The Role of Parental and Peer Smoking Influences in the Development of Adolescents’ Smoking Behavior: A Review

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Abstract: Adolescent smoking is a very important topic for researchers to study. Adolescents have been smoking for many centuries, and this practice had been widely accepted until the health problems of smoking became a public concern. Researchers have tried to find out what factors influence adolescents to start smoking cigarettes in order to find a way to decrease this harmful practice. The purpose of this paper is to identify environmental factors associated with smoking behavior, to explore interpersonal and environmental factors that shape smoking behavior; and to describe the process of smoking behavior among adolescents. It conceptualizes the parental and peer smoking behavior processes and effects, reviews literature regarding the role of parental and peer smoking behavior, and its influences on adolescent attitudes towards smoking and develops a set of propositions on the basis of theory research, and suggests directions for future research.

Key words: adolescents smoking behavior, parents smoking behavior, peer smoking, attitudes towards smoking.

INTRODUCTION

Health is a big concern for our society. Cigarette smoking is a major health concern in most societies, because the diseases and deaths that result from it are in fact preventable (Gray & Donatelle 1990). Cigarette smoking not only affects the person smoking but also those who involuntarily inhale the secondhand smoke. While it is known that cigarettes are harmful and highly addictive, adolescents start smoking every day. Since most adults start smoking as adolescents, it would be very beneficial to try to prevent adolescents from smoking in order to prevent health problems later in life. Although many policies are being implemented by the government to curb the smoking habits in Malaysia, the Malaysia’s Statistics Department reported that the index for food and non-alcoholic beverages during the month of June 2009 compared with the same month in 2008, showed an increase of 3.4%. Particularly, notable increases were noticed among tobacco advanced 8.2% (Star newspaper online, 2009). According to reports some 10,000 Malaysians die annually because of smoking while 4.9 million people worldwide are killed by tobacco every year, mostly in the poor countries (Malaysian Council for Tobacco Control, 2010). The World Health Organization (WHO) estimates that the global death toll from smoking will double to 10 million in 2030 if the increase in the use of tobacco continues unabated. In 1996, nearly 25% of Malaysians were smokers, compared with 21.5% in 1986 (Malaysian Council for Tobacco Control, 2010). According to statistics, 36% of Malaysian teenage boys and 4.2% of girls are smokers, as a result of cigarette prices being too cheap and affordable to youths (Malaysia Council for Tobacco Control, 2009). Smoking remains a very serious problem in Malaysia. Comparative statistics (extracted for Malaysia, Singapore, Thailand, Indonesia, China, India, the US and the UK) from the World Lung Foundation for 2007 or later showed over half of male Malaysians – 51.1% – smoked. More than a third – 36.3% – of 13 to 15-year-old males smoked, by far the highest among the surveyed group of countries. The next highest was Indonesia with less than a quarter (23.3%). This makes Malaysia a rather attractive market for tobacco companies with a large pool of potential smokers (Star newspaper online, 2009). Malaysian women represent a lucrative market to the tobacco industry. The percentage, to date, of Malaysian women who smoke are still considered small. This proves a formidable challenge to all, especially to health-conscious parents and the community, to see to it that smoking among teenagers (particularly girls) will not increase.

Given the magnitude of the smoking problem in developing nations like Malaysia, research is needed to better understand the factors that promote smoking behavior in these specific countries. This, in turn, can assist in the development of more effective tobacco control interventions that are culturally relevant and appropriate. Despite the need for research, only a handful of studies have been conducted in developing countries that specifically investigate the factors that promote smoking behavior. Even fewer studies are encountered when examining country specific smoking research, such as Malaysia. Most of the published literature on smoking in developing countries has been descriptive epidemiology, investigating smoking prevalence of populations and locations. While these studies are helpful in establishing health priorities and policies for a particular country, they fall short in guiding public health practitioners in developing effective smoking prevention and cessation
interventions. The basis for an effective smoking prevention and cessation intervention comes from a comprehensive understanding of what factors lead individuals to smoke, and how these factors influence and are related in the development of smoking behavior.

