

## MOTHER'S KNOWLEDGE OF THE DANGERS OF EXPOSURE TO CIGARETTE SMOKE DURING PREGNANCY

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### ABSTRACT

Pregnancy is a fertilization process to continue the descent, and the resulting fetus will grow in the womb. The harmful impact of smoking on pregnant women are preterm labour, premature rupture of membranes, the threat of release of the placenta before birth, *placenta previa*, the impact on the baby is born with low birth weight. It was an analytic study with cross-sectional by distributing questionnaires. The number of samples used is 64 pregnant women who came to RSU Bunda Margonda Depok for antenatal care checkups from December 1 2016 – to February 28 2017. This study showed that 21 pregnant women answered; the smoke can damage the respiratory tract, whereas only six pregnant women who answered the impact of exposure to cigarette smoke during pregnancy is aborted. This study illustrates that the mother's knowledge of the dangers of exposure to cigarette smoke during pregnancy is still too common.

**KEYWORDS:** Pregnancy, cigarette, knowledge, dangers.

### INTRODUCTION

Smoking is an activity that is now loved by many of our teenagers. In the past, smoking was only a part of parents' lives. However, now smoking has penetrated the lives of school children starting from junior high school, and the most worrying thing is some elementary school students who have started trying to smoke. If smoking has become a habit carried out by society in general, then the dangers of smoking will also lurk in the future.<sup>[1,2]</sup> Smoking becomes a habit that can provide enjoyment for people who smoke, but on the other hand, it can hurt both the active smoker and the people around him. Smoking also aims to find comfort because smoking can reduce tension and make it easier to concentrate.<sup>[1]</sup>

Exposure to tobacco smoke, both through active and passive measures, has a significant impact on health.<sup>[2]</sup> Passive smokers are residents who are not smokers but inhale cigarette smoke exhaled by active smokers and live in the same house or environment as active smokers. In passive smokers who live in the same house as active smokers, the prevalence of smokers in the house reaches 95% on the islands of Sumatra and Java. With a high prevalence rate, how to improve family and community behaviour about clean and healthy living during pregnancy by avoiding cigarette smoke is very difficult to do.<sup>[3]</sup> Active smokers ignore the rules (norms) are prohibited from smoking in public places. This habit is very detrimental to the health of others because it makes other people passive smokers, which is much more

dangerous than active smokers. The risk of disease is significant in passive smokers because they do not have a filter to absorb all the cigarette smoke emitted by active smokers.

Various effects of smoking on human health, among others: cause coronary heart disease, coronary thrombosis, cancer, bronchitis or inflammation of the larynx, and death of the fetus.<sup>[5]</sup> For pregnant women, the direct cause of stillbirth is hypoxia, which is a lack of oxygen in a pregnant woman's body due to exposure to cigarette smoke.<sup>[6]</sup> In addition, other health effects caused by smoking include the wrinkled face, stained teeth and bad breath, polluted air in the environment, being a bad example for children, and becoming a gateway to the use of illegal drugs.<sup>[7]</sup> It is necessary to conduct research studies to find out how dangerous the content of cigarette smoke is for pregnant women and their fetuses. Therefore, it is hoped that this research can provide an overview of how cigarette smoke can damage and affect the health of pregnant women and their babies.

Based on this background, the problems' formulation that was answered in this study are a) How far do pregnant women know about the dangers of smoking? b) What causes mothers to be less aware of the dangers of smoking? c) How can mothers avoid cigarette smoke? The primary purpose of the research is to know the level of knowledge of pregnant women about the dangers of exposure to cigarette smoke.

## LITERATURE REVIEW

According to the International Federation of Obstetrics and Gynecology, pregnancy is the fertilization or union of spermatozoa and an ovum followed by nidation or implantation. When calculated from the fertility phase to the baby's birth, a normal pregnancy will occur within 40 weeks or ten lunar months or nine months according to the international calendar.<sup>[8,9]</sup> According to Guyton, pregnancy is a series of events only when the ovum is fertilized, and the fertilization develops into a fetus at term.<sup>[10]</sup> According to the National Population and Family Planning Agency (BKKBN), pregnancy is a process that begins with the release of a mature egg cell in the oviduct which then meets sperm, and then the two merge to form a cell that will grow.

