SMOKING PATTERNS IN PATIENTS WITH PULMONARY DISEASES ATTENDING ABASSIA, SHOUBRA AND BAB EL SHAARIA CHEST DISPENSARIES IN CAIRO

THESIS

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By

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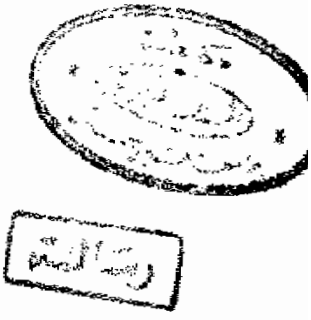

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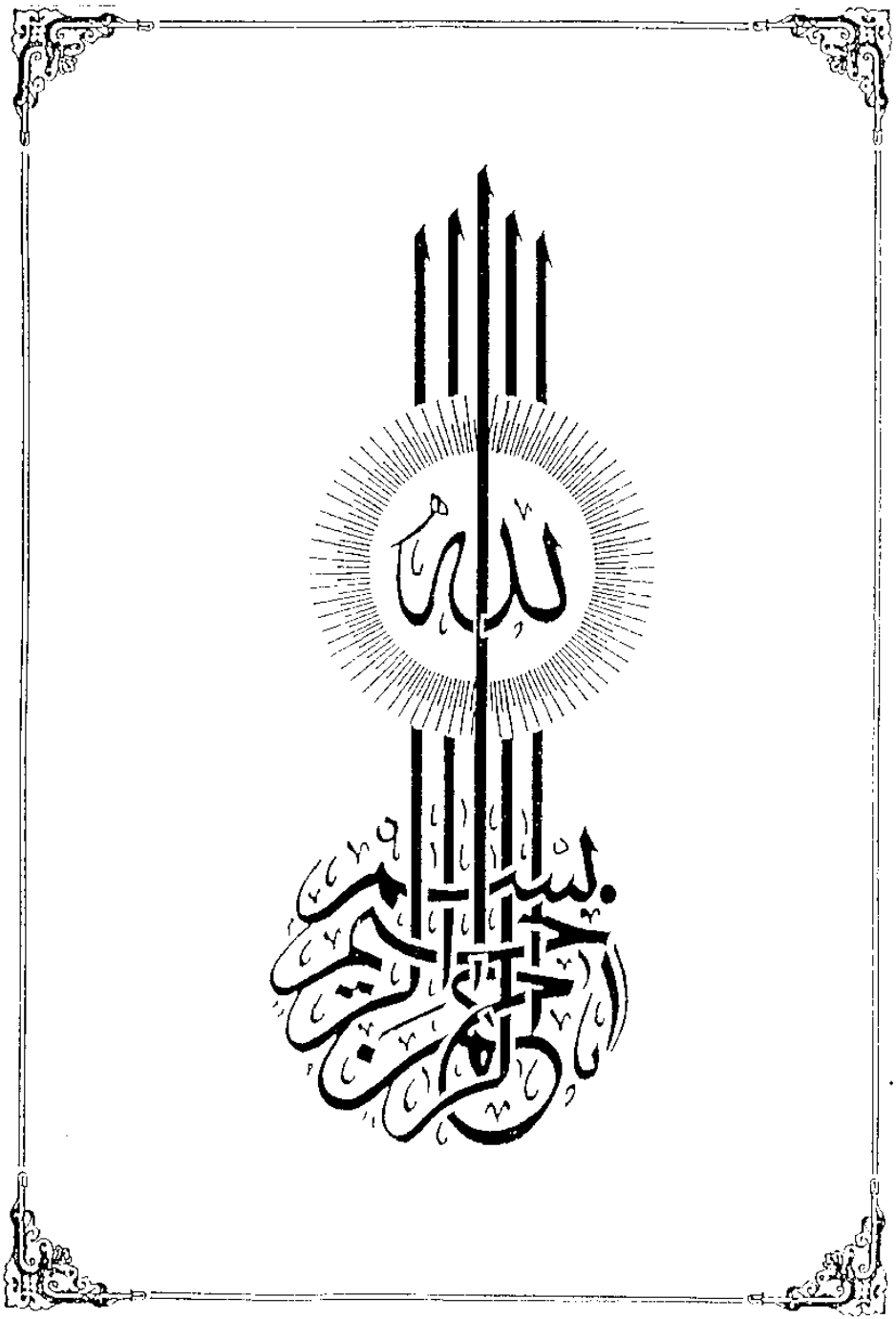

CONTENTS

INTRODUCTION

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Statistical data are usually insufficient and inefficient in the developing countries. However in the last few years intensive attempts were made to collect, from different reliable sources, data which may help in the better understanding of the size of smoking epidemic in Egypt. It is thought that a study of the smoking habit in patients with chest symptoms attending some of the chest dispensaries in Cairo will be of value on sharing in the evaluation of the smoking problem in Egypt.

AIM OF THE WORK

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Studying of the smoking habit and analysis of the data which will be collected from patients attending Abassia, Shoubra and Bab El Shaaria Chest dispenseries complaining of chest troubles.

REVIEW OF LITERATURE

HINTS ABOUT SMOKING

Over 500 years ago, the habit of smoking spread over the whole of Mexico, to the Red Indians and the South American Indians as well. The discovery of America by Columbus in 1492 marks the beginning of the gradual subjugation of Europe to the tobacco plant. In France where tobacco was introduced in the second half of the 16 th century, it was not smoked but taken as a snuff.The Spaniards, on the other hand, took to smoking Cigars (Okasha,1979).

