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Marketing Content on E-Cigarette Brand-Sponsored Facebook Profile Pages

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Abstract

Introduction: E-cigarettes are marketed on brand-sponsored Facebook profile pages despite Facebook’s policy to prohibit e-cigarette marketing on their platform. We aimed to identify e-cigarette marketing strategies used and products marketed on brand-sponsored Facebook profiles and assess whether these strategies and featured products differ by user engagement.

Methods: We examined up to 10 recent Facebook posts on 26 e-cigarette brand-sponsored profile pages uploaded between August 1 and November 31, 2016. We identified positive engagement (i.e. “like,” “love”), negative engagement (i.e. “sad,” “angry”), post type (e.g. link, photo), type of sales promotion (e.g. giveaways, discounts), non-sales promotion (e.g. event promotion without product marketing), and marketed products (e.g. e-cigarettes, e-liquids).

Results: We examined 225 Facebook posts. Engagement was modest (e.g. Median “likes” = 8 [Min = 0, Max = 591]). The most common post types were photos (52.6%) and links (35.5%). Of all links, 83.7% were links to online shops. Of all posts, 35.0% had overt sales promotional content, 32.0% featured non-sales promotional content, and 68.0% featured an e-cigarette product. The most commonly featured product was an e-cigarette device (50.6%). Posts with more positive engagement included giveaways (versus sales [$p = 0.009$]) and posts marketing vaping devices (versus e-liquids [$p = 0.004$]). Negative engagement was not associated with marketing strategies or products. Of the brand-sponsored profile pages, 42.3% could be accessed by underage users.

Discussion: E-cigarettes are marketed on Facebook using a variety of promotional strategies. Importantly, underage youth often can access this marketing content. Comprehensive tobacco control policies that restrict e-cigarette marketing on social media are needed urgently.

Keywords

e-cigarette; marketing; social media

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Disclosure of interest

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Introduction

Emerging literature shows that electronic cigarette (e-cigarette) marketing is expanding rapidly without appropriate regulations (Kornfield et al., 2015). Effective and aggressive e-cigarette marketing may be contributing to the overwhelming popularity of e-cigarettes among U.S. adolescents (Wang et al., 2019). Several studies have demonstrated that adolescent exposure to e-cigarette marketing is associated with frequency of e-cigarette use among users (Emery et al., 2014; Mantey et al., 2016; Singh et al., 2016) as well as susceptibility to using e-cigarettes among non-users (Farrelly et al., 2015; Hébert et al., 2017).

While traditional media such as magazines, newspapers, billboards, and TV/movies have been used widely by the tobacco industry to promote their products (Kim et al., 2014), the e-cigarette industry has harnessed innovative platforms including social media to market their products (Emery et al., 2014). Social media platforms are ideal for advertising e-cigarettes because these platforms can reach large audience quickly, efficiently, and inexpensively. Given that youth frequently use social media platforms and are vulnerable to the tobacco-related content posted on them (Hébert et al., 2017), it is important to examine e-cigarette marketing on social media sites.

Evidence indicates that 50% of U.S. adolescents use Facebook, with lower income adolescents being more likely to use Facebook than higher income adolescents (Anderson & Jingjing, 2018). Moreover, data from Connecticut showed that exposure to e-cigarette marketing on Facebook predicts e-cigarette initiation among adolescents who had never used e-cigarettes (Camenga et al., 2018), even after accounting for exposure to ads on other social media sites (e.g. Twitter, YouTube), traditional media outlets (e.g. TV/radio, magazines, billboards), and retail stores (e.g. convenience stores, vape shops). Despite Facebook's popularity among youth, existing research on e-cigarette marketing *via* social media largely is limited to Twitter (Clark et al., 2016; Huang et al., 2014; Lazard et al., 2016), YouTube (Kong et al., 2019; Luo et al., 2014; Paek et al., 2010), and Instagram (Chu et al., 2017; Laestadius et al., 2016, 2019). Very few studies have examined e-cigarette marketing on Facebook (Jackler et al., 2019), and, to our knowledge, no studies have examined specific e-cigarette marketing strategies used on Facebook.

