



## The Effectiveness of Socialization-media in Improving the Knowledge of Children and Teenager toward Cigarette in Denpasar, Bali

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### Abstract

Background: Prevalence of children and teenagers smoker in Indonesia was more than 45%. This shows the gap between results and efforts of the Indonesian government to reduce tobacco cigarette consumption rate through various programs. Method: Aim of this study was to determine the level of children and teenager knowledge about cigarettes and to measure the effectiveness of socialization media improving their knowledge. This research was held in SMP Negeri 10 Denpasar and SD No. 12 Padangsembian. Design of study was cross-sectional experimental with cluster sampling. The sample size was 203 subjects divided into six groups. The study consists of a pre-test, intervention, and post-test. Level of knowledge about cigarette was determined by questionnaire and divided into 3 levels (good, average, and poor). Interactive communication was given to three groups of students, and the other got advertisement video as an intervention. Result: The overall level of knowledge among children and teenager was good (50.2%), average (37.4%), and poor (12.3%). Level of knowledge among SD No. 12 Padangsembian students was good (42.1%), average (42.8%), and poor (15.2%). While in SMPN 10 Denpasar 70.7% of them was good, average (24.1%), and poor (5.2%). There was no significant difference between pre-test and post-test in the advertisement video intervention group ( $P > 0.05$ ). An increasing number of students with good knowledge was found in interactive communication intervention such as: group I (58%;  $p < 0.05$ ), group II (21.2%;  $p < 0.05$ ), group III (23.2%;  $p < 0.05$ ). Conclusion: Interactive communication could be used as media socialization to increase the knowledge of children and teenager about cigarettes and its negative impact on human health.

**Keywords:** Cigarette, Knowledge, Socialization, Media, Children, Teenager.

### Introduction

The cigarette is one of the processed tobacco products that are widely consumed by people in the world. There are approximately 600 ingredients formed a cigarette; some of them are nicotine, tar, methanol, acetic acid, cadmium, and formaldehyde. Burned cigarettes can produce 7,000 types of harmful chemicals that can induce many kinds of disease, such as cancer, chronic lung disease, and heart disease [1].

Nowadays, the governments and health organizations around the world were collaborating to promote anti-tobacco socialization. It aimed to reduce the number of tobacco consumption especially smokers

worldwide. Their movement succeeded a decreased number of the smoker to 1.1 million in the world at 2015, although still there was an increasing number of a smoker in the Mediterranean and African region [2]. Research by Marie Ng et al. in 2014 about the prevalence of smokers found decreased in smoker prevalence from 1980 to 2012 by 10% [3].

Indonesia had a different smoker epidemiology data trend. Based on the Indonesia Ministry of Health data in 2014, there was a slight increase in smoker proportion from 2007 (23.7%) until 2013 (24.3%) [4].

That fact showed unchanged of Indonesian smoking behavior from several years. Based on data by Basic Health research in 2013, 85% of Indonesia household was exposed by second-hand cigarette smoke. Indonesian government estimated comparison of active and passive smoker mortality rate in Indonesia was 8 to 1 at 2013. Bali as a province in Indonesia had the same smoker epidemiology data trend. From 2007 to 2010 there was an increase in the smoker prevalence in Bali by 6.1% [5]. The widening age range of smoker was current smoker issued in Indonesia.

Based on data by Basic Health Research in 2013, the prevalence of 13-15 years old smokers was more than 42% in Indonesia [6]. That number was 25% higher than young smoker prevalence in the United States. The number of child and teenager smoker in Indonesia had also increased in recent years. That was indicated by an increased ratio of smokers under 18 years old from 2013 (7.2%) to 2016 (8.8%).

Basic Health Research also found 3% of children 10-14 years old smoked in Indonesia and 1.5% of boys and 1.4% of girls 5-9 years old in Indonesia tried to smoke [6,7]. All of those facts showed the gap between anti-tobacco socialization efforts by Indonesia Government with their expected result and widespread focus of the problem towards children and young smokers. The Indonesian government has made various anti-tobacco programs, such as smoking-free socialization through television and other media, non-smoking area programs, and free counseling programs related to stopping smoking campaign [8].

However, what is unknown is whether these programs have touched the children and teenager communities, especially in Indonesia. Different mindset, comprehension, and behavior of children and teenager from adults make them as particular communities who need more attention.

