



**UNIVERSITI PUTRA MALAYSIA**

***PREVALENCE OF AND FACTORS ASSOCIATED WITH SMOKING  
AMONG STAFF IN UNIVERSITI PUTRA MALAYSIA***

**FASORO AYODEJI AKINWANDE**

**FPSK(M) 2013 55**



**PREVALENCE OF AND FACTORS ASSOCIATED WITH SMOKING AMONG  
STAFF IN UNIVERSITI PUTRA MALAYSIA**

**By**

**FASORO AYODEJI AKINWANDE**

**Thesis Submitted to the School of Graduate Studies, Universiti Putra Malaysia, in  
Fulfilment of the Requirements for the Degree of Master of Science**

**August 2013**

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## DEDICATION

This thesis is dedicated to the Holy Trinity who was with me throughout my stay and study in a foreign land. I also dedicate this thesis to my parents Associate Professor and Mrs J.O. Fasoro for their financial, moral and spiritual support.

Abstract of thesis presented to the Senate of Universiti Putra Malaysia in fulfilment of the requirement for the degree of Master of Science.

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**FASORO AYODEJI AKINWANDE**

**August 2013**

**Chairman: Prof. Lekhraj Rampal, DrPH**

**Faculty: Medicine and Health Sciences**

Approximately six million people are killed globally by tobacco every year. One person dies every six seconds as a result of tobacco use making it the cause of every one out of 10 deaths in adults and the single largest and leading cause of preventable death in the world. In Malaysia, tobacco use accounts for about 10,000 deaths yearly. The objective of this study was to determine the prevalence of smoking among staff of Universiti Putra Malaysia. An analytical cross sectional study design was used and a probability proportionate to size sampling method was used to select the faculties and respondents that participated in the study.

A total of 683 respondents participated in the study with a response rate of 95.3%. The overall smoking prevalence was 10.0%. The prevalence of smoking among males and females was 26.5% and 0.5% respectively. A significant association was found between smoking status and gender, religion, marital status, highest educational level, occupation, monthly family income, self esteem, anxiety, knowledge on hazards due to smoking and attitude against smoking. Majority of current smokers (63.2%) and former smokers (66.7%) initiated smoking by trying it for fun. The prevalence of shisha/hookah and smokeless tobacco use was 2.5% and 0.9% respectively. Overall, 21.7% of university staff who are non smokers are exposed to secondhand smoke at home and 82.7% of these non smokers that are exposed to secondhand smoke are females. Male gender, SPM/STPM educational level, daily and monthly exposure to secondhand smoke at home and negative attitude against smoking were significant predictors of smoking ( $p < 0.05$ ).

In conclusion, smoking prevalence among university staff of Universiti Putra Malaysia was considerably low compared to the Global Adult Tobacco Survey, Malaysia report, 2011. Nevertheless, it still constitutes a major problem as smoking still takes place in the university environment. Although, majority (85.2%) of university staff have a good knowledge on hazards due to tobacco, it is paramount that the university authorities implement and enforce smoke-free policies in the university.

Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia  
Sebagai memenuhi keperluan untuk ijazah Master Sains

**PREVALEN DAN FAKTOR-FAKTOR YANG BERKAITAN DENGAN  
MEROKOK DI KALANGAN STAF UNIVERSITI PUTRA MALAYSIA**

Oleh

**FASORO AYODEJI AKINWANDE**

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Setiap tahun lebih kurang enam juta orang di seluruh dunia mati akibat penggunaan tembakau. Setiap enam saat seorang mati akibat penggunaan tembakau, menjadikan ia punca bagi setiap satu dalam sepuluh kematian dikalangan orang dewasa dan satu bilangan terbesar dan penyebab utama kematian yang boleh dicegahkan di dunia. Setiap tahun di Malaysia, tabiat merokok menyebabkan 10,000 kematian. Objektif kajian ini ialah untuk menentukan prevalen tabiat merokok dikalangan kakitangan Universiti Putra Malaysia. Rekabentuk kajian keratan rentas secara analitikal telah digunakan sebagai rekabentuk kajian dan persempalan kebarangkalian berkadar terhadap saiz telah digunakan sebagai kaedah persampelan bagi memilih fakulti dan responden untuk menyertai dalam kajian ini.