Objectives and Significance of Study:
This paper addresses two key issues in smoking behavior research that are insufficiently addressed in the current literature. First, studies conducted in developed countries have consistently shown smoking behavior is associated with certain demographic, cognitive, lifestyle, and environmental factors. Questions remain, however, as to whether such factors are also significant in less developed nations, such as Malaysia, which have different economic and environmental conditions, as well as history and culture. Second, much remains to be known about how demographic, cognitive, and environmental factors actually contribute to the process of smoking behavior development. Also a number of studies have shown that peer and familial influence play a significant role in smoking behavior. The question of how these interpersonal relationships, along with the smoking-related demographic, cognitive, and environmental factors lead one to smoke still needs to be addressed. The overall goal of this paper is to develop a framework that better captures smoking behavior development specifically among adolescents.

This paper focus on cigarette smoking and not smoking of other substances. The specific aims of this paper are to (1) identify environmental factors associated with smoking behavior; (2) explore interpersonal and environmental factors that shape smoking behavior; and (3) describe the process of smoking behavior development. Additionally, understanding the processes of development and maintenance of smoking behavior in one Asian country can help public health researchers develop programs to mitigate the problem of smoking in other Asian countries, where smoking is increasing at an alarming rate.

Literature Review:

Social Learning Theory Bandura's (1977) has been used often in smoking behavior research. Social learning theory views behaviors as a result of the dynamic, reciprocal relationship between personal factors and social environmental influences. The key concepts in social learning theory include behavioral capability, expectancies, observational learning, reinforcements, self-efficacy, and reciprocal determinism. This theory assumed that behaviors learned by individuals are based on what they see and learn from people close to them, such as their parents, friends, and siblings. According to this theory, a child who looks up to an older sibling who is a smoker is more likely to start smoking as well, as long as she or he has the self-efficacy to do it. The way this theory has been commonly tested in research is by asking respondents about the smoking history of people close to them, whether they view smoking as socially desirable, and whether they have the access and ability to smoke. Skinner (1953) developed the learning theories, which stated that complex behavior is learned gradually through the modification of simpler behaviors. Imitation and reinforcement play important roles in these theories, which stated that individuals learn by duplicating behaviors they observe in others and that rewards are essential to ensuring the repetition of desirable behavior (Ajzen 1985). As each simple behavior is established through imitation and subsequent reinforcement, the complex behavior develops. When verbal behavior is established the organism can learn through rule governed behavior and thus not all action needs to be contingency shaped. Skinner (1953) was one of the first psychologists to recognize the critical role of imitation (what he termed "echoic behavior") in the learning of language. Behavior analytic theories of change have been quite effective in improving the human condition (Ajzen 1985). A more recent theory on human relationships and behavior is the relational models theory (Fiske 1991). Relational models theory asserts that humans are social beings and that they relate to each other in four different ways—through (1) communal sharing, (2) authority ranking, (3) equality matching, or (4) market pricing. Communal sharing is a relationship whereby people within a group treat each other as "equivalent" and "undifferentiated", authority ranking is an

