Effects of Mass Media and Tobacco Promotion on Smoking among Adolescents in Ghana

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Abstract

This paper examines the effects of the mass media and tobacco promotion on adolescents' outcome expectancies and intention to smoke in Ghana. A sequential method triangulation approach was adopted in the study. First, we analysed existing data from the Global Youth Tobacco Survey conducted among 1,917 students in Ghana. In-depth interviews were then conducted among 40 adolescents in Accra. The potential determinants of adolescents' intention to smoke were mainly derived from the Social Cognitive theory. The results show that while direct advertisement is minimised, a high proportion of adolescents in Ghana are exposed to tobacco use in films and at public gatherings. There was a direct relationship between exposure to tobacco promotion and outcome expectancies. The variables associated with intention to smoke in the future were outcome expectancies and "ever experimented with tobacco smoking". It is concluded that smoking in movies and tobacco promotion play a role in the initiation of smoking among adolescents in Ghana. Based on the findings, the paper recommends effective parental control and legislation to prevent adolescents from being exposed to smoking in movies. Additionally, effective information should be provided to adolescents about the harmful effects of tobacco use.

Key words: mass media, tobacco promotion, adolescents, outcome expectancies, smoking, Ghana

1. Introduction

Tobacco use is one of the leading preventable causes of death in the world (Horm et al. 2002; Fox and Bailenson 2009). Worldwide, smoking causes more than 5 million deaths per year (WHO 2008). While smoking among adults is a source of worry to many governments and health promoters, rising adolescent smoking is a more serious health problem in many parts of the world (Grube et al. 1990; Thoen and Holmen 2010). Apart from causing diseases such as cancer, heart disease, and lung disease, adolescent smoking is associated with a range of health-compromising behaviours, including carrying weapons, street fighting, engaging in high-risk sexual activities, and using other drugs (Crowley and Riggs 1995).

In view of the negative effects of smoking, many governments of the developed world have adopted various measures to reduce tobacco use. These measures include the passage of laws that prohibit the sale of tobacco products to children, health warnings on tobacco packages, and formulating laws to restrict advertising of tobacco products. These measures have led to a reduction in tobacco consumption in some developed countries (Maassen et al. 2004; Thoen and Holmen 2010). In an effort to restore their profitability which has declined in developed countries, tobacco companies have turned their attention to developing countries. It is predicted that unless current trends are reversed, the vast majority of tobacco related deaths, in the near future, will occur in the developing world (WHO 2008).

Although figures on smoking prevalence in Ghana are not very reliable, anecdotal evidence suggests that tobacco use among adolescents in the country is on the rise. Direct advertising of tobacco products is legally not allowed in Ghana, but tobacco companies use other means to attract adolescents to their products. These include sponsorship of events and the use of public places, which serve as retail points (Komesuor 2006).

Despite the concerns being raised about rising adolescent smoking, the factors that account for this problem are quite poorly understood. While it is acknowledged that intention to smoke is strongly influenced by outcome expectancies which are usually shaped by the exposure to tobacco promotion (French and Perry 1996), the effects of mass media and tobacco promotion on Ghanaian adolescents' outcome expectancies have not been fully examined.

Against this background, the main aim of this study was to assess the extent to which adolescents in Ghana are exposed to tobacco advertisement and smoking in the mass media, and examine how this exposure influences their outcome expectancies. The paper also examines how age and gender differences affect outcome expectancies of tobacco smoking, and discuses the effect of outcome expectancies on adolescents' intention to smoke. The paper contributes to the literature on the effects of mass media on adolescent smoking. The problem examined in this paper is very important because while a number of researchers have examined how smoking by friends and family members influence adolescents, there have been very few attempts to examine the influence of the mass media and tobacco promotion on adolescent smoking behaviour (Strasburger and Donnerstein, 2000; Roberts, 2000). This paper, therefore, contributes to our understanding of the role of the mass media and tobacco promotion in the initiation of adolescent smoking.

2. Theoretical Insights from the Social Cognitive Theory

The discussion in this paper is largely based on the Social Cognitive Theory, which was popularised by Bandura (1986). The theory describes how individuals acquire certain behaviours by observing and replicating the behaviours of others (i.e. models). This process is called social or observational learning. A number of factors, including the observer's perceived ability to perform the behaviour and the rewards and punishments associated with that behaviour determine the likelihood of the observer adopting the behaviour.