Sejumlah 683 responden menyertai penyelidikan kajian ini dan kadar respon ialah 95.3%. Prevalen merokok ialah 10.0%. Prevalen merokok dikalangan lelaki dan perempuan masing-masing ialah 26.5% dan 0.5% mengikut urutan. Terdapat hubungan yang signifikan diantara status merokok dengan jantina, agama, taraf perkahwinan, tahap pendidikan, pekerjaan, pendapatan bulanan keluarga, tahap harga diri, tahap kebimbangan, pengetahuan tentang akibat merokok, dan sikap terhadap tabiat merokok. Majoriti dikalangan perokok semasa (63.2%) dan bekas perokok (66.7%) mula merokok kerana ingin mencuba untuk keseronokan sahaja. Prevalen penggunaan shisha/hookah dan tembakau tidak berasap ialah 2.5% dan 0.9%, mengikut urutan. Keseluruhannya, 21.7% kakitangan universiti yang tidak merokok terdedah kepada asap rokok di rumah mereka dan 82.7% mereka yang tidak merokok yang terdedah kepada asap rokok ialah golongan wanita. Lelaki, tahap pendidikan tertinggi SPM/STPM, pendedahan terhadap asap rokok sekunder di rumah setiap hari dan setiap bulan, dan sikap negatif terhadap tabiat merokok adalah peramal signifikan untuk tabiat merokok ( $p < 0.05$ ).

Kesimpulannya, prevalen merokok dikalangan kakitangan Universiti Putra Malaysia adalah amat rendah berbanding dengan laporan “Global Adult Tobacco” Malaysia, 2011. Walau bagaimanapun, ia masih menjadi sesuatu masalah utama kerana amalan merokok masih berleluasa di sekitar universiti. Sungguh pun begitu, majoriti (85.2%) kakitangan universiti mempunyai pengetahuan yang baik mengenai kesan buruk akibat



merokok, pihak berkuasa universiti mempunyai tanggungjawab untuk melaksana dan menguatkuasakan polisi tidak merokok di dalam universiti.



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I will like to appreciate all the members of staff (academic and non academic) of University Putra Malaysia for their willingness and positive response in participating in

this study. I will also like to say a big thank you to some members of staff who gave their advice and opinions about the conduct of the survey. Your comments were really helpful. I will also like to appreciate the institute and faculty heads for granting the permission to carry out this study in their respective faculties and institute.

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I certify that a Thesis Examination Committee has met on 27th August, 2013 to conduct the final examination of Fasoro Ayodeji Akinwande on his thesis entitled “Prevalence of and factors associated with smoking among staff in Universiti Putra Malaysia” in accordance with the Universities and University Colleges Act 1971 and the Constitution of the Universiti Putra Malaysia [P.U.(A) 106] 15 March 1998. The Committee recommends that the student be awarded the Master of Science.

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## DECLARATION

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## LIST OF ABBREVIATIONS

AOR	-	Adjusted Odds Ratio
ASEAN	-	Association of Southeast Asian Nations
BAT	-	British American Tobacco
BMI	-	Body Mass Index
CDC	-	Centers for Disease Control and Prevention
CI	-	Confidence Interval
COPD	-	Chronic Obstructive Pulmonary Disease
DCD	-	Disease Control Division
DNA	-	Deoxyribonucleic acid
DVT	-	Deep Vein Thrombosis
ELISA	-	Enzyme-Linked Immuno Sorbent Assay
ETS	-	Environmental Tobacco Smoke
FCTC	-	Framework Convention on Tobacco Control
GAD	-	Generalised Anxiety Disorder
GATS	-	Global Adult Tobacco Survey
GTSS	-	Global Tobacco Surveillance System
IDS	-	Information and Documentation System
IPH	-	Institute for Public Health
ITL	-	Imperial Tobacco Company Limited
LR	-	Likelihood Ratio
NHMS	-	National Health and Morbidity Survey
NRT	-	Nicotine Replacement Therapy
OR	-	Odds Ratio
PAHs	-	Polynuclear aromatic hydrocarbons
PHQ	-	Patient Health Questionnaire

