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Research Article

**ASSOCIATION OF PASSIVE SMOKING WITH RESPIRATORY SYMPTOMS AND CLINICAL CORRELATES, AMONG MARRIED WOMEN IN RURAL AREAS OF LAHORE**<sup>1</sup>Sameen Maqsood Khan, <sup>1</sup>Samrah Fatima, <sup>2</sup>Khalid Hussain<sup>1</sup>Lahore General Hospital, Lahore, <sup>2</sup>Basic Health Unit Karam Pur Kher Pur Tamewali Bahawalpur.**Article Received:** October 2020**Accepted:** November 2020**Published:** December 2020**Abstract:**

**Objective:** To evaluate the affiliation of passive smoking with respiratory illness and medical correlates in married women of Pakistan.

**Method:** A Cross-sectional analysis was done on married women of rural areas of Lahore through an Interviewer administered performa. 100 women were interviewed. The study period was from January to October 2020. All data was entered and analysis was done utilizing SPSS v 23.

**Results:** The two significant respiratory illnesses that were common in interviewers to be associated with passive smoking were sinusitis and cough. Coal or dried wooden bars utilization as fuel for cooking also contributed few of the symptoms such as headache. The pulse rate ( $89 \pm 14$  beats/min) of the passive smoking women was statistically significantly higher than the pulse rate ( $71 \pm 09$  beats/min) of the non-passive smoking women.

**Conclusion:** Passive smoking was found to have association with respiratory symptoms among married women. Higher pulse rate was also linked with passive smoking.

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**INTRODUCTION:**

The dangers of passive smoking were very well researched and are wellknown and proven. [1-8] Association among involuntary inhalation of smoke and expanded number of diverse breathing illnesses, both in children or in adults, is now very well established. [8-11] Various publications suggests that respiratory outcomes of passive smoking in people might also consist of non-malignant illnesses further to lung carcinoma. [12] It has been determined that children exposed to second-hand cigarette smoke have increase frequency of asthma attacks and other bronchial diseases.[12-14] Impact of passive smoking on pulmonary function investigations has additionally been extensively tested and various functional disorders of bronchioles have been discovered. [15] Since negative consequences of passive smoking on human health, and quality of life, were ascertained there is a need to promote awareness regarding the adverse affects related with passive smoking. [1]

Most of the research, concerning the consequence of passive smoking, has been analyzed on children. A research performed in Spain concluded that children exposed to second hand smoke had be more vulnerable to developing pulmonary illnesses. Hence, it is clear that passive smoking in a home surrounding is harmful. [2]

Another analysis was carried out in the UK on the side effects of prenatal and/or postnatal passive exposure to smoking on children's health. [13] They point out the uncertainties regarding the relative significance of smoking at various intervals in the child's life. They studied this in a pooled analysis, on 53,879 children from 12 cross-sectional studies - components of the PATY study (Pollution And The Young). There becomes robust proof of association of parental smoking to wheeze, asthma, bronchitis and nocturnal cough, with mean odds ratios approximately of 1.15, with unbiased results of prenatal and postnatal exposures for maximum associations.

Adverse consequences of each pre- and postnatal parental smoking on children's pulmonary functions have been confirmed. Asthma was strongly related with maternal smoking for the duration of pregnancy, however postnatal exposure confirmed impartial associations with a number of different respiratory symptoms. The analysis concluded that each tobacco smoke exposure has deleterious effects for children's respiratory health and urgent reduction is needed. [3]

Other studies associating prevalence of respiratory diseases to those who smoked confirmed that

smoking is associated with increased incidence of COPD, asthma, bronchiectasis and pulmonary emboli. [8] Passive smokers also displayed comparable results. [10,14]

Another study conducted in Turkey reflected that passive smoking leads to enhanced levels of Carbon Monoxide in the blood [17] but very few local surveys have been carried out analyzing association between passive smoking to pulmonary illnesses or clinical interrelationship.

It is evident that very few studies have been published to analyze the results of passive smoking among married women, more so in village areas. Hence, we performed this analysis to further enhance our knowledge by conducting a cross-sectional comparative study. The aim of this study was to enlighten the symptoms and clinical correlates related with passive smoking among married women in rural areas of Lahore, and to look for the relationship of pulmonary symptoms and clinical affiliations in the same group.

**METHODS:**

This cross-sectional survey was performed among married women rural areas of Lahore, from a low socioeconomic status. The study period was from January to October 2020, with a sample size of 100 women.

The data collection was done through a pre formed performa. The sampling technique employed was convenient random sampling. The inclusion criteria were all married women with age more than 18 years, excluding those women who are smokers.

The Independent variables applied were age of women and smoking status of husband, duration of marriage and the dependent variable was respiratory symptoms among wives. All data was entered and analyzed using SPSS version 23. Ethical considerations that were followed were Ethics committee approval, informed written consent and confidentiality of data.