Fig. 1.0: Conceptual Framework.
Attitudes Towards Smoking And Adolescent Smoking Behavior:
Radhakrishna et al (1997) conducted a study to determine the extent of cigarette use among 7th, 9th and 12th graders in six counties of Pennsylvania. It was reported that smokers more likely than non-smokers to agree that: a) it was OK to sell tobacco products to minors; b) don’t mind being around people who smoked; c) smoking helped people to relax; and d) they would probably smoke cigarettes when they became adults. In another study, Nardini et al (1998) aimed to determine: 1) the prevalence of tobacco smoking among chest physicians, the influence of the personal smoking habit on clinical practice and what training about tobacco-related issues (TI) doctors received in medical school. It was found that a significantly higher proportion of smokers than nonsmokers believe that the dangers of smoking were currently overestimated and that air pollution damaged health more than tobacco smoke. A similar difference was detectable in their opinions about passive smoking. In a study by Engels et al (1999) which aimed to assess how far associations between possible explanatory variables and smoking onset depended on the use of cross-sectional versus prospective design, it was found that those with positive attitudes to smoking and lower self-confidence in resisting pressures to smoke were more likely to smoke. Sandos et al (2003) have examined the smoking prevalence, the associations of known smoking risk factors, religious and cultural influences with adolescents’ susceptibility to smoking and experimentation with cigarettes among the ethnic group of Muslim Arab-American adolescents, in an Islamic Academy in Fairfax County, Virginia. The main effects of positive beliefs about smoking were significantly associated with a greater risk of susceptibility to smoking for both genders, while the main effect of perceived negative consequences was significantly associated with a decreased risk of susceptibility to smoking for both genders. Higgins et al (2003) have examined the power of the Theory of Planned Behavior (TPB) to predict smoking intentions and smoking behavior. It was found that intentions not to smoke were best predicted by holding negative attitudes towards smoking and perceiving control over not smoking. Wilkinson (2004) have examined the predictive utility of the following correlates of adolescent smoking intention, PBC (for smoking and smoking-related skills), attitudes, subjective norms, descriptive norms and prevalence estimates, parenting style, neuroticism, extraversion, conscientiousness, self-esteem, Socio Economic Status, personal income, sex, and past behavior. More positive attitude towards smoking directly ‘predicted’ higher intentions to smoke. The path analysis indicated that positive attitude towards smoking was predicted by lower parental control and lower parental support. Ayatollahi et al (2005) have examined the effects of socio-environmental and personal factors on three stages of the smoking continuum among a sample of 10th-grade male students, ages 14–19 years, at 20 high schools in Iran. The discriminant function analysis indicated that attitude toward smoking, were related to more intense smoking behaviors. Forrester et al (2007) conducted a study to identify variables that predicted the initiation of smoking among adolescents, and the development of susceptibility to smoking, over a 2-year period. Relaxed parental attitudes towards youth smoking predicted increased susceptibility. Raptou et al (2009) investigated smoker’s profile by addressing the determinants of cigarette demand and providing a circumstantial exposition of the psychosocial characteristics that differentiate smoking patterns. Perceived negative consequences of smoking was negatively associated with smoking participation. Individuals who were aware of the negative impacts of the smoking habit were less likely to smoke, by 18.69 percent. For all that, in the case of established smokers, information on and familiarity with the negative consequences of smoking do not affect cigarette consumption. Recently, Awaisu et al (2010) conducted a study which aimed to document the prevalence of smoking among newly diagnosed TB patients and to learn about the tobacco use knowledge and attitudes of those who are smokers among Malaysian population. The tobacco use attitudes of the study population were evaluated using an 18-item scale. Notably about two-thirds believed that smoking was fun (65.1%) and a similar proportion believed that it calms nerves (61.3%). Many respondents (70.1%) also agreed or strongly agreed that smoking make them relieved all life stresses. However, an overwhelming proportion of the patients agreed or strongly agreed that: smoking is a waste of money (87.5%);
tobacco use is very dangerous to health (91.3%) and; smokers are more likely to die from heart disease when compared with non-smokers (81.3%). In addition, the vast majority had a positive attitude that; sales of cigarettes should be outlawed (91.3%), people below the age of 18 years should be restricted from purchasing cigarettes (95.1%), and smoking should be allowed at fewer places than it were (63.8%). Conversely, many respondents were neutral on the point that smoking keeps one’s weight down (45.0%) and the belief that it gives confidence (45.0%). To summarize, there appears to be reasonably good supportive evidence that adolescents who tend to have a positive attitudes towards smoking will influence on their smoking behavior. This leads to the following proposition:

P1. Adolescent’s attitudes towards smoking is associated with their smoking behavior.