For nearly a decade, Facebook voluntarily has implemented strict guidelines that prohibit advertisement/commerce of and underage access to tobacco or tobacco-related paraphernalia, including e-cigarettes, on their platform (Freeman, 2012; Jackler et al., 2019). Despite Facebook's policies to prohibit e-cigarette and other tobacco marketing, tobacco companies have circumvented advertising restrictions by setting up brand-sponsored profile pages (Jackler et al., 2019) and encouraging fan profile pages (Freeman & Chapman, 2010; Liang et al., 2015) that are used to promote products and events. These "industry" profile pages are similar to general user profiles and can be used to share a wide range of information with Facebook users including information about tobacco products. Facebook users can interact with the pages by sharing, liking, or commenting on posts.

A recent study of tobacco-related, brand-sponsored profile pages on Facebook found a greater number of such pages for e-cigarettes and hookah compared to other tobacco products (Jackler et al., 2019). Among brand-sponsored profile pages, purchase links and sales promotions were common. Furthermore, only 38% of e-cigarette brand-sponsored pages restricted access to youth under the age of 18 years (Jackler et al., 2019)). These findings suggest that youth can access tobacco marketing information *via* Facebook despite its policies explicitly prohibiting tobacco advertisements and sales. However, the specific marketing strategies that e-cigarette companies use on brand-sponsored Facebook pages have not been studied. Thus, to fully and accurately inform the regulation of e-cigarette marketing, it is critical to identify specific marketing strategies that are employed by e-cigarette companies in addition to the specific products that they market on Facebook.

In sum, an investigation of e-cigarette marketing practices on Facebook is needed because e-cigarettes are popular in the U.S., particularly among young people (Wang et al., 2019), and prior evidence suggests that e-cigarette marketing (especially to youth) is common on this platform (Camenga et al., 2018). For the current study, we limited our focus to brand-sponsored profile pages because the U.S. Food and Drug Administration (FDA) has regulatory authority over the marketing strategies employed by the tobacco/e-cigarette industry but not by private individuals. We assessed the types of products that were marketed and the specific marketing strategies that were employed on e-cigarette brand-sponsored pages. To determine which products/strategies were most engaging to users, we also assessed whether marketing strategies used or products marketed differed by level of engagement (e.g. “likes”). Finally, we assessed whether underage youth (<18 years of age) could access the e-cigarette brand-sponsored profile pages. When considered in concert, the study findings can inform the regulation of e-cigarette marketing on Facebook and may extend to other social media platforms as well.

Methods

Procedures

Selecting e-cigarette brands—We used two complementary sources to determine which e-cigarette brands to evaluate in the current study. First, to determine advertising presence we obtained a list of the 25 e-cigarette brands that spent the most money overall on advertisements across different advertising channels and a list of the 25 e-cigarette brands that spent the most money on online advertisements in the past year starting from the onset of the search (August 1, 2015–July 31, 2016). Both lists were obtained from Kantar Media data (<https://www.kantarmedia.com/us>) which tracks advertisement expenditures on a variety of platforms (e.g. magazines, websites, newspapers, TV networks, radio stations) in the U.S. and has been used in prior studies to understand e-cigarette marketing trends (Kim et al., 2014; Kornfield et al., 2015). Second, we used qualitative data from youth who had used e-cigarettes in the past 30 days ($N = 101$, 50% female, mean age 18.3, $SD = 1.22$) to identify the 25 most frequently used e-cigarette brands among youth.

To generate the final list of e-cigarette brands for inclusion in the study, we first excluded duplicates from the 75 brands ($n = 27$). Next, we conducted an online search of the remaining 48 e-cigarette brands to ensure that each had its own official website and that

their e-cigarette products were sold online through the official product website or *via* other online retail websites. Brands that could not be verified using these methods were excluded ($n = 5$). Finally, we excluded brands that did not have Facebook profile pages or had only old posts (i.e. prior to August 1, 2016; $n = 17$). In total, 26 e-cigarette brands were included in the analysis. See Figure 1 for reasons for exclusion.