Although social learning can take place at any stage in life, it particularly occurs during childhood. The theory suggests that children who observe a model rewarded for behaviour are much more likely to imitate that behaviour than children who observe a model punished for the same behaviour (Bandura 2001; Fox and Bailenson 2009). It therefore follows that adolescent smoking behaviour may be acquired by observing the smoking behaviour of other people within the environment. According to Wold et al (2004), adolescents are more likely to take up smoking if they observe other people smoking. Based on this understanding, tobacco companies use advertisement as a strategy of influencing people to smoke. Stroebe and Jonas (1989) observed that when famous stars from the world of film and sport appear on television using a particular product, viewers might also adopt the product because of the perception that if the product is good for the famous stars, then it will be good for the viewers as well. The theory also implies that showing positive consequences of smoking will encourage observers to smoke. Conversely, showing negative consequences of smoking is expected to discourage observers from smoking (Fox and Bailenson 2009).

2.1 Outcome Expectancies

The Social Cognitive theory suggests that human motivation and action are significantly controlled by forethought. According to Schwarzer and Fuch (1995), this regulatory mechanism entails three types of expectancies. The first category is *situation-outcome expectancies* - in which consequences are determined by environmental events without personal action. The second is *action-outcome expectancies* - in which outcomes result from personal action. The last group is *perceived self-efficacy*, which is concerned with people's beliefs in their capabilities to perform a specific action required to attain a desired outcome.

This study largely focused on action-outcome expectancies. It is argued that the adoption of a particular behaviour by an individual depends on the person's capacity to anticipate and place value on the outcome of different behavioural patterns. Outcome expectation takes several forms, notably physical, social, and self evaluative. Physical outcomes include the accompanying material losses and benefits. Behaviour is also regulated by the social reactions it evokes. Additionally, people regulate their behaviours by their self-evaluative reactions. They adopt what they value but resist innovations that violate their social and moral standards (Bandura 2001). A number of studies have supported this theory by demonstrating how tobacco and alcohol promotions influence adolescents (see for instance, Rimpelå et al 1993; McGee and Stanton 1993; Mastro and Atkin 2002). Based on the Social Cognitive theory, the analytical framework used in this paper assumes that intention to smoke (dependent variable) is influenced by certain variables, including age, gender, exposure to smoking in the mass media, and outcome expectancies.

3. Materials and Methods

3.1 Methods of Data Collection

A sequential mixed method strategy (see Castro et al., 2010) was the approach adopted in this study. First, quantifiable data was extracted from the report of the 2000 Global Youth Tobacco Survey in Ghana. This data was collected through the collaborated effort between the American Center for Disease Control, the WHO, and the Canadian Public Health Association (CPHA). The data was collected from selected schools using an anonymous and confidential self-administered questionnaire. The questionnaire included items on demographic characteristics, knowledge and attitude towards tobacco promotion, self-reported exposure to tobacco promotion, and social influence (including peer, parental, and media influence).

A two-stage cluster sample design was used to produce representative data for all of Ghana. At the first stage, 100 schools were selected with probability proportional to enrolment size. At the second stage, classes were randomly selected. All the students in the selected classes were eligible and 83.1% of them participated in the study (Wellington et al 2000). In all, 1,917 students aged 11-17 years took part in the questionnaire survey.
After analysing the questionnaire data and critically examining the findings, in-depth interviews were held with 40 adolescents selected from a school in Accra. The in-dept interviews were conducted in 2011 with the aim of generating rich qualitative data to enhance the discussions.

3.2 Measurement of Variables

Exposure to tobacco promotion was measured with 5 items on three and four-point scales. For example, (a) "when you watch TV, how often do you see actors smoke?" Answering options included 1= "a lot" 2= "sometimes" and 3= "never". (b) "During the past 30 days (1 month), when you watched sports events or other programmes on television, how often did you see cigarette brand names?" Answering options included 1= "I never watch TV" 2= "A lot" 3= "Sometimes" 4= "Never". Response categories were re-coded so that higher scores represented positive answers, 1= "never"/ "never watched TV", 2= "sometimes" and 3= "a lot".

