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ENVIRONMENTAL TOBACCO SMOKE (ETS) AND BEHAVIOR RISK ON PREGNANT WOMEN

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ABSTRACT

Backgrounds. Tobacco is one of the source of indoor air pollutants. Smoking is hazardous not only for active smokers, but also for passive smoker those who have to breathe involuntarily the environmental tobacco smoke (ETS)

Objectives. This reseach analysis the knowledge, attitude and behavior risk of pregnant women and environmental tobacco smoke (ETS)

Methods. This research was an observational analytical study conducted cross sectionally among the pregnant women. The samples size ware taken for 45 pregnant woman which come to paramedis in sumber sari area conducted april to may 2012. The characteristic were collected through interview guide.

Results. The Respondent's Characteristics are in the range 23-35 years old (68,8%), the number of parity is the firs pregnant (48,9%), the majority of education is elementary school (31,1%), the majority of working status is housewife (31,1%). The husband's respondent characteristics are in the range 23-35 years old, the majority of education is senior high school (28,9%), and working status are non government officaly (88,9%).

The majority of knowledge are enough (48,9%), neutral attitute about smoke harmfull (71,1%), and behavior risk is high (86,7%), and the exposure risk of ETS is high (48,9%).

There is correlation ($p= 0,01$, $\alpha=0,05$) between behavior risk and exposure risk of ETS.

Conclusions. It concluded that, there are behaviour risk in pregnant women and exposure risk of ETS. To get the good quality generation in the future, Indonesia must build the policy in health system limiting exposure to ETS especilly for pregnant women and fetus.

Keywords : *behaviour risk, pregnancy, ETS.*

INTRODUCTION

There are 1,26 Million smoker in the world. And more than 15 Million cigarett inhaled people in the world. Indonesia is the development country that had much active smoker. According to World Health Organization (WHO) Indonesia is the third in the world

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and cause the death till 400, 000 people every year. There are 28,2 % Indonesian are active smoker, it means that there are one active smoker among four people (BPS, 2010).

Prevalencies active smoker in east jawa who smoking every day is 25,1% (Risksdas, 2010). Jember is a city in the east java Indonesia. East java is the area which the highest production of tobacco in Indonesia with total production almost 56%. Total production of tobacco in east jawa in 2011 are 114816 ton (East java agricultural department of Indonesia, 2011).

Indoor air pollution among the top five environmental risks to public health in America. EPA (Environmental Protection Agency) studies of human exposure to air pollutants indicate that indoor levels of many pollutants often are significantly higher than outdoor levels. These levels of indoor air pollutants are of particular concern because it is estimated that most people spend approximately 90 percent of their time indoors. Indoor air pollutants can occur in the in homes, office, schools and other indoor environments where people live, work and play.

Tobacco is one of the source of indoor air pollutants. Tobacco is the second major cause of death and disease in the world. One in ten deaths of adults worldwide occurs due to smoking which comprises about 5 million deaths every year. Cigarettes had alot of poison that can intake the body while smoke. Smoking is hazardous not only for active smokers, but also for passive smoker those who have to breathe involuntarily the environmental tobacco smoke (ETS). Secondhand tobacco smoke or called (ETS), is a combination of mainly sidestream smoke released from the burning end of a cigarette and also from partly exhaled mainstream smoke. Toxic gases and particulate matters of ETS remain suspended in the air of a room, attached to the surface of furniture and walls long after smoking is has ceased (WHO, 2007).

ETS is very dangerous, because it contain mere than 4000 toxic chemical and approximately 69 "known" inducer carcinogens (WHO: 2007 EPA:1992). It has been shown that sidestream ETS smoke actually contains higher concentrations of certain toxic chemicals, including several cancer-causing ones, than does mainstream smoke. Some compounds are 10 times higher in sidestream than in mainstream smoke. The passive smokers get nicotine and tart 3x more than active smoker, 5x corbon oxide (CO), 46x amonia, 3x nicel, and 50x Nitrosamine (EPA 1992; CDC 2004, 2006).

