The Collaborative Funding Program for Southeast Asia Tobacco Control Research

REGIONAL EFFICACY TESTING GRAPHIC HEALTH WARNINGS IN ASEAN COUNTRIES OF CAMBODIA, INDONESIA, LAO PDR, MALAYSIA, PHILIPPINES, THAILAND, AND VIETNAM

Maizurah Omar, Ph.D.

Financial support from The Rockefeller Foundation and Thai Health Promotion Foundation
REGIONAL EFFICACY TESTING
GRAPHIC HEALTH WARNINGS
IN ASEAN COUNTRIES OF CAMBODIA,
INDONESIA, LAO PDR, MALAYSIA,
PHILIPPINES, THAILAND, AND VIETNAM

Prepared for
Southeast Asia Tobacco Control Alliance (SEATCA)
Under The Collaborative Funding Program for Tobacco Control Research

By
Maizurah Omar, Ph.D.

Contributors
Adventist Development and Relief Agency (ADRA Cambodia)
Phnom Penh, Cambodia

Rita Damayanti, Ph.D.
Center for Health Research-University of Indonesia (CHRUI), Jakarta, Indonesia

Vanphanom, M.D.
Postgraduate Studies & Research Department, University of Health Sciences
Vientiane, Lao PDR

Maizurah Omar, Ph.D.
National Poison Centre (NPC), Universiti Sains Malaysia, Penang, Malaysia

Do Thi Phi
International Development Enterprise (IDE), Hanoi, Vietnam

Financial support from
The Rockefeller Foundation and
Thai Health Promotion Foundation (ThaiHealth)

December 2008
SUMMARY PAPER:
REGIONAL EFFICACY TESTING ON GRAPHIC HEALTH WARNINGS IN ASEAN COUNTRIES
ASEAN countries: Cambodia, Indonesia, Lao PDR, Malaysia, Philippines, Thailand, Vietnam

1.0 INTRODUCTION
The Framework Convention on Tobacco Control (FCTC) is the first treaty initiated by the World Health Assembly, the governing body of the World Health Organization (WHO). The objective of the FCTC is "to protect present and future generations from the devastating health, social, environmental and economic consequences of tobacco consumption and exposure to tobacco smoke". FCTC recommends that the best tool to curb the spread of tobacco epidemic is to have a strong, effective, integrated and comprehensive tobacco control policy. One of the policies is graphic health warnings on cigarette packs. The inclusion of vivid photographs and specific stated health warnings on cigarette packaging have proven to have potentials as significant deterrent to smoking initiation among non-smoking children, women and young adults; while it may also encourage quit attempts among adult smokers. Having effective graphic warning labels on cigarette packs is one of the efforts given much attention by SEATCA and also by many of the ASEAN countries.

2.0 ASSESSMENT OF CURRENT WARNING LABELS IN ASEAN COUNTRIES
In general, almost all ASEAN countries have health warnings on their cigarette packs but not completely fulfilling the requirements stated in Article 11 of the Framework Convention on Tobacco Control. Thailand is the only leading country in the group listed above that has implemented and met all the provisions described in the article.

3.0 EXPLORING THE GRAPHIC HEALTH WARNING (GHW) RESEARCH METHODOLOGY
Cambodia national survey on Tobacco Control was carried out by Nhong Sopheany and Nhong Hema (2007) from Royal University of Phnom Penh in collaboration with the Adventist Development and Relief Agency (ADRA) Cambodia. The cross sectional study was conducted from May to August 2006 involving a large sample of 2,025 respondents from various age groups; 18-35 year olds, 36-55 year olds and 56 year olds and above. The aims were to understand public’s opinion on the following issues: (1) Smoking awareness; (2) Smoke Free Area Policies; (3) Health Warning Labels; (4) Advertising Bans and (5) Tobacco Control measures such as introducing tobacco product taxation.

Indonesia’s health warning study is very much similar to Cambodia and to other countries in ASEAN. The research gathered public information through a cross-sectional study from various demographic backgrounds. The task was done by Rita Damayanti from the Centre of Health Research, University of Indonesia in 2007. The survey aimed at gathering public opinion on the existing health warning using a convenient sampling of 1,200 respondents from both

---

2 Survey report: Cambodia public opinion on tobacco control. Adventist Development and Relief Agency (ADRA) and Department of Psychology of Phnom Penh, May 2007.
In addition, Rita Damayanti (2007) had also carried out an efficacy testing of 16 proposed GHW on 18 focus groups comprising a total of 138 informants from various strata, smokers and non-smokers. The intention was to find out from the community the designs that were most preferred according to the following features: attractive; informative; frightening; motivating and effective to encourage quitting and reduce uptake.

Lao PDR had just recently, in February 2008, carried out a cross-sectional research in health warning conducted by a team of investigators Vanphanom Sychareun, Visanou Hansana, Alongkon Ohengsavanh and Sysavanh Phommachanh. The team were supervised by research experts, Assoc.Prof Som Ock Kingsada and Assoc. Prof. Sing Menorath. The research aimed to gain understanding on health warning efficiency and factors that enhanced design effectiveness such as the used of text alone, pictorial alone or combined. A total of 10 designs of proposed GHW were developed and tested. An in-depth interview method and purposive sampling frame were used to gain information from 16 parliamentarians from different provinces. Survey questions and convenient sampling were used to gather large scale of public opinions from a variety of demographic background: smokers and non-smokers, male and female, areas: urban, semi urban and rural, age groups: 15-20 year olds, 21-45 year olds, 46 -55 year olds that total-up to 1360 respondents.

