Addictive Behaviors Reports 16 (2022) 100444

Contents lists available at ScienceDirect

Addictive Behaviors Reports

journal homepage: www.elsevier.com/locate/abrep

E-cigarette imagery in Netflix scripted television and movies popular among young adults: A content analysis

Jon-Patrick Allem [a,*], Shawn P. Van Valkenburgh [b], Scott I. Donaldson [a], Allison Dormanesh [a], Terence C. Kelley [c], Erica L. Rosenthal [b]

[a] Department of Population and Public Health Sciences, Keck School of Medicine, University of Southern California, Los Angeles, CA, United States
[b] Annenberg Norman Lear Center, University of Southern California, Los Angeles, CA, United States
[c] California Tobacco Control Branch, California Department of Public Health, Sacramento, CA, United States

ARTICLE INFO

Keywords:
E-cigarettes
Vaping
Film
Television
Young adults

ABSTRACT

Introduction: Research is needed to understand the frequency of e-cigarette impressions in scripted television and movies, especially in scripted content with characters and storylines that may appeal to young adults. This study aimed to determine the extent of e-cigarette-related imagery and dialogue in Netflix content popular with young adults. We also determine the demographics and character qualities of actors shown holding e-cigarettes.
Methods: Nielsen ratings data were used to compile a list of the most popular Netflix original films and TV shows among U.S. viewers 18–24 years old between June 1, 2020, and May 31, 2021. We used a sample of 12 films and 113 TV episodes from 12 series. Three coders were trained to analyze a total of 101 h of content for the presence of e-cigarettes, level of use, type of characters holding e-cigarettes, brand visibility, and the presence of vaping-related dialogue. Twenty percent of all episodes/films were double coded to ensure reliability.
Results: Out of 125 titles, 16 (13%) had e-cigarette-related content. Thirteen titles (10%) showed at least one character holding an e-cigarette, and three others mentioned vaping without showing e-cigarettes. The total time of e-cigarettes onscreen amounted to 399 s and the average screen time for e-cigarettes was 31 s. Ninety-nine percent of the time an e-cigarette appeared on screen it was being held by a character.
Conclusion: This study documented recent e-cigarette imagery found on Netflix and demonstrates the need for health communication campaigns to denormalize e-cigarette use, particularly among susceptible populations, such as young adults.

1. Introduction

The tobacco industry has employed a variety of marketing strategies that have targeted youth and young adults and have been found to promote an increase in smoking behaviors (Biener & Siegel, 2000; Lovato et al., 2011; Pierce & Gilpin, 1995; Rigotti et al., 2005). In addition to paid advertisements, the tobacco industry has employed methods that combine positive tobacco images and entertainment (National Cancer Institute, 2008). One strategy that received a great deal of empirical attention was tobacco product placement and smoking in movies. For example, cross-sectional (Sargent et al., 2005), and longitudinal (Dalton et al., 2003), surveys have shown that greater exposure to smoking in movies is associated with trying smoking, even after controlling for potential confounders. In a longitudinal study of a representative sample of U.S. adolescents, it was found that exposure to smoking in movies was associated with becoming an established smoker (Sargent et al., 2007). The association between smoking in movies and young adult smoking behavior has been shown to exhibit a dose–response relationship: the more a young adult was exposed to smoking in movies, the more likely they would have smoked in the past 30 days or have become an established smoker (Song et al., 2007). Experimental studies have supported a causal argument, demonstrating that exposure to movies with smoking is associated with more favorable attitudes toward smokers (Gibson & Maurer, 2000), and increased self-reported intentions to smoke (Hines et al., 2000; Pechmann & Shih, 1999).

As a result of the multi-state Master Settlement Agreement (MSA), paid product placement of combustible cigarettes and chewing tobacco in television and motion pictures was restricted, however, the MSA offered no restriction for e-cigarette products (National Association of Attorneys General, 2000). In other words, the MSA covers big tobacco

* Corresponding author at: 1845 N Soto Street, 3rd Floor, SSB 312D, Los Angeles, CA 90032, United States.
E-mail address: allem@usc.edu (J.-P. Allem).

https://doi.org/10.1016/j.abrep.2022.100444
Received 2 April 2022; Received in revised form 26 June 2022; Accepted 26 June 2022
Available online 28 June 2022

companies that signed the agreement but does not cover newer products and companies. As such, e-cigarette manufacturers may use television and movies as vehicles to promote their products and attempt to normalize vaping among viewers. To date, there has been little research on the prevalence of e-cigarette imagery in television and movies. A study done by the Truth Initiative in 2019 showed that e-cigarettes were rare in the 2016–17 cable/broadcast season; the authors pointed out that all e-cigarette depictions were found on Netflix's original productions (Truth Initiative, 2019). The authors also reported that the amount of tobacco depictions on Netflix almost tripled from 2015–16 seasons to 2016–17 seasons, specifically on youth-rated programs (i.e., TV-Y7, TV-PG) (Truth Initiative, 2019).

