

# Parental and Peer Influences on Adolescent Smoking: A Literature Review

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## Résumé :

(traduction)

La cigarette est largement acceptée comme un comportement négatif pour la santé, associé à de nombreux risques graves. Le tabagisme chez les adolescents est d'un intérêt particulier du point de vue de la santé publique, alors même que l'initiation au tabagisme à l'adolescence se trouve associée à des taux plus élevés de dépendance à l'âge adulte. Cette revue de la littérature examinera l'influence des réseaux de soutien social, en particulier les parents et les pairs, sur l'initiation au tabagisme et sur sa progression chez les adolescents. L'influence des réseaux de soutien social opère principalement à travers la théorie de l'apprentissage social, selon laquelle les adolescents imitent le comportement de ceux qui sont dans leur réseau social. La littérature suggère que, tandis que les parents ont plus d'influence chez les jeunes adolescents, les pairs deviennent la principale source d'influence chez les adolescents plus âgés, en raison de ces phénomènes bien connus que sont la sélection par les pairs et l'influence des pairs. Les parents peuvent influencer positivement sur le comportement des adolescents face au tabagisme grâce à une communication efficace et au maintien d'une relation saine parent-enfant. Les pairs peuvent également influencer positivement le comportement des fumeurs par les mêmes mécanismes d'influence et de sélection par les pairs. La connaissance de la façon dont les parents et les pairs incitent les adolescents à commencer de fumer, et à continuer, peut aider à l'élaboration de programmes de santé publique qui ciblent ce comportement à haut risque.

## Mots-clés :

Adolescence, fumer, influence des pairs, sélection des pairs, influence parentale

## Abstract:

Smoking cigarettes has been widely accepted as a negative health behaviour associated with many serious risks. Adolescent smoking is of particular interest from a public health perspective as the initiation of smoking in adolescence has been associated with higher addiction rates in adulthood. This review of the literature will examine the influence of social support networks, particularly parents and peers, on the initiation and escalation of adolescent smoking. The influence of social support networks primarily operates through the social learning theory, in which the adolescent mimics the behaviour of those in their social network. The literature suggests that while parents are more influential in young adolescence, peers become the main source of influence in later adolescence through processes known as peer selection and peer influence. Parents can positively affect adolescents' smoking behaviour through effective communication and maintenance of a healthy parent-child relationship. Peers can also positively influence smoking behaviour through the same mechanisms of peer influence and selection. Knowledge of how parents and peers influence adolescent smoking initiation and escalation can potentially assist in developing public health programming that targets this high-risk behaviour.

## Keywords:

Adolescence, smoking, peer influence, peer selection, parental influence

Smoking cigarettes has become widely acknowledged as a behaviour that entails many serious health risks. Numerous bylaws, retail protocols, and public health initiatives have attempted to prevent the initiation of smoking in adolescents specifically. According to Statistics Canada, the rate of smoking among Canadian adolescents has shown greater reduction than that of any other age group between 2001 and 2011 (Janz, 2012). Smoking rates among men aged 18-19 have declined by 13.4%, while males aged 15-17 have demonstrated a decline in smoking by 9.2%. Female statistics depict a similar trend, with ages 18-19 and 15-17 to declining by 15.7% and 13.6%, respectively. These statistics emphasize the progress in adolescent smoking rates; however, cigarette use remains a critical issue because in 2011, the overall smoking rate in adolescents was still as high as 20% (Janz, 2012).

In a longitudinal study by Griffin, Botvin, Doyle, Diaz, and Epstein (1999), findings indicated an association between smoking association in adolescence and addiction in adulthood, thus reinforcing the importance of health promotion strategies targeting this age group. The influence of parental and peer relationships has been a main focus of research on adolescent smoking, generally supporting the social learning theory that adolescents imitate behaviours of others in their social environment (Bandura & Davidson Films Inc., 2003). Akers and Lee (1996) suggest that behaviours such as smoking are commonly initiated through the processes of the social learning theory such as observation, interaction, reinforcement, and attitudes toward deviant others (in this case, parents and peers). Further, understanding how parental and peer factors influence the initiation of adolescent smoking through a critical review of the literature will potentially enable the development of public health programming which targets not only smoking adolescents but also their families and peers. Important theories from the literature include parental behaviour, communication, and expectations, the power of peer influence, and peer selection in the initiation and prevention of adolescent smoking.

