

Prevalence of Second Hand Smoking Among Antenatal Women – Descriptive Study

DR Vijayakumar, V Madhushree, P Deepika, Roopashree

INTRODUCTION

WHO says tobacco kills about 6–7 million people per year worldwide, more than road traffic accidents, infections, homicides.¹ Upto 38.4% of Indian male population are smokers and estimated 10% of India women chew tobacco and 2.5% smoke according to WHO figures. Second hand smoke contributes to a number of health concerns. Second hand smoke exposure is linked to cancer, cardiovascular and pulmonary diseases and it is estimated to cause more than 40% deaths among females and children.² The prevalence of tobacco exposure among women in India ranges from 15–55%. Around 18–20% women in Karnataka are exposed to second hand smoke.

Smoking or exposure to second hand smoke affects the mother and the foetus causing low birth weight, preterm premature rupture of membranes, placental abruption, preterm labour, stillbirth and sudden infant death syndrome.³

The health effects of passive smoking are serious and debilitating as smoking itself. Passive smoking is an important risk factor for acute and chronic, sometimes lifelong, morbidity that can be avoided.

Apart from increased mortality, low birth weight predisposes to increased morbidity from paediatric asthma and major infectious diseases such as measles, pneumonia and tuberculosis.⁶ Exposure to second hand smoke during pregnancy is associated with more than two fold higher risk of small-for-gestational baby even after adjusting for all possible confounders and there appears to be a nicotine dose response relationship between weight reductions in the baby. The awareness and the harmful effects of passive smoking is poor.⁹

Second hand smoke exposure was associated with an increased risk of low birth weight considering birth weight less than 2500 gm.

Passive smoking is a cause of lung cancer in non-smokers with long-term exposure to tobacco smoke were estimated to have 20–30% higher risk of developing lung cancer than non-exposed.⁵

Materials and Methods

The present study was conducted from January 2013 to April 13 among antenatal women attending outpatient department. Taking the prevalence of passive smoking to be around 18%, sample size was calculated with allowable error. Considering the patients who consented to be a part of the study, sample size of 110 was decided. A detailed demographic profile of the pregnant women was taken after informed consent. Details were entered in a proforma, maintaining confidentiality. Demographic details included age, parity, occupation, educational qualification, socioeconomic status. Other details including obstetric history, second hand exposure to tobacco, duration of exposure, assessment of knowledge and attitude of ill effects of second hand smoke, awareness regarding smoking cessation programme and to access health care.

Results

A total of 110 women were included in the study

who attended outpatient department for antenatal care. Almost 45 pregnant women were exposed to second hand smoke (40.9%) and 21 women (46.6%) between 20–25 years, 14 (31.1%) were between 25–30 years age group and 10 (22.2%) were between 31–35 year age group.

Twenty women (44.4%) of those exposed to second hand smoke had a qualification upto tenth standard⁸ and 17.7% of Women (17.7%) had completed pre university, 17 (37.7%) women were qualified graduates and post graduates.

Thirty five (77.7%) of those second hand smoke exposed women were homemakers and 10 women (22.2%) were employed (Table 1). Twenty three (51.1%) pregnant women who were exposed to second hand smoke were primigravidas, 22 (48.8%) were multigravid (Table 2).

Women those exposed to second hand smoke out of them 23 (51.11%) women were in their third trimester of pregnancy, 21 (46.6%) were in second trimester (Table 3).

Approximately 26.6% of them getting exposed to second hand smoke daily and 62.2% said they were exposed at least once a week. Among study population 14.2% of women shared their awareness about ill effects of passive smoking. Pregnant women expressed that only 28.24% of doctors and health professionals explained about smoking cessation awareness and had offered them counseling.

Discussion

Smoking during pregnancy is one of the most important modifiable risk factor, associated with adverse pregnancy outcome. It increases perinatal morbidity and mortality.

The prevalence of tobacco exposure among women in India ranges from 15–55%. Around 18–20% women in Karnataka are exposed to second hand smoke.

Table 1. Demographic variables

Age (years)	Number	Percentage	Exposed	Percentage
20–25	50	45.5%	21	46.6%
25–30	50	45.5%	14	31.1%
30–35	10	9%	10	22.2%
Education				
Till 10 th class	32	29.9%	20	44.4%
11th–12 th class	18	16.36%	8	17.7%
UG/PG	60	54.4%	17	37.7%
Occupation				
Homemaker	87	79.09%	35	77.7%
Working	23	20.9%	10	22.2%

Table 2. Number of primigravida and multigravida women exposed to second hand smoke

Parity	Number	Percentage	Exposed	Percentage
Primi	62	56.36%	23	51.1%
Multi	48	43.63%	22	48.8%

Table 3. Number of women exposed to second hand smoke in different trimester of pregnancy

Trimesters	Number	Percentage	Exposed	Percentage
First	3	2.7%	1	2%
Second	51	46.36%	21	46.6%
Third	56	50.9%	23	51.1%

This study adds to the increasing body of evidence which suggests that the prevalence of second hand smoking is increasing with the prevalence of 40.9% in this study.