In addition to public surveys, 266 respondents were selected to take part in the focus group discussions to gauge their opinion and perception on health warnings. The research was also intended to gain better understanding the reasons to their choices as well as to get feedback in order to improve the designs in terms of (a) noticeability (b) comprehensibility (c) believability (d) memorability (e) informative (f) size of labels and (g) persuasive. In addition, the focus group discussions were aimed at identifying the most effective health warnings for the country.

Malaysia under the responsibility of the Clearinghouse for Tobacco Control (C-Tob) at National Poison Centre (NPC), Universiti Sains Malaysia (USM) has conducted a series of work in developing design and testing of graphic health warning (GHW) on cigarette packs. Beginning 2003, Maizurah, Rahmat, Razak & Yusof had initiated the work on GHW by constructing new cigarette packages that should be able to discourage people from smoking as well as promote quitting, and to educate the viewers on the health effects of tobacco use, providing scientific evidences and providing viewers with available services to support quitting. Their efficacy testing aimed at measuring the perceived impact of new cigarette packaging, warning labels, and negative ergonomic features. This research consisted of a cross-

---

3 Indonesia’s awareness on health warnings and its impact. Center of Health Research, University of Indonesia, Oct.2007.
4 Research on health warning development in Vientiane, Lao PDR, supported by SEATCA, February, 2008
sectional study of 354 participants who completed a baseline survey. In this survey, the design concepts were based on Canada design concepts5, 6, 7.

Research on Monitoring and Surveillance to advance tobacco control policies by Maizurah, Azam, & Yong (2004) tracked all cigarette products in the Malaysian market to study the design and content information of health warnings8. Observational techniques were implemented on all cigarette packages and on all brands sales. The attributes of these cigarette packages were recorded using the Southeast Asia Tobacco Control Alliance (SEATCA) “Product Regulation Tracking Tool”. They had also explored the extent to which visual messages can influence youth. An in-depth investigation on viewers’ perceptions of 17 brands was explored through qualitative methodology. Focus groups were conducted with smoking and non-smoking adolescents to gauge their perceptions of the physical attributes of packaging design, warning labels, and other information9.

Gan Li Li, Jamilah & Maizurah (2004) also studied the potential of moderately realistic, true-to-life manipulated photos on emotional reactions, salience, and intentions to quit smoking among 600 male and female secondary school children10. Respondents were shown eight visual health warnings and were requested to complete a set of questionnaires and a brief interview.

Another efficacy testing on new sets of proposed GHW was conducted in 2007 by a team of research from C-Tob coordinated by Maizurah. A total of 146 respondents from 24 focus groups from Penang and Selangor in both urban and rural were asked to evaluate 17 mock-up designs of cigarette packs. Development of mock-ups were based the following principles: (1) Social psychological perspective by Strahan et al. (2001) for both content principles and process principles (2) Design checklist from Instructional Media and Technologies for Learning by Heinich, Molenda, Russel and Samidino (2005). The focus groups included a broad cross-section of age groups; 10-12 year olds, 13-14 year olds, 15-16 year olds, 17-19 year olds and 20-30 year olds. Ten to 19 year olds included smokers and non-smokers whereas older groups consisted of entirely smokers, including potential quitters and staunch smokers with no plans of quitting. The older groups were divided into males and females for more convenient conversations. Discussions with focus groups were intended to gather information on the: (1) awareness of health risk of smoking, (2) awareness of recall of current warning messages, and (3) support for and perceived impact of proposed warning messages which covered six different themes. These themes included: (a) messages concerning smoking effects on

10 Gan Li Li, Jamilah, D & Maizurah, O (2004). Moderately realistic true to life manipulated photos to stir emotion, Awareness and Intention of Quitting Among Youth. The 7th Asia Pacific Conference on Tobacco or Health. Korea.
children (second hand smoke); (b) messages concerning smoking-related diseases and death; (c) messages concerning addiction; (d) messages concerning toxic constituents; and (e) messages concerning fatwa of smoking from Islamic perspective and (f) messages concerning smoking cessation.

Philippines. In 2007, the country had carried out similar research called Project Sepia conducted by the Framework Convention on Tobacco Control Alliance (FCAP). The objectives of the program were to gather information regarding belief about smoking and public reactions towards mock-up designs of GHW. A set of 20 images for the GHW were selected from various countries and presented to 18 opinion leaders coming from the health sector. The group were asked to rank the chosen designs from 1-20 with 1 being the most effective in pushing Filipinos to stop (or not to try) smoking. The results were tallied and the top 10 designs were chosen and presented to another set of 400 respondents in Urban Centers Nationwide – Metro Manila, Baguio City (or Dagupan), Batangas City, Cebu and Davao. Respondents were males and females aged 15-60 year olds either smokers who have an intention to smoke or have positive disposition to smoking.

Vietnam. Development and testing of GHW were also carried out in Vietnam. Images for proposed GHW in the form of mock-ups were chosen after screening GHW from various countries. The efficacy testing involved 12 GHW that were tested on eight focus groups with a total of 300 persons representing North and South of Vietnam. Instrument used was a survey questionnaire asking “how effective are the designed health warnings in getting smokers to quit or non-smokers not to start smoking? A scoring scale from 0 to 10 was used to rank the responses.

In conclusion, almost all countries have carried out GHW efficacy testing. The intention is to gather local evidence to support the adoption of Article 11 policy in each country. At ASEAN level, it is also important to gather regional evidence from this research in order to seek general guidelines in terms of methodology and design characteristics of GHW for individual countries to benefit. The methodology employed for efficacy testing was very much similar across all countries. Two approaches were used (1) cross-sectional convenient and large sample survey and (2) focus group discussions. The large sample survey is mainly intended to seek consensus from the general public, across all demographic groups, regarding tobacco control issues associated to awareness, perceptions, beliefs and behavior. Large sample surveys have also been used to test their new proposed graphic health warnings based on Likert scale instrument. Almost all countries used focus group discussions method to test mock-up graphic health warning to explore in-depth reasons to their preferences and seeking for characteristics of a ‘good and effective’ design to convey the intended purpose of GHW.

