



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

conference and exhibition

Addressing Tobacco Problems In Developing Countries

CONTENT

STUDENTSHIP GRANT

ABSTRACT:

Peer Education to Increase Junior High School Teenagers Involvement in Preventing Smoking Behaviour in Bantul District <i>Heni Trisnowati, Supriyati</i>	5
Lozonges Formulation from Extract Miracle Fruit with Freeze Dryer Methode: Improvement Herbal Dosage from Addiction Smoker therapy <i>Yosi febrianti, Mutiara Herawati, Chyntia Paradhita</i>	6
The Effect of Larkspur (Delphinium) Inhalation to Decrease Nicotine Withdrawal Syndrome in Intravenous Nicotine Induced Sprague Dawley Rats <i>Nurvita Risdiana, S.Kep., Ns.</i>	7
The Effect Of Disease Picture Printed-Cigarette Package To Active Smokers of High School Student in Yogyakarta <i>Munawir Saragih, S.Ked</i>	8
Analysis of Ratio 3-Hydroxycotinine: Cotinine: Phenotyping Study of Cytochrome P450 2A6 on Indonesian Smoker <i>Christine Patramurti</i>	9

FULL PAPER:

Peer Education to Increase Junior High School Teenagers Involvement in Preventing Smoking Behaviour in Bantul District <i>Heni Trisnowati, Supriyati</i>	13
Lozonges Formulation from Extract Miracle Fruit with Freeze dryer Methode: Improvement Herbal Dosage from Addiction Smoker therapy <i>Yosi febrianti, Mutiara Herawati, Chyntia Paradhita</i>	29
The Effect of Larkspur (Delphinium) Inhalation to Decrease Nicotine Withdrawal Syndrome in Intravenous Nicotine Induced Sprague Dawley Rats. <i>Nurvita Risdiana, S.Kep., Ns.</i>	40
The Effect Of Disease Picture Printed-Cigarette Package To Active Smokers of High School Student in Yogyakarta <i>Munawir Saragih, S.Ked</i>	51

Analysis of Ratio 3-Hydroxycotinine: Cotinine: Phenotyping Study of Cytochrome P450 2A6 on Indonesian Smoker <i>Christine Patramurti</i>	62
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SEED RESEARCH GRANT

ABSTRACT:

The Effect of Second Hand Smoke Exposure on Lung Function and Urine Cotinine of Cafe and Restaurant Employee of Semarang City <i>Nurjanah SKM, Lily Kresnowati, Abdun Mufid</i>	79
Participatory Learning Action (PLA) To Increase Family Involvement in Reducing Cigarette Consumption For Poor Families in Yogyakarta <i>Tri Hastuti Nur Rochimah, M.Si, Salmah Orbayinah, M.Kes., Apt</i>	80
The Role of Local Leader on The Second-Hand Smoke Protection in Yogyakarta <i>Supriyati, Arika Dewi</i>	81
Smoking Among the Poor and The Impact on Economy and Health in Bali <i>Made Kerta Duana, Ketut Suarjana, Putu Suariyani, Ketut Sutiari</i>	82
Comparison Study of Youth and Cigarette Factory Worker Perceptions Toward Cigarette Advertisement and Their Smoking Behavior Before and After Exposure to Brief Physician Counseling in Sleman and Kudus Regency <i>Ekawati, Fitriana Murriya, Shamadiyah, Nurasih</i>	83
The Evaluation of Yogyakarta Special Province Governor Regulation No. 42 Year 2009 Implementation <i>Didik Joko Nugroho, Tutik Istiyani</i>	84

FULL PAPER:

The Effect of Second Hand Smoke Exposure on Lung Function and Urine Cotinine of Cafe and Restaurant Employee in Semarang City <i>Nurjanah SKM, Lily Kresnowati, Abdun Mufid</i>	87
Participatory Learning Action (PLA) To Increase Family Involvement In Reducing Cigarette Consumption For Poor Families In Yogyakarta <i>Tri Hastuti Nur Rochimah, M.Si, Salmah Orbayinah, M.Kes., Apt</i>	95
The Role of Local Leader on The Second-Hand Smoke Protection in Yogyakarta City <i>Supriyati Arika Dewi</i>	102

Smoking Among the Poor and The Impact on Economy And Health in Bali <i>Made Kerta Duana, Ketut Suarjana, Putu Suariyani, Ketut Sutiari</i>	108
Comparison Study of Youth and Cigarette Factory Worker Perceptions Toward Cigarette Advertisement and Their Smoking Behavior Before and After Exposure to Brief Physician Counseling in Sleman and Kudus Regency <i>Ekawati, Fitriana Murriya, Shamadiyah, Nurasih</i>	111
The Evaluation of Yogyakarta Special Province Governor Regulation No. 42 Year 2009 Implementation <i>Didik Joko Nugroho, Tutik Istiyani</i>	125

