.3.4 Information Sources for Self-Medication

According to findings, 90.5% receive information from drug sellers, 61.4% from neighbors and 40.9% from relatives and family member respectively. From media, most of respondents 39.5 % receive information from TV, and follows by Journal 37.3%, Internet /Social media 25%, Radio 13.2%, Magazine 12.7%, Billboard 10.5% and 9.5% from Newspaper.

Table (4.4) Information Sources for Self-Medication

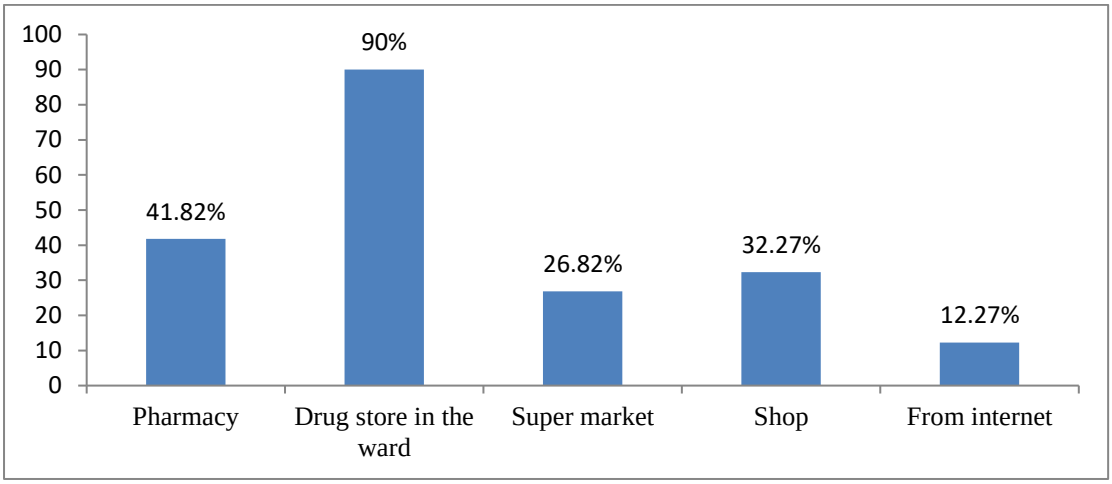
	No.	Particular	Number of Respondents	Percentage
Personal	1	Drug sellers	199	90.5
	2	Neighbors	135	61.4
	3	Relatives/ Family Members	90	40.9
	4	Traditional Medical practitioner	23	10.5
Media	5	TV	87	39.5
	6	Radio	29	13.2
	7	Newspaper	21	9.5
	8	Journals	82	37.3
	9	Magazine	28	12.7
	10	Billboard	23	10.5
	11	Internet/ Social Media	55	25

Source: Survey Result, 2020

4.3.5 Drugs Sources for Self-Medication

According to findings, 90% receive drugs from drug store in the ward, 41.8% from Pharmacy and 32.27% from Shop. Few of respondents 12.27 % receive from Internet Online Shopping.

Figure (4.1) Drugs Sources for Self-Medication

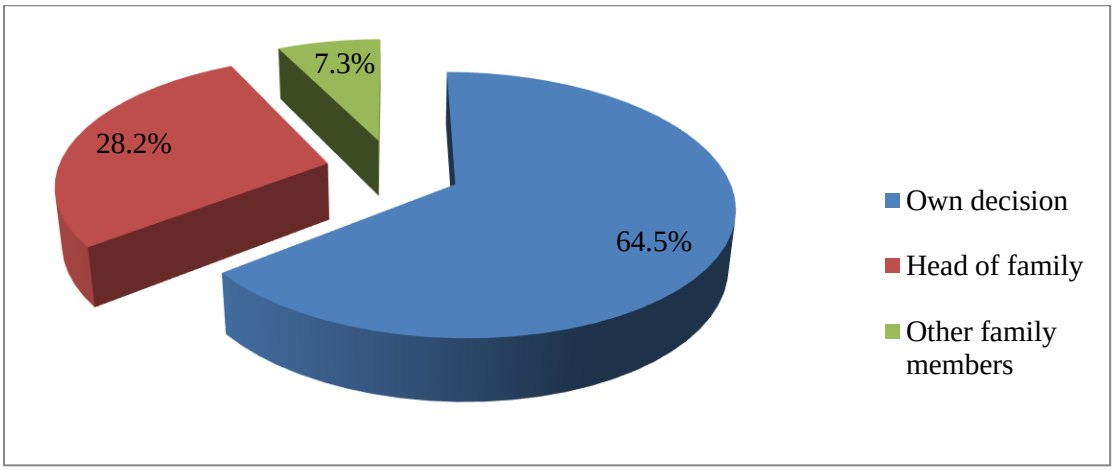


Source: Survey Result, 2020

4.3.6 Decision Making for Self-Medication

As presented in Figure (4.2), 64.5 % of respondents make own decision for self-medication while 28.2% by head of family and 7.3% by other family members.

Figure (4.2) Decision Making for Self-Medication



Source: Survey Result, 2020

4.3.7 Reasons for Taking Self-Medication

There are 9 statements to find out the reasons for taking self-medication and results are shown in Table (4.5).

Table (4.5) Reasons for Taking Self-Medication

No.	Particular	Number of Respondents	Percentage
1	Repeated appointment of medical provider	28	12.7
2	Difficult access to health centers	58	26.4
3	High medical cost	44	20
4	Previous experience	103	46.8
5	Minor illness	169	76.8
6	Time saving	145	65.9
7	Save money	109	49.5
8	Easy and convenient	122	55.5
9	Quick relief	108	49.1

Source: Survey Result, 2020

Respondents report the reasons to take self-medication for minor illness are given as the highest at 169 (76.8%) and repeated appointment of medical provider is 12.7% as the lowest. Other reasons are for time saving (65%) and save money (49.5%).