Smoking is a behavior that closely related to knowledge and attitudes about it. Nowadays, there is still a lack of data on the knowledge of children and teenager about cigarettes and the effectiveness of media socialization on increasing that knowledge in Bali. Research about children and teenager knowledge about cigarette and its negative impact become

urgency because of a high number of children and teenager smokers, especially in Bali.

It is hoped that this research can provide an overview program to deal with smoking problems in Indonesia especially children and teenager smoker. This research conducted in two places, SMP Negeri 10 Denpasar and SD No.12 Padangsembian.

## Method

### Time and Place of Research

The research was done at two places, SMP Negeri 10 Denpasar and SD No. 12 Padangsembian from January 26<sup>th</sup> - 27<sup>th</sup> 2018.

### Population and Sampling

The target population consisted of elementary school and junior high school students. Samples of this research were all students in SMP Negeri 10 Denpasar and SD No. 12 Padangsembian class IV, V, VI with exclusion criteria students who could not read and write.

### Sampling Technique and Research Variable

Simple Random Sampling was used to find two groups sample at SMP Negeri 10 Denpasar and four groups at SD No. 12 Padangsembian, and total sampling was used to get all of group member as a sample. Our research variables were, 1) Age, 2) Gender, 3) Subjects dominant activity at home, 4) Subjects experience in anti-tobacco campaign or hear about anti-tobacco socialization, 5) media source of anti-tobacco socialization, 6) Level of knowledge (pre-test), and 7) level of knowledge (post-test).

### Data Collection Technique

A simple random sampling was carried out among four groups chosen in SD No.12 Padangsembian and two groups in SMP Negeri 10 Denpasar. The total number of students in the group will be taken to become the research sample. Data on age, sex, subject's dominant activity at home, subjects experience in the anti-tobacco campaign or hear about anti-tobacco socialization, and the level of knowledge in pre-test will be obtained before the intervention.

The intervention will be divided into two types, 1) intervention by an advertisement on television and 2) intervention by face-to face

interactive communication intervention. Each intervention will be given to three sample groups.

We used three advertisement videos; their titles were “Iklan Layanan Masyarakat-Berhentilah Merokok-Kehilangan Pita Suara Akibat Asap Rokok”, “Iklan Layanan Masyarakat Berhenti Merokok#Suaratanparokok30s”, and “Iklan Layanan Masyarakat Berhentilah Merokok-Penyakit Paru Akibat Perokok Pasif”. A questionnaire will be distributed again for post-test.

**Data Analysis**

The data obtained will be further analyzed using descriptive quantitative and

comparative bivariate analysis. SPSS version 17 was used as software in data analysis.

**Result**

Subjects were consisted of SD No.12 Padangsembian (71.5%) and SMP Negeri 10 Denpasar (28.5%) students; with an average age of the sample was 11.40±1.29 years old. This study found dominant subjects activity at home were read novels, comics, or textbooks (39.4%) and played social media / online game (33.5%).

Most of subjects mostly listened about anti-smoking socialization or anti-tobacco campaign from television/radio programs (45.6%) and directly when the activity took place (39.1 %) (Table 1).

**Table 1: Baseline Characteristics of Respondents**

Variables	Percentage (n=203)	Mean±SD
<b>Name of school (%)</b>		
SD No. 12 Padangsembian	71.5	
SMP Negeri 10 Denpasar	28.5	
<b>Gender (%)</b>		
Boy	37.4	
Girl	62.6	
<b>Age (years)</b>		11.40±1.29
<b>Most activities at home (%)</b>		
Read a book	39.4	
Watching television	25.1	
Listening to radio	1.5	
Playing social media/online game	33.5	
Others	5.0	
<b>Experience to hear about anti-tobacco socialization (%)</b>		
Yes	84.7	
Never	15.3	
<b>Media resource of anti-tobacco socialization (%)</b>		
Television	45.6	
Social Media	10.6	
Newspaper	4.7	
Direct activity	39.1	

Based on Table 1, most of the samples got anti-tobacco information from television (45.6%) and direct activity (39.1%), while the most activities at home were reading books either novels, comics, or textbooks and playing social media. This study found that the level of knowledge, in general, was good

(50.2%), average (37.4%), and poor (12.3%) (Table2). The level of knowledge about cigarettes based on school origin results shows in Table 2 whereas the predominant results were good (70.7%) in SMP Negeri 10 Denpasar and average (42.8%) in SD No.12 Padangsembian.

