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Return of cartoon to market e-cigarette-related products

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Abstract

Introduction—The tobacco industry’s use of cartoons to market products has been shown to be effective at increasing awareness and appeal of combustible cigarettes among youth. While the Master Settlement Agreement placed restrictions on the use of cartoons for major cigarette and smokeless (chew) tobacco brands in the USA, no such restrictions exist for electronic cigarettes (e-cigarettes). Research has shown that e-cigarette manufacturers are using cartoons to market products, but limited data exist on the extent of these practices. This study examined the extent of the use of cartoons to market e-liquids on Instagram.

Methods—Instagram posts with the hashtag #ejuice or #eliquid were collected from 3 November 2017 to 17 November 2017. Rules were established to identify *Cartoon* (the post contained a cartoon), *Logo* (the post was labelled a cartoon due to the logo) and *promo* (the image of the post or accompanying text indicated it was a promotion) in the data (n=3481).

Results—Among all posts, 723 (20.77%) contained a *Cartoon*, and 479 (13.76%) were coded as a cartoon because of the *Logo*. In other words, 479/723 or (66.25%) of *Cartoon* were coded as cartoons due to the vendor’s or manufacture’s logo. Among all posts, 2360 (67.80%) were *Promo*.

Conclusion—Findings indicate that e-cigarette companies are using cartoons to market their products and many of these companies’ logos are cartoons. Empirical data are needed to determine whether cartoon marketing strategies impact perceived risk and benefits, product appeal, the intention to use and actual use of e-cigarettes.

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INTRODUCTION

The tobacco industry's long-standing marketing efforts aimed at youth and young adults and the influence of these efforts on smoking initiation and maintenance are well documented.^{1–3} One particularly effective strategy—the use of cartoons (drawings of an object, person, animal with comically exaggerated features, anthropomorphic technique and/or attribution of unnatural or extrahuman abilities⁴)—has been shown to be effective at increasing awareness and appeal of combustible cigarettes among youth, as well as altering attitudes and beliefs (such as decreased perceptions of risk and increased perception of benefits) and increasing uptake and continued use of these products.^{5–8} While the Master Settlement Agreement placed restrictions on the use of cartoons and other youth-oriented marketing strategies for major cigarette and smokeless (chew) tobacco brands in the USA,⁴ and the WHO Framework Convention on Tobacco Control (Article 13) recommends that entertainment media aimed at children (including cartoons) do not depict tobacco product imagery, no such restrictions exist for newer tobacco products such as electronic cigarettes (e-cigarettes). Given the rise in e-cigarettes, and the associated risks of use especially among adolescents and young adults,^{9–12} it is critical to understand the extent and impact of youth-oriented marketing strategies, including the use of cartoons.

In our ongoing work investigating the use of social media to market tobacco products, we have observed examples of e-cigarette vendors using cartoons to market their products. For instance, e-cigarette vendors have used Pokémon Go (an interactive cartoon-based virtual reality game) to market their products on Twitter.¹³ Additionally, in an audit of the top 50 websites of online vendors of e-liquids, we found that 12% of these products had a cartoon on the label, and that approximately 77% of these sites sold at least one product with a cartoon on the label (unpublished data). While these initial findings suggest that some e-juice manufacturers and vendors may capitalise on the appeal of the cartoon imagery to market their products, there is a dearth of data regarding the extent to which e-juice manufacturers and vendors use this youth-oriented marketing strategy.

In the current study, we address this gap in the literature by examining the extent of the use of cartoons to market e-cigarette-related products (eg, e-liquids, e-juice) on Instagram. We chose Instagram for two reasons. First, Instagram is a popular and widely used platform; it has over 700 million active users worldwide,¹⁴ and in 2018 is reported to be used by 72% of all US teens aged 13–17 years.¹⁵ Second, Instagram features photo-based content that offers a unique opportunity to examine the marketing practices of e-cigarette manufacturers and vendors.¹⁶ Vendors can post images of their products that are accessible to others on this social media site. Ultimately, findings from this study should directly relate to potential regulations of tobacco products and marketing/advertising characteristics with the potential to appeal to new users.

METHODS

Data collection

We collected publicly available Instagram data (ie, anyone with an internet connection could view the image) through Netlytic, an Instagram-approved third-party vendor. Only

Instagram posts with the hashtag #ejuice or #eliquid were included. This decision was informed by prior research indicating that many e-cigarette vendors and manufacturers use cartoons to market their products¹³ and that these specific hashtags are popular among social media users who discuss e-cigarette products.¹⁷ At the time of data collection, #ejuice and #eliquid had been applied to over 3 million posts, respectively. Hashtags are applied by social media users to specify the context or subject matter related to a post,¹⁷ and allow social media users to search for or browse the posts of other public accounts.^{18,19}

Data collection occurred from 3 to 17 November 2017. Netlytic uses an autocollector that retrieves 100 posts every hour (around 30 min past the hour). If there are more than 100 posts with a particular hashtag posted per hour, only the most recent of them will be retrieved until capacity is reached, for example, ~9000 posts per hashtag. The two datasets #ejuice (n=8625) and #eliquid (n=8868) were combined (n=17 493). Duplicate posts (n=7338) were removed, resulting in a sample of n=10 155. A subsample was then drawn constituting approximately 35% of the original sample and coded (n=3481) which is similar to earlier Instagram studies.^{18,19}

Coding strategy

The Master Settlement Agreement defines ‘cartoon’ as any drawing or other depiction of an object, person, animal, creature or any similar caricature that satisfies any of the following criteria: (1) the use of comically exaggerated features; (2) the attribution of human characteristics to animals, plants or other objects, or the similar use of anthropomorphic technique; or (3) the attribution of unnatural or extrahuman abilities, such as imperviousness to pain or injury, X-ray vision, tunnelling at very high speeds or transformation.⁴ Using this definition as a guide, we coded each post for the presence or absence of a *Cartoon*, for example, ‘Is there a cartoon anywhere in the image (yes=1/no=0)?’