Outcome expectancies were measured with 5 questions covering social and physical consequences of smoking, responded to on a three point scale. For example, (a) "Do you think boys who smoke have more or less friends"? Answering options included, 1= "more friends", 2= "less friends" and 3= "no difference from non-smokers". (b) "Does smoking help people feel more or less comfortable at celebrations, parties, or in social gatherings?" Answering options included, 1= "more comfortable" 2= "less comfortable" and 3= "no difference from non-smokers" (c) "do you think smoking cigarettes make girls look more or less attractive?" Answering options included, 1= "more attractive" 2= "less attractive" and 3= "no difference from non-smokers". Scores were re-coded so that higher scores represented positive values (see table 2 for wording of all items).

Intention to smoke was measured with a question on a 4 point scale. "At any time during the next twelve months, do you think you will smoke a cigarette"? 1= "definitely not", 2= "probably not", 3= "probably yes", 4= "definitely yes".

3.3 Data Analysis

The Statistical Package for Social Sciences (SPSS) was used to analyse the questionnaire data. A factor analysis was performed to identify the variables that made up the exposure and outcome expectancies scales. Sum scores were then computed to have a scale for exposure and outcome expectancies. Chi square tests were used to assess the association between the variables. The alpha value of less that 0.05 was considered significant. Age categories were further reduced to two to reduce the percentage of cells with less than 5 expected frequencies. Multivariate linear regression was conducted to explain the variance in outcome expectancies and intention. In addition, an independent-sample t-test was performed to assess whether there were age and gender differences on outcome expectancies and intention to smoke. Data from the in-depth interviews were subjected to content analysis. The qualitative data was used to explain patterns generated during quantitative analysis.

4. Results

4.1 Characteristics of the Respondents

As stated already, 1,917 adolescents of whom 56.2% (n=1025) were boys and 43.8% (n=800) were girls took part in the questionnaire survey. These respondents were made up of two main age-groups.

The first group, namely younger adolescents (11-14 years), constituted 51.6% (n=964), while older adolescents (15-17 years) constituted 48.4% (n=906). A higher proportion (41.9) of participants was in the lower grade, Junior Secondary School Form One (J. S.S 1). About 26.8% of participants were in J.S.S 2, and the remaining were in J.S.S 3, 27.2% (n=522).

4.2 Exposure to Tobacco Promotion

The results on exposure to smoking were reported for the sample as a whole because analysis did not show any significant gender and age differences. About 29.0% of the questionnaire respondents reported seeing a lot of actors smoke on TV and videos, while 28.2% reported that they *sometimes* see actors smoke on TV and Video. In effect, a 57.2% of respondents reported seeing actors smoke on TV and Video. Additionally, 24.1% of the respondents reported that they often see a lot of cigarette brand names when they watch programmes on TV, with another 24.5% reporting that they sometimes see brand names. Furthermore, 16.7% report that they *sometimes* see advertisements for cigarettes when they go to sports events, fairs, concerts and community events, while 17% reported seeing a lot (See Table 1).

About 28.5% of respondents also reported seeing *a lot* of advertisements/promotions for cigarettes in newspapers or magazines during the last 30 days before the research. These figures suggest that Ghanaian adolescents were highly exposed to tobacco promotions. As a new tobacco bill is before parliament and the activities of tobacco companies in Ghana are declining, it is likely that exposure of adolescents to tobacco promotions may be declining. However, adolescents are still highly exposed to smoking of cigarettes when they watch movies and TV.

Table 1 Exposure to Tobacco Promotion

questions	*Answers (%)*		
	Never	*sometimes*	*a lot*
When watch TV, videos, or movies, how often do you see actors smoking?	42.0	28.2	29.0
During the past 30 days, when you watch sports events or other programmes on TV, how often did you see cigarette brand names?	51.4	24.5	24.1
When you go to sports events, fairs, concerts, or community events, how often do you see advertisements for cigarettes?	66.4	16.7	17.0
	none	*a few*	*a lot*
During the past 30 days, how many advertisements for cigarettes have you seen on billboards and posters?	43.6	28.3	28.1
During the past 30 days, how many advertisements or promotions for cigarettes have you seen in newspapers or magazines?	48.5	23.3	28.5

The researchers initially thought that such exposures take place in the school. However, during the in-dept interviews, most of the adolescents reported that they were more exposed to smoking when they watched TV and movies at home than when they were in school:

> "In the school we only watch films during entertainment days. The actors do not smoke in the school's films, since the Senior House Master determines the films that we watch…It is when I come home that I see actors smoking in the TV movies" (Nuertey, June 12, 2011).

