MATERNAL SMOKING DURING PREGNANCY AND ITS EFFECTS ON THE FETUS AND NEWBORN

ESSAY

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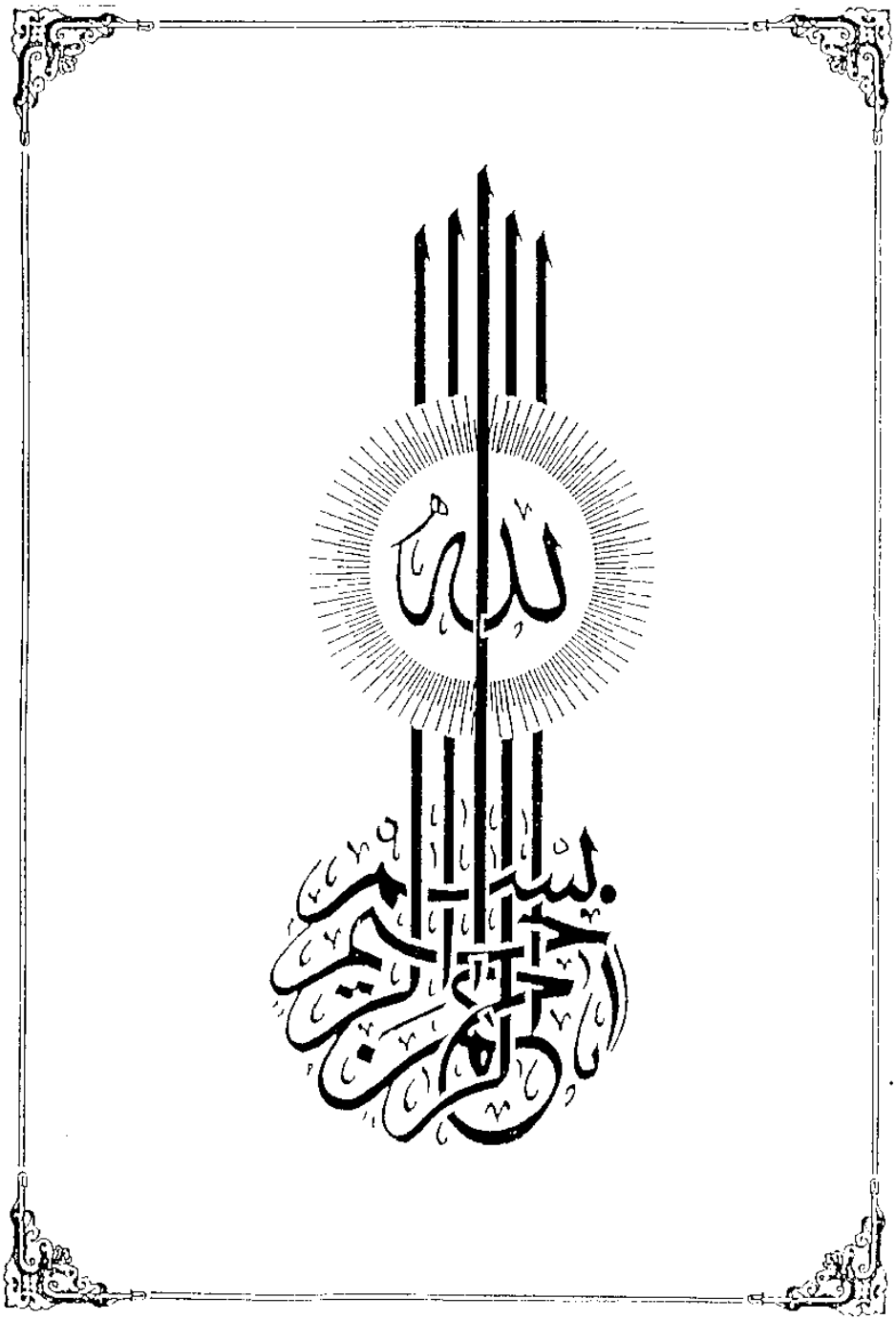
TO

MY PARENTS

MY HUSBAND &

MY CHILDREN



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INTRODUCTION

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It has been established from the clinical studies that cigarette smoking can lead to the development of non specific pulmonary diseases, chronic bronchitis with productive cough and emphysema (Fletcher 1959, Higgins 1968, Hunninghake 1983, Cosio 1984, and Saetta 1985).

Epidemiological studies had shown association between cigarette smoking and higher death rates from chronic bronchitis (Doll and Hill 1964) and pulmonary emphysema (Hammond 1966, Kaln 1966) both conditions have been found among cigarette smokers than among non smokers.

In recent years we have been frequently reminded of the threat of tobacco products' effects on various organs and systems.