Given the rapidly changing e-cigarette marketplace and the popularity of e-cigarettes among young adults (National Center for Chronic Disease Prevention and Health Promotion (US) Office on Smoking and Health, 2016), there is a need to identify e-cigarette imagery in a recent sample of scripted entertainment popular among this age group. Scripted entertainment can be particularly influential in shaping the attitudes and behaviors of young people, for example, Dal Cin and colleagues suggested that transportation theory, or the idea that viewers are affected by stories because of their immersion into the narrative, and identification with the storyline and characters, explains the relationship between exposure to smoking in movies and smoking behaviour (Dal Cin et al., 2007). As a result, this study paid special attention to the demographics and role size of characters found using e-cigarettes in popular Netflix content.

With over 70 million subscribers in the U.S. and Canada, Netflix is currently the most popular streaming-only service globally (Stoll, 2021). Given the increasing popularity of streaming services in general – and Netflix in particular –Netflix content provides an ideal opportunity to identify and analyze e-cigarette representations in television and movies. Findings from this study may point to further need for health communication campaigns to denormalize e-cigarette use, particularly among susceptible populations, such as young adults.

2. Methods

2.1. Sample generation

This study aimed to analyze scripted, Netflix original content popular among young adults ages 18–24. To this end, this study identified the most-watched Netflix original content among adults ages 18–24 from June 1, 2020 – May 31, 2021, based on ratings data from Nielsen Media Research. The Nielsen ratings data were collected at the series level and not the episode level, preventing the identification of the most-watched episodes of any given show. As a result, for TV series, this study analyzed all episodes in the 2020–2021 season, resulting in a final sample of 125 titles (see Appendix A), amounting to 101 h of content (78 h of TV content and 23 h of film content). Four films and 47 TV episodes were rated PG-13 or TV-14 or below. While Netflix pledged in 2017 that it would no longer include visual depictions of smoking or e-cigarette use except for reasons of historical or factual accuracy in original TV shows rated TV-14 or below or original films rated PG-13 or below (Evans, 2019), this study included content with these ratings to monitor whether Netflix was following through on its pledge to limit tobacco-related depictions. As the entertainment overcoming resistance model would argue (Moyer-Gusé, 2008), scripted, narrative content is most likely to shape the attitudes and behaviors of viewers of TV and movies through identification with compelling characters and transportation into the narrative. As such, this study excluded documentaries and reality shows. Additionally, period content (i.e., titles that primarily took place before 1990), and content set in a fantastical or supernatural universe in which e-cigarette use would not realistically appear were also excluded. However, content set in the real world with supernatural elements was included, so long as it was realistic enough to expect it might have e-cigarette depictions. This study selected the 12 most watched films and 12 most watched TV series from the remaining list, achieving a balance of media formats.

2.2. Coding procedures

The study team identified the TV series or film title, format, rating, and genre for each title, as made available on Netflix. The study team also evaluated the following variables: the number of e-cigarettes shown on screen, duration of e-cigarette appearances, number of separate characters holding e-cigarettes, length of time characters held e-cigarettes, presence of e-cigarette-related dialogue (including health risks), visibility of e-cigarette brand information, and length of the episode.

The study team recorded the character name for each character identified as holding an e-cigarette. Character and actor names were recorded to calculate reliability for character-level items. Perceived age (high school age or younger, younger than 21) was recoded. Younger than 21 and high school age or younger were overlapping variables designed to get at the same construct since age is not immediately apparent, and characters may or may not be represented as students. Perceived ethnicity, gender, role size, the valence of character representation (positive, negative, neutral), actor name, and actor age were recorded at the time of release. Characters were counted at the episode level, not the series level. Thus, the same character in a TV series that holds an e-cigarette in two separate episodes would count as two separate characters.