4.3.8 Inappropriate Condition for Knowledge on Self- Medication

There are 4 statements to find out the knowledge on inappropriate condition for self-medication and results are shown in Table (4.6).

Table (4.6) Inappropriate Condition for Knowledge on Self- Medication

No.	Particular	Number of Respondents	Percentage
1	Serious condition	193	87.7
2	After completed dose	58	26.4
3	After few days from taking medicines	48	21.8
4	After symptom relief	165	75

Source: Survey Result, 2020

According to findings, most of the respondents 193 (87.7%) have the knowledge on self-medication should not take when it is serious condition and 165(75%) report after complete of the dose respectively.

4.3.9 Knowledge on Self-Medication

The knowledge questions are categorized into four portions which are the knowledge on self-medication usage, the knowledge on self-medication risks, the knowledge on self-medication complications and side effects and the knowledge on inspection when purchasing and using the drugs.

(a) Knowledge on Self-Medication Usage

The purpose of this section is to find out the knowledge on self-medication usage of respondents and it is assessed with seven statements.

Table (4.7) Knowledge on Self-Medication Usage

No.	Particular	Mean
1	Fever	0.91
2	Cough	1.09
3	Minor injuries	0.26
4	Skin infection	0.05
5	Influenza	0.71
6	Headache	0.82
7	Diarrhea	0.42
	Overall Mean	**0.61**

Source: Survey Result, 2020

According to the findings, respondents report self-medication use for cough which is the highest mean score, 1.09 then which is followed by fevers which mean score is 0.91 and find that there is very low self-medication usage in skin infection which mean score is 0.05 and for minor injuries which mean score is 0.26.

(b) Knowledge on Self-Medication Risks

Self-medication is likely to have risks and disadvantages; the knowledge on self-medication risks is assessed with fourteen statements in Table (4.8).

Table (4.8) Knowledge on Self-Medication Risks

No.	Particular	Mean
1	Wrong diagnosis	0.85
2	Delay on getting medical advice	0.78
3	Wrong treatment	0.87
4	Failure to recognize Pharmacological risk	0.77
5	Failure to recognize contraindication, interaction	0.74
6	Repeated use of different trade mark	0.78
7	Failure to report physician	0.66
8	Use by wrong route	0.60
9	Excessive drug use	0.86
10	Incomplete course of drugs	0.70
11	Unnecessary prolonged drugs use	0.64
12	Risk of drugs addiction	0.62
13	Reaction with food	0.73
14	Loss of potency due to improper storage	0.64
	Overall Mean	**0.73**

Source: Survey Result, 2020

According to the Table (4.8), respondents report that wrong treatment will be the highest possible risks of self-medication which mean score is 0.87 and follows by excessive drug use which mean score is 0.86 and wrong diagnosis which is 0.85. Respondents report that use by wrong route is the lowest possible risks of self-medication which mean score is 0.60.

(c) Knowledge on Self-Medication Complications and Side Effect

The purpose of this section is to find out the knowledge on self-medication complications and side effect of respondents and it is assessed with twelve statements.

Table (4.9) Knowledge on Self-Medication Complications and Side Effect

No.	Particular	Mean
1	Skin rash	0.62
2	Blisters on skin	0.52
3	Abdominal pain	0.62
4	Vomiting	0.58
5	Cold extremities	0.36
6	Diarrhea	0.46
7	Dizziness	0.58
8	Headache	0.58
9	Loss of consciousness	0.31
10	Damage to the Kidneys	0.64
11	Harmful to the Stomach	0.87
12	Damage to the Liver	0.40
	Overall Mean	**0.55**

Source: Survey Result, 2020

According to the findings, respondents report that harmful to the Stomach is shown the highest side effect of self-medication which mean score is 0.87 and damage to the Kidneys gets the second highest mean score which is 0.64. The result show that loss of consciousness with mean score 0.31 and cold extremities with mean score 0.36 are the lowest side effect of self-medication.

(d) Knowledge on Inspecting When Purchasing and Using Drugs

Regarding the assessment on the knowledge of precautions when using drugs and inspecting when purchasing drugs is assessed in Table (4.10).

Table (4.10) Knowledge on Inspecting When Purchasing and Using Drugs

No.	Particular	Mean
Precaution when using drugs		
1	Children under 5 years	0.88
2	Use in pregnant mother	0.81
3	Use in chronic patients	0.59
4	Use in lactating mothers	0.63
5	With alcohol	0.87
6	With some food	0.58
	Overall Mean	**0.73**
1	Expired date	0.81
2	Registered drugs	0.32
3	Restricted drugs	0.25
4	Type of drugs	0.60
5	Brand	0.61
6	Side effects	0.35
7	Advantages	0.55
	Overall Mean	**0.50**

Source: Survey Result, 2020

According to the Table (4.10), respondents report specific warning and information of drugs should be provided especially to children under 5 years, persons with alcohol and pregnant mothers which are above the overall mean score (0.73). The result indicates that drugs' expired date, brand, type and advantages should be checked when purchasing the drugs which are higher the overall mean score (0.50).