The above statement suggests that most parents do little to prevent their children from watching movies that depict smoking.

Interviews with some adolescents also show that while some parents have been warning their children about the negative effects of watching pornographic materials, the same parents do not prevent their children from watching smokers in the TV/movies. This is captured in the statement below by a 12 year old female respondent:

> "My father only prevents me from watching sexually explicit materials at home, but he has never warned me about watching movies that show [depict] smoking (Ama, 4th March 2011).

4.3 Smoking Behaviour among Adolescents

Most of the respondents in the questionnaire survey (85.3%, n=1461) reported that they had never smoked nor experimented with cigarettes, while 14. 7% (n=252) had ever tried or experimented with cigarette smoking. In terms of gender, 15.2% (n=140=) of the males and 13.5% (n=97) of females reported that they have ever experimented with cigarette smoking. This difference did not show any statistical significance. Also, 14.9% (n=127) of younger adolescents had ever experimented with cigarette smoking compared to a similar percentage of older adolescents (14.1 %, n=116). Again, there was also no statistical difference here. It also came out during the in-dept interviews that some adolescents in Ghana might have been attracted to smoking by what they saw in the media. This is captured clearly in the following statement by a 15 year old boy:

> "My friend, Musa, had been asking me to smoke with him but I did not like the idea. One day when we were watching a movie in their house, we saw some of the actors smoke and he told me that smoking is very nice and that is why even the stars were enjoying it. Looking at the way the actors were behaving, I told Musa that I would try it later. Then one day, he reminded me about it and told me he was going to smoke in the bush. I followed him to the bush and we smoked, but I have since not smoked again" (Luma, 15th June 2011).

It is clear from the case above that the young boy was influenced by peer pressure. However, the smokers in the movie were relied upon by his friend to convince him that smoking is good. This means that peer pressure and media messages worked together to influence this adolescent to smoke. The statement also supports the argument that smoking by adolescents' favourite film stars has an influence on smoking among adolescents (Tickle et al. 2001). Even though cigarette smoking is not frequently shown on primetime television, it is depicted in many movies. Adolescents see film stars smoking in the context of sexuality, toughness, adolescent rebellion and as a way to relieve stress (McCool et al. 2001). Adolescents who find themselves in any of these contexts may therefore try to smoke to depict their favourite film stars.

4.4 Outcome Expectancies by Gender

As shown in the Table 2, about 41.4% of the males and 41.6% of the females believe that boys who smoke have more friends. A chi-square test shows that there was no statistical association (X^2=3.51, df= 2, p >0.05) between gender and this type of outcome expectancy. The results also indicated that 31.9% of the males and 28.8% of the females reported that girls who smoke have more friends. Again, the results indicated no significant gender difference here (X^2=2.97, df =2, p >0.05). On how people feel at celebrations after smoking, 31.1% of the males reported that smoking helps people feel more comfortable at celebrations and parties as compared to a lower percentage of the females (24.9%). The gender difference was significant (X^2 = 8.20, df = 2, p<0.05). It also came out during the in-depth interviews that this outcome expectancy sometimes motivates adolescents to smoke during fun games, concerts and other celebrations:

> "I only smoke during concerts and games when most of my friends are also smoking. At such places, many people drink and smoke. If I don't join them, I will appear odd" (Akutse, 17th April, 2011).

It was also observed that some young boys smoke at such gatherings just to portray to other people that they are "hard":

> "Hmm sometimes, one may not want to smoke but when every one is smoking and you don't want to join, they may think you are not a hard guy. Sometimes I am really tempted to smoke during concerts and games but I fear that my father will hear of it and beat me" (Yaw, 8th April, 2011).

The above statements imply that peer pressure is more pronounced at celebrations. On the question of whether smoking makes boys look more or less attractive, 18.6% of the boys and 18.4% of the girls gave a positive response. Finally, 17.0% of the boys said that smoking make girls more attractive and 15.6% of the girls also reported the same.