**RESULTS:**

A total of 100 women were interviewed. The mean age of participant was  $38 \pm 12$  years. The mean number of years their husband had been smoking was  $14 \pm 7$  years. The number of cigarettes smoked per day by husbands was  $12 \pm 6$ . Women who were passive smoker were 58 while those who were not passive smoker were 42. Pulse rate and blood pressure of the women who were passive smoker were  $89 \pm 14$  beats per minute and  $132 \pm 6$  systolic over  $91 \pm 4$  diastolic

while in case of non smoker, the pulse was  $71 \pm 9$  beats per minute and  $122 \pm 3$  systolic over  $84 \pm 5$  diastolic. Among 58 husbands that smoke, 46 (79.31%) smoke inside house, in the presence of

wives while 12 (20.69%) do not smoke inside house. Majority of the women 82(82%) used wood as a cooking fuel, followed by natural gas (Table-1).

Variable	Percentage
<b>Husband Smoking status</b>	
• Smoker	58 (58%)
• Non Smoker	42 (42%)
<b>Where does husband smoke</b>	
• Home	46 (79.3%)
• Outside	12 (20.7%)
<b>Presence of women in room</b>	
• Yes	56 (96.5%)
• No	02 (3.5%)
<b>Use of wood for cooking</b>	
• Yes	82 (82%)
• No	18 (18%)

In passive cigarette smoking wives, 43 (74.1%) complained of headaches as compared to 13 (30.9%) amongst non passive smoking women and this difference was statistically significant (Table-2). The other common symptom were cough, with a frequency of 36(62%) among passive smokers as compared to 22 (52.3%) amongst non passive smoking women (Table-2).

Sinusitis was also a common symptom in 28(48%) of passive smoking women as compared to 6(14%) in non-passive smoking women. The symptoms not related to passive smoking included haemoptysis, otitis media (earache) and shortness of breath (Table-2).

Variable	Passive Smoker	Non Passive Smoker
<b>Pulse</b>	$89 \pm 14$ BPM	$71 \pm 09$ BPM
<b>Blood Pressure</b>	$132/91 \pm 6/4$ mmHg	$122/84 \pm 3/5$
<b>Cough</b>	36 (62%)	22 (52.3%)
<b>Sinusitis</b>	28 (48%)	6 (14%)

### DISCUSSION:

According to the results of this study, the two main symptoms that are related with passive smoking in housewives were cough (62% of passive smokers) and sinusitis (48% of passive smokers). The women who had been affected had been those whose husbands smoked in the house, which had been not properly ventilated. Previous researches additionally showed that passive smoking is strongly related to pulmonary symptoms. [1-8] Few analysis also proven an affiliation among environmental tobacco smoke and otitis media. [18] However, our study did not represented any conclusive link between otitis media (2 women of passive smokers as compared to 1 woman of non passive smokers) and secondhand smoke, as concluded in two other surveys. [7,19] Passive smoking is proven to be injurious to human health; particularly for the respiratory system. [10]

that is why it is essential to identify the affiliation of these symptoms (headache, cough, phlegm and haemoptysis) and diseases (sinusitis, otitis media, cancers, infections, bronchitis and asthma) with passive smoking.

The women affected have been the ones whose husbands smoked in the residence, which have been, in most cases, poorly ventilated. The doorways of the rooms have been kept closed in cold weather or for privacy matters, which further prevented the passage of fresh air in room and exacerbate the symptoms. [11] Many women complained of cough which was moderate to severe in intensity. The women additionally stated to have persistent rhinitis and frontal heaviness which refers the presence of sinusitis, as reported in another survey. [9] The study, also suggested that headache is probably the principle

symptom evaluation of the data, did not support this finding as headache was strongly related with burning of wood at home for cooking purposes, as reported in a study. [11]

Study has additionally proven that the smoke from burning fuel turned into the contributory element for inflicting acute respiratory obstruction, COPD, asthma and lung cancer. [5] The women experienced symptoms like cough, headache and sinusitis. Another survey showed that women suffered from chronic cough when they were exposed to smoke from fuel. [6,19] People exposed to smoke also had signs of dyspnoea and wheezing more frequently in comparison with those who were not exposed. [19]

The women in our research have also shown significant association between passive smoking and increased pulse rate. This is further supported by another study, showing that when there was less exposure to passive smoke, the prognostic pulse rate improved. [21] There were also differences in the systolic and diastolic blood pressures among passive smokers and the nonpassive smokers. Few other researches shown a similar association between passive smoking and blood pressure. [22]

### CONCLUSIONS:

This research concluded that, passive smoking has an association with pulmonary symptoms and has effects on pulse and blood pressure in married women.

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