Table (4.11) Level of Knowledge on Self-Medication

No.	Particular	Mean
1	Illness that can be used self-medication	0.61
2	Possible risks of self-medication	0.73
3	Complications and side effect of self-medication	0.55
4	Specific warning and information should be provided	0.73
5	Some facts are to be checked when purchasing drugs	0.50
	Overall Mean	**0.62**

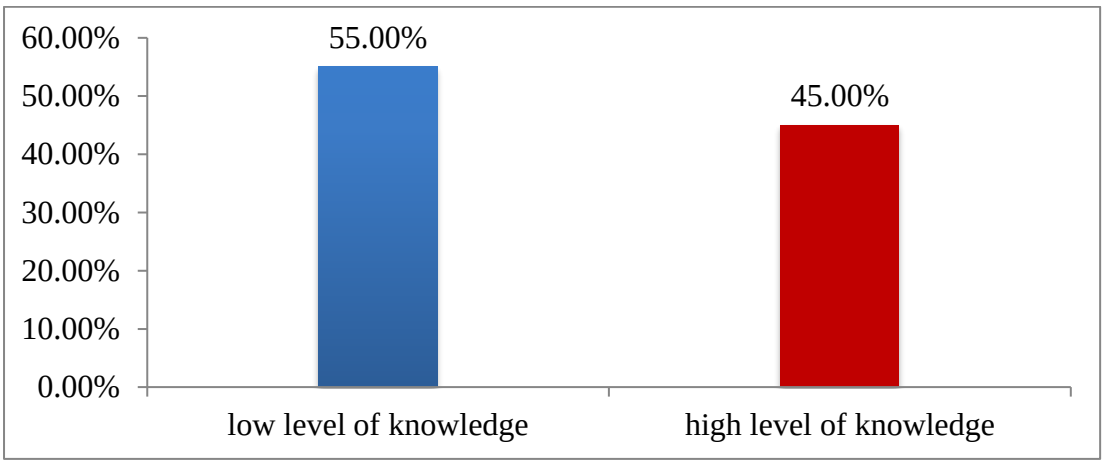
Source: Survey Result, 2020

According to the Table (4.11), there are two out of five points are above the overall mean and it shows among respondents, there are more respondents who have low level of knowledge on self-medication than who have high level of knowledge on self-medication.

4.3.10 Level of the Knowledge on Self-Medication

Respondents' levels of the knowledge on self-medication are assessed by using the result from (4.3.9) which includes 46 statements. The correct answer for each statement counts as one score and total score is 46 and its mean is 28.89. According to the survey data, the outcome scores from respondents are ranged from minimum 14 to maximum 40. It shows that 55% (121) of respondents have low level of the knowledge on self -medication which is below the mean and 45% (99) have high level of knowledge which is including mean and above the mean.

Figure (4.3) Level of Knowledge on Self-Medication



Source: Survey Result, 2020

4.3.11 Belief towards Self-Medication of Respondents

Respondents are assessed their belief towards self-medication with 5-point likert scale 12 questions in Table (4.12).

Table (4.12) Belief towards Self-Medication

No.	Statement	Mean
1	Self-medication can save time and suitable for only acute Conditions.	3.76
2	Self-medication cannot be useful in all disease conditions.	2.26
3	If there is no adequate knowledge about medication, self-medication can be harmful	3.35
4	Antibiotic should continue until the course complete.	3.30
5	Inappropriate use of antibiotic can cause drugs resistance	3.33
6	The problem of drug resistance is important for community.	3.33
7	Dates of expired and manufactured of drugs are important.	3.53
8	It is important to know drug manufactured country, brand and imported company.	3.53
9	All drugs should be registered.	3.72
10	It needs to immediately go to the nearest health center when the condition do not improve while self-medication.	3.65
11	Inappropriate self-medication can cause burden to the Health care services.	3.69
12	It is important to provide history of self-medication to health care provider.	3.75
	Overall Mean	**3.43**

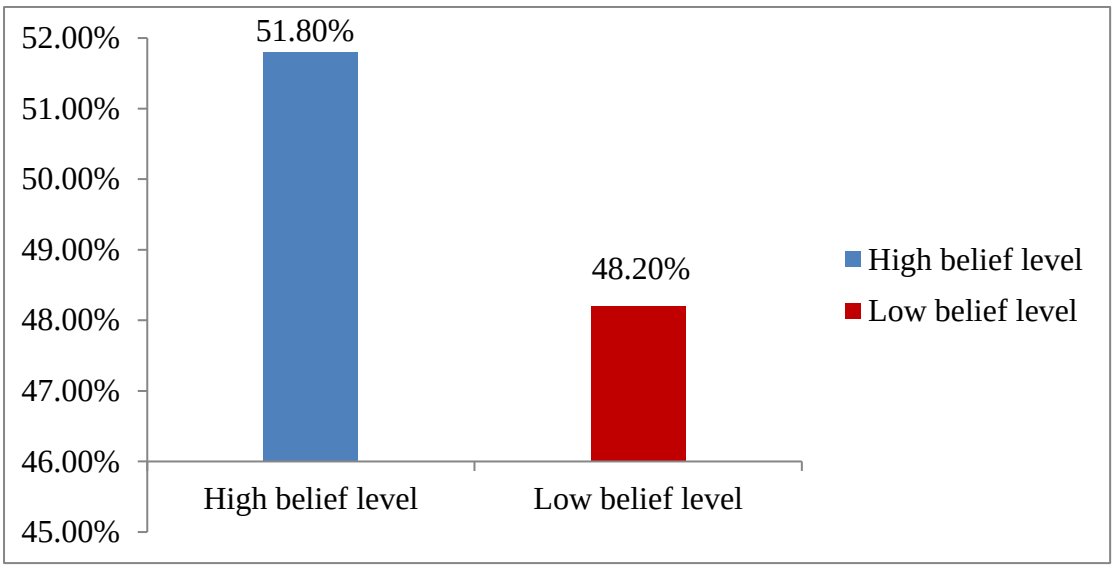
Source: Survey Result, 2020

Table (4.12) illustrates that respondents believe self-medication can save time and suitable only for acute conditions which is the highest mean score 3.76 and follows by it is important to provide history of self-medication to health care provider which mean is 3.75. Findings show that out of 12 statements, 7 statements are above the overall mean which means that there are more respondents who have high level of belief on self-medication.

4.3.12 Level of the Belief on Self-Medication

Respondents' level of the belief on self-medication is assessed by using the result from (4.3.11) which includes 5-point likert scale 12 questions. The overall total score for12 Likert scale questions are 60 and its mean is 41.21. As per the survey data, respondents score range is between 18 and 50. There are 51.8% (114 respondents) of respondents have high belief level (including mean and above) and 48.2% (106 respondents) have low belief level (below mean).