Obtaining facebook posts—We examined up to 10 of the most recent posts on the 26 e-cigarette brand-sponsored profile pages starting from November 31, 2016 and going back to August 1, 2016.

Coding facebook posts—To analyze the posts, we developed and used a codebook to identify 1) post engagement (e.g. “likes”), 2) post type (e.g. photo, link), and 3) marketing characteristics. Marketing characteristics were subdivided into three categories: 1) sales promotions (e.g. discounts/sales), 2) non-sales promotions (e.g. promotion of the brand’s other social media posts, event announcements), and 3) the type of e-cigarette product or products being promoted (e.g. a vaping device, e-liquids). A detailed description of each content area is provided below.

The final codebook was developed iteratively. The coding content first was identified by a research assistant who reviewed Facebook posts on the e-cigarette brand-sponsored profile pages published 6 months prior to the posts included in this study. We evaluated posts that appeared prior to the start of the study to ensure that the content used to develop the codebook did not overlap with the content that ultimately was coded for the current study. All codes were reviewed by the lead author and any discrepancies were resolved through discussions among the study staff. Once the codebook was finalized, two independent coders were trained in the codebook and randomly coded 11% of the Facebook posts included in this study. Cohen’s kappa values for each of the coded sections described below indicated moderate to strong agreement (0.68 to 0.89, $p < .001$; (McHugh, 2012)). Once we established interrater reliability, a single coder coded the remaining posts and a second coder reviewed all coding. Multiple codes were allowed per post.

Post engagement

Post engagement was determined by the number of reactions to a post. Positive engagement was determined by the sum of “like” and “love” reactions, and negative engagement was determined by the sum of “sad” and “angry” reactions. We did not include reactions such as “haha,” or “wow” in either the positive or negative engagement category due to ambiguity.

Post type

Post types were coded as photo, text, link, video, and other.

Marketing characteristics

Type of sales promotion—Posts were coded as having content related to promotional sales strategies if the content included a monetary value or a reward as an incentive for user participation (e.g. social sharing) or purchasing. Sales promotional posts were coded as general sales (e.g. 25% off a new e-cigarette model), deal of the week/month (e.g. 20%

off the e-liquid blend of the month), holiday sales (e.g. Halloween sale), encouragements to share the brand's post on a user's personal Facebook page or interact with the posts (e.g. reply with your favorite model), giveaways (e.g. enter your name for a chance to win a free device), and "other" (see Results for examples).

Type of non-sales promotional content—Promotional content that did not involve a monetary value or a reward as an incentive for user participation or purchasing was coded as non-sales promotional content. This content promoted celebration of holidays, weekends, or weekdays; similar posts on other social media platforms; pro-vaping policies; e-cigarette expos, costume contests; and "other" (see Results for examples).

E-cigarette products promoted—We identified several e-cigarette products that commonly were promoted in Facebook posts. The products were coded as whole e-cigarette devices, e-liquids, hardware (e.g. battery, atomizers, tanks), starter kits, and "other" (see Results for examples).

Underage access

We attempted to log in to each of the 26 e-cigarette brand pages in November 2018. If we could access the brand-sponsored Facebook profile page without logging into an age-verified Facebook account, we coded underage access as "yes."

Statistical analysis—We conducted descriptive statistics on all study variables. We also conducted ANOVAs to assess whether e-cigarette marketing strategies used and products that were marketed on Facebook differed by positive engagement.

Results

We examined 225 posts from 26 e-cigarette brand-sponsored profile pages that were uploaded between August 1, 2016 and November 31, 2016. On average, 5.29 (SD = 0.19) posts for each e-cigarette brand were included and posts were uploaded about 3.25 days apart (SD = 3.44).

Engagement

Engagement (e.g. "likes") was relatively low (Table 1); the median number of "likes" for each post was 8 (Min = 0 and Max = 591). Positive reactions (e.g. "likes") appeared to be greater than negative reactions (e.g. "sad," "angry").