POS	-	Point of Sale
PPS	-	Probability Proportionate to Size
RM	-	Ringgit Malaysia (Malaysian Ringgit)
ROC	-	Receiver Operating Characteristics
SEATCA	-	Southeast Asia Tobacco Control Alliance
SHS	-	Secondhand Smoke
SIDS	-	Sudden Infant Death Syndrome
SPM	-	Sijil Pelajaran Malaysia (Malaysian Certificate of Education)
SPSS	-	Statistical Package for Social Sciences
STPM	-	Sijil Tinggi Persekolahan Malaysia (Malaysian Higher School Certificate)
UK	-	United Kingdom
UPM	-	Universiti Putra Malaysia
US/USA	-	United States of America
WHO	-	World Health Organization

## CHAPTER 1

### INTRODUCTION

This chapter introduces the background of the study, problem definition, significance as well as the objectives of the study. The hypotheses and conceptual framework are also included.

#### 1.1 Background

Tobacco kills six million people every year of which five million are users and ex-users while over 600,000 are non-smokers that are exposed to secondhand smoke globally (WHO, 2012). One person dies every six seconds as a result of tobacco use which makes tobacco use a cause of one in 10 deaths of adults. Half of current users of tobacco will eventually die from tobacco related diseases (WHO, 2012). The use of tobacco has been identified as the single largest and the leading cause of preventable death in the world. Tobacco use is a risk factor for six out of the eight leading causes of death globally (WHO, 2008a). The tobacco atlas in 2012 reported that approximately 20% of the world's population are cigarette smokers and these include about 800 million men and 200 million women (Mackay et al., 2012). Every user of tobacco on the average loses about 15 years of life. About 80% of tobacco related deaths occur in the

developing countries (WHO, 2008a). About 71% of lung cancer, 42% of chronic respiratory disease and 10% of cardiovascular disease has been estimated to be attributable to smoking (WHO, 2011).

About one third of adults in the world, at the beginning of the 21st century have used tobacco. The numbers of women using tobacco is not excluded because it is also on the rise. Though thousands of studies have showed that tobacco in all its forms kills its users, and smoking cigarettes kills both its users and non-users alike, people continue to smoke, and deaths from tobacco use continue to increase despite warnings and other preventive measures adopted to curb the smoking pandemic (Mackay and Eriksen, 2002). Most of tobacco's damage to health does not appear until years or even decades after the onset of its use. So, while tobacco use is rising globally, the epidemic of tobacco-related disease and death has just begun (WHO, 2008b).

The Surgeon General's Report, 2004 on 'The Health Consequences of Smoking' concluded that there is sufficient evidence to infer a causal relationship between smoking and cancer. Cervical, bladder, oesophageal, kidney, laryngeal, leukemia, lung, oral, pancreatic and stomach cancers were reported to have a causal link with smoking. Cardiovascular diseases caused by smoking according to the report include abdominal aorta aneurysm, atherosclerosis, coronary heart disease and cerebrovascular disease. Other diseases having a causal relationship with smoking reported include: respiratory diseases (chronic obstructive pulmonary disease, pneumonia, impaired lung growth,

coughing, phlegm, wheezing, dyspnoea and asthma); reproductive effects (reduced fertility, foetal death and stillbirths, low birth weight, placenta abruption, preterm delivery and shortened gestation); and other effects such as cataract, diminished health status and hip fracture (U.S. Department of Health and Human Services, 2004).