Figure (4.4) Level of the Belief on Self-Medication



Source: Survey Result, 2020

4.3.13 Self-Medication Behavior of Respondents

The behavior questions are categorized into four which are

a. Frequency use of self-medications, checking and understanding of drug prescription
b. Frequently used medications,
c. The first taking action when self-medication is failed and
d. Storage of drug.

(a) Frequency use of Self-Medications, Checking and Understanding of Drug Prescription

According to findings describe in Table (4.13), most respondents use self-medication frequently which is 1.85 above overall mean and it also shows there are less people who checks drug prescription and understand drug prescription which is below overall mean.

Table (4.13) Frequency Use of Self-Medications, Checking and Understanding of Drug Prescription

No.	Particular	Mean
1	Frequency used of self-medication	1.85
2	Habit of Checking Drug Prescription	1.62
3	Understanding drug prescription	1.71
	Overall Mean	**1.72**

Source: Survey Result, 2020

(b) Frequently Used Medications

Respondents are assessed their behavior towards frequently usage of self-medication with seven type of drugs in Table (4.14).

Table (4.14) Frequently Used Medication

No.	Particular	Mean
1	Antipyretics	0.94
2	Antibiotic	0.07
3	Antispasmodic	0.60
4	Cough tab	0.57
5	Vitamin	0.31
6	Anti-purgative	0.23
7	ORS	0.49
8	Traditional medicine	0.53
	Overall Mean	**0.47**

Source: Survey Result, 2020

The result shows Antipyretics are most used in self-medication which is the highest mean 0.94 and follows by Antispasmodic with mean 0.60. It shows Antibiotic is lowest usage in self-medication which mean is 0.07.

(c) Reaction on Unsuccessful Self-Medication

Respondents are assessed their reaction on unsuccessful self-medication with six question in Table (4.15).

Table (4.15) Reaction on Unsuccessful Self-Medication

No.	Particular	Mean
1	Increasing the dose	0.08
2	Change the drugs	0.37
3	Going to clinic	0.82
4	Going to government hospital	0.55
5	Going to traditional practitioner	0.07
6	Stay at home	0.03
	Overall Mean	**0.32**

Source: Survey Result, 2020

According to the Table (4.15) which describes most of respondents advise that going to clinic and going to government hospital will be the first reaction on unsuccessful self-medication which is above the overall mean.

(d) Drug Storage Behavior

Respondents are assessed their drug storage behavior with six question in Table (4.16).

Table (4.16) Drug Storage Behavior

No.	Particular	Mean
1	Keep reach out of children	0.83
2	Keep securely in the bottle	0.54
3	Keep easily available place	0.61
4	Labeled the drugs	0.28
5	Keep not together with food/ other material	0.48
6	Keep cool and dry place	0.21
	Overall Mean	**0.49**

Source: Survey Result, 2020

The findings present most of respondents keep drugs which cannot reach by children, keep easily available place and keep securely in the bottle.

Table (4.17) Level of Behavior on Self-Medication

No.	Particular	Mean
1	Frequency used of self-medication, checking and understanding drug prescription	1.72
2	Frequently used medication	0.47
3	Reaction on Unsuccessful Self-Medication	0.32
4	Drug Storage Behavior	0.49
	Overall Mean	**0.75**

Source: Survey Result, 2020

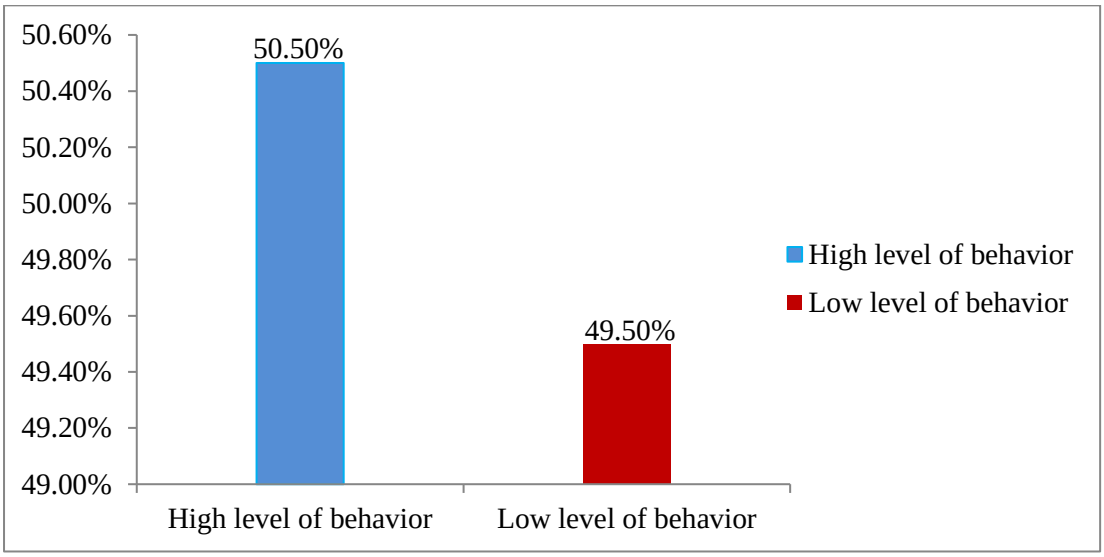
According to Table (4.17), there are some respondents who use self-medication frequently, checking and understanding drug prescription, this statement is significantly

above the overall mean. It shows there are some people who have high level of behavior on self-medication and some people have low level of behavior on self-medication according to the statement from 2 to 4 which are below overall mean.

4.3.14 Level of Behavior on Self-Medication

Respondents' levels on self-medication behavior are assessed by using the result from (4.3.13) which includes 6 questions. Possible maximum score is 24 and its mean is 13.79. According to the result in Figure (4.5), respondents score is within the range of 8-24 and 50.5% (111 respondents) have high level of self-medication behavior (including mean and above the mean) and 49.5% (109) have low level (below the mean).