Post type

The most common post types were photos (52.6%) and links (35.5%; See Table 1 for all post types). Of all photo posts, 54.0% also included an external link. Of all links, 83.7% directed users to the e-cigarette brand's official website or other online shops where the products could be purchased. Example of "other" links (8.7%) included links to external magazine/blog articles and to pro-vaping websites (e.g. vaping advocacy).

Type of sales promotion

Of all posts, 35.0% included overt sales promotions (e.g. a discount on purchase) or an incentive for user participation in product promotion (e.g. social sharing; total $n = 84$; Figure 2). The most common promotion type was “other” sales promotion (25.0%), which included a variety of strategies such as encouragements to “order now,” prompts to visit and purchase from a brick and mortar store, and free shipping. The second most common sales promotion was holiday sales (e.g. “Halloween super sale”), followed by giveaways (e.g. “enter your name to win a free device”), general sales (i.e. price reduction), encouraging users to share the brand’s post on their own Facebook page to receive an incentive, and deals of the week/month.

An ANOVA test showed that positive engagement was associated with type of sales promotion ($F(5, 93) = 3.32, p = 0.009$). Specifically, posts that had giveaways ($M = 99.12, SD = 182.3$) received more positive engagement than did general sales posts ($M = 2.26, SD = 1.99$) or holiday sales posts ($M = 7.90, SD = 54.94$). Negative engagement was not associated with type of sales promotion.

Type of non-sales promotional content

Of all posts, 32.0% featured non-sales promotional content (total $n = 80$; Figure 3). In general, the content of these posts varied greatly. The most common content was “other” (33.8%), which included promotions of concert venues, fundraising events, anti-smoking documentaries, articles on how to use e-cigarette devices safely, and products (without explicitly encouraging purchasing or sharing). The second most common were posts that acknowledged or celebrated holidays, weekdays, or weekends (23.8%; e.g. “Happy Friday!”), followed by promotion of branded posts on other social media platforms (18.8%; e.g. Instagram), policies supporting vaping (8.8%; e.g. voting against vaping tax), e-cigarette expos (7.5%), and costume contests (6.3%). There were no differences between positive and negative engagement and non-sales promotional content.

E-cigarette products promoted

Of all posts, 68.0% featured an e-cigarette product (total $n = 166$; Figure 4). The most commonly featured product was a whole e-cigarette device (50.6%) followed by e-liquids (19.9%). “Other” products (4.2%) included marijuana products (e.g. cannabis oil, devices to vape cannabis) and fashion accessories for e-cigarette devices (e.g. cases).

An ANOVA test showed that positive engagement was associated with products that were marketed ($F(5, 184) = 3.92, p = 0.004$) but negative engagement was not. Specifically, posts that marketed whole devices ($M = 67.22, SD = 114.93$) had more positive engagement than posts that marketed e-liquids ($M = 8.76, SD = 16.03$). A follow-up general linear regression showed that the association between positive engagement and marketed products was not impacted by the different types of sales promotion (results not shown).

Underage access

Of all brand-sponsored Facebook profile pages, 42.3% could be accessed by underage youth.

Discussion

The goal of this study was to assess the content of e-cigarette brand-sponsored Facebook profile pages to identify marketing strategies used, e-cigarette products promoted, and whether level of user engagement differed by these factors. We observed that 68.0% of the posts featured an e-cigarette product, and the most frequently featured product type was whole e-cigarette devices, followed by e-liquids, hardware parts, starter kits, and other (e.g. e-cigarette accessories). Additionally, we observed that overt sales promotional content was present in 35.0% of the posts. Overt sales promotional strategies varied and included holiday sales, giveaways, general sales (e.g. price reduction), incentives for participation (e.g. sharing), and deals of the week/month. Greater positive engagement was associated with posts that featured giveaways (relative to posts that advertised general sales) and posts that featured whole devices (relative to e-liquids).