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The toxic substances of ETS are nicotine, carbon monoxide, nitrogen oxide, ammonia, acrolein, methyl isocyanate, hydrogen cyanide, phenol, cadmium, tart, arsenic, formaldehyde, acetone, respirable suspended particulates, etc. The carcinogens in ETS are benzopyrene (lung cancer), nitrosamines (cancers of bladder, respiratory system, and other organs), aromatic amines (cancers of bladder, and breast), benzene (leukemia), formaldehyde (nasal cancer) and polonium-210 (radioactive).

In adults ETS is a human lung carcinogen, can cause lung cancer in adult non-smokers and that children of parents who smoke have increased frequency of respiratory symptoms and lower respiratory tract infections, and heart disease. And in a children ETS exposure increases the risk of lower respiratory tract infections such as bronchitis and pneumonia. EHSO (2011) estimates that between 150,000 and 300,000 of these cases annually in infants and young children up to 18 months of age are attributable to exposure to ETS. Of these, between 7,500 and 15,000 will result in hospitalization, increases the prevalence of fluid in the middle ear, a sign of chronic middle ear disease, irritates the upper respiratory tract and is associated with a small but significant reduction in lung function, increases the frequency of episodes and severity of symptoms in asthmatic children. The report estimates that 200,000 to 1,000,000 asthmatic children have their condition worsened by exposure to environmental tobacco smoke.

Pregnancy is the special condition from mother which there is fetus development their system organ almost 9 month. Mother must be careful to take care the fetus from the environment poison exposure such as cigarette smoke. Smoking during pregnancy is associated with increased risk of maternal and infant adverse outcomes. For the mother, these include higher rates of placental abruption, placenta praevia, premature labour and premature rupture of membranes. For the baby, adverse outcomes include low birth weight, preterm birth, intra-uterine growth retardation, perinatal death and Sudden Infant Death Syndrome (CDC, 2004; 2006). The agreement state by Ridwan (2006) says that smoke ETS have risk in placental abruption and low birth weight (sig 0,01), it depend on the number of husband cigarettes smoke per day. There is a scientific evidence that maternal ETS exposure during pregnancy may lead to transplacental carcinogenesis (CDC, 2004). An association between passive smoking of pregnant women and postnatal childhood cancers, such as leukemia, lymphoma, and brain tumor has been also found (CDC, 2004)

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The mother's knowledge, attitudes and behavior to take care the pregnancy are the most important thing. It can decrease the exposure risk toxican during the pregnancy. The aims of the reseach are analysis the correlation between knowledge, attitude and behavior risk of pregnant women and environmental tobacco smoke (ETS).

METHODS AND MATERIALS

This research was an observational analytical study conducted cross sectionally among the pregnant women. The samples size ware taken for 45 pregnant woman which come to paramedis in Kecamatan Sumber Sari Kabupaten Jember conducted April to May 2012. The characteristic were collected through interview guide.

RESULTS AND DISCUSSION

Respondent Characteristics

Age

The average of age in the participans are 23-35 years old (68,8%). Age are important thing in the maturity. It influence in the knowledge and attitide. People which are 23 – 35 years old called young adult (Santrock, 2001). The optimum development of physic and mental occurs in the young adult. This is the best age for woman to get pregnancy, because in this age women was predicted in the best physic and mental to get pregnancy.

Parity

There are 48,9 % respondens that get the first pregnancy and 31,1 % get the second pregnancy (see table 2). The history of pregnancy is the important thing for mother to take care the baby. The mother who get the first pregnancy usually always more carefully than other, that because they dont have experience about how to take care the pregnancy.

Education

The majority education of the Respondents (31,1%) is elementary school, and college is 13,3 %. Education contribute to the knowledge, attitude and practice (Sumitro, 1998). Good education can help people more open to any others and acces informations.