Pregnancy takes place in three trimesters. The first trimester lasts 12 weeks, the second trimester 14 weeks (13 to 27 weeks), and the third trimester 12 weeks (28 to 40 weeks). In the first trimester, there are physical changes; nausea in the morning can occur, ranging from abdominal discomfort (mild) to vomiting. Nausea can occur as a reaction to certain odours or food and drink, thin veins on the skin's surface begin to appear, the breast continues to enlarge due to the widening of the milk ducts, and it feels a little sore. The fetus has a length of about 65 – 78 mm from head to rump and weighs between 13 – 20 grams, about a pear size. Entering the second trimester, the placenta is fully developed and provides oxygen, nutrients, and removes fetal waste products. The placenta also produces the hormones progesterone and estrogen to maintain pregnancy. The baby's eyelids have begun to form to protect the fetus' eyes during development. The third trimester is the last trimester of pregnancy. The fetus is in the completion stage and will increase in size until it fills the entire uterine cavity. The bigger the fetus, the more fetal movements will be. It is advisable for pregnant women always to be careful and pay attention to signs of an emergency, such as signs of premature birth. There are physical changes in the mother; body temperature increases, so you feel hot. Difficulty getting a comfortable sleeping position because the uterus has started to contract lightly; this contraction is called Braxton Hicks Contraction, which can appear at gestational age in the second trimester.

Many of the manifestations of physiological adaptation to pregnancy are easily recognized and are essential clues for diagnosing and evaluating pregnancy progress. Some of the changes during pregnancy can be timed relatively accurately so that it is an important marker for estimating the fetus's gestational age. Errors in pregnancy diagnosis most often occur in the first weeks of pregnancy, while the uterus is still a pelvic organ. This error often occurs as a result of hasty and incomplete inspections. Endocrinological, physiological, and anatomical changes accompanying pregnancy produce symptoms and signs that provide evidence of pregnancy. The symptoms and signs are classified into three groups:

presumptive evidence, probable signs, and positive signs of pregnancy.

Presumptive evidence in pregnancy is generally based on subjective symptoms such as nausea with or without vomiting, urinary disturbances, fatigue, and the perception of fetal movement, which includes presumptive signs: cessation of menstruation, changes in the breasts, and changes in the colour of the vaginal mucosa. Possible signs of pregnancy include an enlarged abdomen, changes in shape; size; and uterine consistency, anatomic changes in the cervix, Braxton Hicks contractions, and the presence of physical contours of the fetus. Positive signs of pregnancy are characterized by three things, namely; identification of fetal cardiac work separate and distinct from the work of the pregnant woman's heart, perception of active fetal movement by the examiner, and recognition of the embryo and fetus at any time during pregnancy by sonographic techniques or radiographic recognition of older fetuses in the second half of pregnancy.

According to PP RI No. 109 of 2012, the cigarette is one of the tobacco products produced to be burned and smoked or inhaled, including kretek cigarettes, white cigarettes, cigars or other forms produced from the *Nicotiana Tabacum*, *Nicotiana Rustica*, and other species or synthetics whose smoke contains nicotine and tar with or without additives.<sup>[11,12]</sup> If you look at the history of smoking for the first time, smoking was done by the Indians in America. Initially, the Indians smoked for ritual purposes such as worshipping spirits or gods. Until in the 16th century, Europeans discovered the American continent and tried to smoke cigarettes, until the smoking habit emerged among the nobility.<sup>[13]</sup> In the 21st century, cigarettes and smoking have become widespread habits in society that continue to be talked about a lot. There have been many articles in the print media and scientific meetings, lectures, radio or television interviews, and counselling about the dangers of smoking and the losses that arise from smoking, but smoking is still practiced.<sup>[14]</sup> Indirectly, smokers can also make a real contribution to air pollution, especially in a closed room because of the large amount of cigarette smoke exhaled into the air. More than 3800 chemical compounds are found in cigarette tobacco, and the most influential groups are nitrogen (24%) and hydro-carbon (15%) compounds.<sup>[14]</sup> Smoking becomes a habit that can pleasure smokers, but on the other hand, it can harm both the active smoker and the people around him. Smoking behaviour aims to find comfort because smoking can reduce tension and make it easier to concentrate.<sup>[1]</sup>