## **1.2 Statement of problem**

In Malaysia, tobacco use related diseases have been reported to account for 10,000 deaths annually since the 1980s (DCD, 2003). It was estimated that 22% male deaths and 15% female deaths in Malaysia in the year 2004 were tobacco related (Mackay et al., 2012). In 2006, diseases related to smoking, account for at least 15% of hospitalized cases and approximately 35% of hospital deaths (IDS, 2006). The Second National Health and Morbidity Survey (NHMS II) conducted in 1996 showed that the prevalence of smoking among adults aged 18 years and above was 24.8% of which 49.2% males and 3.5% females were current smokers (IPH, 1997). Rampal et al (2008) reported an overall smoking prevalence of 24.9% (47.2% in males and 2.7% in females) in 2004. The NHMS III survey in 2006 showed that the prevalence of smoking was 21.5%. The prevalence of smoking among males was 46.4% while it was 1.6% among females (IPH, 2008). The recent tobacco survey conducted in 2011 showed that 23.1% or 4.75 million Malaysian adults aged 15 years and above were current smokers of tobacco of which 43.9% (4.64 million) are men and 1.0% (0.10 million) are women (IPH, 2012).



The university is an academic environment and members of staff are expected to be more educated about the health hazards of cigarette smoking. However, with the prevalence of smoking at the national level and also the occurrence of cigarette smoking taking place at strategic places on the campus such as the cafeteria and washrooms, it is important to know the extent of the smoking menace among university staff who are expected to be role models to the students. Health hazards due to smoking are important factors that lower productivity among staff through tobacco related diseases, regular visit to clinics, absenteeism from work and untimely death.

### **1.3 Significance of the study**

The study will determine the extent of the problem and factors associated with smoking among staff of Universiti Putra Malaysia (UPM). The result of this study will add to the body of knowledge by giving up-to-date information about the prevalence of smoking among UPM staff. The result of the study will help the university authorities in making relevant decisions with regards to tobacco control policies in the university. This study will also make known information exposure to secondhand smoke, water pipe and smokeless tobacco use which is unknown among UPM staff.

## **1.4 Objectives**

### **1.4.1 General objective**

The general objective was to determine the prevalence of smoking and its associated factors among staff of UPM.

### **1.4.2 Specific objectives**

The specific objectives include:

1. To determine the prevalence of cigarette smoking, shisha/hookah, smokeless tobacco use and exposure to secondhand smoke among staff of UPM.
2. To determine the reasons for initiating smoking and extent of nicotine addiction among staff of UPM.
3. To determine the association between socio-demographic characteristics (gender, age, ethnicity, religion, marital status, highest educational level, occupation and monthly family income), family smoking status and smoking.
4. To determine the association between psychosocial factors (self esteem, depression and anxiety) and smoking.
5. To determine the association between knowledge and attitude against smoking and smoking.

6. To determine the predictors of smoking.

### **1.5 Research hypotheses**

1. There is a significant relationship between socio-demographic characteristics and smoking.
2. There is a significant relationship between psychosocial factors and smoking.
3. There is a significant relationship between knowledge and attitude against smoking and smoking.
4. There is a significant relationship between family's smoking status and smoking.
5. Socio-demographic factors, psychosocial factors, knowledge and attitude against smoking are significant predictors of smoking.

### **1.6 Conceptual framework**

Figure 1.1 shows the factors associated with smoking and the important variables to be examined in this study. The socio-demographic factors identified to be associated with smoking and which were to be studied include age, gender, ethnicity, religion, educational level, marital status, occupation, monthly family income and residence (rural/urban) (IPH, 2008; Sreeramareddy et al., 2010; Sreeramareddy et al., 2011). However, the place of residence (rural/urban) was not considered in this study. The

educational level could also influence the knowledge one has on the health hazards of smoking which could eventually influence one's attitude against smoking. Anti smoking information from the media is an important factor that influences one's attitude against smoking and thereby increasing the knowledge about health hazards due to cigarette smoking. The exposure one has to cigarette advertisement and promotions, the availability and affordability of cigarette is likely capable of making someone to initiate and continue smoking. Nicotine dependence occurs as a result of smoking. In the same way, smokers continue to smoke because of their dependence on nicotine. Self esteem, depression, anxiety and stress were also considered to be factors that could make one smoke. However, stress was not considered in this study.

