



PROCEEDING

conference and exhibition

Addressing Tobacco Problems in Developing Countries

Economic Impact of Tobacco Use
Social Determinants of Tobacco Use and Demand Reduction Interventions
Culture, Employment and Agriculture: Between Tobacco Myth and Reality
Tobacco Use and Health
Youth, Cigarettes, and Drugs



Wednesday - Thursday, December 5-6, 2012

University of Muhammadiyah Yogyakarta

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Addressing Tobacco Problems In Developing Countries

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**CALL FOR PAPERS
PRESENTATION**

Abstract

**THE RISK FACTORS OF GREEN TOBACCO SICKNESS
(GTS) AMONG THE TOBACCO PICKERS
AT LEGOKSARI VILLAGE
TLOGOMULYO SUBDISTRICT, TEMANGGUNG DISTRICT,
CENTRAL JAVA**

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ABSTRACT

Background : Green Tobacco Sickness (GTS) is one of the risk of health and safety at work suffered by tobacco pickers. This disease occurs through skin exposure to nicotine in tobacco leaves are still wet. The main livelihood of the villagers Legoksari are tobacco farmers, with presentation 100 percent of the population are tobacco farmers too. The purpose of this study was to know about risk factors of GTS among the tobacco pickers at Legoksari Village, Tlogomulyo Subdistrict, Temanggung District, Province of Central Java, Indonesia.

Method : This type and design of research was cross sectional study. The sample size in this study are 108 respondents. Sampling method used non-probability sampling with purposive sampling. Data taken with questionnaire and check-list. The variables examined in this research include duration of work, smoking habit, and the used of personal protection device.

Result : Results showed that of 108 respondents found 38 tobacco pickers (35,2%) had positive GTS and 70 tobacco pickers (64,8%) had negative GTS. Bivariate analysis showed a relationship between smoking habit with incidence of GTS (P Value = 0,001 and RP = 3,188). There was not statistically significant relationship between duration of work (P Value = 0,282 and RP = 1,944) and the used of personal protection device (P Value = 0,05 and RP = 1,653).

Conclusion : There is a statistically significant relationship between smoking habit with incidence of GTS but in the other hand there is no statistically significant relationship between duration of work and the used of self protection device.

Keywords : Green Tobacco Sickness (GTS), smoking habit, duration of work, personal protection device.

Full Paper

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A. INTRODUCTION

The cultivation and use of tobacco and its product has been around in Indonesia since century's ago. Whether it's being consumed by the local or exported overseas, 90 percent of tobacco production is coming from three major provinces in Indonesia. East Java (55 %), Central Java (22 %) and West Nusa Tenggara (12 %). Tobacco is one the biggest commodity that contributes millions of dollars to our country's revenue. Tobacco has been known as a "controversial" plant because of its negative effects towards human's health and welfare. There are a lot of medical researchers are being conducted to confirm tobacco's bad impact in our life. Many life threatening diseases particularly in respiratory area are caused by the dangerous substances in the cigarettes. Not only the cigarettes are bad for our health, the production process of it is also contributing to some serious health risk for the workers.

Green Tobacco Sickness(GTS) is one of the serious health risk amongst the tobacco's farmers. This illness is caused by intensive direct exposure of the skin to the wet (freshly picked) tobacco's leaves. Although GTS has not been considered as a deadly threat to the workers, but the effect of this disease to the worker's body has caused some discomfort such as nausea, vomiting, anxiety, facial pallor and severe headache and directly reduce the productivity of the workers work.

Based on the observation and interviews with the stakeholder on the study site in Legoksari village (Located on the Sumbing mountains, Temanggung, Central Java). It shows that on march 2012, the population is 1.603 people that consist of 415 families. The main occupation of them is tobacco's farmers. The entire village area stretch about 185 acres and the 478 acres has been utilized as the tobacco's farm. This fact clearly stated that people in this area relay their living so much on the tobacco's farming.