The databases Scholars Portal, PsycARTICLES, and SAGE Premier 2014 were used to locate articles of interest. Only Canadian and American studies were included in the review due to cultural differences surrounding smoking behaviour (World Health Organization, 2014).

Literature examining the influence of parental smoking on the initiation of smoking in adolescence supports the social learning theory. For example, Cole, Leatherdale, and

Burkhalter (2013) surveyed 31,396 Canadian secondary school students and found that a parent smoking was highly predictive of adolescent daily smoking (75.7% of daily smokers had a parent, step-parent, or guardian that smoked). This supports a nine-year longitudinal study by Peterson and colleagues (2006) reporting a positive correlation between witnessing parental smoking in the third grade and behavioural acquisition of smoking by twelfth grade. These results conclude that having at least one parent that smokes significantly increased the risk of the adolescent becoming a daily smoker compared to families in which neither parent smoked. Janz (2012) reported that adolescents aged 15-17 were three times more likely to smoke if someone in their household was a regular smoker. Although these statistics support the social learning theory, it is not clear if this finding is due to parental influence specifically, as it could be related to the smoking habits of a sibling or extended family member living in the household.

Parental smoking behaviour has also been found to influence adolescent smoking transitions (for example, an irregular smoker becoming a regular smoker). Bricker and colleagues (2006) surveyed 5520 American families and found that parental smoking is associated with a high probability of adolescent experimentation with smoking, as well as transitioning from monthly smoking to daily smoking. While these studies present a strong case for the negative impact of parental smoking across the span of adolescence, other research supports differing degrees of parental influence throughout adolescence.

Vitaro, Wanner, Brendgen, Gosselin, and Gendreau (2004) attempt to explain the discrepancy between parental smoking behaviours and those of peers in a four-year longitudinal study of 812 preadolescents. Their findings suggest that parental smoking is a predictor of adolescent smoking initiation only if the adolescent begins smoking between the ages of 11 and 13; after this age, the influence of parents significantly decreases and that of peers becomes more important. Despite this change in influence over time, parental smoking remains an important influence on the smoking initiation of adolescents (Vitaro et al., 2004).

Parental influence on adolescent smoking initiation extends beyond tobacco use, as various studies suggest that specific components of the parent-adolescent relationship also have an impact on adolescent smoking. For example, Miller and Volk (2002) examined multiple aspects of family relationships among over a seven-year period, and found that a lack of time spent with family, infrequent engage-

ment in family activities, and a perceived lack of importance of the parent-child relationship were predictive of daily smoking in the adolescent. Scal, Ireland, and Borowsky (2003) have supported this association, reporting that family-connectedness serves as a protective factor against smoking initiation. Feeling understood, cared for, and satisfied with family relationships were associated with a lower risk of smoking initiation throughout development (Scal, Ireland, & Borowsky, 2003).

The parent-child relationship has been further examined in studies that analyzed the association between parent-child communication and adolescent smoking behaviours (Metzger et al., 2013; Simons-Morton, 2004; Simons-Morton, Haynie, Crump, Eitel, & Saylor, 2001). An example of this relationship was apparent in a longitudinal study by Metzger and colleagues (2013), which demonstrated that mothers with low tolerance for the subject of smoking and strict rules regarding the use of cigarettes had adolescents who were more likely to engage in active secrecy when communicating with their mothers (hiding their actual smoking behaviours from their mother in conversation). Engaging in active secrecy in parent-solicited conversations surrounding smoking is in turn associated with an escalation of cigarette use over a two-year period.

Other studies, however, have shown that effective smoking communication can have a protective effect on adolescents. For example, a study by Simons-Morton (2004) examined the protective effects of parental expectations about adolescent smoking initiation through a survey of 1267 students at the beginning of sixth grade and again at the end of seventh grade. Their results suggest that parental expectations for their child to not smoke was the most protective factor in onset of adolescent smoking across the entire time span of the study. Although most parents likely hope that their adolescents will not smoke, it is the parents who communicate this desire effectively that are successful in providing the protective mechanism (Simons-Morton et al., 2001). Simons-Morton and colleagues (2001) have described that authoritative parenting, which is high in demandingness and responsiveness, fosters these protective expectations and effective communication styles. Knowledge of how parents influence adolescent smoking through relationship dynamics is a crucial component in developing effective public health programs as it emphasizes the importance of targeting the family unit in anti-smoking initiatives.