CALL FOR PAPERS PRESENTATION

ABSTRACT:

Risk Factors of Green Tobacco Sickness (GTS) Among the Tobacco Pickers at Legoksari Village Tlogomulyo Subdistrict, Temanggung District, Central Java <i>Zly Wahyuni, Widodo Hariyono</i>	135
The Nutritional Status Analysis Of Toddler In The Smoking Family in Bogor <i>Tria Astika, Kurniansyah, Dwidjo Susilo</i>	136
The Factors Affecting Adolescent Smoking Behavior in The Pillars Fourth Residents Village West Pamulang South Tangerang City in The Year 2011 <i>Badra Al- Aufa, Mochamad Iqbal Nurmansyah</i>	137
Smoking, Alcohol and Drugs at Girl Adolescents: Are They Forgotten in Developing Countries? <i>Dewi Rokhmah, Khoiron</i>	138
Short Paper: Youth And Cigarettes: The Urgency for School of Tobacco Control Policy at School <i>Dwi Amalia</i>	139
The Law and Regulation of Tobacco and Its Effect to Our Health <i>Ensia Lasahid Lentera</i>	140
Cigarette Advertising Exposure and Smoking Behaviour Among Teenagers at Junior High School in Bantul District Yogyakarta <i>Heni Trisnowati, Yayi Suryo Prabandari, Retna Siwi Padmawati</i>	141
The Impact of Tobacco Use in Health: Case from Bangladesh <i>Muhammad Sohel Rana</i>	142

The Dilemma in Tobacco Production Among the Farmer in Bangladesh <i>Muhammad Sohel Rana</i>	143
The Comparison of Ankle Brachial Index (ABI) Value in Smoker and Non Smoker to Peripheral Arterial Disease (PAD) Case <i>Ratna Indriawati, Sylvania Mekasari Putri</i>	144
The Real Struggle of Eliminating Smoking Habit in The Nuclear Family <i>Wiwit Ameliawaty</i>	145
Smoking Habits and Pulmonary Physiology <i>Titiek Hidayati</i>	146
 FULL PAPER:	
The Risk Factors of Green Tobacco Sickness (GTS) Among the Tobacco Pickers at Legoksari Village Tlogomulyo Subdistrick, Temanggung Districk, Central Java <i>Zly Wahyuni And Widodo Hariyono</i>	149
The Nutritional Status Analysis of Toddler in The Smoking Family in Bogor <i>Tria Astika, Kurniansyah, Dwidjo Susilo</i>	156
The Factors Affecting Adolescent Smoking Behavior in The Pillars Fourth Residents Village West Pamulang South Tangerang City in The Year 2011 <i>Badra Al- Aufa, Mochamad Iqbal Nurmansyah</i>	163
Smoking, Alcohol and Drugs at Girl Adolescents: Are They Forgotten in Developing Countries? <i>Dewi Rokhmah, Khoiron</i>	168
Short Paper: Youth and Cigarettes: The Urgency of Tobacco Control Policy at School <i>Dwi Amalia</i>	175
The Law and Regulation of Tobacco and Its Effect to Our Health <i>Ensia Lasahid Lentera</i>	180
Cigarette Advertising Exposure and Smoking Behaviour Among Teenagers at Junior High School in Bantul District Yogyakarta <i>Heni Trisnowati, Yayi Suryo Prabandari, Retna Siwi Padmawati</i>	184
The Dilemma in Tobacco Production Among the Farmer in Bangladesh <i>Muhammad Sohel Rana</i>	194

The Comparision of Ankle Brachial Index (ABI) Value in Smoker and Non Smoker to Peripheral Arterial Disease (PAD) Case <i>Ratna Indriawati, Sylvania Mekasari Putri</i>	198
The Real Struggle of Eliminating Smoking Habit in The Nuclear Family <i>Wiwit Ameliawaty</i>	203
Smoking Habits and Pulmonary Physiology <i>Dr. Titiek Hidayati M. Kes.</i>	205

**CALL FOR PAPERS
PRESENTATION**

Abstract

THE NUTRITIONAL STATUS ANALYSIS OF TODDLER IN THE SMOKING FAMILY IN BOGOR

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The life cycle of toddler is characterized by rapid growth. This fact is resulting from the increasing need for nutrients. Nutritional status of toddler is determined by inadequate nutrition, infectious diseases, inadequate access to food and care during maternity, lack of infant health services, unhealthy environments and government policies in the social, economic, educational and health areas. The toddler's growth is also influenced by the tobacco consumption habits of parents that lead to "displacement effect", such as the reduced allocation for domestic investment growth of the children (nutrition, health and education) because the financial resources are used for buying cigarettes.