Smoking is enjoying the nicotine smoke that is burned. In addition to nicotine, there are also sugar compounds, additives, sauces, flavourings, aromas, and others to form a taste that meets consumers' tastes (smokers). One cigarette consists of various types of tobacco so that the taste and aroma obtained have their characteristics.<sup>[6,7]</sup> Smoking has been known to cause health problems. This

health problem can be caused by nicotine from mainstream smoke and side-stream smoke from cigarettes smoked by smokers.<sup>[9]</sup> Thus, people with cigarette smoke are active smokers and people who are in an environment of cigarette smoke (Environmental Tobacco Smoke) or called passive smokers.<sup>[1]</sup> At this time, many cigarette manufacturers do not include nicotine levels in their packaging. So it is necessary to measure the level of nicotine produced by cigarette smoke to determine how much nicotine content is produced by cigarette smoke from various brands of cigarettes that are widely circulated in the market.<sup>[12]</sup> However, over time, cigarette manufacturers, in various ways, indicate the content of tar and nicotine in their packaging in order to reduce consumers buying cigarettes, or in other cases, quitting smoking.<sup>[13]</sup>

Nicotine is a toxic alkaloid compound separated from tobacco which is a tertiary amine compound with the empirical formula  $C_{10}H_{14}N_2$  and 1-methyl-2-pyrrolidine (3-pyridine) in organic chemistry. Nicotine in its pure state is colourless, in the form of volatile liquid oil, soluble in alcohol, ether and petroleum ether. Nicotine boils at 246-247°C and freezes at temperatures below 80°C. At low temperatures, nicotine has a slight odour but will produce a vapour that smells stimulating and will react with air characterized by a brown colour change. Nicotine is strongly alkaline and exists in a non-ionic form to pass through nerve cell membranes. The strong toxic nature of nicotine is easily absorbed through the skin and can cause nerve paralysis. On average, the nicotine content in tobacco ranges from 0.5 - 4%. Nicotine levels in several types of tobacco in Indonesia range from 0.5 to 2.5%. After the leaves reach maturity (old), the nicotine content decreases. The high-water content causes the nicotine content in the preserved leaves and factory processed products to decrease. In addition to nicotine, tobacco also contains carbohydrates, chlorophyll, organic acids, enzymes, minerals, and metals.<sup>15</sup> Although nicotine is removed, the harmful content in cigarettes cannot be gone due to tar substances in them. Tar, CO gas (Carbon monoxide), TSNA (Tobacco Specific-nitrosamine), B-a-P (benzo-a-pyrene), pesticide residues, and others contained in cigarette smoke are no less dangerous than nicotine.<sup>[13]</sup>

Two kinds of cigarette smoke can interfere with health: the primary smoke (smoke inhaled by smokers and side streams) and smoke resulting from burning cigarettes that spread into the air.<sup>[14]</sup> Thus, secondhand smoke smokers have a higher risk of suffering from health problems due to smoking. Secondhand smoke has a high enough risk of lung cancer, coronary heart disease, and respiratory problems. According to the World Health Organization (WHO), environmental tobacco smoke is the cause of various diseases and can also affect healthy people who are not smokers. Exposure to cigarette smoke experienced continuously in healthy adults can increase the risk of developing lung disease and heart disease by 20-30 per cent. Research results in several

countries show that cigarette tobacco and its smoke contain various elements, some of which are toxic.<sup>[12]</sup> Cigarette smoke that rises from the base of the cigarette before the cigarette runs out is the most dangerous. Cigarette smoke that has just been extinguished in an ashtray contains three times the benzopyrene (cancer trigger) and 50 times the ammonia content of regular cigarette smoke.<sup>[15]</sup>