**Table 2: Level of knowledge in general and schools**

Variables	Frequency	Percentage (%)
<b>General</b>		
Good	102	50.2
Average	76	37.4
Poor	25	12.3
<b>SD No.12 Padangsembian</b>		
Good	61	42.1
Average	62	42.8
Poor	22	15.2

SMP Negeri 10 Denpasar		
Good	41	70.7
Average	14	24.1
Poor	3	5.2

**Table 2: Level of knowledge among groups in advertisement video intervention**

Variables	Pre-test N (%)	Post-test N (%)	P-Value
<b>Group 1</b>			0.157
Good	42 (43.8%)	51 (53.1%)	
Average	37 (38.5%)	30 (31.3%)	
Poor	17 (17.7%)	15 (15.6%)	
<b>Group 2</b>			0.083
Good	27 (65.9%)	30 (73.2%)	
Average	12 (29.3%)	9 (22.0%)	
Poor	2 (4.9%)	2 (4.9%)	
<b>Group 3</b>			0.157
Good	12 (80.0%)	14 (73.2%)	
Average	3 (20.0%)	1 (22.0%)	
Poor	0 (0.0%)	0 (0.0%)	

P-Value: statistically significant if less than 0.05

**Table 3: Level of knowledge among groups in face-to-face interactive communication intervention**

Variables	Pre-test N (%)	Post-test N (%)	P-Value
<b>Group 1</b>			0.00*
Good	5 (16.1%)	23 (74.2%)	
Average	22 (71.0%)	6 (19.4%)	
Poor	4 (12.9%)	2 (6.5%)	
<b>Group 2</b>			0.01*
Good	26 (78.8%)	33 (100%)	
Average	6 (18.2%)	0 (0.0%)	
Poor	1 (3.0%)	0 (0.0%)	
<b>Group 3</b>			0.00*
Good	29 (67.4%)	39 (90.7%)	
Average	11 (25.6%)	4 (9.3%)	
Poor	3 (7.0%)	0 (0.0%)	

\*P-Value: statistically significant if less than 0.05

The comparison of pre-test and post-test result in video advertisement interventions as well as face-to-face interactive communication group was shown in Table 2 and 3. There were significant differences between pre-test and post-test result in face-to-face interactive communication group ( $P < 0.05$ ). However, there was no significant difference between pre-test and post-test result in video advertisement intervention group ( $P > 0.05$ ).

### Discussion

In this study, there were 12% of children and teenager who had poor knowledge about cigarettes. There were various studies on the children and teenager knowledge about cigarettes had been carried out in Indonesia. Most of the results got at least 10% of children and teenager had poor knowledge about cigarette. Research conducted by Ali at 2015 on fifth-grade elementary school students in Cilacap found 15% of students had poor knowledge about cigarette [9].

A study conducted by Setianingrum R in Boro Village, Purworejo also got similar

results, whereas 26.2% of the teenager had poor knowledge about cigarette [10]. Another study conducted by Zuliyani in 2016 at SMP 2 Bantul, Yogyakarta, got 46.5% of teenagers had poor knowledge, and only 17.6% of teenagers who had good knowledge [11]. Research conducted by Hasriani et al. in 2014 at SMP Negeri 30 Makassar also got results that were dominated by children poor of knowledge as many as 60% of students [12].

All of those facts show that there is an imbalance between the government's efforts to decrease the number of smoker and results that were obtained by them. Internal and external factors can influence level of subjects' knowledge about cigarette as well as the future impacts such as hypertension etc [9,13].

Age, experience, and intelligence that formed internal factor could be excluded because researcher had done adjustment. A component of external factors that must be considered was information. It related to anti-tobacco socialization and anti-tobacco campaigns that had been carried out by

Indonesian government and level of children and teenager knowledge. Effective content, media providers, and procedures for delivering information can influence their results. The dominance children and teenager activity at home was reading books and playing social media/ online games, while most of them got information through television / radio media and direct anti-tobacco socialization.

Those facts can provide an overview of the need to expand the media information service towards print media such as school books, novels, and comics and social media or online games. Based on the aforementioned above, the study found that face-to-face interactive communication have a significant result in increasing level of knowledge following intervention. This study illustrates face-to-face interactive communication can be a good media socialization to increase knowledge of children and teenager about cigarettes. Interactive communication was defined as two-way communication between speaker and participant.