Table 2 Outcome Expectancies by Gender

	Overall n (%)	Males n (%)	Females n = (%)	X^2	p
Boys who smoke have more friends					
Less friends	690 (38.5)	402 (40.0)	288 (36.5)		
No difference from non-smokers	360 (20.1)	188 (18.7)	172 (21.8)	3.5	>.05
More friends	744 (41.5)	416 (41.4)	328 (41.6)		
Girls who smoke have more friends					
Less friends	909 (50.3)	508 (50.0)	401 (50.6)		
No difference from non-smokers	346 (19.1)	183 (18.0)	163 (20.6)	3.0	>.05
More friends	552 (30.5)	324 (31.9)	228 (28.8)		
Smoking helps people feel more comfortable at celebrations					
Less comfortable	964 (53.5)	522 (51.6)	442 (55.9)		
No difference from non-smokers	326 (18.1)	175 (17.3)	151 (19.1)	8.1	<.05
More comfortable	511 (28.4)	314 (31.1)	197 (24.9)		
Smoking makes boys look more attractive					
Less attractive	1138 (63.8)	632 (63.2)	506 (64.5)		
No difference from non-smokers	316 (17.7)	182 (18.2)	134 (17.7)	0.4	>.05
More attractive	330 (18.5)	186 (18.6)	144 (18.4)		
Smoking makes girls look more attractive					
Less attractive	1198 (66.3)	663 (65.5)	535 (67.2)		
No difference from non-smokers	314 (17.4)	177 (17.5)	137 (17.2)	0.8	>.05
More attractive	297 (16.4)	172 (17.0)	124 (15.6)		

4.5 Outcome Expectancies by Age

As shown in Table 3, about 43.6% of younger adolescents and 38.0% of older adolescents responded that boys who smoke have more friends. The difference between these two groups was statistically significant ($X^2 = 6.245$, df = 2, p= < 0.05). Furthermore, 35.8% of younger adolescents and 24.6% of older adolescents agreed with the statement that girls who smoke have more friends. The difference was also statistically significant ($X^2 = 27.51$, df = 2, p< 0.05). The in-depth interviews supported this finding. At least two older adolescents among the 40 adolescents interviewed stated that the desire to have friends push them into smoking. It was explained that in the boarding school where "seniors" like punishing "juniors", adolescents may be forced to join a smoking gang of their seniors just to avoid being punished when they go wrong:

> "One day in my school, I saw two of my seniors smoking and they gave me a cigarette to smoke. I did not want to smoke but they told me that if I join them we will become friends and they will stop worrying me. So I smoked with them. Since then, I sometimes smoked with them, but they have now completed the school so I don't smoke again" (Yufi, 23rd June, 2011).

Furthermore, 30.5% of younger adolescents responded that smoking help people feel more comfortable at celebrations as compared to a slightly lower number of older adolescents (25.6%). The difference was not statistically significant, (X^2 =5.52, df = 2, p > 0.05). When respondents were asked the question of whether smoking of cigarettes make boys look more or less attractive, 21.3% and 15.8% of the younger and older adolescents respectively answered that smoking of cigarettes make boys look more attractive. Here, a statistically significant difference (X^2 =9.609, df = 2, p<0.05) was observed.

Analysis of the perception that smoking make girls look more attractive indicated that, a higher proportion of younger adolescents (20.8%) have this outcome expectancy as compared to 11.8% of the older adolescents. This was also statistically significant (X^2 = 28.307, df = 2, p< 0.05). Overall, the results indicated that younger adolescents have more positive outcome expectancies of smoking than older adolescents (See Table 3). This difference may be explained by the fact that older adolescents are generally more difficult to convince than younger adolescents who are likely to copy everything the see "blindly".