Education appeared to be negatively correlated with second hand exposure which means that higher the qualification higher the exposure to passive smoking.

Almost 77.7% of those exposed to second

hand smoking were homemakers, exposing them to more toxins or indoor pollution.

Smoking or exposure to second hand smoke affects the mother and the foetus causing low birth weight,⁴ preterm premature rupture of membranes, placental abruption, preterm labour, stillbirth and sudden infant death syndrome.

The health effects of passive smoking are serious and debilitating as smoking itself. Passive

smoking is an important risk factor for acute and chronic, sometimes lifelong, morbidity that can be avoided.

Extensive knowledge about the adverse health effects of smoke exposure in foetus deserves greater attention in counseling of pregnant women.⁷

Exposure to second hand smoking in infants and children could lead to behavioural disorders. Epidemiological studies show that maternal smoking during pregnancy and postnatal passive smoke exposure could cause subtle changes in children's neurodevelopment and behaviour, such as reduced intellectual ability and attention deficit and hyperactivity disorder.⁸

Only 14.2% of women in this study showed limited awareness about ill effects of second hand smoking.

Awareness regarding ill effects of second hand smoke were explained in detail to all those pregnant women exposed post assessment for the study.

Reducing second-hand smoke exposure is a major health priority for the World Health Organization.^{10,11}

Recommendations

Results from this study about second hand smoking have revealed that awareness about second hand smoking and its effects is poor. Studies have shown beyond doubt about ill effects of second hand smoking on both mother and foetus, hence it is mandatory for clinicians, health professionals to actively intervene in order to reduce impact.

As in smokers who go through changes during smoking period as described by Diclemente and Prochaska¹², passive smokers also will probably going through similar changes (Figure 1).

The model defines following stages:

- **Pre contemplation phase:** This is the phase in which, pregnant women is not aware of ill effects of smoking nor has a desire to find out.

Recommendation to doctors: If doctors find pregnant or women in periconception period a mere advice regarding effects of passive smoking on mother and foetus will move the patient to next stage of contemplation stage.

- **Contemplation phase:** In this phase armed with the knowledge of passive smoking, the patient must be encouraged by the clinicians to think of ways or modalities of how to reduce or eliminate passive smoking.

Recommendations to doctors: Advice regarding measures of how to reduce contact with smoke in their day to day environment.

- **Action phase:** In this phase the patient goes about modifying her immediate environment in order to reduce the exposure to second hand smoke.

Recommendations to doctors: Doctors should encourage and give positive reinforcement