Figure (4.5) Level of Behavior on Self-Medication

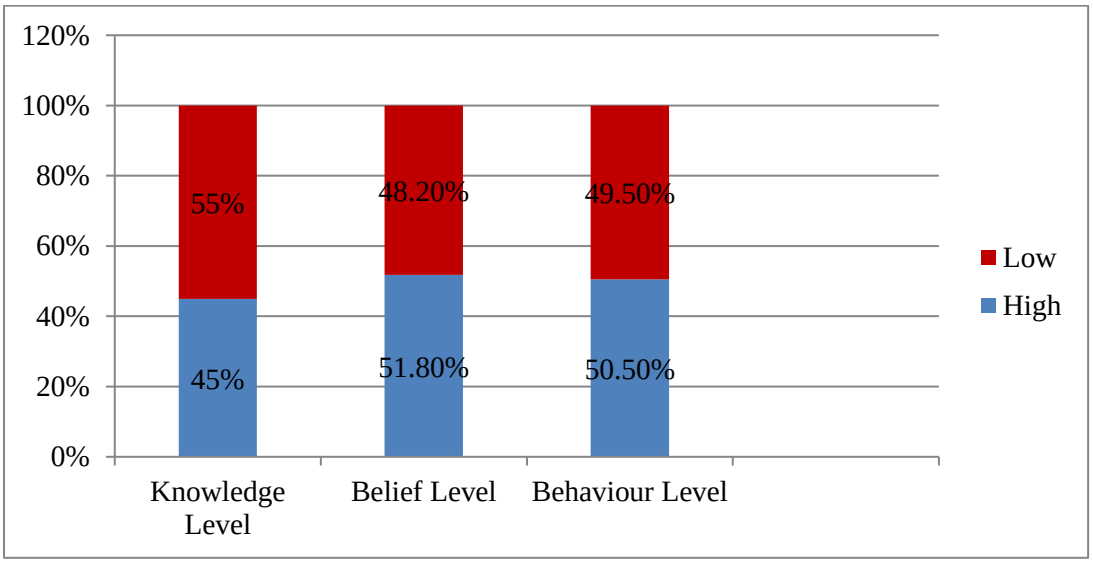


Source: Survey Result, 2020

4.3.15 Level of Knowledge, Belief and Behavior of Respondents

Overall result of Respondents' the level on knowledge, beliefs and behavior toward self-medication are shown in Figure (4.6).

Figure (4.6) Level of Knowledge, Belief and Behavior of Respondents



Source: Survey Result, 2020

4.3.16 Relationship between Socio-Economic Characteristics and Level of Knowledge on Self-Medication

In order to identify the relationship between socio-economic characteristics and the level of knowledge on self-medication, respondent's age is categorized into young age group between 18-30 years, middle age group between 31 and 50 years and older age group above 51 years. Similarly, respondents' educational level is also classified into three groups which are low level includes illiterate, can read and write and primary school passed, middle level includes middle and high school passed and high level includes university and graduate persons. The occupational status of respondents is categorized into three groups: government staff, others employ which includes company staff, seller, etc. and dependent. Marital status is categorized into two groups, single group and married group includes widow, widower, divorced and married persons. Similarly, family income is classified into three groups as low-income group (less than 300,000 *Kyats* per month), middle income group (between 300,000 and 600,000 *Kyat* per month) and high-income group (more than 600,000 *Kyat* per month).

Table (4.18) Relationship between Socio-Economic Characteristics and Level of Knowledge on Self-Medication

Parameter	Level of knowledge score on self-medication		Total	x^2	*p-value*
	Low	High			
Age group					
18- 30 years	19	8	27	0.230	0.632
31-50 years	36	49	85		
Above 51 years	66	42	108		
Total	121	99	220		
Sex					
Male	52	44	96	0.048	0.827
Female	69	55	124		
Total	121	99	220		
Educational level					
Low level	35	17	52	16.97	0.000
Middle level	66	37	103		
High level	20	45	65		
Total	121	99	220		
Occupational status					
Dependent	26	18	44	2.964	0.227
Government staff	19	9	28		
Others employed	76	72	148		
Total	121	99	220		
Marital status					
Single	33	20	53	1.489	0.222
Married	88	79	167		
Total	121	99	220		
Family income					
Low income group	55	34	89	2.86	0.239
Middle income group	34	32	66		
High income group	32	33	65		
Total	121	99	220		

Source: Survey Result, 2020 p=0.05 is significant

Table (4.18) shows the relationship between socio-economic variables and the knowledge of respondents is determined by using Chi-square Test. According to this

table, there are 45 respondents at high education level and only 17 respondents at primary education level have high knowledge level on self-medication. There is statistically significant showed that the relationship between education level and level of knowledge on self-medication with X^2=16.97 with p value=0.000. According to finding, respondents at high education level are more likely to have higher knowledge on self-medication than any lower educational level and there is no relationship with others such as age group, sex, occupational status, marital status and family income.

4.3.17 Relationship between Socio-Economic Characteristics and Level of Belief on Self-Medication

In order to identify the relationship between socio-economic characteristics and the level of belief on self-medication, respondent's age is categorized into young age group between 18-30 years, middle age group between 31 and 50 years and older age group above 51 years. Similarly, respondents' educational level is also classified into three groups which are low level includes illiterate, can read and write and primary school passed, middle level includes middle and high school passed and high level includes university and graduate persons. The occupational status of respondents is categorized into three groups: government staff, others employ which includes company staff, seller, etc. and dependent. Marital status is categorized into two groups, single group and married group includes widow, widower, divorced and married persons. Similarly, family income is classified into three groups as low-income group (less than 300,000 *Kyats* per month), middle income group (between 300,000 and 600,000 *Kyat* per month) and high-income group (more than 600,000 *Kyat* per month).

