

UNIVERSITI TEKNOLOGI MARA

**SELF-MEDICATION PRACTICE IN
YEMEN AND THE ROLE OF
COMMUNITY PHARMACY
DISPENSERS, PHARMACY
EDUCATION, AND HEALTH
AUTHORITIES: A MIXED-
METHODS STUDY**

SAMI MOHAMMED ALBAWANI

Thesis submitted in fulfillment
of the requirements for the degree of
Doctor of Philosophy

Faculty of Pharmacy

February 2018

ABSTRACT

Self-medication is a common practice worldwide. However, irrational use of drugs can lead to serious side effects, toxicity and drug interactions. Very few studies have been reported about self-medication practice in Yemen and no studies were found in the literature regarding the role of community drug dispensers, pharmacy education and health care authorities in Yemen. The purpose of this study is to evaluate self-medication practice in Yemen, to study the underlying reasons and associated factors, and to investigate the role of community pharmacy dispensers, pharmacy education and health care authorities in such practice. Two different approaches were used in this study. The first approach was a quantitative method; the validated questionnaire was developed and administered to consumers attending community pharmacies in Sana'a City in a cross-sectional design and different variables were investigated for possible association and correlation with self-medication practice. The second approach was an exploratory qualitative method; in-depth semi-structured interviews were conducted with four different groups; community pharmacy consumers, community pharmacy dispensers, pharmacy lecturers and health administrative staff. Four different topic guides were used for each group. For the quantitative part, SPSS version 21 was used to conduct the statistical analysis. Chi-square and multiple logistic regression were used in data analysis. For the qualitative part, thematic qualitative analysis was used. All interviews were audiorecorded, transcribed verbatim and translated to English. Quantitative findings showed that the prevalence of self-medication practice is among the highest in the world (90.7%). Self-medication with antibiotics among consumers was found to be alarmingly high as well (87.1%). The most common predictors for self-medication were the trust among respondents toward physicians ($p= 0.001$) and community drug dispensers ($p= 0.001$), ease of access to medical centers ($p= 0.013$), smoking history ($p= 0.020$), chewing khat ($p= 0.033$) and death due to self-medication ($p= 0.045$). However, there was not any association between self-medication with antibiotics and factors like age, gender, and educational status. Irrational use of medications was common among consumers and wide range of antibiotics was used during self-medication. Qualitative findings showed that poor qualifications of most drug dispensers and irrational drug dispensing are the main reasons for the irresponsible self-medication practice. In addition, it is the responsibility of pharmacy schools and institutions to prepare students with the required knowledge and ethics before they graduate including the rational use of medication. Moreover, the lack of comprehensive laws and regulations, overlapping of responsibilities between health authorities, and the absence of clear national drug policy are among the reasons behind the irresponsible self-medication in Yemen. There is an urgent need for educational campaigns to increase knowledge and awareness among Yemeni people about the risk of irresponsible self-medication. Only qualified pharmacists should be allowed to dispense medications. Pharmacy curriculum needs to be reviewed and updated to address important health issues including self-medication. Health authorities must urgently ensure enactment of pharmacy law which will define responsibilities, offense, and penalties.

Keywords: Self-medication; Mixed-method, Community Pharmacies; Community Pharmacy Dispensers; Pharmacy Education; Health Authorities, Sana'a City, Yemen

ACKNOWLEDGMENT

IN THE NAME OF ALLAH, THE MOST GRACIOUS, THE MOST MERCIFUL

To my supervisors, Professor Dr. Yahaya Bin Hassan, Prof. Dr. Noorizan Abd-Aziz and Dr. Shubashini Gnanasan for your encouragement, patience, and professional advice, thank you.

To Prof. Dr. Sami Al-Dubai and my friend Dr. Al-abad Ali, for your valuable help and advice in data analysis, and my friend Ibrahim Alhakami for his help during data collection, thank you all.

To my brothers and sisters, Hani, Hana'a, Kamal, Hanan and Hesham, for being always part of my life, I love you.

To my children, my best friends Mohammed and Yousef, the source of my strength and ultimate cause of happiness and madness, I love you.

To my beautiful wife Najlaa, for her unconditional love, trust, patience, and respect, I love you.

To my father and mother, Mohammed and Amt Alrazzaq, the best gift Allah has given to me, the kindness, the wisdom and my only way to Jannah, I love you.

To my country, Yemen, my past, present and the future, I owe you everything!

To all of you, without your valuable help and support, nothing of this would happen.

TABLE OF CONTENTS

	Page
CONFIRMATION BY PANEL OF EXAMINERS	ii
AUTHOR'S DECLARATION	iii
ABSTRACT	iv
ACKNOWLEDGMENT	v
TABLE OF CONTENTS	vi
LIST OF TABLES	x
LIST OF FIGURES	xi
LIST OF SYMBOLS	xii
LIST OF ABBREVIATIONS	xiii
CHAPTER ONE: INTRODUCTION	1
1.1 Study Background	1
1.2 History of Self-medication	6
1.3 Problem Statement	7
1.4 Rational of Study	7
CHAPTER TWO: LITERATURE REVIEW	10
2.1 Self-Medication and Self-Care	10
2.1.1 Significance of Self-Medication Practice	12
2.1.2 Factors Influencing Self-Medication Practice	13
2.1.3 Prevalence of Self-Medication	18
2.1.4 Types of Drug Used During Self-Medication	20
2.1.5 Self-Medication with Antibiotics	23
2.1.6 Reasons for Self-Medication Practice	24
2.1.7 Sources of Information/Advice During Self-Medication	26
2.2 The Role of Pharmacist in Self-Medication Practice	28
2.3 Health Care in Yemen	32
2.3.1 Health Care Services in Yemen	33

2.3.2	Health Expenditures	33
2.3.3	Regulatory Inspection	35
2.3.4	Quality Control and Pharmacovigilance	36
2.3.5	Medicines Advertising and Promotion	36
2.3.6	Selection and Rational Use of Medicines	36
2.3.7	Prescribing	37
2.3.8	Dispensing	37
2.3.9	Challenges from A Governmental Point of View	37
2.4	Pharmacy Education in Yemen	44
2.4.1	Quality of Education and Teaching Methods	50
2.5	Khat	51
2.6	Self-Medication Practice in Yemen	54
2.7	Objectives	55
2.7.1	General Objectives	55
2.7.2	Specific Objectives	55
CHAPTER THREE: MATERIALS AND METHODS		56
3.1	Introduction	56
3.2	Mixed-Methods Research Study	56
3.3	Development of the Questionnaires	57
3.4	Translation and Back Translation	60
3.5	Study Setting and Description of Participants Involved	60
3.6	Ethical Considerations	61
3.7	Quantitative Research	62
3.7.1	Self-Medication Practice Among Consumers in Sana'a City	62
3.7.2	Self-Medication with Antibiotics Among Consumers in Sana'a City	64
3.8	Qualitative Research	65
3.8.1	Self-Medication Practice Among Consumers in Sana'a City	65
3.8.2	The Role of Community Drug Dispensers in Self-Medication Practice	67
3.8.3	The Role of Pharmacy Education in Self-Medication Practice	70
3.8.4	The Role of Health Authorities in Self-Medication Practice	72
3.9	Data Analysis	74
CHAPTER FOUR: RESULTS		76