

Smoking Poses Significant Risks to Infant Health, A Review for Developing Countries

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Abstract

International research and professional literature confirmed that both prenatal and postnatal exposure to tobacco smoke poses significant risks to infant health, which negatively influences the health status of the early life periods as well as long-term health problems in childhood. Active smoking during pregnancy or exposure to smoking has causal adverse effects on pregnancy and neonatal outcomes. Scientists and researchers recommend a Comprehensive intervention should be implemented for smoking cessation, especially in the Middle East region, where the smoking rate is high and there are less restriction and less awareness of smoking risks among the population.

Keywords: Active Smoking; Passive Smoking; Pregnancy; Middle East; Infant Health; Low Birth Weight

Abbreviation

LBW: Low Birth Weight

Many evidence showed that infants born to mothers who smoke are weight less than those of nonsmokers. This effect on fetal growth is regarded as evidence of the reproductive toxicity of cigarette smoking, as CDC [1], conclude that smokers are at higher risk of delivering very small preterm infants, and their infants have higher perinatal mortality at every relative birth weight [1]. In addition, babies who are exposed to the toxins in tobacco smoke during pregnancy or after birth are more likely to die of SIDS [2]. According to the American Cancer Society, up to 5% of infant deaths would be prevented if pregnant women did not smoke. Smoking is also linked to an increased risk of early delivery and infant death [3].

Reducing infant mortality is a challenge around the world, in spite of the improvement in the health. The global infant death rate is 31 per 1000 live births and the situation is even more concerning in less developed countries. Infant mortality in the Middle East and North Africa is about 21 per 1000 live births in 2016, respectively [4,5]; however, most factors associated with infant death are modifiable and preventable. LBW has been recognized as a major determinant of neonatal mortality since 1930 when it was noticed that infants born weighing 2500g or less were at substantially increased risk of death (Gee and Godman 2006). LBW remains the single most important factor in neonatal mortality and morbidity in developing countries and infant morbidity and mortality in developed countries [3]. LBW infants are more likely to die in the neonatal period in compared with infants weighing more than 2500g at birth [6]. Many of LBW infants, who survive, remain malnourished as a result of repeated infections. Their growth deficiency will be continued into adult, life, and translated into reduced work output, and often impaired learning ability [1]. As many evidence showed that infants born to mothers who

smoke are weight less than those of nonsmokers. This effect on fetal growth is regarded as evidence of the reproductive toxicity of cigarette smoking [1]. Further, international health evidence suggests a significant dose-related association between smoking and spontaneous abortion [7]. The risk of spontaneous abortion in relation to pre-pregnancy smoking showed a clear dose-response effect [8]. CDC [1], conclude that smokers are at higher risk of delivering very small preterm infants, and their infants have higher perinatal mortality at every relative birth weight. In addition, babies who are exposed to the toxins in tobacco smoke during pregnancy or after birth are more likely to die of SIDS, and the risk increases if a baby sleeps in the same bed as a parent who is a smoker. According to the American Cancer Society, up to 5% of infant deaths would be prevented if pregnant women did not smoke. Smoking is also linked to an increased risk of early delivery and infant death [3]. Still, LBW is one of the main leading causes of infant mortality in the countries where the rate of smoking is high [9-11], which in turn influences infant morbidity and long term health outcomes of survivors [3].

Extensive studies confirmed that both prenatal and postnatal exposure to cigarette smoke poses significant risks to infant health, which negatively influences the health status of the early life periods [3]. Active smoking during pregnancy or exposure to smoking has causal adverse effects on pregnancy and neonatal outcomes [3]. These risks include spontaneous abortion, placenta previa, abruption placenta, preterm premature rupture of membranes, preterm delivery, low birth weight, small for gestational age (SGA), as well as it increased the risk of miscarriage, stillbirth, sudden infant death syndrome (SIDS), and infant death [3]. Furthermore ear infection, respiratory problems, allergy, asthma, and chest wheezing among neonates and infants also associated with smoking during pregnancy [12-14]. Many long-term problems in childhood increase with prenatal smoking exposed including overweight and obesity [15]. Cancers such as leukemia, lymphoma and cerebral tumors are more likely in children born to women who smoke during pregnancy [16], as well as cognitive behavioral and emotional problems is associated with prenatal exposure to smoke [17,18]. Evidence suggests that prenatal smoking exposure may impair auditory function and disrupt auditory processes related to speech perception, this negatively affecting reading and language development during childhood [19]. Moreover, babies of mothers who smoked during pregnancy had lower school performance and intelligence test (IQ) scorers in childhood [18]. Attention deficit and hyperactivity disorders [3]. A dose-response relationship exists for the prenatal tobacco smoke exposure and neonatal and pregnancy outcomes risks [20].

A study conducted in Jordan by Badran Salhab, *et al.* in 2009 found that among 220 infants and neonates who attended outpatient Paediatric Clinic of the University of Jordan, participated mothers' reported that 132 (60.0%) were exposed to environmental tobacco smoke, mostly by household members, and the 'cotinin' was also detected in the urine samples of seven neonates. Of particular concern was evidence of tobacco smoke exposure in 8 out of 20 neonates born than 48 hours earlier, and this is an alarm that they were exposed to smoke in the uterus during the pregnancy [21].

Comprehensive intervention should be implemented for smoking cessation, especially in the Middle East region, where the smoking rate is high and there is less restriction by low and governmental guideline, as well as there is less awareness of smoking risks among the population [10]. In developing countries still smoking habits widespread among the population and many pregnant mothers are smokers. Reduction of underlying causes of perinatal and infant mortality rates could be achieved by conducting studies for modifiable risk factors including passive and active smoking among pregnant women. There is informed demand for and provision of quality preventive and curative health care services to be included in such intervention [22]. Perinatal and neonatal mortality rates within a country are very sensitive indicators for the impact of interventions, they also useful for monitoring changes in the quality of care provided to populations in various areas of a country [11,23-25].

Conflict of Interest

There is no conflict of interest exists.

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