Tobacco that is being cultivated in this area is the variety of Kemleko which content of 3.75 to 8.65 nicotine level in it. This kemleko variety is considered as the highest quality of tobacco because of its high nicotine content. The farmers in this area are also applying different ways of planting their tobacco which uncommon in most tobacco's farm in Indonesia. In this farming area, the farmers are not using the traditional way of growing the tobacco by using the "second utilized plants" such as carrots and nutmeg. These farmers are only able to plant this tobacco during its special season which makes it impossible for other plants to grow out of their season.

Based on this explanation, a scientific research needs to be conducted to be able to determine the correlation between the risk issue of health amongst the tobacco's farmers and their daily exposure towards their job in Legoksari village, Tlogomulyo district, Temanggung Central Java.

B. METHOD OF RESEARCH

This research is conducted using the analytical observational method with cross sectional study. The populations of 108 farmers were involved in this process. The data retrieval was gathered using the non probability sampling process combined with the purposive sampling technique. Unit variant and bi variant are applied in the data analysis process and the bi variant analysis uses the chi square and fisher exact method.

C. RESULT

1. Respondents characteristic

The data are based on the age group, level of education, occupation, level of income and marital status. The data is retrieved as listed below on tabel 1 :

Tabel 1. Distributed frequency of respondents characteristic based on age, level of education, occupation, level of income and marital status.

No.	characteristic of respondents	number of people	Percentage (%)
1	Age:		
	< 31 years old	47	43,5
	≥ 31 years old	61	56,5
	Total	108	100
2	level of education:		
	Not graduated from elementary school	14	13
	Elementary school	31	28,7
	Junior High school	47	43,5
	Senior High school	16	14,8
	Total	108	100
3	Occupation:		
	Labor	34	31,5
	Farmer	74	68,5
	Total	108	100
4	Level of income:		
	< Minimum wages (709.500)	32	29,6
	≥ Minimum wages (709.500)	76	70,4
	Total	108	100

No.	characteristic of respondents	number of people	Percentage (%)
5	Marital status:		
	Married	92	85,2
	Single	16	14,8
	Total	108	100

Based on table 1, it shows that the respondents are mostly from the age group of above 31 years old which is 61 people (56,5 %).the respondents whose graduated from junior high school are also the most dominant number based on the level of education which is 47 people (43,5 %) and about 74 people (68.5 %) are working as the tobacco's farmers. Meanwhile, the numbers of respondents who earn more than the minimum wages are 76 people (70.4 %) and those respondents that are married which is 92 people(85.2 %) are the dominant number in this research.

2. Frequency of variable distribution

The analysis of the frequency based on duration of work, smoking habit and the use of safety tools as protection for tobacco's farmer due to the GTS cases on the study sites as listed on table 2 :

Table 2. Distribution of respondents characteristic based on the research variables.

No.	Research variables	Number of people	Percentage (%)
1	duration of work		
	New farmers	3	2,8
	Senior farmers	105	97,2
	Total	108	100
2	Smoking habit:		
	Non smoker	6	5,6
	Smoker	102	94,4
	Total	108	100
3	the use of safety tools:		
	Not fully protected	33	30,6
	Fully protected	75	69,4
	Total	108	100

Based on table 2, it shows that out of 108 farmers, 3 people (2.8 %) are the new comer as farmer where the rest of 105 people (97.2 %)are already in this job for a while. There are 6 farmers (5.6 %) whose not smoking and 102 farmers (94.4 %) who smokes regularly. The data also shows that 33 farmers are not protected during their work while the rest of 75 farmers (69.4 %) are fully protected.

3. The correlation between two variables

The result from bi variant analysis based on the duration of work, smoking habit and the use of safety tools as protection due to the GTS cases on the study sites are shown on table 3 :

Table 3. The correlation between the variables and GTs cases

No.	Variable	RP	P	CI 95%
1	duration of work	1,944	0,282	0,837-4,517
2	smoking habit	3,188	0,001	2,392-4,247
3	the use of safety tools	1,653	0,05	1,005-2,717

Based on the duration of work ,the statically analysis shows that new comer as tobacco's farmers are 1.9444 times have more chance to suffer from GTS compare to the senior farmers. The correlation between smoking habit and GTS is clearly shown (P = 0,001).the biological analysis shows that no smoking farmers are likely to catch GTS 3.188 times compare to the regular smoking farmers.

