PREGNANT WOMEN EXPOSED TO CIGARETTES WITH LOW BIRTH WEIGHT

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ABSTRAK

Salah satu faktor risiko signifikan yang berkontribusi terhadap kejadian BBLR adalah paparan asap rokok selama kehamilan. Asap rokok mengandung lebih dari 4.000 bahan kimia berbahaya, termasuk nikotin dan karbon monoksida, yang dapat memengaruhi aliran darah dan pasokan oksigen ke janin. Penelitian ini bertujuan untuk berspekulasi tentang paparan asap rokok pada ibu hamil dengan kejadian berat badan lahir rendah (BBLR). Metode yang digunakan adalah penelitian kuantitatif dengan pendekatan deskriptif. Populasi yang digunakan adalah seluruh ibu hamil dengan 44 orang dalam bentuk pengambilan sampel yang tidak disengaja. Hasil penelitian menemukan bahwa ibu hamil yang terpapar rokok memiliki peluang lebih tinggi untuk meningkatkan faktor risiko berat badan lahir rendah (BBLR). Intervensi untuk mengurangi paparan tembakau selama kehamilan sangat penting untuk mencegah komplikasi kesehatan pada bayi baru lahir dan meningkatkan kualitas kesehatan ibu dan bayi.

Kata Kunci : Ibu hamil, Berat Badan Lahir Rendah (BBLR), Asap Rokok, Pasif

ABSTRACT

One of the significant risk factors that contribute to the incidence of BBLR is exposure to secondhand smoke during pregnancy. Cigarette smoke contains more than 4,000 harmful chemicals, including nicotine and carbon monoxide, which can affect blood flow and oxygen supply to the fetus. This study aims to speculate on exposure to cigarette smoke in pregnant women with the incidence of low birth weight (BBLR). The method used was quantitative research with a descriptive approach. The population used was all pregnant women with 44 people in the form of accidental sampling. The results of the study found that pregnant women who were exposed to cigarettes had a higher chance of increasing the risk factor of low birth weight (BBLR). Interventions to reduce tobacco exposure during pregnancy are essential to prevent health complications in newborns and improve the quality of maternal and infant health.

Keywords : *Pregnant Women, Low Birth Weight (BBLR), Cigarette Smoke, Passive*

INTRODUCTION

Child mortality is one of the main problems for several countries, including Indonesia. This is also an indicator to assess the success of a country's health development. The objectives of the SDGs are ensuring a healthy life, well-being for all for all ages and lowering the Neonatal Mortality Rate to 12 per 1,000 live births. Low Birth Weight (BBLR) is one of the important indicators of newborn health and is often associated with high rates of neonatal morbidity and mortality. Babies with a birth weight of less than 2,500 grams have a higher risk of developing a variety of complications, including impaired physical and mental development in the future. One of the significant risk factors that contribute to the incidence of BBLR is exposure to secondhand smoke during pregnancy (Tarasi et al., 2022).

Cigarette smoke contains more than 4,000 harmful chemicals, including nicotine and carbon monoxide, which can affect blood flow and oxygen supply to the fetus. Nicotine causes vasoconstriction of the blood vessels of the placenta, while carbon monoxide decreases the ability of hemoglobin to carry oxygen. This condition can inhibit fetal growth, thereby increasing the risk of BBLR. Time brackets In the last 20 years, the number of cigarette connoisseurs has decreased by about 60 million people worldwide, but Indonesia has the third-highest number of smokers in the world, according to WHO data (Khatimah et al., 2024).

Pregnant women who are exposed to cigarette smoke, both as active and passive smokers, have a greater chance of giving birth to babies with low birth weight. In the WHO report, it is stated that exposure to secondhand smoke during pregnancy is associated with a decrease in baby weight at birth, and can increase the risk of low birth weight by 22%. In Indonesia, the number of pregnant women exposed to cigarette smoke is quite high, especially due to the high prevalence of active smokers in households.

According to Eshaghi et al (2024) Exposure to cigarette smoke during pregnancy has complications, one of which is lower birth weight, premature birth, perinatal death, and fetal growth disorders.

A preliminary study conducted by researchers at the Lamper Tengah Health Center in Semarang City, by conducting interviews with pregnant women on average said that their partner is an active smoker and often smokes in the house. So it can be said that the average mother is directly exposed to cigarettes in her environment and there is still a lack of awareness of husbands regarding the dangers of cigarette smoke in pregnant women. Based on this problem, researchers are interested in "Pregnant Women Exposed to Cigarettes with Low Birth Weight Events".

METHOD

The type of research used is quantitative research with a descriptive method. This design is used to describe pregnant women who are exposed to cigarettes with an incidence of low birth weight in the Lamper Tengah Health Center area, Semarang City. Descriptive research is research that aims to provide an objective description or circumstance about a state or condition (Vallen IP, Nella, 2023). The population of this study is pregnant women who are in the working area of the Lamper Tengah Health Center, Semarang City as many as 44 people in October - November 2024 using the *accidental sampling*. The tool used by the questionnaire with the data analysis used is univariate analysis to describe the frequency distribution.