Three coders were trained to recognize e-cigarettes and code the titles for relevant content. Two training videos were coded as a pilot test. The training videos were a film in the sample, and a TV episode not in the sample (from HBO's *Mare of Eastown*). The research team discussed inconsistencies with the coders, who then re-coded the training videos until their responses matched those of the research team. Coders were instructed to watch each episode at least two times. The coders did not attempt to distinguish between tobacco and marijuana, as many e-cigarette devices can be used to deliver either product. Data were entered into a survey form hosted on Qualtrics (see Appendix B for full codebook).

2.3. Reliability

Twenty percent (20%) of titles (n = 25) were double coded by two independent coders to establish inter-rater reliability. Initially, 12 titles were randomly selected from the sample, and discrepancies were discussed and resolved with the research team. However, only 2 of these 12 episodes included e-cigarette content. As such, a second round of coding was performed with episodes purposefully selected. The second group of episodes analyzed for reliability consisted of 13 episodes that were initially coded as including e-cigarette content. Most variables had strong reliability (see Appendix C). Reliability for numeric variables was calculated using Krippendorf's Alpha, while reliability for nominal variables was calculated using Cohen's Kappa. However, we were unable to detect any brand visibility in our sample. As a result, percent agreement between coders was provided for the brand visibility variable in lieu of Cohen's Kappa, which required some variability for meaningful calculation. Coders were in 100% agreement on the absence of brand visibility. Additionally, character valence did not achieve adequate standards of reliability $\kappa = 0.56$, despite multiple rounds of training. We believe this was due to the morally ambiguous behaviors of complex characters who were shown holding e-cigarettes.

3. Results

3.1. Title level

Out of 125 titles, 16 (13%) had e-cigarette-related content. Thirteen titles (10%) showed at least one character holding an e-cigarette, and three others mentioned vaping without showing e-cigarettes. The total

Table 1
Qualities of titles with *visual* e-cigarette-related content.

Name of film or TV series	Media type	Season #	Episode #	Rating	e-cigarette on screen	# of characters with e-cigarettes	# of e-cigarettes	e-cigarette Screen Time (Seconds)
Army of the Dead	Movie	NA	NA	R	Yes	1	1	1
Bad Trip	Movie	NA	NA	TV-MA	Yes	1	1	4
Emily in Paris	TV	1	1	TV-MA	Yes	1	1	48
Fate: The Winx Saga	TV	1	2	TV-MA	Yes	2	1	48
Grand Army	TV	1	1	TV-MA	Yes	2	2	4
Grand Army	TV	1	3	TV-MA	Yes	3	3	52
Grand Army	TV	1	6	TV-MA	Yes	2	1	15
Hubie Halloween[a]	Movie	NA	NA	PG-13	Yes	1	1	3
I Care a Lot	Movie	NA	NA	R	Yes	1	1	180
Outer Banks	TV	1	1	TV-MA	Yes	2	2	12
Outer Banks	TV	1	2	TV-MA	Yes	1	1	11
Outer Banks	TV	1	3	TV-MA	Yes	1	1	2
Outer Banks	TV	1	9	TV-MA	Yes	2	1	19

Note. [a] = films rated PG-13 or below, or TV shows rated TV-14 or below, that did not comply with Netflix's pledge to no longer include visual depictions of smoking and e-cigarette use.

time of e-cigarettes onscreen amounted to 399 s or approximately six and a half minutes (Table 1). Among the 13 titles that showed e-cigarettes, the average screen time for e-cigarettes was 31 s. Ninety-nine percent of the time an e-cigarette appeared on screen it was being held by a character. Twenty separate characters were shown holding at least one e-cigarette. No titles showed e-cigarette brand identifiers.

The title showing the greatest duration of e-cigarette screen time was the film *I Care a Lot*. The film's main character is an intelligent, conniving, and well-groomed antihero who scams senior citizens out of their savings. She is shown holding an e-cigarette for a total of 180 s. The title with the second greatest amount of e-cigarette screen time was an episode of *Grand Army*, which shows three teenage characters holding e-cigarettes for a total of 52 s. The premiere episode of *Emily in Paris* shows a well-dressed French man holding an e-cigarette for 48 s outside a Parisian Cafe. An episode of *Fate: The Winx Saga* shows two teenage characters holding an e-cigarette for 48 s in a boarding school bedroom. One character warns them that they are breaking school rules, and they might get caught.