The majority of the posts that contained links (83.7%) directed users to external websites where e-cigarette products could be purchased. This finding is consistent with a previous study that observed that external links to tobacco shops were common in the posts of tobacco brand-sponsored Facebook profiles (Jackler et al., 2019). Importantly, we observed that 42.3% of the e-cigarette brand-sponsored Facebook profile pages included in the current study could be accessed by underage youth in 2018, two years after the initial search was conducted. Overall, our study findings indicate that e-cigarette brands are promoting and selling a diverse range of e-cigarette products on Facebook despite Facebook's effort to restrict tobacco marketing. The current study suggests that Facebook may be better able to restrict tobacco marketing if they extend their voluntary restrictions to include any type of tobacco marketing on brand-sponsored Facebook pages. To further limit youth access, Facebook should consider prohibiting access to any Facebook pages managed by the tobacco/e-cigarette industry for accounts owned by youth under the age of 18 years and unregistered accounts.

Our findings are consistent with others that show the e-cigarette industry is capitalizing on the capabilities of social networking platforms to market their brands using methods that are prohibited for combustible cigarettes (Escobedo et al., 2018; Jackler et al., 2019). For instance, we observed that e-cigarette brands tried to engage users with interactive features that encouraged them to refer a friend to get a discount, share their post to receive a reward/discount, or sign up for giveaways. Indeed, posts that included giveaways had greater positive engagement. Giving away free tobacco products (including e-cigarettes or e-liquids) without a tobacco product purchase transaction is a clear violation of FDA rules (FDA, 2017).

Furthermore, e-cigarette brands often provided links within their Facebook posts that redirected to the brand's other social media websites to increase user engagement and expand brand influence. The presence of any tobacco marketing on social media platforms is especially concerning due to risk for youth exposure. As demonstrated in this study, youth may view marketing content directly from brand-sponsored profile pages. Perhaps having an even more insidious effect, youth may view content that is shared by other peers, and,

consequently, perceive e-cigarette use to be normative; it has been established that peer influence is a key reason for e-cigarette initiation among adolescents (Kong et al., 2015).

The study findings must be considered in light of several limitations. It is important to note that the presence of e-cigarette-related sales promotions reported in this study may be an underestimate because our operational definition of “sales promotion” was conservative. In the current study, post content was coded as a sales promotion if it involved a monetary value or offered incentives for user participation such as social media sharing. However, a liberal operational definition of “sales promotion” may have included any posts that feature a product, as the intent of such posts on brand-sponsored profile pages almost certainly is to promote use. Additionally, some posts did not promote any products but attempted to interact with their audience by creating or endorsing various events such as costume contests, concerts, or fundraising events. These posts were coded as non-sales promotional content. Other non-sales promotional content included pro-vaping materials such as articles on policies supporting e-cigarette use or anti-smoking materials. Although these “non-sales promotional” posts did not directly promote the sale of e-cigarettes, the extent to which this type of content promotes e-cigarette use merits further examination.

Another limitation was that the study design did not allow us to determine the overall impact and reach of the marketing strategies employed by the e-cigarette brand-sponsored profile pages or the effectiveness of these marketing strategies for adolescents. Although a prior study observed that exposure to e-cigarette marketing on Facebook was associated with subsequent e-cigarette use among adolescents (Camenga et al., 2018), future studies need to determine the cumulative impact of viewing e-cigarette-related content in social media posts. Further, while we observed that engagement (based on “likes,” “loves,” etc.) was relatively low, this may not be the most accurate way to assess exposure and influence among youth. It is possible that youth and adults may intentionally access or otherwise be exposed to e-cigarette-related posts but not provide a reaction (e.g. “like” or leave comments that are visible to others in their social media circle. However, it is important to note that we observed more positive than negative reactions to posts overall, suggesting that when people take the time to provide feedback it largely is positive. Thus, irrespective of whether a viewer personally responds or not, the bulk of feedback they see from other Facebook users is supportive of the product. Future research is needed to determine how exposure, even in the absence of a posted reaction, impacts use.

In addition, our study was conducted in 2016, and the study findings represent a snapshot of the marketing activities of e-cigarette brands at that time. Product innovation, sales, and marketing practices of the e-cigarette industry continue to evolve, and ongoing surveillance and monitoring of e-cigarette marketing on Facebook and other social media platforms are critical for policy development. However, it should be noted that no new restrictions on e-cigarette advertisements of which we are aware have been implemented by Facebook or the FDA since this study was conducted. An additional limitation, we chose to analyze up to 10 of the most recent posts for each e-cigarette brand, but these posts may not have been representative and trends in marketing strategy over time on Facebook should be examined.