The purpose of this study is to analyze nutritional status of the toddler from the family of smokers in the Mekarwangi Village, Tanah Sareal, Bogor. The study is conducted in May to June 2011 using the cross-sectional study. The numbers of samples required are 92 families with the toddler and using the technique of the sample with the proportion of a population formula. Primary data is retrieved through measurement of height and weight of the toddler and distributing questionnaires to parents. Statistical analyzes performed unit variant and bi variant through Chi-square test to determine the relationship between the dependent variable (nutritional status of children) with the independent variables (number of family income, the number of cigarette consumption, type of cigarettes smoked, the allocation of expenditure for cigarettes, energy intake and nutrition knowledge $\alpha=0.05$ mother).

This study finds that 83 children (90.2%) have a good nutritional status and 9 children (9.8%) with malnutrition status. More than 20% of family income per month in toddler with malnutrition is used to buy cigarettes. In a family with good nutritional status of the toddler, less than 20% of family income per month is used to buy cigarettes. A total of 53 respondents (57.6%) admit the number of family members who smoke is only one person. 49 respondents (53.3%) consume 10-14 cigarettes per day. A total of 62 respondents (67.4%) smoke in the house and as many as 67 respondents (72.8%) admit their toddler are exposed to cigarette's smoke. About 59 respondents (64.1%) spend Rp. 10,000-Rp 20,000 per day to buy cigarettes. A total of 59 respondents (64.1%) have a desire to quit smoking in the past year.

The bi variant of 95% confidence level shows a significant correlation between family income, maternal nutrition knowledge, energy intake, number of cigarettes consumed and the allocation of household expenditures for smoking on nutritional status of toddler. On the other hand, there's no significant relationship among sex, maternal occupation and type of cigarettes consumed.

Based on this results, this study suggest that the Bogor Government, especially the government of Village Mekarwangi should apply the smoke-free area around the young children, put a banned on cigarettes advertising, promotion and sponsorship. The local government should encourage a program that can help people to quit smoking.

Full Paper

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BACKGROUND

Tobacco's consumption has proven bringing so many disadvantages to the economy in terms of medical cost and the incapability of earning income caused by sickness and death as an effect of tobacco. Another form of disadvantage is the "displacement effect", which means the reduction of money spent in the family for the children's welfare (food, health and education) because the money is allocated to buy the cigarettes. (Gani, 1995 in Roni, 2005).

Amongst the poor family in Indonesia, it is very common that the smoking father usually spend some of their income to buy the cigarettes instead of spending it for their children welfare. This circumstance has lead to poor nutrition intake amongst the children in this type of family. The smoke from the cigarette damage the lower respiratory system and increase the oxygen pressure which lead to bronchitis, lung dysfunction, cancer and eventually death. Although most of researches focus on the correlation between the smoking habit and its negative side effect such as cancer, respiratory problems and cardiovascular disease, there are only few that actually concern about the effect of smoking habit towards the children's welfare within the family that smokes regularly. A stunning fact shows that even in the poorest family in Indonesia, the money being spent for the cigarettes are more than the money the family spend for their children nutrition, health care and education.

In 2002 Indonesin consumed about 182 billions of cigarette sticks, this country ranked the fifth after China (1.697 billion), United States (464 billion), Russia (375 billion) and Japan (299 billion). In 2009 Indonesian consumed about 239 billion of cigarettes sticks as we ranked the fifth after China (2.163 billion), United states (357 billion), Russia (331 billion) and Japan (259 billion) (Tobacco Atlas, 2009).

The prevalence of the tobacco users reached its lowest point in 2007 which was 35.8 % and reached its highest point which was 31.5 %. There is a raise of 5.6 % in the social economy group during its lowest point in 2004 to 2007 while the highest point of the social economy group decreased by 4 % (Riskesdas, 2007). In 2001, the mortality number caused by the tobacco's use reached 427.948 per year with total economic loss of 127 billion rupiah or 7,5 times higher than the custom revenue the country received which was 16,5 billion rupiah (Kosen, 2006).