Seven titles (6% of all titles) contained dialogue about vaping (Table 2). In three of these titles, vaping-related dialogue explicitly referenced marijuana use. For example, an episode of *Fate: The Winx Saga* included the following exchange between 2 high school students:

> CHARACTER 1: "If you see a vape anywhere, Dowling took mine last year."
> CHARACTER 2: "A vape? Every time you seem cool, you say something that ruins it."
> CHARACTER 1: "It's still weed."
> CHARACTER 2: "So smoke a joint."

There was no vaping-related dialogue that explicitly referenced tobacco products. However, four titles included substance-ambiguous vaping dialogue.

One episode of the drama series *Grand Army* included dialogue that referenced vaping. A character reports that vaping marijuana makes them feel "mellow," and later expresses regret for vaping: "I smoked weed and I feel shame. But I know I shouldn't because I won't do it often." Although these two instances did not mention vaping explicitly, the dialogue takes place in the context of characters holding e-cigarettes, such that vaping is clearly the referent.

Two titles had dialogue about the effects of vaping on health. A character in *Outer Banks* suggests that "a little weed never hurt no one." Once again, this dialogue takes place in the presence of an e-cigarette, such that vaping is clearly the referent. The PG-13 film *Hubie Halloween* includes the health-related line "smokers are for chokers," and briefly shows a teenager holding an e-cigarette.

Three episodes of the sitcom *Mr. Iglesias* refer to vaping in dialogue without showing any e-cigarettes or vaping activity. Each of these mentions constitutes an offhand, joking reference. In one case, a character expresses resigned sadness by joking that he'll soon be "vaping with the goth kids." In another instance, a smart student expresses incredulity by making an e-cigarette user the butt of a joke: "[That is as likely as] Walt putting his vape pen down." Finally, during one character's comedy routine, he briefly mentions "vaping at the pier." In all these instances, vaping is part of a punchline.

3.2. Character level

Out of the 20 characters shown holding e-cigarettes, the average time holding an e-cigarette was 20 s. No characters were shown holding more than one vaping device. Of the 20 characters who held an e-cigarette, 13 were men, and 12 were white. Thirteen were major characters. The average age of actors playing e-cigarette-holding characters was 26 years old, and 12 of the 20 actors (60%) were confirmed to be age 21 or older (Table 3). However, 16 of the 20 characters (80%) were meant to be in high school and under 21 years old. Nine characters who held an e-cigarette (45%) were portrayed in a "positive" light (Table 4).

4. Discussion

This study analyzed a total of 101 h of Netflix scripted content for the presence of e-cigarettes, level of use, type of characters holding e-cigarettes, visibility of e-cigarette brand information, and the presence of vaping-related dialogue. It identified 16 titles that had e-cigarette-related content and 13 titles that showed at least one character holding an e-cigarette, and 3 others that mentioned vaping without showing e-cigarettes. Twenty separate characters were shown holding an e-cigarette. No titles showed e-cigarette brand identifiers.

This study's findings add to the literature on tobacco product placement and smoking in movies (Dalton et al., 2003; Gibson & Maurer, 2000; Hines et al., 2000; Pechmann & Shih, 1999; Sargent et al., 2005, 2007; Song et al., 2007). Exposure to pro-tobacco behaviors in television or film may alter young adults' harm perceptions and attitudes toward e-cigarettes, and consequently they may initiate or continue tobacco use. For instance, Tickle et al. demonstrated that among youth who never smoked, liking movie stars that smoked frequently in films was associated with intentions to smoke and smoking initiation (Tickle et al., 2006). Youth exposed to smoking in media also had increased positive expectancies about smoking, which then lead to greater intention to smoke (Tickle et al., 2006). In a sample of young adults, Dal Cin et al. found that identifying with the protagonist characters that smoked on screen led to greater implicit association of smoking with the self (for both smokers and non-smokers) (Dal Cin et al., 2007). Exposure to smoking in media can resonate with young adults

Table 2
Titles with *linguistic* e-cigarette-related content.