Table (4.19) Relationship between Socio-Economic Characteristics and Level of Belief on Self-Medication

Parameter	Level of belief on self-medication		Total	x^2	*p-value*
	Low	High			
Age group					
18- 30 years	15	12	27	2.841	0.242
31-50 years	35	50	85		
Above 51 years	56	52	108		
Total	106	114	220		
Sex					
Male	45	51	96	0.117	0.733
Female	61	63	124		
Total	106	114	220		
Educational status					
Low level	34	18	52	21.89	0.000
Middle level	57	46	103		
High level	15	50	65		
Total	106	114	220		
Occupational status					
Dependent	23	21	44	0.376	0.603
Government staff	13	15	28		
Other employed	70	78	148		
Total	106	114	220		
Marital status					
Single	30	23	53	1.984	0.159
Married	76	91	167		
Total	106	114	220		
Family income					
Low income group	45	44	89	0.535	0.765
Middle income group	32	34	66		
High income group	29	36	65		
Total	106	114	220		

Source: Survey Result, 2020 $p = 0.05$ is significant

Table (4.19) displays the relationship between socio-economic variables and the level of belief on self-medication. According to table, there is association between education level and the level of belief on self-medication. 50 respondents at high education level have high belief on self-medication while 18 respondents at primary education level have low belief. It is statistically significant by X^2=2.198 with *p* value=0.000. According to finding, respondents at high education level have higher belief on self-medication than any lower educational level and there is no relationship with age group, sex, occupational status, marital status and family income.

4.3.18 Relationship between Socio-Economic Characteristics and Level of Behavior on Self- Medication

In order to identify the relationship between socio-economic characteristics and the level of behavior on self-medication, respondent's age is categorized into young age group between 18-30 years, middle age group between 31 and 50 years and older age group above 51 years. Similarly, respondents' educational level is also classified into three groups which are low level includes illiterate, can read and write and primary school passed, middle level includes middle and high school passed and high level includes university and graduate persons. The occupational status of respondents is categorized into three groups: government staff, others employ which includes company staff, seller, etc. and dependent. Marital status is categorized into two groups, single group and married group include widow, widower, divorced and married persons. Similarly, family income is classified into three groups as low-income group (less than 300,000 *Kyats* per month), middle income group (between 300,000 and 600,000 *Kyat* per month) and high-income group (more than 600,000 *Kyat* per month).

Table (4.20) Relationship between Socio-Economic Characteristics and Level of Behavior on Self-Medication

Parameter	Level of Behaviors on self-medication		Total	x^2	p-value
	Good	Fair			
Age group					
Up to 30 years	15	12	27	1.861	0.394
31-50 years	38	47	85		
Above 51 years	58	50	108		
Total	111	109	220		
Sex					
Male	44	52	96	1.455	0.228
Female	67	57	124		
Total	111	109	220		
Educational status					
Low Level	25	27	52	0.162	0.790
Middle Level	53	50	103		
High Level	33	32	65		
Total	111	109	220		
Marital status					
Single	26	27	53	0.055	0.815
Married	85	86	167		
Total	111	109	220		
Occupational Status					
Dependent	24	20	44	0.944	0.624
Government staff Servant	12	16	28		
Others Employed	75	73	148		
Total	111	109	220		
Family income					
Low income group	51	38	89	3.188	0.203
Middle income group	32	34	66		
High income group	28	37	65		
Total	111	109	220		

Source: Survey Result, 2020 p=0.05 is significant.

Table (4.20) indicates the relationship between socio-economic characteristics and the level of behavior on self-medication which is determined by using Chi-square Test. There is no statistically significant relationship between socio-demographic characteristics and level of behavior on self-medication.

4.3.19 Relationship between Level of Knowledge and Level of Belief on Self-Medication

The result from (4.3.10) and (4.3.12) are used to find out the relationship between the level of knowledge and the level of belief on self-medication which is determined by using Chi-square test. Results are shown in Table (4.21).

Table (4.21) Relationship between Level of Knowledge and Level of Belief on Self-Medication

Level of Knowledge on self-medication	Level of Belief on self-medication		Total	x^2	p-value
	High	Low			
High	71	28	99	28.548	0.000
Low	43	78	121		
Total	114	106	220		

Source: Survey Result, 2020 p=0.05 is significant.

According to the result, the respondents with high level of knowledge and belief are 32.27% (71) and shows that there is statistically strongly significant between the level of knowledge and belief. (p -0.000).

4.3.20 Relationship between Level of Knowledge and Level of Behavior on Self-Medication

The result from (4.3.10) and (4.3.14) are used to find out the relationship between the level of knowledge and the level of behavior on self-medication which is determined by using Chi-square test. Results are shown in Table (4.22).

Table (4.22) Relationship between Level of Knowledge and Level of Behavior on Self-Medication

The Level of Knowledge on Self-Medication	Level of Behavior on self-medication		Total	x^2	p-value
	High	Low			
High	49	50	99	0.066	0.797
Low	62	59	121		
Total	111	109	220		

Source: Survey Result, 2020 p=0.05 is significant.

According to findings, the respondents with the high level of knowledge and behavior are 22.27% (49) of respondents and there is no statistically significant between the level of knowledge and behavior (p-0.797). According to findings, it can be generally said that more than half of respondents which is 50.5% (111 respondents) have high behavior level, while 55% (121 respondents) have low knowledge level and 49.5% (109 respondents) have low level of behavior on self-medication.

4.3.21 Relationship between Level of Belief and Level of Behavior on Self-Medication

The result from (4.3.12) and (4.3.14) are used to find out the relationship between the level of belief and the level of behavior of respondents on self-medication which is determined by using Chi-square test. Results are shown in Table (4.23).