3.0 EVIDENCES GATHERED FROM THE SIX (6) RESEARCH REPORTS ON HEALTH WARNINGS

Current status in term of knowledge, perception, belief, attitude and practice

Cambodia National Tobacco Control Survey report stated that majority (96.7%) of Cambodian adults and an even greater percentage from the younger group (99.1%) have attained high knowledge and awareness regarding the specific dangers (e.g. “smoking causes lung cancer”, “smoking causes stroke”, “smoking aggravates tuberculosis” and other tobacco related diseases) and social annoyance of tobacco use. Even though the current messages on Cambodian cigarette packs carry a general message “Smoking causes harm to health”, on the side panel of the pack, according to the report, this message was seen by 97.8% of the respondents. In addition, 98.1% of respondents agreed that smoking is bad for health, 95.8% believe that smoking is addictive and 98.4% know about the effects of smoking to the family and economic status. It could be that the health messages from other sources might have encouraged the see-r to read health warning messages on the cigarette packs. The report claimed that because of the comprehensive approaches in disseminating the knowledge over the last 10 years by the Cambodian government (such as media campaign, Quit-Now programs and Smoke Free Areas declarations), has indeed to large extent had translated into positive behaviour to fully support the implementation of the tobacco control policy. Cambodian respondents also firmly believed that the policy can be an effective method to control and reduce tobacco use. These supports were a consensus of both smokers and non-smokers urging the government to increase their commitment in controlling and reducing tobacco use and to lead the way in implementing measures that will optimize the health status of Cambodian people.

On the contrary, the scenario in Indonesia was slightly different. Indonesia’s survey report on the impact of health warnings explained that although over 90% of the Indonesian respondents were aware of their cigarette health warnings “Smoking can cause maternity problems and birth defect, cancer, heart attack and impotency”, almost half (42.5%) of the Indonesian respondents (both smokers and non-smokers) did not believe in the message. Another 45% believed that the current health warnings were not effective to prevent non-smokers from taking-up smoking or to encourage smokers to stop smoking. They claimed that there was no evidence on cases of illnesses affected by tobacco use in Indonesia. The report also explained the misconception that occurred were due to lack of awareness about the adverse effects of tobacco smoke regarding second-hand smoke and poor information dissemination. According to the report, in terms of memory retention about the diseases printed in textual format on the packs “Smoking can cause maternity problems and birth

---

14 Survey report: Cambodia public opinion on tobacco control. Adventist Development and Relief Agency (ADRA) and Department of Psychology of Phnom Penh, May 2007.
15 Indonesia’s awareness on health warnings and its impact. Center of Health Research, University of Indonesia, Oct.2007.
defect, cancer, heart attack and impotency”, almost 60% of the Indonesian respondent could recall at least one disease. Students were the group that could recall more diseases compared to others and the low social economic status (SES) was the worst group that could recall the diseases. On the other hand, the high and middle SES remembered more of the 4 diseases compared to the low SES respondents. In relation to this the most frequent disease that could be recalled by majority of the respondents was cancer, followed by the maternity problems, heart attack and impotency. Specific messages that the students were able to recall were the maternity problems and the birth defect, followed by the impotency. Further results showed that less than 10% of Indonesian smokers said that they never smoked in-front of other people. Almost 30% of the respondents were not motivated and did not care to quit smoking by the message. About half of the Indonesian’s active smokers smoked one to two packs a day and this group largely came from low-economic status and students. To date Indonesia has not yet sign and ratify the Framework Convention on Tobacco Control (FCTC). Thus, this given tobacco companies the opportunities to market their products especially through advertising, sponsorship and promotion primarily to those from the low SES, the illiterate, the rural and young.

Lao PDR’s study revealed only a small percentage (19.2%) of smokers who were aware of the health warning that are currently on the side panel of the pack. The retention rate was also reported as very low because the warnings were less salience to the viewers. The report stated only 18.3% respondents read the textual warnings, thus, suggesting that the warnings needed improvement in various aspects: size, placement, areas covered, varying in health messages and with pictures. Having prominent health warning with pictures could increase attention, awareness and understanding as well as to raise fear appeal and social appeal among smokers.

Relatively similar to Indonesia, according to the Philippines survey, smoking is not something that the public sees as a problem to health. The research report stated that only a third of the respondents, mainly from the middle class, expressed their concerns over a growing number of smokers in the country. Further in the report, the researchers explained that although a great majority of the respondents agreed that smoking is bad, addictive and causes death but most of them did not believe the negative effects of smoking from the medical condition. Instead their beliefs were grounded on the lifestyle approach similar to bad habit that smoking may or may not cause those illnesses. This belief, the report stated that may be influenced by the environment where smokers usually have close relatives or friends who are also smokers (25% of the smokers were enticed by seeing people smoking). The report highlighted that the tobacco culture in Philippines is very dominant. The need to be accepted by the majority is paramount important (i.e. peer pressure). Smokers in Philippines perceived that smoking is perceived as fun and to release stress. Further in the report stated

---

16 Indonesia’s awareness on health warnings and its impact. Center of Health Research, University of Indonesia, Oct.2007.
17 Research on health warning development in Vientiane, Lao PDR, supported by SEATCA, February, 2008
that in terms of knowledge about health effects of smoking, half of the respondents recalled “Government warning: cigarette smoking is dangerous to health” followed by a third of the respondents recalled “Smoking causes lung cancer” and “Smoking kills”. While this knowledge was rated high in likeability and believability, only half said that it affected their view about smoking\(^19\).