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Working Status

Most of respondents is housewife (31,1%), non officer (farmer, personal selling etc) is 28,9% and the officer (teacher, nurse, goverment officer) is 26,7%. Approximately housewives have much time at home than working women. They spend alot of time at home while the pregnantcies. So if the family members are active smoker, ETS at home will be higher around them. (see table 1)

Table 1. Distribution Age of the Respondents

No	Respondent Characteristic	Amount	%
1.	Age range of respondent (years)		
	15-18	4	8,8
	19-22	9	20
	23-35	31	68,8
	> 35	1	2,2
	Total	45	100
2.	Number of parity		
	1	22	48,9
	2	14	31,1
	3	7	15,6
	4	2	4,4
	Total	45	100
3.	Education		
	Elementary school	14	31,1
	Junior high school	13	28,9
	Senior high school	13	28,9
	College	5	13,3
	Total	45	100
4.	Working Status		
	Housewife	14	31,1
	Non officer (farmer, personal selling etc)	13	28,9
	Officer (teacher, nurse, goverment officer etc)	12	26,7
	Total	45	100

Husband's Respondent Characteristic

AgeThe majority of husband's respondents age is 23-25 years old (86,6%) and there are 13,4% was > 35 years old. **Education.** The majority of husband's respondents education

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is senior high school (28,9%). **Working Status.** Non government officialy like farmer, gardener, street vendors, etc are majority (88,9%). (see table 2).

Table 2. Distribution Age of the Husband's Respondent

No	Husband's Respondent Characteristics	Jumlah	%
1.	Age range of husbands (years)		
	15-18	-	-
	19-22	-	-
	23-35	39	86,6
	> 35	6	13,4
	Total	45	100
2.	Education		
	Elementary school	12	26,7
	Junior high school	11	24,4
	Senior high school	13	28,9
	college	9	20
	Total	45	100
3.	Working status		
	Non government officialy	40	88,9
	Government officialy (teacher, nurse etc)	5	11,1
	Total	45	100

Knowledge on ETS Health Effects for Pregnant Women and Fetus

Respondents' knowledge of cigarettes smoke are harmful during pregnancy was enough (48,9%) because the majority incorrect indicated that smoking increase the risk of teratogen and risk of low birth weigh. In otherside, respondents' knowledge was high. There are 44,4% respondents understand health effect particularly on pregnant woman and fetus. (see table 4.)

Knowledge often come from experience or other people like teachers, parents or media like television, newsletter, megazine etc (Tjitarsa, 1992). People will have behavior base on knowledge (Walgito, 2004). But not all research agree with it. Pona (1998) says that behavior not always base on knowledge, a good knowledge in the healthy not always make people have the healthy behavior. In their research Passey (2012) show that knowledge of risk cigarettes smoke was high, but respondent still smoking during pregnancy because of the social norm (Passey, 2012)

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Table 4. Knowledge on ETS Health Effects for Pregnant Women and Fetus

No	Knowledge	Jumlah	%
1.	Less	3	6,7
2.	Enough	22	48,9
3.	High	20	44,4
	Total	45	100

Attitude Towards Smoking and ETS

The majority of respondents had neutral attitudes (71,1%) to cigarettes harmful during the pregnancy. (see Table 5) They agreed with statement that not always stay a way from cigarettes smoke during the pregnancy and inhaled cigarette smoke at home. Their attitude were permissive toward to smoker and inhaled the cigarette smoke during pregnancy. The reasons why they had the attitude are smoking is the common habits. They consider that not commonly to forbid the smoker smoking around them. Especially forbid their husband, parents, brother, uncle, cousin or other member of their family to not smoking around them while during the pregnancy.

There are correlation between knowledge and attitude (Purwanto, 1998), good knowledge will be produce good attitude (Notoatmojo, 2005). And a good attitude will produce good behavior (Gerungan, 2000).

Spearman SPSS 19 is used to analysis correlation between knowledge and attitude in this research. Spearman correlation show that there are no correlation between knowledge and attitude ($p= 0,07$; $\alpha=0,05$). There are so many things influence the attitude. It can be from knowledge, believe, emotional, social norm, habits, etc. The fact show that the respondents had enough knowledge about harmful of cigarette smoke during the pregnancy, but they had neutral attitude. Respondents considered that smoking at home while there are pregnancy is a normal social norm. Although they know the harmful of cigarette smoke, they couldnt do anything to avoid the smoke at home or another place.