Table 3 Outcome Expectancies by Age

Outcome expectancy	Overall n (%)	11-14 n (%)	15-17 n = (%)	X^2	p
Boys who smoke have more or less friends	710 (38.7)	348 (36.6)	362 (41.0)		
Less friends	373 (20.3)	188 (19.8)	185 (21.0)	6.2	<.05
No difference from non-smokers	750 (40.9)	415 (43.6)	335 (38.0)		
More friends					
Girls who smoke have more or less friends	930 (50.3)	441 (46.1)	489 (54.8)		
Less friends	357 (19.3)	173 (18.1)	184 (20.6)	27.5	<.05
No difference from non-smokers	563 (30.4)	343 (35.8)	220 (24.6)		
More friends					
Smoking helps people feel more or less comfortable at celebrations					
Less comfortable	985 (53.4)	488 (51.5)	497 (55.5)		
No difference from non-smokers	340 (18.4)	171 (18.0)	169 (18.9)	5.5	>.05
More comfortable	515 (28.1)	289 (30.5)	229 (25.6)		
Smoking makes boys look more attractive	1157 (63.5)	583 (62.1)	574 (64.9)		
Less attractive	326 (17.9)	156 (16.6)	170 (19.2)	9.6	<.05
No difference from non-smokers	340 (18.7)	200 (21.3)	140 (15.8)		
More attractive					
Smoking makes girls look more attractive	1227 (66.4)	606 (63.9)	621 (69.1)		
Less attractive	318 (17.2)	146 (15.4)	172 (19.1)	28.3	<.05
No difference from non-smokers	303 (16.4)	197 (20.8)	106 (11.8)		
More attractive					

4.6 Overall Exposure and Outcome Expectancies

In addition to analysing the specific outcome expectancies by age and gender, the overall total was also computed. There were 5 items in the scale scored from 1-3; the range of the scale is therefore 5-15. The value 10 indicates no difference from non-smokers whereas more than 10 indicate more positive outcome expectancies and exposure. Table 4a and 4b show the inter-item and item-total Pearson correlations for the single items in exposure and outcome expectancies scales. Inter-item correlations were significant for both outcome expectancies and exposure scales. Cronbach's alpha with all items included was 0.7 for exposure and 0.6 for outcome expectancies.

Table 4a Overall Exposure

Items in the scale	2	3	4	5	Iter-total correlation	Cronbach's alpha if item is deleted	Factor loading
1. How often actors are seen smoking on TV	.345**	.111**	.104**	.202**	.280	.590	.559
2. How often cigarette brand names are seen during sport events on TV		.225**	.195**	.264**	.405	.524	.680
3. Advertisement for cigarettes seen on billboards			.473**	.195**	.397	.528	.636
4. Advertisements for cigarettes seen in news papers and magazines				.240**	.378	.538	.622
5. Advertisements for cigarettes seen at sport events					.335	.561	.601
Cronbach's alpha for exposure =.603							

******Correlation is significant at $p \leq 0.01$ (2 tailed)

Table 4b Overall Outcome Expectancies

Items in the scale	2	3	4	5	Iter-total correlation	Cronbach's alpha if item is deleted	Factor loading
1. Boys who smoke cigarettes have more or less friends	.489**	.232**	.190**	.204**	.403	.664	.577
2. Girls who smoke cigarettes have more or less friends		.247**	.281**	.288**	.485	.627	.663
3. Smoking helps people feel more or less comfortable at celebrations			.310**	.288**	.376	.674	.577
4. Smoking of cigarettes make boys more or less attractive				.599**	494	.625	.732
5. Smoking of cigarettes make girls more or less attractive					.496	.626	.731
Cronbach's alpha for Outcome expectancies =.693							

******Correlation is significant at p< 0.01 (2 tailed)

4.7 Age and Gender Differences in Overall Exposure and Outcome Expectancies

Independent-sample t-test was also performed to assess whether there was any significant age and gender differences on overall total exposure and total outcome expectancies. There was no statistical difference between scores for males (M = 8.75, SD = 2.55) and females (M =8.59, SD = 2.55; t (1700) =1.30, p = >.05) on overall exposure to tobacco promotion. There was also no statistical difference in the scores for younger adolescents (M = 8.64, SD = 2.45), and older adolescents (M = 8.74, SD =2 .66; t (1734) = .83, p = >.05).

The independent t-test analysis also showed that there was no statistical significant difference in scores for males (M = 8.67, SD = 2.85, and females (M = 8.56, SD = 2.75; t (1721) = 184, p = >.05) on total outcome expectancies. However, there was significant age difference. The scores for younger adolescents was slightly higher (M = 8.91, SD = 2.95) than that of older adolescents (M =8.31, SD = 2.60; t (1756) =4.55, p =< .05).