Parents are not the only factor influencing whether or not adolescents choose to smoke. The effect of peers on adoles-

cent behaviour is of interest due to the large amount of time adolescents spend in contact with their peers in and outside of school (Barnes, Hoffman, Farrell, & Dintcheff, 2007). Peer influence constitutes an adolescent being influenced or 'pressured' to smoke with the intention of identifying more with peers. (Hoffman, Monge, Chou, & Valente, 2007). Maxwell (2002) demonstrated a strong peer influence in the domain of cigarette smoking through a longitudinal study of 1969 adolescents, providing evidence that a same sex friend engaging in smoking behaviour at the first data collection was associated with the initiation of the same behaviour in the adolescent at the second data collection. In fact, the likelihood of the adolescents in this study engaging in the behaviour was 1.9 times higher than that of an adolescent without a same sex, smoking friend.

As previously discussed, the influence of peers increases as adolescents get older. At ages 12-13, witnessing parents and friends smoking are equally predictive of adolescent smoking; however, between at ages 13-14, the peer group was the highest predictor in smoking initiation (Vitaro et al., 2004).

A study by Harakeh and Vollebergh (2012) distinguished Hoffman and colleagues' (2007) definition of peer influence into two domains: active and passive. Imitation of peers' smoking in order to belong was termed passive peer influence, where as peer pressuring another into smoking was termed active peer influence. In a sample of 68 older adolescents and young adults, peer smoking was predictive of the total number of cigarettes smoked by the participants while peer pressure was not. This study demonstrates the importance of imitation or passive peer influence in accordance with the social learning theory.

While peer influence appears to play a crucial role in adolescent smoking initiation, academics have differentiated between peer influence and peer selection, and it is suggested that the latter may be more significant concerning tobacco use. While peer influence involves an adolescent being pressured or influenced by friends into smoking, peer selection is defined as the selection of friends based on their existing smoking status (Ennett & Bauman, 1994). Hoffman and colleagues (2007) studied smoking behaviours in 20,747 adolescents and compared them to the smoking behaviours of their peers on two separate occasions. Questionnaires inquired about adolescents' smoking habits and the smoking habits of their self-defined three best friends. Findings indicated evidence of peer selection due to smoking at the first time-point being associated with friends smoking at the second time-point.

Hall and Valente (2007) have provided further evidence of the critical effect of peer selection by conducting a survey on personal smoking behaviour and that of five best friends in 1960 adolescents at two time-points. Peer selection was evident when participants nominated smokers as friends at the first time-point, as this was predictive of smoking at the second time-point. For example, students were more susceptible to smoking in grade seven if they chose smokers as friends in grade six (AOR=20.27,  $p < 0.05$ ) (Hall & Valente, 2007). Cole and colleagues (2013) used data from the 2010/2011 Canadian Youth Smoking Survey to demonstrate the association between adolescents' their friends' smoking behaviours: 72.1% of regular adolescent smokers reported that five or more of their closest friends also smoke cigarettes. Although this study supports other findings (Hall & Valente, 2007; Hoffman et al., 2007), one study design limitation is the cross-sectional methodology, which renders it unclear if the effects observed were due to peer influence or peer selection.

Despite the negative impact that peer relationships can have on adolescent behaviour, there are also protective benefits that can arise from these relationships. Hall and Valente (2007) demonstrated that smokers' influence in sixth grade negatively predicted smoking in seventh grade. This effect was present when a smoker nominated a non-smoker as a friend, but the non-smoker did not reciprocate the nomination. This decreased the non-smoker's chances of smoking by keeping his or her friend group free from the influence of smokers.

It has also been found that adolescents are more likely to deter smoking among their friends than they are to promote it. Brady, Morrell, Song, and Halpern-Felsher (2013) found that approximately 70% of 'ever-smokers' had deterred smoking to a friend, compared to only 45% that had promoted it. Non-smokers were even less likely to encourage smoking, with only 5% of 'never-smokers' promoting it and 40% actively deterring it. This demonstrates that although peer influence is often assumed to be negative in nature, peers also have the capacity to provide positive influence on health behaviour and this aspect should be considered when planning public health initiatives.