Name of film or TV series	Media type	Season #	Episode #	Rating	e-cigarette Dialogue	e-cigarette health dialogue
Fate: The Winx Saga	TV	1	2	TV-MA	Yes	No
Grand Army	TV	1	6	TV-MA	Yes	No
Hubie Halloween[a]	Movie	NA	NA	PG-13	Yes	Yes
Mr. Iglesias[a]	TV	1	7	TV-14	Yes	No
Mr. Iglesias[a]	TV	1	10	TV-14	Yes	No
Mr. Iglesias[a]	TV	3	4	TV-14	Yes	No
Outer Banks	TV	1	9	TV-MA	Yes	Yes

Note. [a] = films rated PG-13 or below, or TV shows rated TV-14 or below, that did not comply with Netflix's pledge to no longer include visual depictions of smoking and e-cigarette use.

Table 3
Demographics of characters who held e-cigarettes.

Character	Film/series title	Season	Episode	Rating	Gender	Race	Younger than 21	High school	Actor age
Mikey Guzman	Army of the Dead	NA	NA	R	Man	Hispanic/Latinx	No	No	43
Luc	Emily in Paris	1	1	TV-MA	Man	White	No	No	46
Beatrix	Fate: The Winx Saga	1	2	TV-MA	Woman	White	Yes	Yes	19
Riven	Fate: The Winx Saga	1	2	TV-MA	Man	White	Yes	Yes	26
George Wright	Grand Army	1	3	TV-MA	Man	White	Yes	Yes	21
Joey Del Marco	Grand Army	1	3	TV-MA	Woman	White	Yes	Yes	21
Leila Kwan Zimmer	Grand Army	1	6	TV-MA	Woman	API	Yes	Yes	19
Omar Biller	Grand Army	1	6	TV-MA	Man	Middle Eastern/SA	Yes	Yes	19
Tim Delaney	Grand Army	1	3	TV-MA	Man	White	Yes	Yes	23
Uncredited #1	Grand Army	1	1	TV-MA	Woman	Can't tell	Yes	Yes	NA*
Uncredited #2	Grand Army	1	1	TV-MA	Woman	Can't tell	Yes	Yes	NA*
Frankenstein Kid	Hubie Halloween[a]	NA	NA	PG-13	Man	White	Yes	Yes	19
Marla Grayson	I Care a Lot	NA	NA	R	Woman	White	No	No	42
Uncredited	Bad Trip	NA	NA	TV-MA	Man	White	No	No	NA*
J.J. #1	Outer Banks	1	1	TV-MA	Man	White	Yes	Yes	23
J.J. #2	Outer Banks	1	2	TV-MA	Man	White	Yes	Yes	23
J.J. #3	Outer Banks	1	9	TV-MA	Man	White	Yes	Yes	23
Kiara	Outer Banks	1	1	TV-MA	Woman	Mixed/other	Yes	Yes	22
Pope	Outer Banks	1	9	TV-MA	Man	Black	Yes	Yes	22
Uncredited	Outer Banks	1	3	TV-MA	Man	Can't tell	Yes	Yes	NA*

Note. [a] = films rated PG-13 or below, or TV shows rated TV-14 or below, that did not comply with Netflix's pledge to no longer include visual depictions of smoking and e-cigarette use.
* = Not available.

Table 4
Role size and valence of characters who held e-cigarette.

Character	Film/series title	Season	Episode	Rating	Role size	Valence
Mikey Guzman	Army of the Dead	NA	NA	R	Minor	Positive
Luc	Emily in Paris	1	1	TV-MA	Major	Positive
Beatrix	Fate: The Winx Saga	1	2	TV-MA	Major	Negative
Riven	Fate: The Winx Saga	1	2	TV-MA	Major	Negative
George Wright	Grand Army	1	3	TV-MA	Major	Negative
Joey Del Marco	Grand Army	1	3	TV-MA	Major	Positive
Leila Kwan Zimmer	Grand Army	1	6	TV-MA	Major	Negative
Omar Biller	Grand Army	1	6	TV-MA	Minor	Neutral
Tim Delaney	Grand Army	1	3	TV-MA	Major	Neutral
Uncredited #1	Grand Army	1	1	TV-MA	Nonspeaking	Neutral
Uncredited #2	Grand Army	1	1	TV-MA	Nonspeaking	Neutral
Frankenstein Kid	Hubie Halloween[a]	NA	NA	PG-13	Minor	Neutral
Marla Grayson	I Care a Lot	NA	NA	R	Major	Neutral
Uncredited	Bad Trip	NA	NA	TV-MA	Minor	Positive
J.J. #1	Outer Banks	1	1	TV-MA	Major	Positive
J.J. #2	Outer Banks	1	2	TV-MA	Major	Positive
J.J. #3	Outer Banks	1	9	TV-MA	Major	Positive
Kiara	Outer Banks	1	1	TV-MA	Major	Positive
Pope	Outer Banks	1	9	TV-MA	Major	Positive
Uncredited	Outer Banks	1	3	TV-MA	Nonspeaking	Neutral