The prevalence of the smokers who smoke inside the house in Mekarwangi residences Bogor is 75,7% out of the total numbers of 12.021 households with the number of 1.402 toddler or 11,6% from the total population. According to this number, it is very important to determine the correlation between the nutritional status of the toddler in this area and the smoking habit within the family.

This research aims to analyze the nutritional status of toddler that live within the smoking family in Mekarwangi residences Bogor in 2011. This research is expected to give a better picture for us about the nutritional status of toddler, level of income, level of cigarettes consumption by the father, type of cigarettes, spending budget for cigarettes, energy intake and mother's knowledge of nutrition. This research is also targeted to analyze the correlation between gender, type of mother's occupation, amount of family income, the level of mother's knowledge, energy

intake, the amount of cigarettes being consumed, type of cigarettes and the budget allocated for cigarette towards the nutritional status of toddler in the smoking family in Mekarwangi residences Bogor.

METHOD OF RESEARCH

This research is using the quantitative method with cross sectional study and conducted from March to June 2011. There were 92 respondents of toddler and the mothers who take care of their toddler.

The prime data included the household expenses and the anthropometric index. The household expenses were used to determine the household variable while the index data is used to determine the nutritional status of the toddler by measuring their weight based on the age, gender, the knowledge of mother and the energy intake.

The data of gender, the smoking habit of the parents, level of economic condition and level of knowledge of the mother were retrieved through in depth interview and questionnaire. The data of meal consumption was gathered from the 24 hours recall.

RESULT

Nutritional status is defined as a measurement of the amount of food and nutrition intake into our body on daily basis using the anthropometric index. For toddler aged 1 to 4 years old the nutritional status is classified based on the cut-off point unit of standard deviation or the Z-score standard of body weight per age according to the WHO_NCHS standard.

The toddler nutritional status in Mekarwangi residences Bogor has shown as listed below on table 1 :

Tabel 1
The nutritional status of toddler in Mekarwangi residences Bogor In 2011

Nutritional status	Total	%
good	83	90,2
more than good	0	0
less than good	9	9,8
Total	92	100

The result of body weighing based on the age (body weight / age) on 92 toddlers found that the average z-score is 2.89. About 83 toddlers (90.2 %) have the z-score of -2 to 2 so they can be categorized as those who has good nutritional status. about 9 toddlers (9.8 %) have the z-score of - 2 which fall into the category of having poor nutritional status. Meanwhile, no toddler were found in the category of having more than good nutritional status.

This level of nutritional status is mostly influenced by the smoking behavior within the family. The table 2 shows the smoking habit in Mekarwangi residences Bogor.

Tabel 2
Distribution of frequency of the smoking behavior in Mekarwangi residences
Bogor in 2011

Name of variable	n	%
Number of family who smoke		
1	53	57,6
2-3	39	42,4
Total	92	100
Place of smoking		
Inside the house	62	67,4
Outside the house	30	32,6
Total	92	100
Toddler are exposed to cigarette's smoke		
Yes	67	72,8
No	25	27,2
Total	92	100
Willingness to quit smoking		
Yes	59	64,1
No	33	35,9
Total	92	100

The result shows that the entire numbers of toddler are living among the family members who smoke regularly or at least one person in the family smokes cigarette. About 67.4 % of smokers admit that they smoke inside the house thus about 72.8 % of toddlers are being exposed to cigarette's smoke inside their house. There are 64 % of family members who have the desire to quit their smoking habit while the rest of 36 % have no desire at all to do so.

The respondents characteristic were drawn on table 3 where it clearly shown that the vast majority of the respondents occupation are the entrepreneur (63 %), followed by those who work in the private sector (13 %) and the rest work as labor (12 %). Most of the mothers (70.6 %) are housewives while 17 % are the entrepreneur.

Table 3
Distribution of frequency of the respondents' characteristic in Mekarwangi residences
Bogor In 2011

Name of variables	n	%
Father's occupation		
Public servant	4	4,3
Military service	2	2,2
Private worker	12	13,0

Name of variables	n	%
Entrepreneur	58	63,1
Labor	11	12,0
Retired	0	0
Unemployed	0	0
Farmers	5	5,4
Total	92	100
Mother's occupation		
Public servant	5	5,4
Private worker	3	3,3
Entrepreneur	16	17,4
Labor	1	1,1
Housewives	65	70,6
Farmers	2	2,2
Total	92	100
Amount of family income		
< Rp 500.000	3	3,3
Rp 500.000 - Rp 1.000.000	38	41,3
> Rp 1.000.000	51	55,4
Total	92	100
Money spent for cigarette		
< Rp 10.000	83	90,2
Rp 10.000 - Rp 20.000	9	9,8
> Rp 20.000	0	0
Total	92	100

Most of the toddler's families (55 %) earn above Rp. 1.000.000,- and 41,3% families earn between Rp. 500.000,- to Rp. 1.000.000,-. Nevertheless, about 90% of the toddler's families spend below Rp. 10.000,- per day to buy cigarette and only 10% of families spend between Rp. 10.000,-to Rp. 20.000,-. The result of bi variant analysis using the chi square test shows that the amount of family's income is tightly related to the nutritional status of the toddler within that family (P-value 0,037) as shown on table 4 .