Cigarette smoke contains three of the most dangerous chemicals, namely TAR, nicotine, and carbon monoxide. TAR or tobacco latex is a mixture of several hydrocarbon substances, and nicotine is the most significant component in cigarette smoke and is an addictive substance. Carbon monoxide is a toxic gas with a strong affinity for haemoglobin in red blood cells to form carboxyhaemoglobin. In addition to these three compounds, cigarette smoke also contains pyridine, ammonia, carbon dioxide, ketones, aldehydes, cadmium, nickel, zinc, and nitrogen oxides. All of these substances are disruptive to the mucous membranes found in the mouth and respiratory tract at different levels. Cigarette smoke is acidic (pH 5.5), and nicotine is in the form of ions but cannot pass through the membrane quickly so that the mucous membranes (mucosa) of the cheeks absorb nicotine from cigarette smoke.<sup>[12]</sup>

According to WHO (2002), Indonesia ranks fifth in cigarette consumption in the world. Cigarettes have become one of the biggest causes of death in the world.<sup>[16]</sup> The Tobacco Control Support Center and Public Health Association Indonesia in Jakarta showed that 61% of street children are smokers.<sup>4</sup> The smoking prevalence of street children aged 13 to 15 is 41.3%, while the national prevalence of smoking among young children -school children at the same age is only 24.5%.<sup>[11]</sup> Around 80% of smokers in Indonesia start this habit before they are 19 years old. Metro TV News, February 15, 2013, at 16.20, also reported that Indonesia was given the label "Baby Smoker" because the prevalence of child smokers has increased significantly and the age for starting smoking is getting younger.<sup>[17,18]</sup> More than 40.3 million Indonesian children aged 0-14 years are exposed to cigarette smoke in their environment, and as a result, they experience slow lung growth and are more susceptible to respiratory tract infections.<sup>[19]</sup> The national percentage of the population aged 15 years and over who smokes daily is 28.2%.<sup>[17]</sup> According to The Tobacco Atlas 3rd Edition, related to the percentage of the world's population who consume tobacco, it is found that 57% of the population of Asia and Australia. The most significant percentage of smokers in the population in ASEAN countries is in Indonesia (46.16%).<sup>[19]</sup> According to the Indonesian Tobacco Facts, it is estimated that 5% of women in Indonesia smoke. It is estimated that 65.6 million women and 43 million children in Indonesia are exposed to cigarette smoke. It happens because 91% of smokers smoke at home, not far from their wives and children.<sup>[20]</sup> Fertility rates and impotence can occur in women who

smoke actively and passively, both of whom have an increased risk of delaying the ability to become pregnant. For men, smoking can increase the risk of impotence by up to 50%. This data proves that the consequences of using cigarettes will affect the degree of reproductive health to affect the quality of future generations.<sup>[19]</sup>

Effects of Cigarettes and Cigarette Smoke for Health - The risks caused by smoking can be reduced if the nicotine levels in cigarette smoke can be known. If it is assumed that the average person smokes ten cigarettes per day, and it is assumed that all nicotine contained in cigarette smoke is wholly absorbed into the body, then the amount of nicotine that enters the body per day can be calculated.<sup>[18]</sup> Cigarette smoke contains a considerable danger for people who smoke and people around smokers who are not smokers. Among others, cigarette smoke contains approximately 4000 chemicals, of which 200 are toxic and 43 other types that can cause cancer. Freshly extinguished cigarette smoke in an ashtray contains three times the carcinogenic substances in the air and 50 times the eye and respiratory irritant.<sup>[21]</sup> Some of the most common diseases that active and passive smokers suffer from are lung cancer, chronic obstructive pulmonary disease, asthma, and lung infections.<sup>[22,23,24,25]</sup>

Although many female smokers are aware of the dangers of smoking, the number of female smokers seems to be increasing from year to year. It is evident from the increase in the mortality rate from lung cancer which increased by 40% in women, while in men, it was only 3%, in industrialized countries.<sup>[26]</sup> Cigarettes and their smoke are also dangerous for children and pregnant women. The adverse effects of smoking and its smoke on pregnant women include: a) More likely to experience premature birth, pregnancy complications, and infant death at birth.<sup>[21]</sup> b) Every puff of cigarettes will cause suffering to the prospective baby; c) Cigarette smoke affects fetal growth through several mechanisms.<sup>[27]</sup> d) Threatened risk of miscarriage up to 25 per cent than non-smokers; e) Has a 1.5-2.5 times risk of having an ectopic pregnancy so that to remove the fetus must be operated; f) premature rupture of the amniotic fluid before the time of pregnancy, and g) The effect of nicotine contained in cigarettes causes contraction of blood vessels.