Parental Smoking Behavior And Adolescents’ Smoking Behavior:

A study conducted by Chassin et al (1984) among adolescents from 7th-12th Graders in the United States (U.S) to examine the acquisition of cigarette smoking within the context of normal social development in adolescence found that adolescents with greater smoking involvement reported more parental smoking. Never Smokers who remained abstainers had significantly fewer smoking parents than did any other group. Regular Smokers had significantly more parents who smoked than all groups. Brown et al (1994) have used data from the Youth Smoking Survey (YSS) to determine the degree and the nature of the association between cigarette smoking in adolescents and the smoking habits of parents, and other potentially important influences in the youth’s social environment. It was found that there was an association between the smoking habits of the father and the smoking habits of the adolescent. There were no apparent differences between males and females in the relationship between the current smoking habits of the father and the smoking habits of the youth. An association between lifetime smoking habits of the father and the smoking habits of the child was also noted. There was little difference between males’ and females’ reports of their father’s opinion of their smoking. Father’s disapproval of youth smoking appeared to rise among older smokers in each of the categories of smoking. Youth whose mother smoked were more likely to smoke. There was an association between the smoking habits of the mother and those of the youth. The association was stronger for females than for males and for those aged 10-14 than for those aged 15-19. Females appeared slightly more likely than males to smoke when both parents smoked. Engels, et al (1999) conducted a three-wave 5-year longitudinal survey among 1063 secondary schoolchildren (12 to 18-year-olds) in The Netherlands. The study aimed to assess how far associations between possible explanatory variables and smoking onset depended on the use of cross-sectional versus prospective design. It was found that smoking by family members was not related to smoking at Time 1 but smoking by the father or mother was associated with smoking at Time 2 and Time3. Modelling effects were apparent on the part of the mother. Those with a smoking mother, were more likely to become smokers themselves. Using a sample of adolescents from junior and high schools in the U.S, Smith and Stutts (1999) have found that adolescents who smoked were more likely to have parents who smoked. Significant differences in parental smoking were also found for junior high/middle school and college students. For the junior high/middle school students, the mean for parents’ smoking was greatest for at risk smokers followed by regular smokers and non-smokers and for college students the pattern was opposite. Biener et al (2000) conducted a prospective study among adolescents in the U.S to examine the effect of tobacco marketing on progression to establish smoking. Receptivity was significantly associated with living in a household in which at least one adult smoked. A study conducted by Soteriades and DiFranzal (2003) with a sample of adolescents aged 12 to 17 years in the U.S, examined the association between parental socioeconomic status (SES) and adolescent smoking. It was found that maternal smoking was associated with an 85% increased risk of the child’s being a smoker. Islam and Johnson (2003) conducted a study to examine the smoking prevalence, the associations of known smoking risk factors, religious and cultural influences with adolescents’ susceptibility to smoking and experimentation with cigarettes among the ethnic group of Muslim Arab-American adolescents, in an Islamic Academy in Fairfax County, Virginia. However, it was found that family smoking behavior and family advice against smoking were not significantly correlated with ever smoking. Family smoking, and family advice against smoking were not significantly associated with