We also chose to limit our study sample to e-cigarette brand-sponsored profile pages because the FDA can regulate the e-cigarette industry's marketing strategies but they cannot set restrictions on fan pages owned by private individuals. However, future studies also should examine fan pages to develop a comprehensive understanding of the marketing strategies used and to determine if fan pages are promoting e-cigarette brands using the same or different strategies than are employed by brand sponsored pages. Finally, we only examined posts on Facebook, so the findings may not generalize to all social media platforms. Future studies should examine whether similar or different marketing strategies are used to promote e-cigarettes across a wide range of social media platforms.

Although there are limitations to the study, our findings have important regulatory implications. E-cigarette companies are using social media platforms such as Facebook to market their products overtly by including external purchasing links and discounts on their posts. They also are using a variety of covert strategies to make their content engaging to and interactive for users. For instance, companies are using strategies such as endorsing pro-vaping articles/websites, contests, events, and other activities that likely promote e-cigarette use by creating a shared sense of online community. It is important to note that these activities are taking place despite Facebook's efforts to self-monitor and restrict tobacco advertisements on their platform. Furthermore, while access to websites that sell e-cigarettes should be restricted to underage individuals, our findings indicate that many of the e-cigarette brand-sponsored profile pages on Facebook are accessible to underage youth (<18 years old), and we encourage more stringent regulations be implemented to prevent youth access.

It is crucial to note that the marketing strategies identified in this study, including direct sales promotions such as offering free giveaways, discounts, free shipping as well as indirect methods such as sponsored events, have been used by the combustible tobacco industry in the past (Henriksen, 2012). In the U.S., the FDA has the authority to regulate the marketing, distribution, and sale of all tobacco products including e-cigarettes. It is critical for the FDA to implement a comprehensive e-cigarette advertisement ban that not only applies to traditional media but also applies to digital/social media where youth are vulnerable to pro-e-cigarette marketing and messaging.

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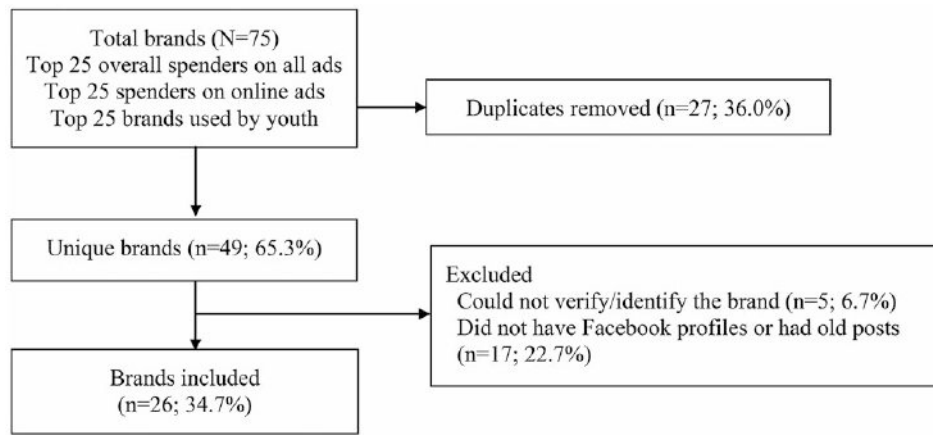


Figure 1.
Inclusion of e-cigarette brands and reasons for exclusion.



Figure 2. Type of sales promotion content on e-cigarette brand-sponsored Facebook profile pages ($n = 84$).