The correlation between the use of safety tools as protection and the case of GTS is not clearly visible in this study result. Based on the biological analysis, it is found that those farmers that are not fully protected are 1.653 times in risk of suffering the GTS compares to those farmers who are fully protected.

D. EXPLANATION

The diagnosis of GTS appears based on the symptoms that the farmers have during their working hours. These symptoms seem to disappear during their recess time and coming back as soon as they start their work again. There are some dominant symptoms such as anxiety, exhausted, severe headache and excessive sweat. The more rare symptoms such as nausea and chest tightness are also found among the farmers. These results are co relevant with the previous research done by Suprpto which proves that the effect of nicotine to the spontaneous nerves system has caused some symptoms like headache and anxiety. The effect of nicotine is also influence the digestive system and the eksokrim gland which lead to some symptoms like nausea, vomiting and excessive sweat.

1. The correlation between duration of work and GTS cases.

The risk of getting GTS is tightly related to the amount of nicotine that being exposed directly to the skin. Researchers have agreed on the fact that the initial absorption of nicotine into the body through the skin has the same side effects as if someone is inhaling the cigarette for the first time. This activity will trigger some discomfort feelings such as headache, coughing and difficulty in breathing. Nicotine is known for its addictive effect that causes the users to crave more and more. in the case of active smoker, the nicotine has been accumulated inside the body thus the smokers will not feel the same discomfort effects as if they smoke for the time.

This theory is also applicable to the GTS cases where the senior farmers whose been exposed to the nicotine on daily basis have a higher body toleration towards the discomfort feelings compare to the new comers. It clearly explains why the body can create some sort of

resistant mechanism after being exposed to extensive and intensive amount of nicotine.

The research found that the new farmers that are suffered from GTS are 66 % and senior farmers who suffer the same case are only 34 %. This result is relevant to the previous research done by McKnight and Spiller⁶, whose focus their research on the duration of work experience. the research showed that there is no statistic evidence of significant correlation between those farmers whose been working for one year and farmers whose been working for five years. This result is argued by the further study done by Suprpto which focus on the incident and the risk factors of GTS among the farmers in Bansari village, one of the variables in this research was the working experience of the farmers. Based on this study, using the bi variant analysis, the value of OR 19.60 and CI 95 % (3,49<OR<97,6) and P = 0,00 which interpret as tightly related in statistic.

In this research we found that the new farmers are more likely to suffer from GTS cases than the senior farmers. This fact confirms that the length of work experience has a significant influence in the GTS cases where the senior farmers are usually more cautious and more likely to minimize their direct exposure to the nicotine on the fresh picked leaves. The result of this research is not thoroughly cover all the significant variables, therefore we also found no correlation between the variables such as the content level of nicotine, the nicotine level in urine and humidity .These variables will be such a valuable resources to be used in the further research.

2. The correlation of smoking habit and GTS cases.

During this research, we discovered some new evidences about the difference between the smoking habit of the farmers who live in the study site and the farmers who live outside the study site. The farmers who live in the study site are categorized as “the heavy smoker”. They consume two packs of cigarettes daily where the farmers from outside the study site only consume less than one pack per day.

Based on this fact, it explains why the farmers who are categorized as the “heavy smoker” are less likely to suffer from GTS because of their high body resistant towards the nicotine exposure. In contrary, those farmers who consume fewer cigarettes per day are more likely to suffer from GTS. The rule of thumb for this case is the less consumption of cigarettes then the higher chance of getting the GTS.