With the increasing number of women smokers and the ever growing concern about environmental effects on the fetus, the relationship of smoking to the outcome of pregnancy has become an important issue (Paul B. et al, 1967).

(Sontag & Wallace, 1935) first reported an effect of maternal smoking on the unborn child and since then, information in the scientific literature strongly confirms their beliefs that cigarette smoking during pregnancy has seriously adverse effects on the health of the child prior to birth, on the health of the newly born baby and on the long-term development of the infant and child.

In (1935, Sontag & Wallace) produced data documenting an effect on the fetus of maternal cigarette smoking.

However, concern that tobacco might be harmful to the outcome of pregnncy, dates back almost a century.

Ballantyne, considered by many to be the father of antenatal care, in 1902, speculated about the effect of tobacco poisoning on antenatal life, while not specifically mentioning maternal smoking during pregnancy, he cited the opinion of a number of authors who wrote during the latter decades of the 19th century about the risks of spontaneous abortion among tobacco workers.

He quoted a paper written in 1879 by Decaisne from France and a report in 1868 by Kostail from Australia about female tobacco workers.

Ballantyne wrote in his celebrated manual of antenatal pathology and hygiene, that these authors were quite convinced that abortion was very frequent among women workers in tobacco (factories).

Ballantyne continued, while there is much doubt, therefore, regarding the evil effect of nicotism in cutting short antenatal life, there seems to be no shadow of doubt that there is a very large infantile mortality in post natal life among the offspring of women workers in tobacco. During the early decades of this century there was a sparsity of reports on the subject, with most opinions based on anecdote.

They already cited report of (sontag & Wallace, 1935) contained the first objective information.

They measured the fetal heart rate during the last 2 months of pregnancy in eight women, and noted a definite and real increase after the mother began to smoke a cigarette and that this was probably due

to the transport of nicotine into the fetal circulation.

Campbell (1936) reported that chronic nicotine poisoning was not consistent with efficient child bearing and advised that women who smoked had more difficulty with pregnancy, labour and lactation. The first relevant animal expirement was carried out by (Essenberg et al, 1940), who tested the effects of injected and inhaled nicotine on groups of pregnant, female albino rats.

They reported that the treated groups had smaller litters, lighter offspring with a higher mortality, difficulty in feeding and altered maternal behaviour, consisting of cannibalism and neglect of the young.

These findings were not investigated in any depth in human subjects for almost 20 years, until Simpson (1957) reported her findings.

A preliminary prospective survey of 2,257 pregnant women has been made for possible harmful effects of smoking by (Russel et al, 1966).

This analysis indicates that regular smoking of five or more cigarettes per day (as contrasted with

non - smoking and occasional smoking taken together) has the following effects:-

1- Lower baby weight, this effect, though observed throughout pregnancy, is most marked in babies born between the 38th - 42nd weeks.

2- Increased risk of premature delivery in those women who report early pregnancy bleeding, but not in other women.

3- Increased risk of abortion, still birth or neonatal death.

Smoking a standard cigarette caused an acute decrease in intervillous placental blood flow. This change normalized within 15 minutes.

At the time intervillous blood flow was depressed, heart rate and blood pressure were elevated and remained so throughout the study period.

Repeated decreases in the intervillous blood flow could explain growth retardation of the fetus and some other complications of pregnancy in women who smoke (Lehtovirta & Forss, 1978).

(Fergusson et al, 1979) examine smoking amongst a sample of 1248 women giving birth to live born infants.

The findings show:

1- That about 26 percent of women smoked throughout pregnancy and a further 8.0 percent smoked at sometime during pregnancy.

2- Smoking during pregnancy was related to the mothers social background, younger mothers, non European mothers, mothers with no formal educational qualifications and mothers of low socioeconomic background, tended to smoke more during pregnancy.

3- Smoking was associated with a decrease in birth weight, a greater risk of low birth weight infants (less than 2500g) and a greater risk of spontaneous abortion.

There was no statistically significant relationship between smoking during pregnancy and the risk of complicated labour, time to the onset of neonatal respiration, the use of active resuscitation or the risk of neonatal infection.

AIM OF THE WORK

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The hazards of smoking on the pregnant mothers and her babies should be known to every mother in order to avoid smoking before, during and after pregnancy.

The unborn child is the best example of the passive smoker, obliged to 'inhale' what its mother smokes. The mal effects are serious and incontrovertible. Since cigarette smoking is a potentially controllable environmental factor, so all efforts to control and eliminate the habit should continue.

At birth a baby is on average 9 months old intrauterine. Those involved in prenatal care should make every effort to protect the child against the effects of smoking during these first critical 9 months.

REVIEW OF LITERATURE