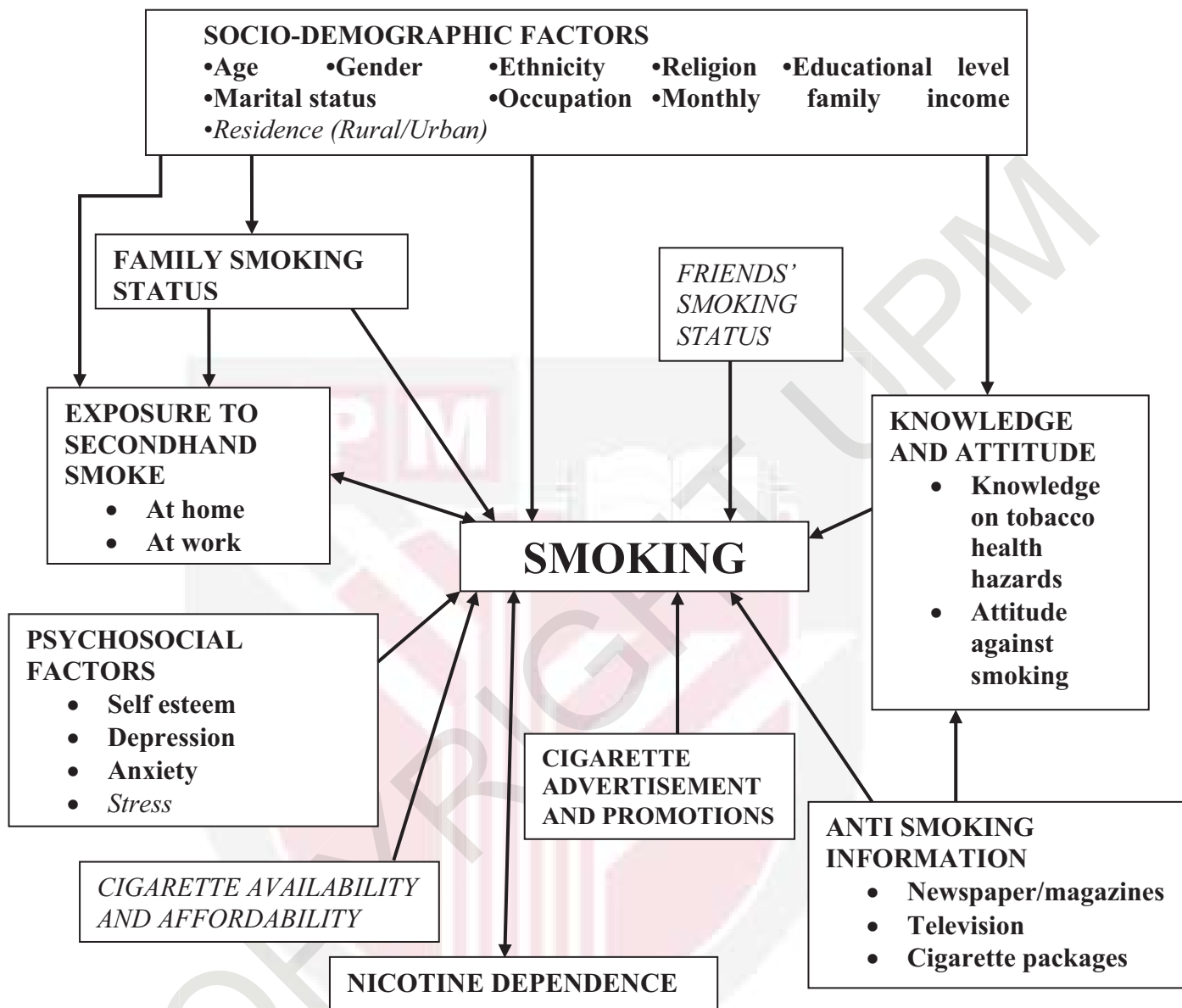


Figure 1.1 Conceptual framework

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