To determine if vendors and manufacturers were using cartoons as logos (indicating the cartoons is integral to the companies’ brand recognition strategy), we created the category *Logo*, for example, ‘Was the image coded as a cartoon solely because of the logo (yes/no)?’ To distinguish between the type of post (ie, promotional vs non-promotional), we created the category *Promo*, for example, ‘Is the post an advertisement/flyer/ promotional material with visible branding (eg, digital water-mark) and/or does the written message accompanying the post imply promotional material (eg, price [yes/no])?’ Two trained investigators coded all posts; a subsample (n=199) was double-coded to determine reliability. Coding agreement was acceptable ranging from 76.1% to 89.9%.

We conducted χ^2 tests to examine the potential association between the type of post and the presence of cartoons (alpha=0.05).

RESULTS

Among all posts, 723 (20.8%) contained a *Cartoon* (see figure 1 for a representative image). Among all posts, 2360 (67.80%) were *Promo*. There was a significant association between the type of post and whether or not the post contained a *Cartoon* ($\chi^2_{[1]}=2$, p=0.003); promotional

posts had a higher percentage of cartoons (22.1%) compared with non-promotional posts (17.9%).

Of the 723 posts that contained a *Cartoon*, 479 (66.25%) were coded as cartoons due to the vendor's or manufacturer's *Logo*. There was a significant association between the type of post and whether or not the post was coded as a cartoon due to the *Logo* ($\chi^2_{[1]}$, $p < 0.001$). The percentage of posts that were coded as *Logo* was greater for promotional posts (74.0%) compared with non-promotional posts (46%).

DISCUSSION

These findings provide further evidence that e-liquid vendors and manufacturers are using cartoons to market their products in line with earlier research.^{13,20} While the present study focused on images posted to Instagram, recent research has also shown that e-cigarette companies are using popular music videos that appeal to youth as vehicles for product placement to increase brand awareness.²¹ Taken all together, it appears that marketing restrictions are limited for the growing market of e-cigarette products. This may have public health consequences as these marketing practices may increase the risk of adolescents and young adults trying nicotine-delivering products.^{22,23}

The current findings also indicate that many e-juice manufacturers and vendors use cartoons in their logo designs, suggesting that cartoon imagery is integral to the companies' brand recognition strategy. One similar brand awareness marketing strategy that received a great deal of empirical attention was the use of 'Joe Camel' (from 1987 to 1997) in a multiplatform advertisement campaign (eg, billboards, magazine advertisements) for RJ Reynolds' Camel combustible cigarettes. Joe Camel was considered a cartoon as defined by the Master Settlement Agreement,⁴ and evidence indicates that this advertisement campaign increased the risk of smoking uptake in youth,⁸ potentially through several mechanisms including increased brand awareness^{5,6} and perceived subjective appeal and 'coolness',⁵ as well as decreased perceived risks of smoking.²⁴ Earlier research reported that a sample of children (aged 3–6 years) demonstrated high rates of Joe Camel recognition,⁶ and high school students were more likely to report prior exposure to Joe Camel compared with adults.²⁵ Given the strong impact of cartoon-based marketing strategies on youth health behaviour in general (such as food preference²⁶) and cigarette smoking specifically, a clear direction for future investigations will be to examine the impact of cartoons (including logo designs with cartoons) on the appeal of e-cigarette use among youth.

Limitations

The present study focused on images from Instagram, and findings may not generalise to other social media platforms. The images analysed in this study were collected from a short time frame and may not generalise to other time periods. Future research should examine a longer time frame to fully characterise this marketing strategy. While only two hashtags (#ejuice, #eliquid) were used in data collection limiting generalisability to other hashtags, research has indicated that these two hashtags comprised large volumes of posts, suggesting popularity among users.¹⁷ Our findings pertain to e-juice vendors and manufacturers and

may not pertain to e-cigarette device manufacturers themselves. Additionally, our findings may not generalise to all brands or companies, and thus it is not clear whether cartoons are used primarily by small independent companies or major tobacco companies.

Concluding remarks

Findings from the present study indicate that e-juice manufacturers and vendors are using cartoons to market their products, with companies incorporating cartoons into their logo designs. The posts to Instagram demonstrate that these online marketing strategies could be particularly accessible to youth. In the USA, the Food and Drug Administration has recently deemed that e-cigarette-related products are subject to tobacco product regulations. However, current regulations do not restrict use of cartoons in tobacco product marketing. To further develop effective regulations, empirical data are needed to determine whether cartoon marketing strategies effectively impact perceived risk and benefits, product appeal, the intention to use and actual use of e-cigarettes.

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What this paper adds

- ▶ E-cigarette manufacturers and vendors are using cartoons to market their products and many of these companies' logos are cartoons.
- ▶ Instagram can be used to study e-cigarette companies' promotional strategies.
- ▶ Empirical data are needed to determine whether cartoon marketing strategies effectively impact perceived risk and benefits, product appeal, the intention to use and actual use of e-cigarettes.



Figure 1.
Image representative of a cartoon used to market e-cigarette products.