This allows an active information exchange between participants and speakers. Interactive communication about cigarettes and its negative impact not only can be done through a special seminar or socialization activity. Simple activities in each school carried out by the teacher can be an option in providing information about cigarettes effectively and efficiently.

## References

1. Rabinoff M, Caskey N, Rissling A, Park C (2007) Pharmacological and chemical effects of cigarette additives. *Am j. Public Health*, 9(11):1981-1991.
2. WHO report on the global tobacco epidemic (2008) Geneva, World Health Organization, 2008.
3. Ng M, Freeman MK, Fleming TD, Robinson M, Dwyer-Lindgren L, Thomson B et al (2014) Smoking prevalence and cigarette consumption in 187 countries, 1980-2012. *JAMA*, 311(2):183-92
4. World Health Organization, Regional Office for South East Asia (2012) Global adult tobacco survey: Indonesia Report 2011. Jakarta, Indonesian Ministry of Health.
5. Dinas Kesehatan Provinsi Bali (2010) Angka Prevalensi Perokok di Bali. Riset Kesehatan Dasar (RISKESDAS).
6. Badan Penelitian Dan Pengembangan Kesehatan Kementerian Kesehatan Republik Indonesia. Riset Kesehatan Dasar (2013) Jakarta: Ministry of Health.
7. World Health Organization (2012) Global youth tobacco survey: Indonesia report 2011. Geneva: WHO.
8. Indonesian Ministry of Health (2012) Pemerintah Terus Berupaya Kendalikan Dampak Rokok [Internet]. Available from: [www.depkes.go.id/article/print/2051/pemerintah-terus-berupaya-kendalikan-dampak-merokok.html](http://www.depkes.go.id/article/print/2051/pemerintah-terus-berupaya-kendalikan-dampak-merokok.html) [cited January 12<sup>th</sup> 2018]
9. Ma'ruf A (2015) Tingkat pengetahuan tentang bahaya merokok pada siswa kelas

Communication between children and teenager with their parents at home also includes interactive communication that can be used as one of the strategies for increase knowledge about cigarettes for children. The advertisement video currently still one of the largest anti-smoking socialization facilities in Indonesia. Media advertising video providers can be one of effectiveness determinant of advertisement target. We found most children playing social media / online games when at home, so social media / online games can be one of media for anti-tobacco advertising video for children and teenager.

## Conclusion

Level of children and teenager knowledge in general about cigarette was 50.2% good, 37.4% average, and 12.3% poor. There was a significant increase in the percentage of good knowledge children and teenager at post-test result compared to pre-test in face-to-face interactive communication interventions. There were no differences in pre-test and post-test result at video advertisement intervention group.

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V SD Negeri Pucung Lor 02 Kecamatan Kroya Kabupaten Cilacap tahun pelajaran 2014/2015 [Skripsi]. Available from: [https://eprints.uny.ac.id/32213/1/Ali%20ma%E2%80%99ruf\\_12604227062.pdf](https://eprints.uny.ac.id/32213/1/Ali%20ma%E2%80%99ruf_12604227062.pdf). [Cited January 12<sup>th</sup> 2018]

10. Setianingrum R (2012) Hubungan tingkat pengetahuan remaja tentang bahaya merokok dengan perilaku merokok pada remaja di desa boro wetan kecamatan banyu urip purworejo tahun 2009. *Jurnal Komunikasi Kesehatan P3M Akbid Purworejo*, 3(1):1-10.
11. Zuliyani (2016) Gambaran tingkat pengetahuan anak remaja tentang bahaya rokok di SMPN 2 Sanden Bantul [Skripsi]. Available from: <http://repository.umy.ac.id/bitstream/handle/123456789/2623/HALAMAN%20JUDUL.pdf?sequence=2&isAllowed=y>. [Cited January 12<sup>th</sup> 2018]
12. Hasriani H, Sewang N, Muzakkir H (2014) Hubungan Pengetahuan dengan Perilaku Merokok Siswa Kelas II SMP Negeri 30 Makassar. *Jurnal Ilmiah Kesehatan Diagnosis*, 5(5):601-604.
13. Pertiwi GAR, Aryawangsa AAN, Prabawa IPY, Manuaba IBAP, Bhargah A, Ratni NWS, Budiana IPG (2018) Factors associated with visit-to-visit variability of blood pressure in hypertensive patients at a Primary Health Care Service, Tabanan, Bali, Indonesia. *Family Medicine and Community Health*, 6(4):191-199.