4.8 Predicting Outcome Expectancies

A regression analysis was undertaken to explore the relationship between outcome expectancies (dependent variable) on one hand, and exposure, controlling for age, gender, and ever tried smoking (independent variables) on the other. A four-step regression analysis was performed by entering outcome expectancies scale into the model as the dependent variable. Whereas in block 1 of this model, exposure was entered as the only explanatory variable, age was entered in block 2, gender in block 3, and ever tried smoking in block 4. The predictive power of each predictor was evaluated in terms of its standardized regression coefficients (beta values). The focus was also to examine the amount of variance each block of predictors (exposure, age, gender, and ever tried smoking) was able to explain the dependent variable.

Results of the hierarchical regression analysis show exposure has a significant explanatory power, before and after the other variables were entered in the regression model. (F (1, 1589) = 6.234 p<.05) (see Table 5a). Besides, age was also a significant predictor of outcome expectancies; entering age increased the explanatory power of the model, R^2 increased from .004 to .016. (F (2, 1588) = 19.235 p<.05). Gender, on the other hand did not have significant explanatory power, neither alone nor in conjunction with other variables. Ever tried smoking, however, had a significant explanatory power. (F (4, 1586) = 36.298 p<.05), the ANOVA Table shows that the model as a whole is significant.

An assessment of standardized regression coefficients (beta weight) revealed that, "ever tried smoking" was the strongest predictor of outcome expectancies (standardised beta=.15), followed by age (standardised beta=.11), and exposure (standardised beta= .06). Gender did not make any significant contribution to the model. Together, all the variables in the model explained 3.9% of variance in outcome expectancies. The results of this hierarchical regression model are shown in Table 5a.

4.9 Predicting Intention to Smoke in the Future

A second regression analysis was undertaken to explore the relationship between intention to smoke in the future (dependent variable) on one hand, and exposure, outcome expectancies, age, gender, and ever tried smoking (independent variables) on the other. A five-step regression analysis was undertaken by entering intention to smoke cigarette into the equation as the dependent variable. In block 1 of this model, exposure was entered. Outcome expectancies scale was entered in block 2. In blocks 3, 4 and 5, age, gender, and ever tried smoking were entered respectively. The predictive power of each predictor was evaluated in terms of its standardized regression coefficients (beta values). The focus was also to examine the amount of variance each block of predictor (exposure, outcome expectancies, age, sex, and ever smoked cigarette) was able to explain.

The results of this hierarchical regression indicated that exposure did not have direct explanatory power, neither alone, nor in conjunction with other variables. Entering outcome expectancies significantly increased the explanatory power of the model. R^2 increased slightly from 0 to 0.004 ($F(2, 1588) = 6.479$ $p<0.05$). Age and gender on the other hand were not significant. On entering 'ever tried smoking' in the fifth and final block, the explanatory power of the model increased. R^2 increased from 0.006 to 0.070 ($F(5, 1585) = 109.17$, $p<0.05$). In this block, the significance of outcome expectancies disappeared. An assessment of the standardised coefficients (beta weight) reveals that 'ever tried smoking' was the most potent explanatory variable in the block (standardised beta= .26). All the other variables did not make any significant contribution to the prediction of intention to smoke in the future. All variables explained 6.7% of variance of intention to smoke in the future (see Table 5b).

Table 5a Predicting Outcome Expectancies

	Model 1		Model 2		Model 3		Model 4	
	Beta	p-value	Beta	p-value	Beta	p-value	Beta	p-value
Exposure	.063	.013	.065	.009	.064	.010	.056	.024
Age			-.109	.000	-.100	.000	-.109	.000
Gender					-.027	.281	-.023	.342
Ever smoked							.149	.000

Model 1 R^2 =. 004
Model 2 R^2 = .016
Model 3 R^2 = .017
Model 4 R^2 = .039

Table 5b Predicting Intention

Predictors	Model 1		Model 2		Model 3		Model 4		Model 5	
	Beta	p-value	Beta	p-value	Beta	p-value	Beta	p-value	Beta	p-value
Exposure	.017	.498	.013	.604	.013	.606	.014	.573	.003	.904
Outcome Expectancies			.064	.011	-.064	.011	.065	.010	-.027	.279
Age					-.002	.936	-.005	.829	-.005	.849
Gender							.043	.088	.048	.049
Ever smoked									.256	.000

Model 1 R^2 = .000
Model 2 R^2 = .004
Model 3 R^2 = .004
Model 4 R^2 = .006
Model 5 R^2 = .070

5. Discussion and Concluding Remarks

The analysis in this paper has shown that a high proportion of adolescents in Ghana were exposed to tobacco promotion and smoking in the media. About 57.2% of adolescents who took part in the questionnaire survey reported seeing actors smoke when they watch television, videos, and movies. Again, 51.8% of adolescents had seen advertisements and promotions for cigarettes in newspapers and magazines.

