

Oral Health and Adolescence Pregnancy: A Social Oblivion in India

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ABSTRACT

Background: India remains a country, in which adolescent marriage remains extremely likely in addition to a high incidence rate of deplorable events and lack of education, which accounts for adolescent pregnancy. The oblivion towards the repercussions associated with adolescent pregnancy has led to a series of complications: both oral and systemic.

Keywords: Adolescent pregnancy, Dental caries, Periodontal diseases.

INTRODUCTION

Even in 21st century, India remains a country in which adolescent marriage remains extremely likely. This not only leads to a plethora of consequences but also forces the socio economic mindset a decade back. Marriage in adolescent stage is one of the most common contributing factors to adolescent pregnancy. Weak implementation of the laws, gender norms and expectations, limited education and livelihood opportunities account for child marriage. Motherhood in childhood remains a global problem. According to UNICEF 47% of girls are married by 18 years of age and 18% are married by 15 years of age in India. The society can never progress and prosper if welfare and well being of women and children are overlooked.

The main contributing factor towards adolescent pregnancy is lack of education. That being the main culprit precipitates various other factors like: low self-esteem, peer pressure and impetuous decisions. There is a significant relation between poverty and adolescent pregnancy, which highly reflects on the socio economic status of the society. The high prevalence of deplorable events like molestation, rape, etc. has also been one of the

major contributing factors. The statistics of juvenile rape in India is quite disturbing.

Here are a few extremely distressing facts about adolescent pregnancy:

- Every day 20,000 girls below age 18 give birth in developing countries.
- Missed educational and other opportunities.
- 70,000 adolescent deaths annually from complications during pregnancy and childbirth
- 3.2 million unsafe abortions among adolescents each year
- Perpetuation of poverty and exclusion
- Basic human rights denied
- Girls' potential going unfulfilled

It not only reflects on the socio economic status but also on the mortality rate of a region. Pregnancy is a physiological phase in a woman's life with increased nutritional demands. Thus, diet of the pregnant adolescent has effects on the fetal health. Nutrients like folate, vitamin B-6, vitamin B-12, calcium and zinc are required in well-proportioned quantities¹. Quite often as a result of lack of knowledge about these needs, there have

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been medical complications, more so in the adolescents like delivery of low birth weight infants, increased neonatal death rate and increased mortality rate for the mother². Other critical considerations for the pregnant adolescents are pregnancy- induced hypertension, anemia, sexually transmissible diseases and premature delivery³.

Most of the pregnant adolescents are ignorant about the importance of oral hygiene during pregnancy and the implications of this ignorance⁴. There is an increased possibility of infection in children whose mothers have poor oral health and high amount of cariogenic bacteria⁵. The main goal of perinatal oral health care in regard to the caries transmission, is to reduce the number of cariogenic bacteria in the pregnant adolescent's mouth so that mutans streptococci (MS) colonization of the infant is delayed as much as possible⁶. Thus a proper awareness about the preventive measures which could be taken can reduce the incidence of early childhood caries (ECC) and thus prevent the need of any kind of dental rehabilitation⁷.

TOBACCO USE AND ITS RISK

The consequence of lack of education does not end yet. Many pregnant adolescents are not aware of tobacco use and its associated risk factors during pregnancy. Various adverse outcomes such as- ectopic pregnancy, spontaneous abortion and preterm delivery have been associated with smoking during pregnancy⁸. Infants born to the adolescents who smoke have been seen to be small for gestational age and have low birth weight⁸. Intellectual disability, oral clefts and sudden infant death syndrome (SIDS) have also been associated with maternal smoking⁸.

Second Hand Smoke

Second hand smoke also known as passive smoke or environmental tobacco smoke leads to both maternal and fetal complications like lung cancer, heart disease, emphysema, allergies, asthma, lower respiratory illness and middle ear infections⁸.

ALCOHOLISM DURING PREGNANCY

Alcoholism during pregnancy has a series of repercussions on both maternal and fetal health. Fetal alcoholism syndrome (FAS) has been

associated with this. A number of potential problems like- facial deformities, learning disabilities, deformed ribs and sternum, limited joint movements, small head, etc. have been seen in the infants.