susceptibility to smoking for either gender. Rohde et al (2004) study have examined whether lifetime psychopathology, regular smoking and psychopathology in family members, and smoking characteristics were associated with successful cessation among daily smokers. It was found that the measures of daily smoking by mothers, fathers, and siblings were not significantly associated with successful smoking cessation. None of the measures of familial smoking were associated with successful smoking cessation. In Queensland, O’Callaghan, et al (2006) have examined associations between maternal smoking and family, social or child risk factors when the child was aged 5 and adolescent smoking. The Influence of mothers who smoked in pregnancy or continue to smoke at 14 years was also examined. It was reported that mothers who lost to follow-up were of lower educational level and age, were more likely to be unmarried and poorer, to have smoked more in early pregnancy and had children of lower birth weight. Maternal and child factors at 5 years related significantly to adolescent smoking. Maternal smoking related significantly to adolescent smoking. Barnett et al (2007) have used students in Quebec secondary schools to
investigate the association between smoking behavior among secondary school students and school smoking policies. It was found that the prevalence of daily smoking among parents was high: 46.4% and 51.3% of students had at least one parent who reported smoking among 13 and 16 year old subjects, respectively. Daily smoking was more prevalent among students whose parents smoked. White et al (2008) conducted a study among twins in Australia. The data were used from a prospective cohort study of twins to investigate the influence of unmeasured genetic and measured and unmeasured environmental factors on the smoking behavior of adolescents and young adults. Their result indicated a strong association between an individual’s smoking status and that of their peers, which was far greater than the association with parental smoking. However, there was no evidence that the parental or peer associations varied by wave. Raptou et al (2009) conducted a study in northern Greece. The study investigated smoker’s profile by addressing the determinants of cigarette demand and providing a circumstantial exposition of the psychosocial characteristics that differentiate smoking patterns. The study reported that both families’ and friends’ smoking behavior were found to be positively associated with individual’s smoking patterns. More specifically, the higher the number of smokers in an individual’s family and social environment, the higher the probability for smoking participation, by 23.60 percent and 15.65 percent, respectively. Chassin et al (1984) have examined the acquisition of cigarette smoking within the context of normal social development in adolescence. All subjects reported their parents as having negative attitudes toward their smoking. Girls reported that their parents were more negative than did boys. Subjects viewed their parents as less negative. The increase in parental acceptance of smoking was not due solely to the subjects’ increased age. Regular Smokers’ parents were the least negative, less so than any other group except the Triers who became Regular Smokers. Further, even before they increased their smoking level (at Time 1), Initial Never Smokers who made a transition had parents who were relatively more accepting of smoking than did non-transitional never smokers. The corresponding difference (.04) between transition and non-transition groups for initial Triers at Time 1 was not significant. This suggested that parental attitudes were more predictive of the initial onset of smoking than of the transition from Trier to Regular Smoker. To summarize, there appears to be reasonably good supportive evidence that parental smoking has an effect on adolescents smoking behavior, and parental smoking behavior influences adolescents attitude towards smoking. This leads to the following propositions:

