

Peer Pressure and Social Media Impact of Smoking/Vaping and its Neuroscience Correlation

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ABSTRACT:

This research investigates the correlation between peer pressure, social media influence, and smoking/vaping behavior, with a focus on the neuroscience behind these behaviors. Through a literature review, the study explores the impact of peer pressure and social media on smoking and vaping behaviors among adolescents and young adults. Findings reveal that these factors significantly contribute to smoking/vaping behaviors. The study emphasizes the long-term consequences of nicotine exposure during adolescence on brain development and function, highlighting the disruption of nicotinic acetylcholine receptors and changes in neurotransmitter release and reward-related brain regions. The research underscores the need for accurate information, interventions addressing social norms and peer influence, and regulation of e-cigarette portrayal on social media, understanding the underlying neuroscience mechanisms to mitigate the negative health consequences of smoking/vaping.

INTRODUCTION:

Electronic cigarettes (e-cigarettes) have increased exponentially among adolescents [7]. The increasing popularity of e-cigarettes, or vaping, among adolescents and young adults is problematic due to the potential associated health risks. The rise of vaping has prompted researchers to investigate the factors contributing to its prevalence. One such factor is the influence of peer pressure and social media [5] on smoking and vaping behavior. This research paper explores the correlation between peer pressure, social media validation, and the neurological rewards of nicotine in amplifying the propensity for smoking and vaping in modern society.

Existing research highlights the association between social media use and e-cigarette initiation among US adolescents [1] and found that exposure to nicotine product placement increases the likelihood of e-cigarette use among young adults [2]. Furthermore, research shed light on the misleading nature of e-cigarette marketing, which often portrays these products as less harmful than traditional cigarettes and as aids for smoking cessation [3]. However, there is no evidence supporting their effectiveness in quitting smoking [3]. Research also found that social status, as measured by the number of friends and leadership among peers, alone did not significantly impact e-cigarette use. However, perceived social impact, or beliefs about the social consequences of e-cigarette use, and peer influence increased the likelihood of accepting a cigarette and increasing the frequency of use. Those using e-cigarettes more frequently and those with friends using e-cigarettes perceived e-cigarette use as having a positive social effect [8]. Lastly, a study demonstrated that adolescents who use nicotine are more likely to initiate and continue using other drugs, emphasizing the potential long-term consequences of nicotine exposure during adolescence [6].

While the influence of social media, peer pressure, and underlying neural mechanisms were studied in isolation, we aim to examine the interplay between peer pressure, social media validation, and the neurological rewards of nicotine and provide valuable insights into the underlying mechanisms that drive smoking/vaping behavior in modern society. These findings will contribute to developing targeted interventions and preventive measures to mitigate the negative health consequences of smoking/vaping among adolescents and young adults.

I hypothesize that the combination of social media validation and the neurological rewards of nicotine contributes to an increased likelihood of engaging in smoking and vaping behaviors. Reviewing existing literature, this paper seeks to improve understanding of the complex mechanisms underlying smoking and vaping habits and inform potential interventions to address this public health concern. In conclusion, this research paper seeks to shed light on the complex relationship between peer pressure, social media validation, and the neurological rewards of nicotine in influencing smoking/vaping behavior. By addressing the gaps in existing literature, we can gain a deeper understanding of the factors contributing to the prevalence of smoking/vaping and develop effective strategies to combat this growing public health concern.

METHODS:

I conducted a scoping literature review to gather existing research on the relationship between social media validation, nicotine rewards, and smoking/vaping behaviors. I searched PubMed and Google Scholar using the keywords "social media," "peer pressure," "nicotine rewards," "smoking," and "vaping."

I included studies that focused on the influence of social media on smoking and vaping behaviors, as well as studies that explored the neurological rewards of nicotine. I also considered studies that examined the role of peer pressure and social influence in smoking and vaping initiation. I focussed the search on recent papers by limiting the search to the last 10 years to ensure the most recent and relevant research is included.

The literature review included quantitative and qualitative studies, review articles and meta-analyses. I excluded opinion pieces, editorials, letters to the editor, and other non-peer-reviewed articles.

The research paper is limited to studies published in English and may not include all relevant research on the topic. Additionally, the paper does not include primary data collection or analysis but instead synthesizes existing literature to comprehensively understand the topic.

RESULTS:

Users on social media such as Facebook, Google Plus, YouTube, LinkedIn, Twitter, Tumblr, Instagram, Pinterest, or Snapchat were classified into three categories: never users, non-daily users, and daily users. Social media use is associated with increased susceptibility and initiation

of e-cigarette use among adolescents^[1]. Exposure to tobacco content on social media may encourage tobacco use initiation and normalize tobacco use behaviors among regular social media users, like adolescents and young adults [4]. Exposure to tobacco content in social media had greater odds of reporting lifetime tobacco use, past 30-day tobacco use, and susceptibility to tobacco use amongst never-users [4]. Exposure to nicotine product placement in marketing is associated with increased use among adolescents. E-cigarette marketing often portrays these products as less harmful than traditional cigarettes and as aids for smoking cessation, despite no evidence supporting their effectiveness in quitting smoking [3].