Findings from focus groups research in Malaysia\(^20\) showed that 80% of the respondents had noticed health warning on Malaysian cigarette packs. However, in the report, the research findings stated that only a small percentage of women aged 10-14 from both urban and rural did not know or noticed the existing of health warnings on cigarette pack. The report further stated that although noticing of health warning is considerably high but not many had uttered out correctly the simple phrase of health warning: “Warning by the Malaysian Government: Smoking is hazardous to health”. The report also explained the reasons were because they never thought about health warning when buying or wanting to smoke. However, to those who noticed health warnings, many of them said that through the Tak Nak media campaign, they noticed the text warning on the side panel of the pack.

In another Malaysian focus group report\(^21\), it was stated the findings from the smokers who perceived the labels on cigarette packs as secondary influenced on their decision to smoke. According to this report, peers were listed as the main factor that influenced them to start and continue smoking. In addition, the report also stated the findings from adolescent smokers that given a ‘good design’ (i.e. the physical features were attractive, convenient, and appealing), the adolescents in the focus group preferred to go for the quality of the taste and popularity of a brand.

As a conclusion, despite having health warnings which were poorly designed (e.g. location at the side panel, using small font size and low in color contrast), multi country report showed that there were high in percentage of respondents who had noticed and were aware of health warnings on their cigarette packs. However, noticing and understanding the warnings had not contributed much to their attitude of smoking. Most of them did not believe that smoking had adverse effects on health. Hence, health warnings did not deter them from smoking. Interestingly, comprehensive approach had shown greater influence on noticing and gaining knowledge from these health warnings. Therefore, much greater impact on belief and attitude as well as practice could be evidently shown if the warning incorporates pictures and other additional information. Indeed, this opportunity should not be missed.


Preference to change the existing health warnings

Findings on perception survey regarding Cambodia’s health warning “Smoking causes harm to health” showed a high percentage (97%) of Cambodians preferring the warning to be changed\(^\text{22}\). In the report, majority of the respondents (90.5%) suggested that the warnings should be large and prominent and be displayed in front covering 50% or more of the pack. In addition, majority of them (99.2%) also stated the main reason to have health warnings was to educate people to encourage smokers to reduce their smoking rate and to quit smoking. Even the smokers (99.2%) strongly support this opinion. Further in the report, 98.6% agreed or strongly agreed for the government to pass tobacco control laws. The report also highlighted a total of 95.9% wanted Cambodia’s messages to be either the same as the Thais or with prominent message incorporated picture on the back and side panel of the packs. Further in the report, majority of the respondents (97.8%) reported that they would like to see the health warning appear on the front side of packs as opposed to the side panel of the pack because of its legibility. In terms of the size of health warnings, 90.5% of these respondents wanted to see a large health warning that covers 50% or more of the package.

Indonesian’s research report\(^\text{23}\) on health warning stated that more than 75% of the Indonesian respondents preferred a combination of textual and pictorial health warning and about 78% of them preferred a health warning that covers about 50% of the cigarette packs. Smoker had higher preference on informative (29.7%) and specific messages (31.7%) than non-smoker (25.1% and 29.8% respectively). On the contrary, non-smoker respondents preferred scary messages (40.7%) more than smoker respondents (33.8%). In summary, threatening and specific messages are most preferred to be used as health warnings. This research study provides evidence that even smokers in a high tobacco consumption country like Indonesia suggested large, specific and informative messages of the health warning for effective outcome.

---

\(^{22}\) Survey report: Cambodia public opinion on tobacco control. Adventist Development and Relief Agency (ADRA) and Department of Psychology of Phnom Penh, May 2007.

\(^{23}\) Indonesia’s awareness on health warnings and its impact. Center of Health Research, University of Indonesia, Oct.2007.
In Lao PDR, research report of health warnings\textsuperscript{24} stated that the vast majority of the public respondents supported the implementations of GHW to replace the current warnings (i.e. “Smoking is dangerous to your health”) which are too general, having small font size, less noticeable and less informative. Due to its poor design, the message is less attractive, less memorable and less believable. Most parliamentarian respondents in Lao PDR stated that the health warnings on cigarette packs should be intended to increase awareness on harmful effects of tobacco and to reduce uptake among children.

The Malaysian research report on monitoring and surveillance\textsuperscript{25} stated that most cigarette packages in the Malaysian market carry the general text warning label “Smoking is Hazardous to Health”, which covered less than 10\% of the display area. The textual warning was poorly designed in terms of (a) small font size (b) very low contrast color (c) vertical positioning which is hard to read and (d) location at the side of the pack. Another research report stated the findings from focus group research\textsuperscript{26} that showed majority of respondents wanted the existing health warning to be replaced by better and effective warnings that will make smokers stop smoking and children not to take-up smoking. Some of them suggested that the warning should states “Don’t try to smoke” and “Smoking shorten your life” to be included as well as the insertion of information and the use of scary pictures.

As a conclusion, there was high interest among the majority of respondents in ASEAN countries to have their current health warnings changed with the intention to reduce uptake and to encourage quitting. The recommendations to have graphic health warnings are because of its potentials to educate and to inform about the adverse effect of smoking. Thus, suggests the positive behaviour toward de-normalising the culture and the willingness to adopt article 11 in the FCTC.