Note. [a] = films rated PG-13 or below, or TV shows rated TV-14 or below, that did not comply with Netflix's pledge to no longer include visual depictions of smoking and e-cigarette use.

and subsequently effect their smoking behavior. While Netflix pledged in 2017 that it would no longer include visual depictions of smoking and e-cigarette use in original TV shows rated TV-14 or below or original films rated PG-13 or below (Evans, 2019), this policy did not extend to content popular with young adults. Future film and TV titles with e-cigarette imagery could receive a rating of R or TV-MA (mature

audience). Titles with e-cigarette imagery could also start and end with a public service announcement about the harms of e-cigarette use.

This study found that seven titles contained dialogue about vaping. While the dialogue identified in this study defined smoking marijuana as "cool" behavior, e-cigarettes were described in an unflattering way. Although our sample was small, our findings suggest that e-cigarette use may be an undesirable behavior among some characters, even as using drugs is considered admirable. Brief representations of teenagers holding e-cigarettes, as in the PG-13 film *Hubie Halloween* which includes the line ""smokers are for chokers," would seem to contradict Netflix's no-e-cigarette pledge for PG-13 content and suggests a need for further outside-party monitoring of e-cigarettes in Netflix programming. Additionally, in many of these instances, vaping is part of a punchline, such as when a character briefly mentions "vaping at the pier" during his character's comedy routine in the show *Mr. Iglesias*. Future research could explore the extent of character sentiment toward e-cigarettes in scripted entertainment and its impact on viewers.

4.1. Limitations

The scripted content analyzed in this study was from Netflix and may not be representative of content from other production studios or streaming platforms. Documentaries and reality shows were not included in this study. Additionally, the most-watched Netflix original content was identified from a 12-month period and may not be representative of content from another period. Results for the "character valence" variable should be interpreted with caution since reliability was not well established.

4.2. Conclusion

The findings from this study demonstrate the need to denormalize e-cigarette imagery found in forms of scripted entertainment popular among young adults.

Role of Funding Sources

This publication was funded by the California Tobacco Control Branch, Center for Healthy Communities of the California Department of Public Health through contract number 21-10032 Tobacco Industry Monitoring Evaluation (TIME). The findings and conclusions in this article are those of the authors and do not necessarily represent the views or opinions of the California Department of Public Health or the California Health and Human Services Agency.

CRediT authorship contribution statement

Jon-Patrick Allem: Conceptualization, Methodology, Data curation, Writing – original draft, Writing – review & editing, Supervision, Funding acquisition. **Shawn P. Van Valkenburgh:** Methodology, Formal analysis, Investigation, Data curation, Writing – review & editing, Project administration. **Scott I. Donaldson:** Writing – review & editing. **Allison Dormanesh:** Writing – review & editing, Project administration. **Terence C. Kelley:** Writing – review & editing, Project administration. **Erica L. Rosenthal:** Investigation, Data curation, Writing – review & editing, Supervision, Project administration.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Appendix A. Supplementary material

Supplementary data to this article can be found online at https://doi.org/10.1016/j.abrep.2022.100444.

References

Biener, L., & Siegel, M. (2000). Tobacco marketing and adolescent smoking: More support for a causal inference. *American Journal of Public Health, 90*(3), 407–411.

Dal Cin, S., Gibson, B., Zanna, M. P., Shumate, R., & Fong, G. T. (2007). Smoking in Movies, Implicit Associations of Smoking With the Self, and Intentions to Smoke. *Psychological Science, 18*(7), 559–563. https://doi.org/10.1111/j.1467-9280.2007.01939.x

Dalton, M. A., Sargent, J. D., Beach, M. L., Titus-Ernstoff, L., Gibson, J. J., Ahrens, M. B., Tickle, J. J., & Heatherton, T. F. (2003). Effect of viewing smoking in movies on adolescent smoking initiation: A cohort study. *Lancet (London, England), 362*(9380), 281–285. https://doi.org/10.1016/S0140-6736(03)13970-0

Evans, G. (2019, July 3). *Netflix Pledges To Cut Back On Smoking; 'Stranger Things' Among Top Offenders, Says New Study*. Deadline. https://deadline.com/2019/07/netflix-stranger-things-truth-initiative-study-tobacco-depictions-1202641738/.