### Research Method

This research is analytical. The technique used for data collection in this study was to use research questionnaires distributed to all pregnant women who came for ANC examinations at the Obgyn Polyclinic at Bunda Margonda General Hospital, Depok on December 1 2016 – February 2017, which would be collected using a cross-sectional approach.<sup>[34]</sup> The research was conducted at Bunda Margonda General Hospital, Depok. Data collection by distributing questionnaires will be carried out in December 2016 - February 2017. The population of this study were all pregnant women who came for ANC examination in December 2016 - January

2017. The number of samples was determined using field research techniques, namely research conducted to collect primary data through observation by giving questionnaires to 64 respondents. The next step taken after the respondents filled in all the questionnaires was data processing. The data is processed using the SPSS program and will be presented in tabular form. Data processing is carried out with the following steps: editing, coding, data entry and cleaning [34]. To display the frequency distribution and percentage of each variable in tabular form. To see whether or not there is a statistically significant relationship between the independent and dependent variables, the Chi-square test uses the SPSS program. If the value of  $p = <0.05$ , then there is a relationship, and if the value of  $p = 0.05$ , then there is no relationship.

### RESULT AND DISCUSSION

Respondents in this study were women aged 20-40 years who were pregnant, with a gestational age of 2-35 weeks, who came to the Obgyn Polyclinic of Bunda Margonda General Hospital, with a total of 64 people.

**Table 1: Characteristics of respondents by age.**

	n	%
20 - 25 year	10	15.6
26 - 30 year	23	35.9
31 - 40 year	31	48.4
Total	64	100.0

Gestational age was studied to see from one of the factors causing an abortion in pregnant women apart from inhaling cigarette smoke, namely looking at the mother's age during pregnancy. Based on the table above, of the 64 respondents taken, data on the age of pregnant women who came for ANC examination at Bunda Margonda General Hospital mainly were 31-40 years old. In the study by Tazkiah et al., 2013 age is one of the risk factors for LBW babies, babies born with defects, and stillbirths. The results of Tazkiah's research, maternal age 20 and 35 years are at risk ages for pregnancy and childbirth. 30 Mothers with age <20 years have uterus and hips that have not grown optimally to reach adult size, which results in the safety and health of the fetus in pregnancy disturbed content. Mothers <20 years old can suffer from anaemia because they have to share red blood cells with the fetus they are carrying. Mothers >35 years old have reproductive organs and physiological functions of the birth canal that are no longer flexible, and degenerative diseases are found in the mother's body that can affect pregnancy. That is the process of fertilization, the quality of women's eggs at this age has decreased compared to eggs in women of healthy reproductive age (20-35 years).

**Table 2: Characteristics of respondents based on last education.**

Last education	n	%
Senior High School	15	23.4
Diploma	7	10.9
Bachelor	36	56.3
Magister	6	9.4
Total	64	100.0

Based on the table above, the data obtained from respondents who most perform ANC at the Bunda Margonda General Hospital in Depok are pregnant women with a bachelor's last education.

**Table 3: Characteristics of respondents based on employment status.**

Job-status	n	%
Students	5	7.8
Civil Servant	6	9.4
Private employees	17	26.6
Entrepreneur	7	10.9
House Wife	29	45.3
Total	64	100.0

Based on the table above, the data obtained: respondents with the work status of homemakers are the most, namely 29 (45.3%) of 64 respondents. Work status as a housewife can be interpreted from the time of marriage, not working, or the mother stops working after getting pregnant.