\textsuperscript{24} Research on health warning development in Vientiane, Lao PDR, supported by SEATCA, February, 2008
\textsuperscript{26} Studying the effect of pictorial and health warning labels on the attitude of children and young adults towards smoking in Malaysia. Focus group report submitted to Malaysian Ministry of Health, February 2007.
**Efficacy testing of Graphic Health Warnings**

Indonesia’s efficacy testing of 16 proposed GHW on 18 focus groups\(^{27}\) showed that smoker respondents had higher preference on informative and specific messages. On the contrary, non-smoker respondents preferred scary messages. Below are the results from the efficacy test.

<table>
<thead>
<tr>
<th>Most attractive GHW</th>
<th>Less attractive</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Image" /></td>
<td><img src="image2.png" alt="Image" /></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Most informative</th>
<th>Less informative</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image3.png" alt="Image" /></td>
<td><img src="image4.png" alt="Image" /></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Most motivating</th>
<th>Less motivating</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image5.png" alt="Image" /></td>
<td><img src="image6.png" alt="Image" /></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Most frightening</th>
<th>Less frightening</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image7.png" alt="Image" /></td>
<td><img src="image8.png" alt="Image" /></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Most effective</th>
<th>Less effective</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image9.png" alt="Image" /></td>
<td><img src="image10.png" alt="Image" /></td>
</tr>
</tbody>
</table>

\(^{27}\) Indonesia’s awareness on health warnings and its impact. Center of Health Research, University of Indonesia, Oct.2007.
Lao PDR’s research report\textsuperscript{28} stated more than 60\% of the respondents said that pictorial health warnings on cigarette packages were very important. Hence, most of the respondents suggested that the size of the message should be in big print and should include pictures. Further in the report stated that almost half of the respondents (majority among smokers) recommended pictorial health warnings should cover 50\% to 100\% of the principal display areas. The report also stated that, over 80\% smokers and non-smokers mentioned that cigarette packages should carry health information. In addition, comparing with “text only” warning, pictorial health warnings were generally more likely to lead thinking of health risk of smoking and this were the views of more than 80\% of the respondents. More than 77\% of the respondents perceived that pictorial health warnings have great potential to aid memory, reinforce awareness on health effects, communicate effectively and arouse fear. Finally, the report stated that more than 50\% believed that pictorial health warning have potential to encourage quitting. In another section of the report, findings from efficacy testing in Lao PDR showed that among 10 designs that were tested, five GHW had received high preferences. These were, first, “Smoking causes throat cancer”, second “Smoking causes lung cancer”, third “Smoking causes mouth cancer”, fourth “Smoking causes heart attack” and fifth “smoking causes emphysema”. The least effective were those with less clearly defined pictures; those with difficult image to understand, especially without messages (Stroke, Newborn baby); those with conceptually obscure or small pictures; those with not evocative enough (“Smoking causes smelling”, “smoking harms your family”, “Tobacco smoke harms people around you”).

\textsuperscript{28} Research on health warning development in Vientiane, Lao PDR, supported by SEATCA, February, 2008
<table>
<thead>
<tr>
<th>Image</th>
<th>Text Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Smoking causes throat cancer</td>
</tr>
<tr>
<td>2</td>
<td>Smoking causes lung cancer</td>
</tr>
<tr>
<td>3</td>
<td>Smoking causes mouth cancer</td>
</tr>
<tr>
<td>4</td>
<td>Smoking causes heart attack</td>
</tr>
<tr>
<td>5</td>
<td>Smoking causes emphysema</td>
</tr>
</tbody>
</table>

- **Arouse real fear.**
- **Personal to individual.**
- **Horror and gruesome.**
- **Highly believable.**

- **Evoke strong emotion such as disgusting and dirty.**
- **For hardcore smoker- is an exaggerated photo of external appearance.**

- **High in severity.**
- **Horror and gruesome.**
- **For hardcore smoker- is an exaggerated photo of external appearance.**

- **Familiar, true and highly believable.**
- **Too familiar with the issue-desensitized.**
- **Young smoker- too remote/future issue, not really caused by smoking per se- not worry.**

- **High in severity.**
- **Arouse fear and believable.**
- **Young smoker- not really caused by smoking per se.**

- **Not depicting stroke.**
- **Not believable.**

- **Not impressive.**
- **Not clear.**
- **Little relevance.**

- **Too common.**
- **Not illustrate severity.**

- **Relevance to pregnant women.**
- **True and believable.**
- **Not related to smoking per se.**
In Philippines’s report stated that, among the 10 designs tested, the message on Neck Cancer received the most votes as being the most effective design in pushing people to stop smoking followed by Slow Death, Children Copies, and Mouth Disease (see pictures below). The report also included findings that showed majority of the respondents (particularly the adolescent) preferred graphic design over text - only warning. The reason given was because graphic warning aids understanding. They also said that real photos used in GHW were able to describe the complex meaning and magnitude of suffering, scary and gross. Some also said that graphic warning designs will actually stop people from buying cigarettes.

Below are four designs that were highly preferred by the Philippines respondents.