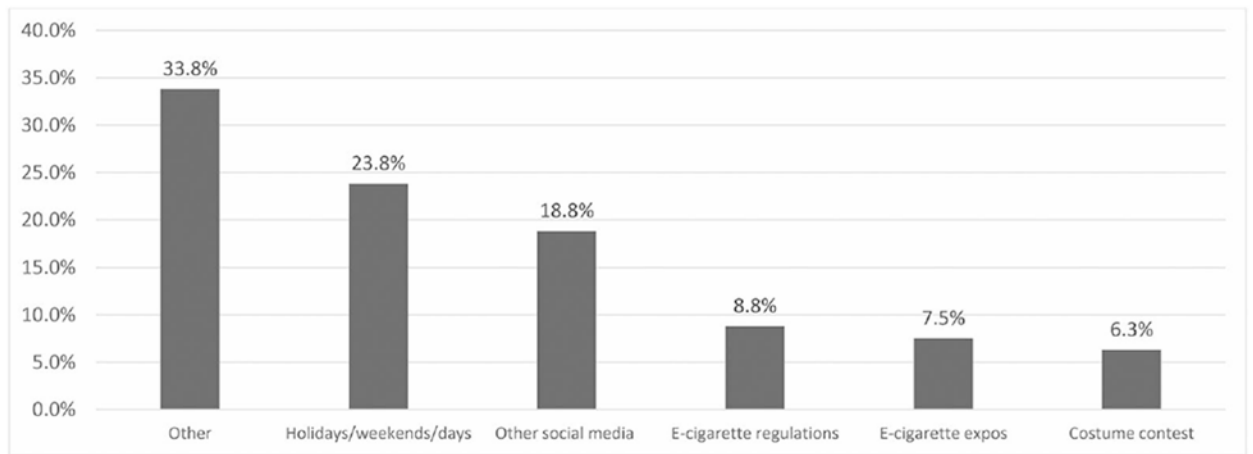


Figure 3. Type of non-sales promotional content on e-cigarette brand-sponsored Facebook profile pages ($n = 80$).

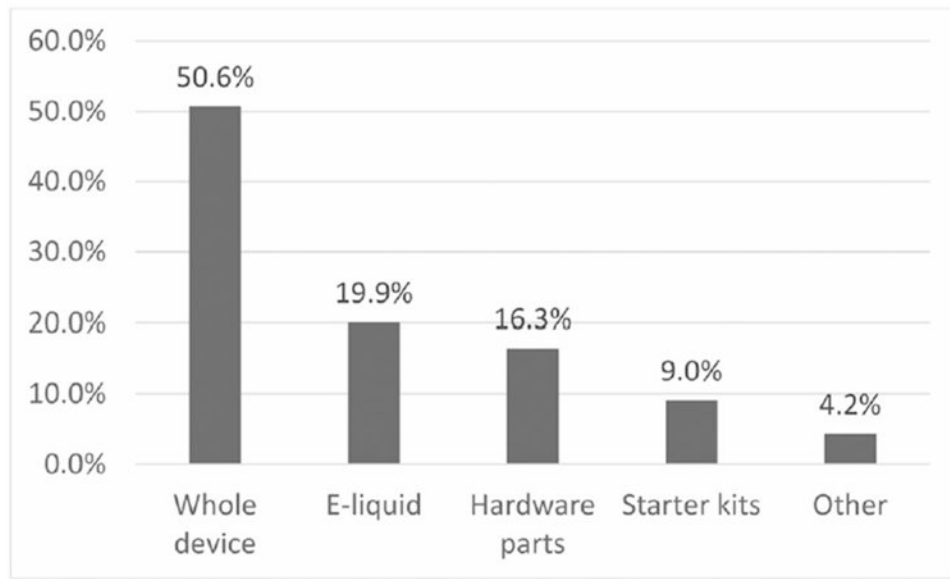


Figure 4. E-cigarette products promoted on e-cigarette brand-sponsored Facebook profile pages ($n = 166$).

Table 1.

Engagement data and post characteristics of e-cigarette brand-sponsored Facebook profile pages.

		median (min, max)/%
Engagement (<i>N</i> = 225)	Likes	8 (0, 591)
	Love	0 (0, 33)
	Haha	0 (0, 7)
	Wow	0 (0, 32)
	Sad	0 (0, 7)
	Angry	0 (0, 4)
Type of post (<i>N</i> = 225)	Photo	52.6%
	Link	35.5%
	Other	8.7%
	Video	1.7%
	Text	1.4%

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