

UNIVERSITI TEKNOLOGI MARA

**PREVALENCE OF
URINARY INCONTINENCE
AND THE LEVEL OF KNOWLEDGE
AMONG DIABETIC PATIENTS:
A PRELIMINARY STUDY**

AIMA NABILA BINTI ABDUL BASID

Dissertation submitted in partial fulfillment
of the requirements for the degree of
Bachelor of Pharmacy (Hons.)

Faculty of Pharmacy

2014

ACKNOWLEDGEMENTS

Bismillahirrahmanirrahim.

Syukur alhamdulillah, I praised to Allah S.W.T for having me successfully completed this dissertation. I would like to thank my supervisor Mr. Yogheswaran Gopalan for the continuous advice, guidance and constructive comments during completion of this study.

On the other hand, I would like to thank my parents for their encouragement and support throughout this study. A sincerest gratitude to my coursemates as well as the Faculty of Pharmacy lecturers, Universiti Teknologi MARA (UiTM) staffs, nurses at Unit Kesihatan UiTM Shah Alam, Persatuan Diabetes Malaysia, community pharmacists and everyone who directly or indirectly assisted me during this study.

TABLE OF CONTENTS

	Page
TITLE PAGE	
LIST OF TABLES	vi
LIST OF FIGURES	vii
LIST OF ABBREVIATIONS	viii
ABSTRACT	ix
CHAPTER 1	1
INTRODUCTION	1
1.1 Introduction	1
1.2 Problem Statement	2
1.3 Hypothesis	3
1.4 Objectives	4
1.5 Significance of Study	4
CHAPTER 2	6
LITERATURE REVIEW	6
2.1 Urinary Incontinence	6
2.2 Diabetes Mellitus	6
2.3 Epidemiology	7
2.4 Types of Urinary Incontinence	10
2.5 Normal Function of Bladder	11
2.6 General Etiology of Urinary Incontinence	12
2.7 Pathophysiology of Urinary Incontinence in Diabetes	14
2.8 Diagnosis of Urinary Incontinence	17

ABSTRACT

Urinary incontinence (UI) which is also known as urinary leakage is a common bladder problem yet not well understood, affecting population all over the world with its prevalence increased with age. Many international studies showed high prevalence of UI in diabetes patients as well as significant association between risk factors of UI and presence of UI. However, up to this knowledge, there was no data available in Malaysia. Hence, this preliminary study was conducted to determine the prevalence of UI among diabetic patients, its association with patients' characteristics and the level of knowledge that the patients have on UI problem. A questionnaire-based survey was done on randomly selected 104 diabetes mellitus patients. Revised Urinary Incontinence Scale (RUIS) and Incontinence Quiz (IQ) were used to determine presence of UI and level of knowledge on UI respectively. Non-parametric Chi Square Tests were used to investigate the associations between the variables while Mann-Whitney U Test and Kruskal-Wallis Test for significant difference findings. The results showed that the prevalence of UI among diabetes patients was 56%. Among each gender group, the UI prevalence was 69% and 42% for females and males respectively. There was a significant association between gender and presence of UI as well as types of UI ($p < 0.05$). Females showed high prevalence with mixed UI whilst urge UI was common in males. The level of knowledge on the UI problem was quite low, with a mean score of 4.4 ± 2.2 . No correlation found between age and IQ scores. There were no differences between IQ scores and variables such as gender, race, level of education background and presence of UI ($P > 0.05$).

CHAPTER 1

INTRODUCTION

1.1 Introduction

According to Malaysian Urological Association (MUA), urinary incontinence (UI) is an involuntary loss of control of urine or simply called, urinary leakage. In Malaysia, an approximately 1.2 million Malaysians experienced UI in which one out of 10 women and one out of 20 men suffered from UI ('One in Ten Malaysian Women Face Problems in the Toilet', 2013). Though UI is not life-threatening, it causes physical, psychosocial and economic problems (Wan Nazaimoon *et al.*, 2013).

Many epidemiological studies reported significant association between diabetes and UI, especially for urge urinary incontinence (UUI) (M. H. Ebbesen, Hannestad, Midthjell, & Hunskaar, 2007). In Malaysia, based on National Health and Morbidity Survey (NHMS) II and III the prevalence of diabetes was 8.3% in 1996 and 14.6% in 2006. This number continued to rise drastically by a recent population-based prevalence study which reported overall diabetes prevalence of 22.9% (Wan Nazaimoon *et al.*, 2013). Local study by Mohd Sidik (2010) reported a significant