Social status is considered in two forms. One is an individual's perceived number of friends. This measure indicates perceived popularity. The second form of social status, leadership among peers, refers to the degree to which an individual controls or directs the actions of a peer group (i.e., choosing what to do). Results showed that social status alone did not have any significant association with e-cigarette use. However, those reporting using e-cigarettes more frequently, as well as those reporting more friends using e-cigarettes, perceived e-cigarette use as having a positive social impact. The perceived social impact was positively related to the frequency of e-cigarette use and the likelihood of accepting an e-cigarette offered by a friend [8].

Nicotine use during adolescence can disrupt the normal development and function of nicotinic acetylcholine receptors in the brain, leading to changes in neurotransmitter release and reward-related brain regions. This can impact reward regulation and cognition and increase the reinforcing effects of other drugs. Furthermore, nicotine exposure during adolescence can have long-lasting effects on brain chemistry and function. It can lead to persistent increases in deltaFosB, a protein associated with reward, in the nucleus accumbens. It can also impair GABA signaling in the ventral tegmental area and alter gene expression in reward regions. These changes in brain function and behavior can increase the vulnerability to substance abuse and addiction later in life [6].

These findings suggest that the combination of social media validation, being with other users, and the neurological rewards of nicotine contributes to an increased likelihood of engaging in smoking and vaping behaviors which in turn increase the vulnerability to substance abuse and addiction to other drugs later in life.

DISCUSSION:

The objective of this study was to investigate the correlation between peer pressure, social media influence, and smoking/vaping behavior, with a particular focus on the neuroscience underlying these behaviors. The findings of this research provide valuable insights into the interplay between social media, peer pressure, and the neurological rewards of nicotine in shaping smoking and vaping behaviors among adolescents and young adults.

Social media platforms have emerged as powerful influencers in shaping smoking behaviors. Daily social media use among adolescents who never used e-cigarettes was associated with a

higher likelihood of being susceptible to e-cigarette use, past e-cigarette use, and current e-cigarette use^[1]. Additionally, the influence of online social networks through platforms such as YouTube can promote the perception that e-cigarette use is socially accepted behavior, further contributing to susceptibility among young people [9]. Therefore, it is crucial to address the role of social media and peer pressure in preventing adolescent smoking and vaping behaviors. We can leverage social media platforms to create engaging and informative campaigns that highlight the negative health effects of smoking and vaping, while also promoting positive alternatives and providing support for those looking to quit. The influence of social media on smoking behaviors highlights the importance of regulating the portrayal of smoking-related content and providing accurate information about the risks associated with smoking.

Peer pressure is another significant factor contributing to vaping behaviors among adolescents and young adults. The study found that social status, including the perceived number of friends and leadership among peers, did not directly correlate with e-cigarette use. However, individuals who reported using e-cigarettes more frequently and had friends who also used them viewed e-cigarette use as positively affecting their social lives. This perception was linked to the higher frequency of e-cigarette use and a greater likelihood of accepting an offered e-cigarette from a friend [8]. Interventions targeting peer influence and promoting resistance skills can help mitigate the impact of peer pressure on vaping behaviors.

The neuroscience aspect of smoking and vaping behaviors reveals the complex interplay between the rewards of nicotine and the brain's response. Research shows that nicotine activates the brain's reward system, leading to feelings of pleasure and reinforcing the behavior of smoking or vaping [6]. This reward system plays a significant role in the development and maintenance of addiction [6]. Nicotine stimulates the release of dopamine in the brain, a neurotransmitter associated with feelings of reward and reinforcement [6]. This reinforcing effect can make smoking or vaping behaviors more difficult to quit or resist. Understanding the neurobiology of smoking and vaping behaviors allows for the development of targeted interventions that address the underlying mechanisms driving addiction. Chronic nicotine exposure can lead to changes in the brain's reward pathways, reinforcing the addictive nature of smoking and vaping [6]. The neurological effects of nicotine highlight the importance of understanding the underlying mechanisms to develop targeted interventions for smoking cessation.

The interplay between social media, peer pressure, and the neuroscience of smoking and vaping behaviors is evident. The portrayal of smoking as a desirable behavior on social media can amplify the influence of peer pressure and increase the likelihood of engagement in smoking and vaping behaviors. The neurological rewards of nicotine further strengthen the addictive potential of smoking and vaping, making it challenging to quit. It is important to consider factors such as peer pressure, social media exposure, and family influences when addressing interventions for young adults. Young adults may feel pressured to engage in risky behaviors such as substance abuse or dangerous activities to fit in with their peers, influenced on social media, leading to feelings of inadequacy or the desire to conform influenced by the values, beliefs, and

expectations of their family members, which can impact their decision-making and behavior. By understanding these interpersonal influences, strategies like peer support can be implemented to reduce vaping behavior. Additionally, limiting celebrity endorsements of e-cigarette products could help in reducing positive perceptions of vaping within social networks. Therefore, it is crucial that comprehensive vaping interventions for young adults incorporate these interpersonal influences, including peer pressure and social media exposure [9].

In conclusion, this study highlights the significant influence of social media and peer pressure on smoking and vaping behaviors among adolescents and young adults. To effectively address and target these behaviors, interventions need to take into account the interplay between social media, peer pressure, and the neurological rewards associated with smoking and vaping. By understanding these influences, interventions can be designed to effectively mitigate the impact and reduce the prevalence of vaping among young adults. Furthermore, implementing strategies such as peer support and limiting celebrity endorsements of e-cigarette products can significantly contribute to reducing the positive perceptions of vaping within social networks.

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