Original Research

Distinctive role of opinion leaders in the social networks of school adolescents: an investigation of e-cigarette use

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ABSTRACT

Objectives: This study examines a diverse set of social motives (e.g. peer support, peer pressure, social loneliness) for e-cigarette use, through the mediating effects of opinion leadership, among both male and female adolescents.
Study design: Prospective cohort study.
Methods: The data were obtained from a survey conducted among 666 adolescents across 14 school classes, namely, students at three urban schools, public and private, in Lille, France. The proposed integrative model includes social motives, opinion leadership and e-cigarette use in a trilateral relationship; gender is proposed and tested as a potential moderator in a structural equation model.
Results: More positive peer support is negatively associated with opinion leadership and e-cigarette use. Both loneliness and susceptibility to peer influence are positively related to opinion leadership and e-cigarette use. Moreover, social support from peers and opinion leadership shape e-cigarette use differently across genders.
Conclusions: Policy makers should account for the various (positive and negative) roles of peers and consider the gender of their audience when designing anti–e-cigarette policies.
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Introduction

Adolescent smoking is among the most important public health issues, both in France and worldwide.[1] Adolescents progressively seek distance from their parents and increasingly rely on new significant others, namely, their peer group.[2] Thus, risky behaviours at school often are prevalent during adolescence;[3] a recent survey reported that more than 65% of adolescents have already tried to smoke and 30% of them smoke daily. The use of electronic cigarettes (e-cigarettes), a battery-operated nicotine delivery system that releases aerosolized nicotine, among other chemicals,[4,5] also has gained popularity among both adults and adolescents since first becoming available in Europe in 2006.[6,7] Furthermore, the transition from childhood to adolescence is a vulnerable

period for experimentation[8] and even as classical cigarette use has declined, e-cigarette use is expanding among adolescents around the world in the United States,[9] Canada,[8] Asia[10] and Europe.[11,12] According to an European National Survey, the proportion of adolescents (grades 9–12) who had tried e-cigarettes increased from 9.6% in 2012 to 39% in 2014.[11] In France, the rate is even higher: more than 53% of French adolescents have tried e-cigarettes and 2.5% of them use e-cigarettes daily.[13] Another US survey suggested that 16% of adolescents use e-cigarettes daily, whereas only 43% of them have never smoked cigarettes.[14,15]

Although smoking initiation has been extensively investigated, prior research on e-cigarette use suffers from three main limitations. First, it focuses on adults or young adults,[14–16] not adolescents. More research on adolescents is needed because these young consumers differ qualitatively from consumers in other stages of development, both in the value they attach to peer groups[3] and in their adoption likelihood towards harmful or illegal consumption activities.[17] Adolescents generally try e-cigarettes to experiment, rather than as an alternative to traditional cigarettes or as a means to stop smoking.[11] Second, though prior studies recognize the importance of peer groups, they do not test empirically the effects of opinion leadership within a peer group on the use of e-cigarettes. Opinion leaders are members of a social system who provide information they have received to the other members of their social system[18] such that they contribute significantly to the diffusion and adoption of new products.[19] As early adopters of new behaviours, opinion leaders also tend to function as gate keepers; so, they may have an important influence on the adoption of risky products, especially among adolescents.[20] Because opinion leaders influence others and reflect group trends, it is interesting to investigate if they are more likely to adhere to e-cigarette use and contribute to their diffusion. Thus, we study the emergence of adolescent opinion leadership specifically as it relates to e-cigarette use. Third, existing literature often focuses on demographic variables to explain the use of e-cigarettes during adolescence.[21–25] More recent research also considers social contexts related to e-cigarette use such as moral support from the family,[8] peer pressure, friend 'coolness',[26] peer affiliation[27] and the influence of peer uses of e-cigarettes.[8,28,29] Most of these prior studies take place in the United States,[8,27,28] with additional research conducted in Turkey[30] or specifically in Hawaï.[31] Yet, a dearth of empirical investigations analyzed the social mechanisms that underlie the initiation of e-cigarette use among adolescents in France.[11,13] Moreover, extant studies examine social motives separately without considering how a set of social motives might combine and simultaneously explain e-cigarette use together with the effects of opinion leadership.

Therefore, this study aims to examine the relationship between a set of social motives (peer support, peer pressure, social loneliness) and e-cigarettes use, through the mediation of opinion leadership, among a sample of French teenagers. This broader analysis of the effects of the social environment on e-cigarette use can provide useful policy implications for tobacco-control programs. The data came from a survey conducted with 666 adolescents. We also investigate potential gender-based differences in e-cigarette consumption patterns, which provide new insights for policy makers.[30]

Conceptual framework

Social mechanisms underlying opinion leadership in the context of e-cigarette use

Credibility has an important influence on the development of opinion leadership, and adolescents are open to information from peers that signal trendy topics. Reflecting the norms of their friend groups, adolescents develop strong social identities and ties that enhance their credibility. With a seemingly counter-intuitive claim, we thus expect opinion leaders to be somewhat susceptible to peer pressure with regard to e-cigarettes. To perform their role as social communicators, opinion leaders cannot violate the norms of the social system in which they operate.[20] Formally, we predict:

H1. Susceptibility to peer pressure relates positively to opinion leadership in the field of e-cigarettes.

Furthermore, a few studies seek to identify the relationship between peer pressure and the increasing use of e-cigarettes among adolescents. For example, Pentz et al.[8] show that the risk of e-cigarette use among adolescents more than doubles when their peers already use e-cigarettes. In this respect, we expect:

H2. Susceptibility to peer pressure relates positively to e-cigarette use.

Peer support is another social mechanism that is fundamental to the development of social competence, such that it decreases the likelihood that adolescents look to material goods[32] or seek to gain central social positions[21] to compensate for feelings of low self-worth. In contrast, adolescents with less-supportive peers rely more on materialistic goods and seek social status as a way to deal with peer pressure. Therefore,

H3. Peer support relates negatively to opinion leadership in the field of e-cigarettes.

As psychology research shows, people with social support are less likely to feel isolated and more likely to engage in pro-social behaviour.[33] In other words, adolescents with support from friends should exhibit fewer risky behaviours including e-cigarette use.[20] In contrast, some studies argue that peer support is not related to the adoption of ethical behaviours.[34] These inconclusive findings suggest the need for more research that explicitly explores the relationship between peer support and risky behaviours including e-cigarette use. Recent consumer ethics research indicates that close friendship relationships foster ethical behaviours,[35] possibly because those with close friendships work to nurture their social relationships and avoid risky behaviours that might erode their relationships with others.

H4. Peer support relates negatively to e-cigarette use.

Finally, in contrast with people who are socially integrated, lonely individuals have lower self-perceptions of their power in their networks.[36] Thus, we expect:

H5. Loneliness relates negatively to opinion leadership in the field of e-cigarettes.

However, some studies indicate that loneliness can lead to pro-social behaviours in an attempt to rebuild social