Tobacco has been smoked in one form or another in Britain since its introduction by Raleigh in the reign of the first Elizabeth. In Britain upto the 19 th century tobacco was smoked chiefly in pipes and by men; cigarettes manufactured for the first time just after the Crimean War, gave a wide access to tobacco (Royal College of Physicians, 1983).

Tobacco was introduced into Africa in the 14 th century, when the Turks brought it to Egypt (Mahfouz, 1979).

Since the early 1950s, when cigarette smoking was first implicated as a major cause of Lung cancer in men(Doll & Hill, 1952), further research into the relationship between smoking and ill health has provided substantial additional data that

support various theories about the mechanisms caused or enhanced by smoking, with regard to both mortality and morbidity (Horn, 1977).

More than a million people around the world still die prematurely every year because of cigarette smoking. In developed countries, it is generally understood that smoking causes lung cancer, coronary heart disease, chronic bronchitis and respiratory disorders and major compaigns have been launched to reduce the rate of smoking. In most developing countries, however the situation is extremely serious, because the public is not aware of the dangers to the same extent, nor are educational, legislative and other measures being taken to combat the smoking epidemic (WHO,1983).

Pharmacology and toxicology of tobacco smoking:

There are at least 65 varieties of Nicotiana tabacum. Many of them are grown in Africa, and they are not all equally harmful to health. Beside their intrinsic genetic differences, the method of cultivation, curing and flavouring the tobacco have implication for health, rendering one product more or less harmful than another. But though the type of tobacco grown and used may make a difference to the pattern of ill-health observed

in users, there is no type of tobacco nor level of use that is considered either harmless or acceptable. (WHO, chronicle, 1985).

Cigarette smoke is a mixture of gases, vapours and particulate matter. The smoke can be separated into a particulate phase and gase phase . The gas phase is further subdivided into two parts, one which condensate to liquid at air temperature and part which do not. The brown yellow condensate of the smoke is known as tobacco tar, which can be collected in traps cooled to the temperature of dry ice (-70°C). These tar contains all the particulate phase of the smoke as well as the condensable part of the gas phase. The amount of tar from the smoke of one cigarette is between 3-40 mg, this wide range depends upon the burning, condensing conditions, the length of the cigarette, the use of a filter, porosity of the papers, the content of tobacco, weight and kind of tobacco,(Keith and Newsome, 1957).

The compounds which are identified in cigarette smoke are classified into groups for the purpose of the study,chemical and biological analysis. These groups, include the alkaloid nicotine and the related compounds, the isoprenoids, polycyclic

aliphatic hydrocarbons, terpens, isoprenoids hydrocarbons, alcohols, esters, aldehydes, ketones, acids, phenols, polyphenols alkaloids, nitrogen bases, heterocyclic amino-acids, inorganic chemicals such as arsenic, potassium and some metals (Johnston & Plimmer, 1959).

Some of the polycyclic compounds isolated from the cigarette smoke have been established to be carcinogenic. But the overall carcinogenic potency of tobacco tar is much higher than the effect of each substance isolated from it. This difference may be attributed to the presence of co-carcinogens in tobacco smoke (Hobbes and Philippe, 1956).

The gas phase accounts for 60% of the total cigarette smoke. It is made up of the following components: nitrogen 73 mol%, oxygen 10%, Co_2 9.6%, carbonmonoxide 4.2%, hydrogen 1%, Argon 0.6%, methane 0.5% and 1.1% constitute ethane, propans, acetylene, ethylene, formaldehyde, acetaldehyde, acrolein, methanol, acetone, ammonia, nitrogen dioxide, hydrosulphide hydrogen cyanide and methyl chloride.(Hobbes & Philippe,1956).

The average British filter tip cigarette is smoked in nine or ten puffs over 10 minutes. With each puff the smokes draws air through the burning tip of the cigarette and about

50 ml of smoke enters the mouth. This intake of smoke contains about 50 mg of material, 18 mg of which is solid particulate matter, the particulate material in the smoke is an aerosol of tar in which the alkaloid drug nicotine is dissolved (Wald et al., 1981).

Inhaling cigarette smokers breath out only a small porportion of the smoke they inhale, all the carbonmonoxide, over 90% of the nicotine and 70% of the tar are retained whilst tar particles in the smoke are deposited in the air-ways, the nictoine diffuses into the blood, rapidly reaching the brain where it exerts the pharmacological effects which are thought to form the habituating basis of the tobacco smoking habit (Armitage et al., 1978).

The total particulate matter concentration(Particle per cubic meter) have been shown to be very high in cigarette smoke. The particulate in tobacco smoke varies in size ranging from 0.1 to 1 (micron) which form a highly respirable range since all these particles will reach deep pulmonary spaces, (Feyerabend et al.,1982).

Carbon monoxide (CO).is one of the most important constituents of the gas phase of the cigarette smoke, it is produced on the average of 5 volumes percent by weight in the main stream smoke and 10-15 volumes percent by weight in the side stream smoke. Incomplete combustion is the main source of CO in the lung during smoking (Bockhoven & Niessen, 1961,Vogeh and Glesser, 1972).

The amount of Nicotine delivered from a cigarette varies considerably depending both on brand used and the way in which it is smoked. It is greater from plain cigarette than from filter tipped one. It varies between 1-2 mg. The amount of nicotine actually absorbed in the lung is greater in inhaler, (95% in a Puff) than in non-inhaler (10% only). (Armitage et al., 1975).

Acrolin and other irritating substances emanate from cigarette smoke. Hundreds of substances have been separated, most of them are toxic in more concentration, other are known as carcinogens, co-carcinogens and respiratory membrane irritants (Wanner,1977).

Carcinogens are the most powerful cancer initiators that can be isolated from tobacco smoke condensate including