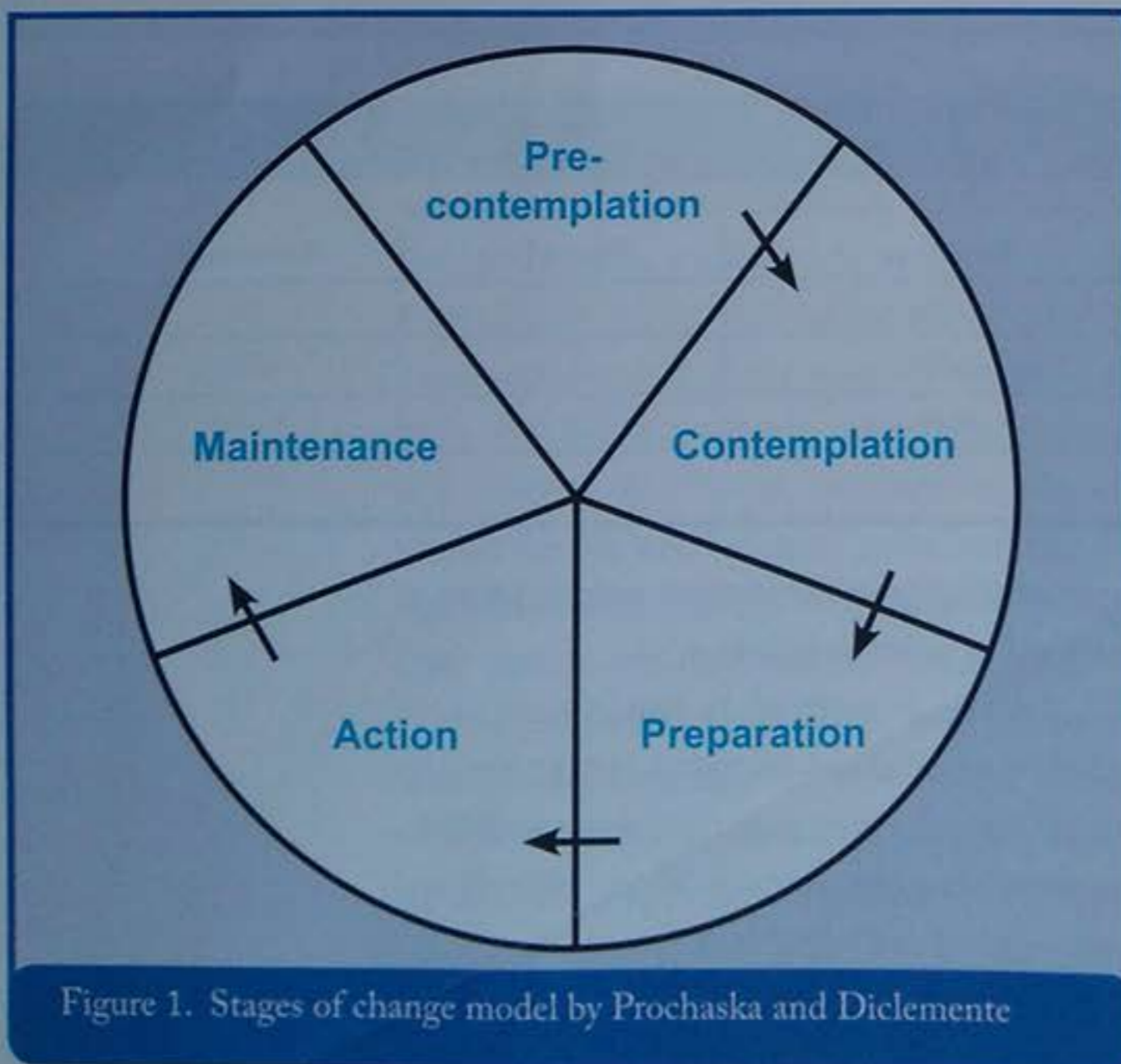


Figure 1. Stages of change model by Prochaska and Diclemente

to the patient, in order to maintain the changes that the patient has brought about. The doctor should also address the problems she is facing in trying to modify the environment.

It is strongly recommended that spouse should also be involved actively in assisting the patient including smoking cessation.

It is recommended that clinician should elicit history of exposure to second hand smoke during the booking visit and in periconception period. It is also recommended that clinicians must mention avoidance of exposure to second hand smoke in their prescription advice along with their routine supplementation medicines.

CONCLUSION

Health education is a primary goal to induce behavioural change in patients. All pregnant women should be enquired about tobacco use and second hand smoking exposure and appropriate advice given by health professionals at the time of contact during antenatal visit.

About the Authors

Dr DR Vijaykumar is Consultant Psychiatrist, Dr V Madhushree is Consultant, Dr Deepika and Dr Roopashree is Registrar, Department of Obstetrics and Gynaecology, St. Philomena's Hospital, Bangalore.

REFERENCES

1. Cogswell ME, Weisberg P, Spong C. Cigarette smoking, alcohol use, and adverse pregnancy outcomes: implications for micronutrient supplementation. *J Nutr*. 2003;133(Suppl 2):1722S-1731S.
2. Gupta R, Prakash H, Gupta VP, Gupta KD. Prevalence and determinants of coronary heart disease in a rural population of India. *J Clin Epidemiol*. 1997;50(2):203-209.
3. Gupta PC, Subramoney S. Smokeless tobacco use, birth weight, and gestational age: population based, prospective cohort study of 1217 women in Mumbai, India. *BMJ*. 2004;328(7455):1538.
4. Jaddoe VWV, E Tros, et al. "Active and passive maternal smoking during pregnancy and the risks of low birthweight and preterm birth: the Generation R Study." *Paediatric and Perinatal Epidemiology* 2008;22(2):162-171
5. Gupta D, Aggarwal A N, Jindal SK. Pulmonary effects of Passive Smoking. *The Indian Experience Tobacco induced Dis* 2002;1: 127-34.
6. Mautya V, Vijayan V.K, Shah A, Smoking and Tuberculosis, An association overlooked. *The International journal of tuberculosis and Lung Disease*. 2002;6(11):942-951.
7. Fantuzzi et al; Exposure to active and passive smoking during pregnancy and severe small for gestational age at term; 2008;21(9):643-647.
8. Hofhuis W et al; Negative effects of passive smoking on the Unborn child. 2002;146(6): 782-783
9. P Goel et al; Effects of Passive smoking on outcome in pregnancy. 2004;50(1):12-16.
10. World Health Organization. (2007). Protection from exposure to second-hand tobacco smoke. Policy recommendations. World Health Organization: Geneva.
11. World Health Organization. (2008). WHO report on the global tobacco epidemic. (<http://www.who.int/tobacco/mpower/en/>), retrieved
12. Prochaska, JO and CC Di Clemente. "Trans-theoretical therapy: Toward a more integrative model of change." *Psychotherapy: Theory, Research and Practice* 1982;19(3):276-288.