Research concerning parental and peer influences on smoking initiation and escalation in adolescents can help public health programs target the prevention and cessation of adolescent smoking. However, current research possesses many limitations that must be considered when interpreting the findings. A major limitation to studying smoking

behaviour is the inconsistency of how smoking is defined. Cole and colleagues (2013) used data from the Canadian Youth Smoking Survey in their research of smoking patterns among youth. For this survey, "current smoking status was measured by asking respondents if they have ever smoked 100 or more cigarettes in their lifetime, and on how many of the last 30 days they smoked one or more cigarettes" (Cole et al., 2013, p. 1611). In order to be classified as a current daily smoker, adolescents had to have smoked both 100 cigarettes in their lifetime, and one cigarette per day for the last 30 days. It could be argued that these qualifications are quite arbitrary, and many adolescents may be unsure if the number of cigarettes they have smoked falls above or below 100. Other studies have identified adolescents as smokers based on how many times they have tried even one puff of a cigarette (Hall & Valente, 2007; Hoffman et al., 2007; Simons-Morton, 2004). This definition is practical in the sense that it accounts for all adolescents that have tried smoking; however, it does not differentiate between the separate behaviours of daily smoking and trying smoking once due to peer pressure or other external forces. Vitaro and colleagues (2004) defined smoking by measuring the number of cigarettes smoked during the week and the day before data collection, which is also limited. If data collection were to take place mid-week, this measure does not account for cigarettes that may be smoked predominantly on weekends when adolescents are engaging in social smoking. This study also required adolescents to report on the smoking behaviour of their parents as occasional, regular, or very often (Vitaro et al., 2004). This is a fairly subjective measure as some adolescents may view 'very often' as a pack of cigarettes a day, while others may view this as one or two cigarettes per day. For future research it is recommended that a consistent measure of smoking behaviour be implemented, including objective numbers differentiating cigarettes smoked by one-time, occasional, and daily smokers.

A second limitation of the research surrounding adolescent smoking is that the majority of data is collected using surveys in the classroom setting. Although participants are guaranteed that their information will be kept confidential, there is still a chance of social desirability bias occurring as smoking is generally viewed as a negative health behaviour. Another type of bias appears in these surveys when adolescents are asked to report the smoking behaviour of their friends, such as in the study by Hoffman and colleagues (2007). Again, there is bias in this measure as smoking adolescents are more likely to report that their friends smoke, regardless of friends' actual smoking prevalence

(Urberg, Shiang-Jeou, & Liang, 1990). A better method of measuring friends' smoking behaviour is matching friendship nominations within the group, as was done by Hall and Valente (2007).

Limitations also exist in the methodology of the present literature review. Parental and peer influence on smoking in adolescence is a heavily researched topic, thus it is possible that many important study findings were excluded from the literature review. For example, despite cultural implications, the many European studies on this topic may still lend valuable information. It may also be beneficial to include sibling influence in the discussion of adolescent smoking initiation, as other household members may impact adolescents (Janz, 2012).

The prevalence of adolescent smoking continues to decline (Janz, 2012); however, the high risk associated with adolescent smoking initiation highlights this behaviour for targeting by various public health campaigns. Parents and peers both have influential effects on adolescents' smoking behaviour, predominantly through the social learning theory. Parents' smoking has been found to be a predictor of adolescents' smoking, especially between ages 11-13 (Vitaro et al., 2004). Parents can also have a protective effect on adolescents by fostering valued and connected family relationships, as well as ensuring clear communication of expectations in regard to cigarette smoking. Peers can impact adolescents through both peer influence and peer selection. Having a same sex friend that smokes has been correlated with smoking in adolescents, especially at the age of 12 and older (Vitaro et al., 2004). Evidence of peer selection is also clear, as adolescents that smoke or want to smoke are likely to choose friends that also smoke. Despite these negative effects of peer influence, peers can also provide a protective effect over adolescents by deterring them from smoking. It is recommended that further research in this area implements a standard definition of smoking behaviour as well as the use of alternate data collection methods that limit bias. This will enhance the accuracy of findings and thus meaningfully contribute to the development of public health initiatives. It is also recommended that this acquired knowledge of how the social learning theory influences adolescent smoking initiation is used to incorporate families and peers into health promotion programs, and thus help approach the goal of preventing adolescent smoking initiation and promoting adolescent smoking cessation.

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