**Table 4: Characteristics of respondents based on the history of childbirth.**

Childbirth History	n	%
Never gave birth	25	39.1
Normal	15	23.4
C-section	24	37.5
Total	64	100.0

Of the 64 pregnant women who checked the womb at the Bunda Margonda General Hospital, 25 people (39.1%) had never given birth. The meaning has never been this pregnancy on average because of the first pregnancy. However, some have never given birth because the baby does not develop and dies in the womb (Appendix 2). 24 out of 64 respondents opted for Secio cercariae (SC) surgery for mothers who have already given birth.

**Table 5: Characteristics of respondents based on abortion status.**

Abortion History	n	%
Never had a miscarriage	37	57.8
once	22	34.4
More than once	5	7.8
Total	64	100.0

Based on the table above, 37 respondents (57.8%) in this study have never experienced miscarriage, and 22 people (34.4%) have experienced an abortion once. This study does not examine the various types of abortion but instead discusses why abortion (miscarriage) can occur. According to research, exposure to cigarette smoke has a significant effect on stillbirths and babies born below average weight. Dzira's research, 2012 found that 25% of pregnant women who inhaled cigarette smoke were at risk of having a stillbirth (miscarriage). The nicotine in cigarettes causes contraction of the blood vessels, resulting in reduced blood flow to the fetal umbilical cord, thereby reducing the ability to distribute substances needed by the fetus. In addition, carbon monoxide from cigarette smoke will bind Hb in the blood, which causes the distribution of nutrients and oxygen supplied to the fetus to be disturbed, so this condition can be at risk of giving birth to premature babies and even death because there is no food intake.

**Table 6: Characteristics of respondents based on knowledge about smoking and its dangers.**

Value	df	Asymp. Sig. (2-sided)
Knowledge of Cigarettes and the Dangers	n	%
Damage to the respiratory tract	21	32.8
trigger various types of cancer	19	29.7
miscarriage	24	37.5
interfere with baby's development	18	28.1
Total	64	100.0

By distributing questionnaires to respondents, in this study, respondents were asked to fill in the knowledge they knew about the dangers of being exposed to cigarette smoke during pregnancy. Based on the table above, the data obtained from the number of respondents' knowledge answers to the dangers of being exposed to cigarette smoke during pregnancy, as many as 21 people (32.8%) of respondents answered that it damaged the respiratory tract. Starting from shortness of breath due to the frequency of smoke that is too much and accumulates, coughing, and causing blackened lungs. Research by Sugiri, 2000 58% of the public understand well and know the dangers of smoking and inhaling cigarette smoke, which damages the respiratory tract. 29.7% of respondents already understand and know the dangers of smoking and being exposed to cigarette smoke, which triggers various types of cancer. However, this opinion is still too general because respondents mention general, not specific, impacts such as the dangers during pregnancy. Meanwhile, 37.5% of other mothers answered the impact of smoking on pregnancy, namely 9.4% of respondents already understood and knew the dangers of smoking and exposure to cigarette smoke, namely miscarriage, and 28.1% of respondents had understood and knew the dangers of smoking and exposure to secondhand smoke, which interfered with the development of the baby.

**Table 7: Characteristics of respondents based on how respondents avoid cigarette smoke.**

Attitude in Avoiding Cigarette Smoke	n	%
Reprimand and remind	34	53.1
Dodge without saying anything	24	37.5
Let	6	9.4
Total	64	100.0

Based on the table above, the data obtained: 53.1% of respondents' ways to avoid reprimanding and reminding the smoker. However, it is inversely proportional to the Yoga 2000 study, that 58.7% of respondents (pro smokers) studied will be shunned by family, friends, or people around them by simply leaving the smoker without saying anything. It is because smokers think that all public places, including public transportation, can be

used as a place for them to smoke, regardless of who is around them.<sup>[22]</sup>

Table 8: Chi-Square Test Results.

Table 8 shows whether there is a significant relationship between the respondent's work and how the respondent avoids cigarette smoke because it is seen from the work and environment that the respondent adapts to take an attitude towards avoiding smoking. The results of the Chi-Square test above show a p-value of 0.240. Because p-value > 0.05, it can be concluded that there is no significant relationship between the respondent's job status and the answer to how the respondent avoids cigarette smoke.

