

UNIVERSITI TEKNOLOGI MARA

**RELATIONSHIP BETWEEN HOUSEHOLD
INCOME & BONE DENSITY AMONG
PHARMACY STUDENTS IN UiTM**

SYARIFAH NABILAH BINTI SYED NABAWI

Dissertation submitted in partial fulfilment of the requirements for the

degree of

Bachelor of Pharmacy (Hons.)

Faculty of Pharmacy

2016

ACKNOWLEDGEMENT

First of all, I thank Allah SWT, the most merciful for having me completed this dissertation as it is one of the partial requirements for Bachelor of Pharmacy (Hons.), Faculty of Pharmacy, UiTM. Moreover, the completion of this dissertation is not possible without assistance from my supervisor, Prof. Zabidah binti Ismail and from my group member which are Nogeanne binti Ishak and Nur 'Amirah binti Mohd Hisham.

Besides that, I would like to thank my family member especially my parents, Mr. Syed Nabawi binti Syed Abdullah and for the endless support and understanding spirit throughout this study. I also want to thank all my relatives and friends that are always shared their support, morally and physically.

TABLE OF CONTENTS

TITLE PAGE	Page
LIST OF TABLES	i
LIST OF FIGURES	iii
LIST OF ABBREVIATIONS	iv
ABSTRACT	v
CHAPTER 1	1
INTRODUCTION	1
1.1 Introduction	1
1.2 Problem Statement	5
1.3 Objectives	6
1.4 Hypothesis	6

ABSTRACT

Osteoporosis is a progressive and silent disease that is usually characterized by decrease in bone mass and deterioration of bone tissue. It is a major problem that affecting people worldwide especially in elderly. It is important to know what are the risk factors for osteoporosis. This study aimed to determine the relationship between household income and osteoporosis among UiTM pharmacy student. Moreover, this study was also carried out in order to determine what are the other risk factor that influence the bone mineral density (BMD). By using a cross- sectional study, a sample of 340 respondents were asked to fill in the questionnaire that were provided. These questionnaires were basically contained information about demographic factor, lifestyle, diet and supplement intake of the respondent. Moreover, an instrument called Seca height measurement were used to determine the height of the respondent. Next, the BMI and fat distribution of the respondent will be measured by using an instrument called OMRON body composition monitor. Lastly, the calcaneous bone of the respondent were measured in order to obtain the osteoporosis index which will determine the condition of the bone. Correlation between the variables and bone mineral density were measured by using a Spearman correlation test. Chi-square test was used to determine the significant differences of t-score result whether it is normal, osteopenia or osteoporosis. 5 percent level of statistical significance was chosen. From 340 respondents, 64.7 percent were normal, 31.5 percent were osteopenia and 3.8 percent were osteoporosis. According to the result, there were no significant correlation between household income and osteoporosis ($r = -0.043$ and $p > 0.05$). Moreover, there were some other factors that were having a

CHAPTER 1

INTRODUCTION

1.1 Background

Osteoporosis is a disease of porous bone, which is the systemic skeletal disease that is characterized by a decrease in bone mass and also deterioration of bone tissue. This condition causes the bone to lose its density and quality. As this condition keeps worsening, the bone becomes porous, fragile and easily fractured (Kanis *et al.*, 2012). The process occurs silently and progressively. The symptoms are not realizable until the first fracture is seen. Bones are very compact and dense at early 20s. This period is also termed as peak bone mass. However, as people grow older, resorption occurs. Resorption is a process where bone cells begin to dissolve the bone matrix. At the same time, new bone cells are deposited and cause formation of new bone matrix. In osteoporotic person, the bone that are lose is outspacing the grewed bone.

The incidence of osteoporosis keeps increasing year by year worldwide. Around 25 to 28 millions Americans were affected by this disease. Moreover, this disease often affects the Caucasians and Asians. They can be classified as those who have a high risk of osteoporosis. In Malaysia, the Chinese community has a higher risk of osteoporosis, followed by the Malays and Indians (Ahmad *et al.*, 2014).