ORAL CONDITIONS DURING PREGNANCY

Periodontal changes have been observed during pregnancy owing to the change in hormonal levels (mainly increase in estrogen and progesterone). This is accompanied by increase in number of various bacteria like Bacteriodes, Prevotella and Porphyromonas⁹. Most of the changes are seen in the gingival vasculature. During the second trimester, signs of gingivitis are quite significant, anterior teeth being more affected than the posterior teeth¹⁰. These conditions get aggravated if there is poor plaque control or mouth breathing¹⁰. Increased tooth mobility has been observed as a result of microbial shift from aerobic to anaerobic⁹. Mineral disturbances in the lamina dura have also been associated with tooth mobility, which reverses postpartum⁹.

There is also a relation of morning sickness with perimyolysis. Perimyolysis is the erosion of lingual surfaces of the teeth due to the exposure to gastric acids. Xerostomia has also been observed as one of the changes in oral conditions during pregnancy¹¹.

DENTAL CARIES

The prevalence of dental caries is very high both in adults and children. It is a chronic infectious disease leading to demineralization of the tooth surface, from the tooth- adherent bacteria, mainly MS which have been seen to metabolize sugars producing acids¹². Many pregnant adolescents avoid addressing to medical needs, never mind dental hygiene. There have been evidences showing vertical transmission of MS from mother to infant¹³⁻¹⁶. This was concluded by identical genotype of MS seen in the infants¹⁵. The infant colonization not only depends on the maternal salivary levels of MS, but also on maternal oral hygiene, periodontal disease, socio economic status and snack frequency¹⁷.

Caries risk assessment can be conducted to determine the oral health status, its primary goal being- preventing and identifying the causative

agents and enhancing better oral hygiene by use of optimizing protective factors (eg- fluorides, sealants)¹⁸.

RECOMMENDATIONS

Besides recommendations for perinatal oral health, awareness about risks associated with adolescence pregnancy must be spread too.

The oral health recommendations include:

- Oral health education: exposure to awareness about the importance of oral health must be given.
 - Oral hygiene: due to increased amount of hormonal activity as mentioned earlier, maintaining proper oral hygiene during pregnancy can be challenging. Being ignorant towards addressing dental issues not only harms oral hygiene but can also lead to systemic complications including preterm deliveries, low birth weight babies and preeclampsia^{19,20}. Preterm delivery can be understood on the basis of: periodontal infections being a reservoir of increased inflammatory mediators which in turn poses a threat to both placenta and the developing fetus^{21,22}. Also, maternal periodontitis is associated with high level of prostaglandins in their gingival crevicular fluid and blood which in turn is seen to affect uterine contractions leading to preterm delivery^{22,23}. Therefore, oral hygiene problems must be addressed to in order to avoid not only any oral complications but also to safeguard both maternal and fetal health along with reducing caries risk in the infant²⁴.
 - Diet: as mentioned earlier, pregnancy is a physiological phase with increased nutritional demands. Thus, a proper dietary recommendation must be discussed fully and any food substances, which could be cariogenic, must be reduced to minimal.
 - Fluoride: use of fluoridated toothpaste and alcohol free rinse containing 0.05 percent sodium chloride once a day or 0.02 percent
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sodium chloride twice a day must be advised as it is an excellent plaque control technique.

- Dental visits: apart from all the preventive measures, pregnant women must pay regular visits to the dentists for proper caries risk assessment and optimize her oral health²⁴.

CONCLUSION

Preventing adolescent pregnancy can add to India's economy according to the UN reports. Much has been said, advocated, promised and planned for improving conditions of women; for socio-economic development of the female sector. There has been some improvement in the last two decades. But whatever has been attained is inadequate. Much more is required to be done to improve the socio-economic conditions of women, their health and hygiene, women in backward sector and rural area and much more so, for women in pre-adolescent and adolescent stage.

Thus a proper awareness must be spread on adolescent pregnancy and the correlation of dental health and systemic complications.

CONFLICT OF INTEREST

No potential conflict of interest relevant to this article was reported.

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