**Table 9: The relationship between employment status by avoiding respondents to cigarette smoke.**

Job Status	How to Avoid			Total
	Reprimand and Remind	Avoid	Let	
Students	0	4	1	5
Civil Servant	5	1	0	6
Private employees	11	4	2	17
Entrepreneur	4	3	0	7
House Wife	14	12	3	29
Total	34	24	6	64

Based on the results from the table above, out of 64 respondents, 34 people (53.1%) prefer to reprimand and remind the smoker not to smoke if there are pregnant women or children. At the same time, 24 people (37%) prefer to stay away without warning the smoker. This behaviour occurs because there is a relationship with the environment where the respondent works, affecting the knowledge and ways of pregnant women to avoid cigarette smoke.

employment status of the respondents, in this case looking at the environment where the pregnant women work. Of the 29 housewives, 14 take action to reprimand and remind smokers about the environment where the smoker smokes; 12 others choose to stay away from the smoker. Among the respondents who reprimanded and stayed away, there was a slight difference.

The results of this study indicate that there is no significant relationship between the behaviour of pregnant women in avoiding cigarette smoke and the

It is concluded from the results of the data obtained that this is not necessarily due to education or where the respondent works, but it could be due to the individual attitude of the respondent who wants to express his discomfort with cigarette smoke.

**Table 10: Chi-Square Test Results.**

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	10.703 <sup>a</sup>	9	0.297
Linear-by-Linear Association	0.000	1	0.985
N of Valid Cases	64		

Table 10 shows whether there is a significant relationship between the respondent's last education and the respondent's knowledge of cigarette smoke because it is seen from the work and environment that the respondent adapts to take an attitude towards avoiding smoking. The results of the Chi-Square test above show a p-value of 0.297. Because p-value > 0.05, it can be concluded that there is no significant relationship between the respondent's last education and the

respondent's knowledge of the dangers of being exposed to cigarette smoke.

**Table 11: Relationship between recent education and knowledge of pregnant women.**

Knowledge	Education				Total
	Senior High School	Diploma	Bachelor	Postgraduate	
Damaging the Respiratory Tract	3	1	14	3	21
Cancer	8	3	7	1	19
Miscarriage	2	0	4	0	6
Interfere with baby's development	2	3	11	2	18
Total	15	7	36	6	64

Based on the results from the table above, the respondents who mostly came to Bunda Margonda General Hospital were classified as follows: Depok with undergraduate education status (36 people), 14 people gave the opinion that exposure to cigarette smoke can interfere with and damage the respiratory tract of both the fetus and the mother—followed by the opinion that smoking can interfere with the development of infants (11-persons) including premature birth, congenital disabilities, and stillbirths. Cigarette smoke can damage the respiratory tract, which is the general answer of society. In this case, cigarette smoke can indeed damage the respiratory tract. It affects everyone, even the smoker, so it is not specific for pregnant women and fetuses. This general knowledge can be obtained anywhere as technology has developed dramatically, and cigarette manufacturers now include the dangers of smoking, TAR and nicotine levels in cigarette packaging. This study concluded that there was no relationship between the last education of pregnant women and mothers' knowledge about the dangers of being exposed to cigarette smoke during pregnancy. It is because knowledge can be obtained from anywhere, such as from the work environment, home environment, environment around the residence, and over time, the internet answers all questions.

## CONCLUSION

Based on the results of the study, it can be concluded that: a) Mother's knowledge of the dangers of being exposed to cigarette smoke during pregnancy is not understood yet, because the respondents' answers are too directed to the general impact, not the impact on pregnant women; b) Most of the respondents took a firm attitude towards smokers, namely by reprimanding and reminding that the respondents were disturbed by the exhaled smoke; c) There is no relationship between work status and mother's attitude to avoid cigarette smoke, and c) There is no relationship between a mother's last education and mother's knowledge of the dangers of exposure to cigarette smoke during pregnancy. This research is still minimal, so that further research is needed with different methods and more complete variables, and pregnant women are strongly advised to be more concerned about themselves, such as reading more magazines about pregnancy and being brave enough to take a stand if disturbed by cigarette smoke around them.

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