**P2a.** Parents smoking behavior is associated with adolescent’s smoking behavior.

**P2b.** Parental smoking behavior will influence adolescent’s attitudes towards smoking which in turn will influence adolescent’s smoking behavior.

### Peer Influence And Adolescents Smoking Behavior:

Brown et al (1994) used data from the Youth Smoking Survey (YSS) to determine the degree and the nature of the association between cigarette smoking in adolescents and the smoking habits of friends, and other potentially important influences in the youth’s social environment. A strong association between the smoking habits of close friends and those of the youth in the YSS was found. In sharp contrast, 59% of lifetime abstainers reported having no close friends who smoke. Lifetime abstainers were less likely to report having no close friends who smoke as they became older. Engels et al (1999) study aimed to assess how far associations between possible explanatory variables and smoking onset depended on the use of cross-sectional versus prospective design. It was found that smoking by their best same-sex friend and the proportion of smokers in the peer group were positively associated with current smoking at each time point. Modeling effects were apparent on the part of the best friend (Time 1-data). Those with a best same-sex friend were more likely to become smokers themselves. West et al (1999) conducted a longitudinal survey of 1009 15 year old interviewed at baseline followed at 16,18, 21, and 23 years of age in West of Scotland. The study was to examine the effect of friends’ smoking on uptake of regular smoking among young people from mid-adolescence to early adulthood; whether such effects were time limited, vary by social class and gender, and the extent to which uptake precedes or follows friends’ smoking. The results indicated that the uptake of regular smoking between aged 15 and 23 was associated significantly with friends’ smoking behavior at age 15, 44% of those with ‘most’ friends smoking becoming regular smokers over this period compared with 18% with no smoking friends. Biener et al (2000) study examined the effect of tobacco marketing on progression to established smoking. It was reported that receptivity was significantly associated with having at least one close friend who smoked. Being an early experimenter and having a close friend who smoked were also significant independent predictors of progression to establish smoking. Kin Lai Man et al (2004) conducted a study to assess perceived peer smoking prevalence and its association with smoking behaviors in Hong Kong among Chinese adolescents. Overestimation of peer smoking prevalence was observed regardless of gender and smoking status, and was more common in girls than boys, and in experimental (74.3%) and current smokers (85.4%) than in never smokers (60.7%). Boys who overestimated and grossly overestimated (over two times) peer smoking were more likely to be current smokers. In Malaysia Nyi Nyi et al (2004) conducted a cross-sectional study to identify the factors related to smoking habits of adolescents among secondary school boys in Kelantan state, Malaysia. Reasons most often given for smoking were: following friends, feeling of maturation, enjoyment, relaxation in free time, and feeling that
smoking was the normal behavior of a man. Gilpin et al (2007) conducted two longitudinal cohorts of adolescents aged 12 to 15 years in the U.S from the 1993 and 1996. The researchers investigated whether receptivity to tobacco advertising and promotions during young adolescence predicted young adult smoking 6 years later. In each cohort, exposure to peer smokers in young adolescence (between 12 and 15 years of age) was positively associated with status as a current established smoker in young adulthood. Very recently, Sabiston et al (2009) conducted a study in five Canadian provinces to explore individual-and school-level policy characteristics on student smoking behavior using an ecological perspective. Students who reported higher numbers of social influences who smoke were more likely to be smokers. Droomers et al (2005) employed a sample of 947 adolescents in New Zealand to investigate the relationship among father's occupational group, daily smoking, and smoking determinants in a cohort of New Zealand adolescents. It was reported that adolescents who had positive attitudes toward smoking friends or adults, who did not believe in the detrimental effects of smoking, who reported a higher number of reasons to smoke were significantly more likely to smoke daily. Compared with adolescents who strongly agreed with the statements about the harmfulness of smoking, those who just agreed had higher odds of smoking daily. To summarize, there appears to be reasonably good supportive evidence that peer smoking has an effect on adolescents smoking behavior, and adolescents who have a positive attitude towards their friends smoking will more likely influence their own smoking behavior. This leads to the following propositions:

P3a. Peer smoking is associated with adolescent’s smoking behavior
P3b. Adolescents with a positive attitude towards smoking friends will more likely have an influence on their own smoking behavior.

Conclusion and Directions For Future Research:

The information presented in this article suggests some generalizations supported by reasonably adequate evidence and others which are more speculative and require additional research. Parental smoking behavior appear to play an important role in adolescents smoking behavior, and they are instrumental in influencing adolescents consumption of tobacco. Youngsters appear to acquire a variety of other consumption-related orientations skills, from their parents. Apparently, different behavioral processes are involved in the direct transmission of specific behaviors from parent to child, and these processes vary by socio-demographic characteristics.

Parental smoking and peer smoking behaviors lead to rather different interaction patterns with other sources of consumer learning and development of specific behaviors among adolescents. Several avenues for future research are possible. Clearly, there is a need for better understanding of the nature of parental and peer smoking influences. We need to understand the communication processes involved in the transmission and acquisition of certain behaviors from parent to child, and from peer smoking influences and how these vary by socio-demographic characteristics. The research reviewed here suggests that parental smoking behavior and peer smoking influences have been examined in the context of how parents affect the development of adolescents’ tobacco consumption. It would also be useful to examine the behavioral effects of adolescents’ tobacco consumption when one parent’s smoking behavior with the child is quite different from that of the other parent. Much of the research needed in this area can only be addressed using certain research designs. Experimental and longitudinal designs could enable the researcher to better study such processes and their effects. In summary, this article has attempted to present an update on the present knowledge and research on the role of parental and peer smoking behavior, as well as adolescents’ attitudes towards smoking. It has also attempted to integrate much of the information in the area and has presented propositions to guide future research and theory development.

ACKNOWLEDGMENT

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