1. Neck Cancer
2. Slow Death
3. Children Copies
4. Mouth Disease

Mouth disease, neck cancer, oral cancer, gangrene and slow death - High potential to arouse fear.
Oral cancer and slow death - Highly relevance
Gangrene - least relevance and least believable
Slow death - highly believable

<table>
<thead>
<tr>
<th>Condition</th>
<th>Description</th>
<th>Philippines Comment</th>
</tr>
</thead>
</table>
| Hurt Babies        | Tobacco use during pregnancy weakens the growth of babies in utero. Those smaller babies may catch up in growth after birth and the risk of childhood diseases, disability and death are increased. | Hurt babies and children copies- highly believable  
Hurt babies- highly relevance esp. among males |
| Miscarriage        | Tobacco use during pregnancy increases the growth of babies in utero. Those smaller babies may catch up in growth after birth and the risk of childhood diseases, disability and death are increased. | Evoke feelings of sorry  
Highly relevance- esp. among middle class  
Miscarriage- highly believable |
| Mouth Disease      | Smoking causes mouth disease.                          | Mouth Disease- Evoke grossly feelings |
| Impotence          | Smoking increases the risk of health problems.         | Addictive- and Impotence- Rated low in all aspects |
Findings from GHW efficacy testing in Malaysia reported that most respondents preferred more visuals than text without visuals. The reasons given were that pictures can attract and focus viewers’ attention. In terms of graphic design, the findings showed that detailed shaded pictures (drawings) were found effective for clear communication\(^3\).

In another research report\(^3\), the findings revealed that the use of statistics to inform the negative effects of smoking were too abstract to many viewers. They suggested to replace the use of statistics with analogy pictures, e.g. the illustration of the death of 10,000 Malaysians dying from smoking-related diseases with the picture of a wrecked tour coach with a statement to associate smoking deaths to the death of all passengers in 250 coaches.

The report further stated pictures of babies and children have a potential to arouse positive emotion in viewers. In addition, manipulated photos have the potential to evoke viewers’ emotions, to increase awareness of smoking-related health problems and can be personalized to individuals.

\(^3\) Maizurah, O, Razak, L, Rahmat, A. The Effects of Selected Packaging and Labeling variables on Perception of Quality of Cigarettes. Poster presentation, 12th World Conference on Tobacco or Health: Global Action for A Tobacco Free Future. 2-8 August 2003, Helsinki, Finland.

\(^3\) Gan Li Li, Jamilah, D & Maizurah, O (2004). Moderately realistic true to life manipulated photos to stir emotion, Awareness and Intention of Quitting Among Youth. The 7th Asia Pacific Conference on Tobacco or Health. Korea
According to Maizurah et.al (2003) research report, they highlighted no differences in responses on the perceived effectiveness towards understanding (knowledge) of warning labels and health messages on the cigarette packages among the respondents across race, gender, educational status and smoking status. Below are the warning messages from the GHW survey of those who perceived the warning labels as either effective or most effective:

1. Smoking causes stroke
2. Smoking causes mouth cancer
3. Smoking causes lung cancer
4. Smoking causes a slow and suffering death
5. Protect your children’s health
6. Smoking causes addiction

GHW that was perceived as “Scary”

1. Smoking causes stroke (from 56.1% among Chinese to 65% among Malays; 63.7% among male and 62.2% among female; 6.2% smokers, 66.7% quitters and 63.1% non-smokers)
2. Smoking causes mouth cancer (from 56.1% among Chinese to 61% among Indians; 54.5% among male and 63.2% among female; 63.5% smokers, 53.8% quitters and 58.4% non-smokers)
3. Smoking causes lung cancer (from 38.0% among Indians to 45.3% among Malays; 40.2% among male and 46.1% among female; 49.1% smokers, 40.7% quitters and 42.5% non-smokers)
4. Smoking causes a slow and suffering death (from 30.8% among Chinese to 43.0% among Malays; 39.9% among male and 37% among female; 39.6% smokers, 40.7% quitters and 38.1% non-smokers)
5. Smoking causes addiction (from 10.7% among Chinese to 30.8% among Indians)

GHW that was perceived as “sad”

6. Protect your children’s health (from 17.9% among Chinese, 53.8% among Indians to 45.0% among Malays; 33.7% among male and 47.7% among female; 30.0% smokers, 40.7% quitters and 43.2% non-smokers)

Most respondents in the report agreed that the information were suitable, meaningful, enough and increased their awareness and knowledge. In addition, all respondents found that:

- the text is easy to read,
- the text is easy to understand,
- the arrangement of text, picture and color is well laid out, and
- Black and white used on cigarette pack associates with life and death and is too dramatic. Blue is a “cool” color while pink is perceived as “soft” and “feminine”.

Maizurah, Rahmat, Razak & Yusof (2003). Impact of visual messages, health warning labels and physical features of the proposed Malaysian cigarette packages. report submitted to Malaysian Ministry of Health
The amount of information were adequate and relevant
- The suitability of employing two languages (English and Malay)
- The additional information in the inner pack.

The research finally listed a few suggestions to enhance GHW as below:

a. Introduction of other warning labels that can be rotated, e.g. Smoking is Haram (forbidden), Smoking can affect your foetus, Smoking can cause impotence, and others.

b. The category classification of information can be expanded, e.g. Instruction of how to quit smoking.

c. The inclusion of statement “For Sale and Consumption in Malaysia” in Malay language to deter smuggling activities.

d. Increase the minimum number of cigarettes from 20 to 30. Therefore, the width of the container has to be increased to accommodate the contents. The increase of size of the container will render it difficult to keep in pockets.

e. The insertion of additional health warnings in a container will also help to increase production cost of a tobacco company.

f. The colors of a container serve two purposes: attract a smoker to read health information (blue color container) or to deter him/her from associating with the product (pink color container). Black color can work either way: to attract or to deter. It is because black has been associate as a color of status and elegance.

In another GHW efficacy testing, results showed that messages concerning babies and children are suitable for dissemination of information, especially to male smokers. These messages are important to change one’s perception and develop positive belief - smoking has been long accepted as a norm by the society. The used of vivid photos with a high “degree of severity” and “fear appeal” have the potential to evoke strong emotion and stimulate thinking. Smokers may have to buy cigarettes with graphic warning and hence such graphic warnings have a high potential to educate and curb the smokers from smoking.