RESULT AND DISCUSSION

Result

Table 1. Distribution of Frequency of Smoking Partner Status in Pregnant Women

Smoking Couple Status	n	%
Smoking partner	30	68,2
Couples who do not smoke	14	31,8
Sum	**44**	**100**

From table 1. It is known that pregnant women who have a smoking partner from 44 samples who have a smoking partner are 30 people (68.2%) and those who do not smoke 14 people (31.8%).

Table 2. Distribution of Frequency of Cigarette Smoke Exposure in Pregnant Women

Exposure to Cigarette Smoke	n	%
Immediately	34	77.3
Indirect	10	22.7
Sum	**44**	**100**

From table 2. It is known that pregnant women from 44 samples were exposed to cigarettes as many as 34 people (77.3%) and 10 people (22.7%) were not exposed to cigarettes.

Discussion

Couples who smoke will be exposed to cigarette smoke from their husbands. The problem of smoking is an important issue in the field of public health, the impact is not only on the health of people who smoke, but also on passive smokers. Pregnant women who are exposed to cigarette smoke from their husbands are at risk of becoming passive smokers. Cigarette smoke contains harmful substances such as nicotine, carbon monoxide, and heavy metals that can reduce the supply of oxygen to the fetus, interfere with the development of the placenta, so that the nutrients received by the fetus become less than optimal, and Increase the risk of premature birth and low birth weight (Cahyani et al., 2023).

Research conducted by Simamora & Ronoatmodjo (2020) The results of his research The proportion of BBLR incidence in mothers with active smoking husbands was slightly higher in mothers with non-smoking husbands. Research conducted by Delcroix et al (2023) Result Active smoking in husbands increases the risk of low birth weight in pregnant women. Because pregnant women directly become passive smokers, which is caused by couples who smoke, contributes significantly to this risk, highlighting the importance of tobacco control policies and smoking cessation efforts.

The behavior of husbands who smoke actively can have a significant impact on the health of pregnant women and fetuses, including increasing the risk of low birth weight (BBLR). Husband's support during pregnancy by quitting smoking habits is very good for pregnant women and increases the chances of giving birth to a healthy baby.

Passive smoking is a combination of smoke *Sidestream* which comes from the end of a

burnt cigarette and smoke *Mainstream* exhaled by smokers. *Environmental Tobacco Smoke* (ETS) belongs to the carcinogen group along with asbestos, benzene and radon gas (Simamora & Ronoatmodjo, 2020). Cigarette smoke is a substance that is very dangerous for pregnancy and certainly has its own impact on pregnant women when exposed to cigarette smoke. As shown in the government's warning on each cigarette pack itself, exposure to cigarette smoke has a high potential to interfere with pregnancy status and fetal health. Exposure to secondhand smoke, both as passive and active smokers, can affect fetal development (Umar & Rachmiyani, 2021).

The presence of exposure to cigarette smoke is divided into low to high level exposure. The more often a pregnant woman is exposed, the higher the chance of low birth weight in the baby. The occurrence of BBLR by exposure to cigarette smoke is caused by the presence of toxic substances (*toxic*) from cigarettes that live in the house (attached to things). These substances will not disappear in a short time. As a result, pregnant women will breathe air mixed with toxic substances (*toxic*) and over time it has an impact on the fetus it carries (Choirunnisa et al., 2022).

Research conducted by Umar & Rachmiyani (2021) The results of the research pad The number of cigarettes and the nicotine level contained in cigarettes are determining factors that can cause mothers who are passive smokers to experience BBLR events. However, in this study, the number of cigarette consumption per day and the nicotine levels in the affected cigarettes in the respondents were not the focus of the researcher and the researcher did not know the nicotine level in the body.

In pregnant women who are exposed to cigarettes, this is one of the causes of the large amount of CO content (carbon monoxide) can cause the birth of BBLR if the exposure is continuous during pregnancy. This is because CO can be bound in maternal haemoglobin, resulting in a decrease in oxygen transport capacity (O^2) in the mother's blood, so that the fetus's body will receive less oxygen. Pregnant women as passive smokers can be exposed to cigarette smoke from various different places, this is referred to as *microenvironments*. *Microenvironments* is a place or location that a person may visit every day for a long period of time. Some of the places included in the *microenvironments* are homes, workplaces, public places, and public transportation (Rahim & Muharry, 2019).

Cigarette connoisseurs must be educated, especially to couples who smoke, that cigarette smoke is not only exposed to themselves but also to passive smokers, especially for pregnant women, which can have negative effects and increase the chance of low birth weight so that it can increase the incidence of pain and mortality in babies.

CONCLUSION

Exposure to cigarettes in pregnant women is a significant risk factor for the incidence of BBLR. Therefore, interventions to reduce exposure to cigarettes during pregnancy are essential to prevent health complications in newborns and improve the quality of maternal and infant health. Education and tobacco control policies in the community need to be strengthened to support healthy pregnancy.

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