Table (4.23) The Relationship between Level of belief and Level of Behavior on Self-Medication

Level of Belief on Self-medication	Level of Behavior on Self-medication		Total	x^2	p-value
	High	Low			
High	58	56	114	0.017	0.502
Low	53	33	106		
Total	111	109	220		

Source: (Survey Result, 2020) p=0.05 is significant

According to the result, the respondents with high level of behavior and belief is 26.36% (58) and shows that there are no statistically significant between belief and behavior level (p-0.797). According to survey data, it can be generally said that more than half of respondents which is 50.5% (111 respondents) have high level of behavior and 48.18% (106 respondents) have low belief level. In terms of behaviors on self-medication is 49.5% (109 respondents) have low level of behavior on self-medication.

CHAPTER V
CONCLUSION

5.1 Findings

Rising prevalence of self-medication is a matter of serious concern because improper self-medication can lead to undesirable serious health problems in Myanmar. This could contribute to drugs resistance, a worldwide growing problem, as identified by WHO. The study was undertaken to identify causes of self-medication among people, to assess the level of knowledge, beliefs and behavior on self-medication, and to analyze the relationship between socio-economic characteristics and the level of knowledge, belief and behavior on self-medication of patients. Target respondents are the first time visited patients to OPD of Yangon General Hospital. This study was conducted by cross sectional descriptive hospital based with quantitative approach. A total of 220 first time visited patients was selected and interviews was conducted by face-to-face with structured questionnaire which included 6 questions for knowledge assessment, 5-point likert scale questions for belief assessment and 6 questions for behavior assessment on self-medication.

It was found that the main reasons for self-medication were minor illness, time saving, easy and convenience, save money, quick relief and pervious experienced. Sources of information on self-medication from the main two channels which were people and media.TV from media channel and drug sellers from people channel was the main dominant sources of information. According to the finding, the common conditions on self-medication used among the respondents were for minor illness, fever, cough and cold, diarrhea and skin infection.

From the analysis on the level of knowledge on self-medication showed that 55% of respondents had low level and 45% had high level. The result on assessment the level of belief on self-medication indicated that 51.8% had high level and 48.2% had low level. The results in terms of the level of behavior on self- medication presented that 50.5% had high level and 49.5% had low level.

The finding indicated that high level of knowledge on self-medication was found in the group of middle age, high education level and female. The reason was

respondents in the middle age group had much more general knowledge than others, respondents at high education level read and understand drugs prescription and female in most of families are care providers. Only education had association with the level of knowledge and belief but not with the behavior on self-medication. It was found that the majority respondents did not aware the possible risks of Hepatotoxic as of self-medication.

According to finding, it was found that there was no statistically significant between the level of behavior and socio-economic characteristics but there was high level of behavior on self-medication found in middle age group and female group. It is indicated that the level of behavior had no significant relationship with the knowledge and belief on self-medication. But there was strong association between the level of knowledge and belief on self-medication.

5.2 Recommendations

Based on the findings, most of respondents use self-medication because of easily accessible, saving time and money and traditional behavior which is not related to the level of education and income. They know what medications should be taken but did not read drug prescription and had not enough knowledge on dosage form, drug's manufactured country, imported company and whether it was restricted by governments.

Since drugs resistance is the most seen problem among developing countries, it should be emphasized by health professionals and policy makers in our country. As a govern agency of health care center, the MOHS initiate and develop health education programs and coordinate with respected stake holders to deliver trainings or campaigns especially on self-medication, possible risk of inappropriate self-medication and drug resistance by using IEC materials which should be illustrated in Myanmar language. To improve the public awareness on self-medications, pamphlets and posters should be distributed and disseminated in public areas. The MOHS should also adopt health education programs for drug sellers and pharmacist to improve their knowledge and behavior on self-medication.

The government should update rules and regulations as necessary for better control of pharmacies. To improve the standards for quality pharmacy services of safe use of drugs, there should be developed National Pharmacy Practice Guidelines.

The study found that drugs were purchased mostly from the drug shops which sell medicines without prescription and mixed pills ready to use for self-medication. The FDA is responsible for safe drugs in public, it should ensure that drug sellers should sale registered drugs and controlled drugs with prescription and monitor closely not to sale expired and restricted drugs. The owner and pharmacy personnel should be encouraged to strictly follow the rules and regulations mentioned in the drug laws and by-laws.

Media has a vital role in conveying message to grassroots level, hence, to broadcast many awareness programs in more television and radio channels with multi approaches for self-medication awareness message to reach to community level.

Self-medication consumers also should check drugs' expiry date and read prescription and whether the drug is restricted by the government before taking. If there is not sure how to take medications, seek advice from pharmacists or health professional or persons have the knowledge on self-medication to mitigate potential risks.

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APPENDIX – I

SURVEY QUESTIONNAIRE

Interview Guide Questionnaire for Knowledge, Belief and Behavior on Self-Medication

This is a survey questionnaire for my thesis. These answers will need to complete it probably takes 5-10 minutes. The information collected is "private and confidential" and will not be used for assessment. No part will be revealed without consent.

Part (A) Socio-Economics Data

No.	Particular		Answer	Code
1	**Age of the respondent**	Completed age in years		
2	**Sex of the respondent**	Male		
		Female		
3	**Race**	Bamar		
		Other		
4	**Religion**	Buddhist		
		Other		
5	**Marital status**	Married		
		Single		
		Separated/ Widow/Widower		
		Divorced		
6	**Education**	Illiterate		
		Primary education level and below		
		Middle education level		
		High school education level		
		University/ Graduate		

No.	Particular		Answer	Code
7	**Occupation**	Dependents		
		Government Staff		
		Wage Workers		
		Own Business		
		Company Staff		
		Retired Persons		
8	**Total Family Income**	<300000		
		300000-600000		
		>600000		
9	**Numbers of family members**	<3 members		
		3-5 members		
		6-12 members		
10	**Type of family**	Nuclear family		
		Extended family		