The majority of respondents had bad behavior (86, 7%) (see table 6). Respondents are highly exposed to environmental tobacco smoke (ETS) everywhere. They dont try to avoid the cigarette smoke during the pregnancy although at home. Early study (Atabekyan, 2007) shows this in forms tolerate behavior of pregnant women towards passive smoking in the households and all interviewer mention no action to avoid or minimize tobacco smoke. They

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let their husband, parents, uncle, cousin and other people smoking at their home during the pregnancy. They say that they afraid to forbid other people who smoking around them. So they still inhaled the cigarette smoke during the pregnancy every time and every where. There are correlation between attitude and behavior (sig $p=0,01$ $\alpha=0,05$). Neutral attitude of cigarette smoke contribute in bad behavior of cigarette smoke. The determinants of this problem do not work separately, there are interrelated with each other as well as with social and cultural issues (Atabekyan, 2007)

Peer behavior (subjective norm) and attitude is a important thing influence the behavior. In the research Ganley (2012) had shown that Subjective norm and attitude may predict smoking but knowledge was not a predictor, where as knowledge of the hazard of smoking does not appear to influence smoking behavior, but tobacco use among young adults may directly influence by overall attitude and peer and family smoking behavior.

This was agreement with the finding of an earlier study (Atabekyan, 2007) that 95% women interviewed were exposed to ETS during their pregnancies. No rules to smoking at home, it show that 53% reported that no restriction in hauseholds for family members and guest, smoking allowed in some rooms.

Table 5. Attitude Towards Smoking and ETS

No	Attitudes	Jumlah	%
1.	Negatif	7	15,6
2.	Netral	32	71,1
3.	Positif	6	13,3
Total		45	100

Table 6. Behavior Risk of Pregnant Women to Avoid ETS

No	Behavior	Jumlah	%
1.	High	39	86,7
2.	Low	6	13,3
Total		45	100

Exposure Risk of Environmental Tobacco Smoke

According to smoking status of respondents, smoking status of husbands respondent, number of smoked cigarettes per day by family members, number of the smoker at home

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and Inhaled cigaretts smoke at home during pregnancy. The exposure risk of environmental Tobacco Smoke is high (48,9%) and middle (37,8%). See table 7.

The majority of the respondents are passive smoker (97,8%). Responden still inhaled the cigaretts smoke during pregnancy at home because of there are people who active smoker at their home (86,7%). The active smoker are hausband, father, brother or cousin. There are more than one persons who are active smoker at home (97,8%), and they spend more than 12 cigarettes per day (43,9%). Respondents claim to be inhaled the smoke of cigarettes at home during pregnancies (91,1%)

Table 7. Exposure Risk of ETS at Indoor

No	Attitude	Jumlah	%
1.	Low	6	13,3
2.	Middle	17	37,8
3.	High	22	48,9
	Total	45	100

The analysis shows that there are correlation between behavior ETS and exposure risk (sig $p=0,01$ $\alpha=0,05$). The ETS behavior and exposure risk during pregnancies must be controlled, because it can be dangered for mother and fetus. In their reseach, Hernandes C, et. al (2011) showed that baby from the active smoker mother and passive smoker had slow responds, and baby which come from passive smoker mother (ETS) had low motoric development, and cannot control their behavior and responds well in their fisiologis, sensoric, motoric and responde.

CONCLUSIONS AND RECOMENDATION

Conclusion

This study not only has identified knowledge, attitudes and risk behavior the pregnant women in the cigarrets smoke but also the risk exposure of cigarrets smoke at indoor. Respondents had a high exposure risk of ETS because of social norm. They dont have a brave to forbiden the family member especially their husband not to smoke around them during their pregnancies.

Recommendation

Government must be educated the members of family's pregnant women not to smoking around the pregnant women, and support the pregnant women to have a brave to avoid and leave the smoker to protect their pregnancy while the smoker are their husband, father or other people. Stay a way from the cigarette smoke during the pregnancy can produce good quality generation in the future. Socialization about the harmful of cigarette smoke can be application in poster, leaflet, posyandu etc. Good cultural and social norm of cigarette smoking must be build together by government and community's programs. To protect future generations of Indonesia a policy limiting exposure to ETS should be developed. Indonesia needs rule and healthy programs which designed to straighten up smoking area for people to create the good habits of behavior active smoker.

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