The proportion numbers of toddler that categorized as less in nutritional status are more likely coming from the family who earns below Rp 1.000.000 (12,2%) compare to the family with income above Rp 1.000.000 (7,8%).

Tabel 4
The correlation between the amount of family's income and the toddler's nutritional status in Mekarwangi residences Bogor in 2011

Income	Nutritional status				Total		P Value
	less		decent		N	%	
	n	%	n	%			
low (< Rp 1.000.000)	5	12,2	36	87,8	41	100	0,037
high (>Rp 1.000.000)	4	7,8	47	92,2	51	100	
Total	9	9,8	83	90,2	92	100	

The correlation between the family's expenses and the toddler's nutritional status is shown on table 5.

Tabel 5
The correlation between the family expenses for cigarette and the toddler's nutritional status in Mekarwangi residences Bogor in 2011

Alokasi Allocated budget Family's expenses for cigarettes	Nutritional status				Total		P Value
	less		decent		N	%	
	n	%	n	%			
> 20 %	9	100	0	0	9	100	0,000
< 20 %	0	0	83	100	83	100	
Total	9	9,8	83	90,2	92	100	

Based on the statistic analysis using the chi square test, it is found that the result of P-value 0,000 (P-value < 0,05) which means that there is a tight correlation between the amount

of family expenses for cigarettes and the toddler's nutritional status. The proportion numbers of toddler with poor nutritional status are found in the family with household expenses more than 20 %.

DISCUSSION

The nutritional status is defined as a balance measurement between the food intake and the use of this food inside the body. The nutritional status is determined based on the Z score of body weight and age. out of 92 samples, About 9 toddlers or 9.8 % are classified into the group of poor nutritional status. this number is less than the national number of 13 %. About 83 toddlers or 90.2 % are having good nutritional status and this number is also higher than the national number of 76.2 %.(Riskesdas, 2010).

The nutritional status of toddler are influenced by some factors such as energy intake, amount of family income, the clean and healthy behavior of the parents and the knowledge of the parents about nutritional status. (WHO, 2005).

This research shows that family who earn more than Rp 1.000.000,- per month are more likely to have their toddler with good nutritional status (47 toddlers) while 4 toddlers were still classified as poor nutritional status. The families who earn less than Rp 1.000.000 with toddler who have good nutritional status are 36 toddlers while 5 toddlers are falling into the category of poor nutritional status.

The cigarette's consumption has brought many disadvantages for the household particularly the "displacement effect", which means the reduction of money being spent for the welfare of the children because the money is being allocated for buying the cigarette. This result also shows that the family who spend more than 20 % of their income per month for cigarette expenses tend to have toddler with poor nutritional status.

.On the other hand, families who spend less than 20 % of their income per month to buy cigarette tend to have toddler with good nutritional status (83 toddlers).

CONCLUSION AND SUGGESTION

Generally, toddler that live in Mekarwangi residences Bogor have good nutritional status (90 %) and only 10 % have poor nutritional status. The majority of father's occupation is entrepreneur (63 %) and the majority's occupation of the mothers is housewives (70.6 %). There are 54.4 % families who earn more than Rp 1.000.000,- per month, the rest are below Rp.1.000.000,- per month.

In every household in this area, at least one member of the family smokes regularly (57.6 %) with an average consumption of 10-14 cigarettes per day (53.3 %). 67 % of these smokers smoke inside the house thus about 73 % of toddler are exposed directly to the cigarette's smoke every day. About 64 % of smokers spend Rp 10.000,- - Rp 20.000,- per day and only 46% who spend less than Rp. 10.000,- per day to buy cigarette..

This research can be used as a consideration for those rule makers to apply the non smoking area policy in Mekarwangi residences Bogor particularly around the toddler. Hopefully, this research can be useful as resources for the community to raise a better awareness about the harm of cigarette's smoke particularly for toddler therefore the community can stand together against this issue of bad smoking behavior to create a healthier environment.

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