---

Results from this research explained that abstract pictures such as x-ray photograph and “manipulated photo” have potential to enhance understanding, to link to and to visualise what is within the body. An example was a picture of rotting lungs full of tar and smoke relates a situation that cannot be seen to happen within the chest cavity. This is important to reinforce the truth of the message.

The research\textsuperscript{34} also showed that realistic or true-to-life pictures without manipulation (e.g. brain organ) have a potential to convince viewers to believe the message as real and authentic. However, this research also found that even for realistic pictures it MUST be accompanied by relevant information. Pictures employing concept of “analogy” which are highly abstract MUST include informative text to heighten understanding. This is important especially of a disease that is not commonly known.

\textsuperscript{34} Maizurah et.al. Evidence to support graphic health warning labels on cigarette packs (article 11). Report submitted to Malaysian Ministry of Health, September 17, 2007.
The report also discussed the use of analogy type pictures. Analogical pictures such as this is more suitable to those of older age group (>12 years old). For the younger ones, analogical pictures MUST be accompanied with informative texts. The use of analogical pictures can cultivate thinking but has to be designed with great care. The use of additional information in the inserts can further help to clarify the message.

In addition, the research explored the use of “associated objects” and found that it could be very useful to give meaning to abstract concepts. An example was the use of an ashtray full of cigarette butts to illustrate level of addiction. In addition, the research also confirmed the use of universal symbols that has high potential to channel information speedily. Symbol of “poison” is clear both visually and in message even if without informative text.

---

The research also explored design that delivered positive message such as “Quitting now reduces your risk of serious diseases”. Results revealed that this message was not highly preferred or appreciated as it showed a high “degree of severity” and “fear appeal”. Information and inserts were important and can provide instant additional information.

Other important findings regarding the design resulted from the research were:

- Counselling service logo that is “Quit line” and other allied services such as “Quit Clinic” and web sites.
- Include inserts as fast access additional information.
- Maximise positioning space on cigarette packs to 75% or more.

In Vietnam, GHW efficacy testing revealed that the health warning that carried messages about diseases have stronger impacts than that of social and family responsibility. The most preferred GHW in hierarchy is as below:
1. “Smoking causes a slow and painful death”
2. “Smoking causes emphysema”
3. “Tobacco smoke harms the babies”
4. “Smoking causes foul breath and damages teeth”
5. “Smoking causes heart attack”
6. “Smoking causes lung cancer”
7. “Smoking causes brain stroke”

GHW which reported low in reliability and understanding among Vietnamese respondents were (2) “Smoking harms your family” and (4) “Adult smoke, children imitate”. GHW which were difficult to understand and low impact were (1) “Quit smoking now before it too late”, (5) “Smoking causes premature ageing” and (10) “Smoking may cause impotence”. Regarding the size of GHW, all respondents preferred GHW to cover more than 50% of the principal display area. Less than 50% will reduce legibility of GHW\textsuperscript{38}.

Finally, the research concluded that:

1. health warning should carry a simple message statement preferably one message in a statement;
2. minimum number of messages to be rotated is the most four messages;
3. specific messages related to diseases has potential to increase retention;
4. scary pictures that are able to evoke emotional feelings;
5. diseases caused by tobacco have high preferences due to its potentials to grab attention, evoke emotion and retention;
6. Specifically throat cancer, lung cancer and mouth cancer were the most preferred cancer diseases suggested to be conveyed in the health warning message;
7. Other potential diseases: maternity problems, heart attack, impotency and emphysema, slow death, children copies, and mouth disease.
8. Ambiguous images which are opened to various interpretation such “Smoking causes smelling”, “Smoking harms your family”, “Tobacco smoke harms people around you” and abstracts images that are difficult to “read” such as “stroke” and “newborn” were the least preferred.

As a conclusion, the efficacy testing on GHW by ASEAN countries revealed almost similar results. Both smokers and non-smokers preferred scary pictures and expressed high sympathy on women and children who have been affected by second hand smoke. GHW that incorporates additional information are perceived as very effective and meaningful. Females are more affected by GHW that relates to their partner’s sexual ability and health as well as their appearance (i.e physical beauty). On the other hand, male smokers are more affected by pictures illustrating the effects of second hand smoke to their children. Finally, GHW that carry abstract concepts, such as addictions, impotence and emphysema are the least preferred messages by most respondents in most ASEAN countries.

Below is a list of design characteristics for effective graphic warning labels that has been derived from the multi-country research report.

1. Objectives of GHW:
   a. Increase Salience
      i. to grab attention, to increase awareness, and to increase retention;
   b. Increase desires/feelings
      i. to evoke emotion, to motivate and to persuade
   c. Increase thinking leading to change in perception and beliefs
      i. to inform and to educate
   d. change in behavior
      i. To make smokers to stop smoking and to prevent non-smokers especially boys and girls from taking-up smoking.