A further 33.7 had seen advertisements for cigarettes when they attend sport events, fairs, and community events. Lack of effective implementation of legislation on smoking has contributed to this high level of exposure of adolescents to tobacco promotion. Although a drafted tobacco bill which is yet to be approved by parliament may have reduced the level of adolescents' exposure to tobacco promotions, in recent years, exposure of children to cigarette smoking in the media may be on the rise as many TV stations now show various movies each day. Another problem is the fact that there is also no legislation restricting smoking in public places. This explains why some adolescents reportedly smoke at concerts and other celebrations. It was also demonstrated that a high proportion of adolescents in Ghana have positive physical and social outcome expectancies concerning smoking. Some researchers have attributed this development to the actions of tobacco companies and the film industry (Everett et al, 1998; McCool et al, 2001). In some parts of the world, tobacco companies display young and attractive smokers in their advertisement as a way of implanting the idea of initiation of smoking behaviour in adolescents' mind. Adolescents, therefore, easily notice and respond to these messages in tobacco advertising (Sargent et al. 1997).

Regarding the relationship between gender and outcome expectations, the results revealed that there were no gender differences on physical outcome expectancies. This unexpected trend shows that tobacco promotion has equal effects on both female and male adolescents. According to Elkind (1985), tobacco companies sometimes use brand images to counteract negative stereotypes, such as the idea that smoking is not good for women. There was, however, a gender difference on one item on social outcome expectancies. About 31.1% of the males were positive that smoking helps people feel more comfortable at celebrations as compared to 24.9% of the females. These findings support the argument that while men smoke for pleasure, females tend to adopt smoking as a strategy of coping with stress (Snow and Bruce 2003). In relation to the relationship between age and outcome expectancies, it was shown that younger adolescents generally have more positive outcome expectancies than older adolescents. This means that it is very important to provide information on the adverse effects of smoking to younger adolescents in both formal and non-formal educational institutions.

It is concluded that there is a positive relationship between exposure to tobacco promotion and outcome expectancies. Indeed, a substantial number of adolescents in Ghana have physical and social outcome expectancies about cigarette smoking. The findings also suggest that outcome expectancies act as mediating variable between exposure to tobacco promotion and intention to smoke. This resonates with the position of the Social Cognitive theory that the capacity to anticipate and place value on the outcome of different behaviours determines the behavioural patterns that an observer will eventually adopt. As stated already, "ever experimented with smoking" was a more significant predictor of intention to smoke in the future. These results are noteworthy because research to date has consistently shown that exposure to tobacco strongly predict intention to smoke (Maassen, et al 2004). The findings of this study, therefore, suggest that past smoking behaviour is more strongly associated with smoking behaviour. This trend could be attributed to the addictive nature of nicotine. According to Perry and Staufacker (1996), tobacco use in adolescence develops into nicotine dependency, a behaviour which is likely to continue into adulthood. Therefore, adolescents who have ever experimented with smoking are more likely to smoke in the future. This observation means that it is important to ensure that children are prevented from ever experimenting with smoking.

Based on the findings of this study, it is suggested that apart from passing laws to prohibit direct tobacco advertisement, children must not be exposed to smoking in the mass media. The movie industry has long been criticised for showing smoking stars on screen (Everet et al., 1998; McCool et al., 2001), but industry managers do not believe that viewing smoking in movies has influence on children (Shields et al, 1999). The findings here demonstrate that exposure to smoking in movies influences their outcome expectancies and intentions to smoke. Laws must, therefore, be formulated to protect adolescents from being exposed to smoking in the mass media. Parents must also be educated on the need to prevent their children from watching movies which feature smoking stars. It is also suggested that all government agencies and youth related institutions of training must have programmes directed at addressing the problem of tobacco use as part of their curricular or extra curricular activities. Additionally, effective information should be provided to school children about the harmful effects of tobacco use.

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