Part (B) Health Related Factors

No.	Particular	Answer
1	**What do you do when your family members get some illness?**	Do self-medication
		Going to clinic
		Going to government hospital
		Consult with Specialist
		Going to Traditional Clinic / Practitioner
2	**How long will it take to get the nearest health center?**	Less than 15 min
		Between 15-30 min
		Over 30 min
3	**How long will it take to get the nearest Chemists?**	Less than 15 min
		Between 15-30 min
		Over 30 min
4	**What are the sources of information about Self-Medication?**	Drug sellers
		Neighbors
		Relatives/Family Members
		Traditional Medical practitioner
		TV
		Radio
		Newspaper
		Journals
		Magazine
		Billboard
		Internet/ Social Media
5	**Where do you usually purchase drugs?**	Pharmacy
		Drug store in the ward
		Super market
		Shop
		Internet /Online Shopping

No.	Particular	Answer
6	**Who advise what should do when family members get ill?**	Own Decision
		Head of your family
		Others family members
7	**Reasons for Taking Self-Medication**	Repeated appointment of medical provider
		Difficult access to health centers
		High medical cost
		Previous experience
8	**Benefits of Self-Medication**	Minor illness
		Time saving
		Save money
		Easy and convenient
		Relief from symptom quickly
9	**Inappropriate Condition for Self- Medication**	Serious condition
		After completed dose
		After few days from taking medicines
		After symptom relief

Part (C) Knowledge Questions

No.	Particular	Answer	Score
1	**Illness that can be used Self-Medication**	Fever	
		Cough	
		Skin infection	
		Minor injury	
		Influenza	
		Head ache	
		Diarrhea	
2	**Possible risks of Self-Medication**	Incorrect diagnosis	
		Delay on getting medical advice	
		Incorrect treatment	
		Failure to recognize Pharmacological risk	
		Failure to recognize contraindication, interaction	
		Repeated use of different trade mark	
		Failure to report physician	
		Use by wrong route	
		Excessive drug use	
		Incomplete course of drugs	
		Unnecessary prolonged drugs use	
		Risk of drugs addiction	
		Food and drug interaction	
		Loss of potency due to improper storage	
3	**Complications and Side Effect of Self-Medication**	Skin rash	
		Blisters on skin	
		Abdominal pain	
		Vomiting	
		Cold extremities	
		Diarrhea	
		Dizziness	
		Headache	
		Loss of conscious	

No.	Particular	Answer	Score
4	**Long term use of pain- killers drugs can (more than one response)**	Damage to the kidneys	
		Harmful to the stomach	
		Damage to the liver	
5	**Specific warning and information should be provided the following persons.**	Under 5 children	
		Pregnant mothers	
		The persons with chronic illness	
		Lactating mothers	
		With alcohol	
		With some food	
6	**The followings are to be checked when purchasing the drugs.**	Expired date of the drugs	
		Whether registered or not	
		Restricted drugs	
		Type of drugs	
		Brand	
		Side effects	
		Advantages	

Part (D) Belief Questions on Self-Medication

No.	Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	Self-Medication can save time and suitable for only acute conditions.					
2	Self-Medication cannot be useful in all disease conditions.					
3	If there is no adequate knowledge about medication, Self-Medication can be harmful.					
4	Antibiotic should continue until the course complete.					
5	Improper use of antibiotic can lead to drugs resistance.					
6	The problem of drug resistance is important for the Community.					
7	Expired date and manufactured date of the drugs are also important.					
8	It is important that the origin of drugs ,imported company brand.					
9	All drugs should be registered.					
10	It needs to immediately go to the nearest health center when the condition do not improve while self-medication.					
11	Inappropriate Self-Medication can cause burden to the Health care services.					
12	It is important to report to health care provider that history of Self-Medication.					

Part (E) Behavior Questions on Self-Médication

No.	Particular	Answer	Score
1	**How many times does your family do Self-Medication?**	Always do	
		Often do	
		Sometimes do	
		Seldom do	
2	**Do you usually check description when purchasing the drugs?**	Always	
		Often do	
		Sometimes	
		Seldom do	
3	**How do you understand when you read drug prescription?**	Completely understand	
		Usually understand	
		Partially understand	
		Do not understand completely	
4	**What are the drugs that used for acute illness?**	Antipyretics/ analgesics	
		Antibiotics	
		Antispasmodic	
		Cough tab	
		Vitamins	
		Anti-purgative	
		ORS	
		Traditional medicine	
5	**What do you do when the symptoms do not recover after using Self-Medication?**	Increasing the dose	
		Changing the drugs	
		Going to clinic	
		Going to government hospital	
		Going to traditional practitioner	
		Stay at home	
6	**Where do you keep the drugs in your home?**	Keep reach out of children	
		Keep securely in the bottle	
		Keep in an easily available place	
		Labeled the bottle	
		Keep not together with food/ other material	
		Keep cold and dry place	

Thank you for your participation.

APPENDIX - II

Sample Size Calculation

The following formula is used to calculate the minimum required sample size.

$$n = z2\ (1- /2)\ pq/d^2$$ (Lemeshow et al., 1990)

n = minimum required sample size

z = reliability coefficient 1.96 for $\alpha = 0.05$

p = proportion of good awareness and utilization (assumption = 50%) (0.5)

q = 1 - p (0.5)

d = absolute precision = 0.07

$n = (1.96^2 x 0.5 x 0.5)/0.07^2 = 196$

Therefore, 220 samples were selected in order to prevent drop out effect.

Inclusion criteria

Willing to participate in the study

Heads of family or main responsible family member

Exclusion criteria

The health care personnel

The persons who had language barrier or poor communication

The persons who were seriously ill

APPENDIX - III

Gantt chart

This study was conducted from March, 2020 to December, 2020

No.	Activities	Duration (Months)									
		2020									
		March	April	May	June	July	August	September	October	November	December
1.	Preparation for research										
2.	Data collection										
3.	Data Entry, Data Analysis and Thesis Writing										
4.	Thesis Submission and Defense										