The smoking habit is statically proven contributes to the GTS cases. The intensive use of tobacco will decrease the chance of getting GTS although this fact will not be relevant with the health message about the bad effect of tobacco use. The farmers are encouraged to take an alternative solution such as equipped themselves with safety tools to protect them from GTS. Another alternative for this farmers are avoiding picking out the tobacco’s leaf in the morning when it still wet.

3. The correlation between the use of safety tools and GTS cases.

The use of safety tools as protection has no statistic correlation with the GTS cases although the previous research has shown some correlation between them. The research done by Suprpto has proven that wearing the long sleeves shirt help the skin from getting the bad effect of nicotine exposure by reducing the absorption of the nicotine on the skin.

According to this research, we also found that the farmers prefer to use the safety tools during their work based on their attempt to avoid the tobacco’s sap called “ mingsri” that stick to their skin and very hard to clean even if they use the soap.

It is obvious that these farmers are using the safety tools for the purpose of their comfort during their work. Most of them do not fully aware of the other use of this safety tools. These farmers need to be educated more about the advantage of using the safety tools to protect them from GTS.

Speaking of the matter of GTS, there are also some natural factors that influence the GTS cases such as the temperature. The temperature in this village is 24.42 with humidity of 86.25 % and the wind speed is 18.3 km/hour. This kind of nature condition is suitable for the GTS cases to rise because of the humidity in this area is causing the tobacco's leaf become very wet in the morning.

Every job comes with its consequences and tobacco's farmers are no different. They need to be aware of all the risk of their job environment and trying to minimize those risk by using the safety tools as a protection, picking out the tobacco's leaf when it is not wet and changing their clothes as soon as they finish their job.

The problem faced by the health care provider is to find the best solution for these farmers to work without getting the side effect of the tobacco. This is the ethic code for the entire health care provider as it's their obligation to achieve this goal.

E. CONCLUSION DAN SUGGESTION

1. Conclusion

The conclusions of this research are :

- a. There is no correlation between the duration of work of tobacco's farmers with the case of GTS in Legoksari village, Tlogomulyo Temanggung Central Java.
- b. There is a correlation between the smoking habit and the case of GTS in Legoksari village Temanggung Central Java.
- c. There is no correlation between the use of safety tools as protection with the case of GTS in Legoksari village Temanggung Central Java.

2. Suggestion

- a. To the Ministry of Health as the rule maker : we expect the health care provider in this area are more active in giving information to the tobacco farmers about the risk of GTS in their job field.
- b. To the other researcher : we hope that this research can help other researcher to conduct more useful research in terms of the bad effect of tobacco.

REFERENCES

1. Padmo, S. dan Djatmiko, E. 1991. *Tembakau. Kajian Sosial dan Ekonomi*. Yogyakarta: Aditya Media.
2. Ikatan Ahli Kesehatan Masyarakat Indonesia. 2010. *Fact Sheet Petani Tembakau di Indonesia*. Jakarta: TCSC IAKMI.
3. Departemen Kehutanan Republik Indonesia. 2010. *Komoditas Tembakau*. Jakarta.
4. McBride, S.J., Altman, D.G., Klein, M., dan White, W. 1998. Green Tobacco Sickness. Review Artikel dari: *Tobaccocontrol.com*. Volume 7: 294 – 298. Diunduh: 12 Februari 2012.
5. Suprpto, S. 1996. *Insidensi dan Faktor Risiko Green Tobacco Sickness (GTS) Pada Petani Pemetik Daun Tembakau di Desa Bansari Kecamatan Parakan, Kabupaten Temanggung, Jawa Tengah*. Tesis. Jakarta: Universitas Indonesia.

6. McKnight, H.R. dan Spiller, A.H. 2005. Green Tobacco Sickness in Children and Adolescents. *Public Health Reports from Association of School of Public Health*. Volume 120: 602 – 605.
7. Arcury, T.A., Quandt, S.A., dan Preisser, J.S. 2001. Predictors of Incidence and Prevalence of Green Tobacco Sickness Among Latino Farmworkers in North Carolina, United States of America. *Journal Epidemiology of Community Health*. Volume 55: 818 – 824.