2. Strategy implementation:
   a. An integrated approach should be used to achieve maximum impact. GHW should incorporate text WARNING (e.g. “Smoking causes lung cancer), vivid photographs, explanation text and additional information (e.g. quit line).
   b. A comprehensive approach should be used together with GHW policy to aid understanding and elaboration thinking leading to changing in beliefs and behaviour. Messages regarding diseases from GHW would be more convincing if also propagated through media campaign or other tobacco control policies and activities.
   c. De-normalising is of paramount importance. Peer pressure and to be accepted by dominant group are critical factors reasons for smoking.
   d. Messages need to be rotated. Older people could recall one message while the younger ones could recall more;

3. Design:
   a. Can gain attention:
      i. Photos concerning diseases. E.g. pictures illustrating cancerous organs (throat cancer, neck cancer, lung cancer and mouth cancer); heart attack, stroke and emphysema.
      ii. Photos of babies and women suffering from second hand smoke.
   b. Can evoke emotion:
      i. Vivid photographs e.g. photos of miscarriage babies and sick children;
      ii. Pictures depicting “fear appeal” or scary. e.g. photos illustrating diseases;
iii. Illustrations (manipulated pictures- as in Malaysian design of GHW)

c. Can increase understanding (encourage elaboration thinking):
   i. Pictures that show a high degree of severity. e.g. pictures that illustrate painful and suffering death;
   ii. Pictures that tell stories or “narrative” especially abstract concepts such as impotence;
   iii. Pictures that use “associated objects” such as ashtray full of cigarette butts to illustrate degree of addiction;
   iv. Universal symbol to give correct and effective information. e.g. poison symbol;
   v. Analogy and abstract pictures MUST be accompanied by explanation especially to the young readers. e.g. bended cigarette to illustrate impotence;
   vi. Reuse pictures and warning messages that are similar to other anti-smoking campaign.

d. Can influence attitude and behavior change (promote contemplation):
   i. Use inserts for additional information;
   ii. Use text explanation to elaborate the warning labels and pictures;
   iii. Include information on services such as quit line and brief quitting steps.

e. The least preferred pictures:
   i. Abstract and conceptual obscure pictures such as Stroke, newborn baby, addiction and cessation. These pictures could be enhanced by using explanation text.
   ii. Pictures that are not evocative enough such as “smoking causes smelling”, “smoking harms your family” and “Tobacco smoke harms people around you”. Superimpose techniques or body language could be used to enhance the message.
   iii. Pictures involving sensitive issues such as “Smoking is forbidden”. Analogy pictures should be carefully selected.

f. Follow good design principles:
   i. Ensure legibility e.g. font size
   ii. High contrast between fore-ground and back ground e.g. white text on black.
   iii. Front top of the pack.
   iv. Occupy maximum possible space. Preferable 50% and more

4. Evaluation: Efficacy testing and effectiveness testing
   1. cross sectional large sample survey:
      a. gather evidence from public regarding tobacco control policy issues
      b. survey questionnaire
   2. focus group efficacy testing- use mock-up cigarette packs to gather information on preferences and appropriate design features
      a. interview guide
5.0 POLICY RECOMMENDATIONS IN LINE WITH COUNTRY EXISTING POLICIES AND WITH WHO FCTC ARTICLE 11

The WHO Framework on Tobacco Control in the article 11 states that within three years of ratification, parties must implement measures that address health warnings, constituent disclosures, and misleading packaging and labelling.

It is evidence that all countries in the report analyzed are urging for graphic health warnings covering 50% or more, on both front and back of the main display areas of the cigarette package, using the country principal language and deliver several different warnings in the form of rotations. From the reports analyzed, there is no country that had included in their survey questions on constituents and misleading terminology such as “light” and “mild”. Below is the brief summary the examples of effective graphic health warnings.

**Most frightening/motivating/effective**

“Smoking causes mouth cancer”, “Smoking causes throat cancer”, “Smoking causes neck cancer”, “Smoking causes lung cancer” and “Smoking causes stroke”
Vivid photos of children and babies - scary and sad and most effective

Use of symbol – to inform

WARNING
TOBACCO SMOKING HARM CHILDREN.

The people you smoke is not just limited to smokers, but to other people around you. Cancer of tobacco smokers and others who suffer from secondhand smoke, children of non-smokers.

WARNING
SMOKING CAUSES PREMATURE BIRTH

Tobacco use during pregnancy increases the risk of premature birth. Babies born premature weigh more at birth and are more likely to be born with behavioral and learning disorders.

WARNING
CIGARETTE SMOKE IS POISONOUS

Efficacy support - quit line and insertion

Efficacy support- quit line and insertion

Narrative picture more effective than analogy type picture

Efficacy support- quit line and insertion

Smoking is bad for pregnant women. Smoking during pregnancy causes prenatal death, low birth weight babies, and protein deficiencies. It may also increase the risk for sudden infant death syndrome and middle ear infection, as well as children’s childhood asthma.

Remember!
Quitting smoking when pregnant helps your baby.

Quitting sometimes requires many attempts. Call toll free 1800 88 8099 or visit quitline website at www.quit.com
REFERENCES

2. Gan Li Li , Jamilah, D & Maizurah , O (2004). Moderately realistic true to life manipulated photos to stir emotion, Awareness and Intention of Quitting Among Youth. The 7th Asia Pacific Conference on Tobacco or Health. Korea.

Report written by
Dr. Maizurah Omar
National Poison Centre, Universiti Sains Malaysia, Penang,
27th July, 2008
About SEATCA

The Southeast Asia Tobacco Control Alliance (SEATCA) works closely with key partners in ASEAN member countries to generate local evidence through research programs, to enhance local capacity through advocacy fellowship program, and to be catalyst in policy development through regional forums and in-country networking. By adopting a regional policy advocacy mission, it has supported member countries to ratify and implement the WHO Framework Convention on Tobacco Control (FCTC)

Contact persons:
Ms. Bungon Ritthiphakdee: SEATCA Director
Email: bungon@seatca.org
Ms. Menchi G. Velasco: SEATCA Research Program Manager
Email: menchi@seatca.org; menchi55@yahoo.com
Southeast Asia Tobacco Control Alliance (SEATCA)
Address: Thakolsuk Apartment Room 2B, 115 Thoddamri Rd., Nakornchaisri
Dusit, Bangkok 10300, THAILAND
Tel./Fax: +662 241 0082
Website: http://www.seatca.org