Gibson, B., & Maurer, J. (2000). Cigarette Smoking in the Movies: The Influence of Product Placement on Attitudes Toward Smoking and Smokers1. *Journal of Applied Social Psychology, 30*(7), 1457–1473. https://doi.org/10.1111/j.1559-1816.2000.tb02530.x

Hines, D., Saris, R. N., & Throckmorton-Belzer, L. (2000). Cigarette Smoking in Popular Films: Does It Increase Viewers' Likelihood to Smoke? *Journal of Applied Social Psychology, 30*(11), 2246–2269. https://doi.org/10.1111/j.1559-1816.2000.tb02435.x

Lovato, C., Watts, A., & Stead, L. F. (2011). Impact of tobacco advertising and promotion on increasing adolescent smoking behaviours. *The Cochrane Database of Systematic Reviews, 10*, CD003439. https://doi.org/10.1002/14651858.CD003439.pub2

Moyer-Gusé, E. (2008). Toward a theory of entertainment persuasion: Explaining the persuasive effects of entertainment-education messages. *Communication Theory, 18*(3), 407–425.

National Association of Attorneys General. (2000). *Tobacco*. http://www.naag.org/tobacco.php.

National Cancer Institute. (2008). *The Role of Media in Promoting and Reducing Tobacco Use* (NIH Pub. No. 07-6242; Tobacco Control Monograph No. 19). U.S. Department of Health and Human Services, National Institutes of Health, National Cancer Institute. https://cancercontrol.cancer.gov/brp/tcrb/monographs/19/email/mono19email.htm.

National Center for Chronic Disease Prevention and Health Promotion (US) Office on Smoking and Health. (2016). *E-Cigarette Use Among Youth and Young Adults: A Report of the Surgeon General*. Centers for Disease Control and Prevention (US). http://www.ncbi.nlm.nih.gov/books/NBK538680/.

Pechmann, C., & Shih, C. (1999). Smoking scenes in movies and antismoking advertisements before movies: Effects on youth. *Journal of Marketing, 63*(3), 1–13.

Pierce, J. P., & Gilpin, E. A. (1995). A historical analysis of tobacco marketing and the uptake of smoking by youth in the United States: 1890–1977. *Health Psychology: Official Journal of the Division of Health Psychology, American Psychological Association, 14*(6), 500–508. https://doi.org/10.1037//0278-6133.14.6.500

Rigotti, N. A., Moran, S. E., & Wechsler, H. (2005). US College Students' Exposure to Tobacco Promotions: Prevalence and Association With Tobacco Use. *American Journal of Public Health, 95*(1), 138–144. https://doi.org/10.2105/AJPH.2003.026054

Sargent, J. D., Beach, M. L., Adachi-Mejia, A. M., Gibson, J. J., Titus-Ernstoff, L. T., Carusi, C. P., Swain, S. D., Heatherton, T. F., & Dalton, M. A. (2005). Exposure to movie smoking: Its relation to smoking initiation among US adolescents. *Pediatrics, 116*(5), 1183–1191. https://doi.org/10.1542/peds.2005-0714

Sargent, J. D., Stoolmiller, M., Worth, K. A., Cin, S. D., Wills, T. A., Gibbons, F. X., Gerrard, M., & Tanski, S. (2007). Exposure to Smoking Depictions in Movies: Its Association With Established Adolescent Smoking. *Archives of Pediatrics & Adolescent Medicine, 161*(9), 849–856. https://doi.org/10.1001/archpedi.161.9.849

Song, A. V., Ling, P. M., Neilands, T. B., & Glantz, S. A. (2007). Smoking in Movies and Increased Smoking Among Young Adults. *American Journal of Preventive Medicine, 33*(5), 396–403. https://doi.org/10.1016/j.amepre.2007.07.026

Stoll, J. (2021, November 11). *Netflix—Statistics & facts*. Statista. https://www.statista.com/topics/842/netflix/.

Tickle, J. J., Hull, J. G., Sargent, J. D., Dalton, M. A., & Heatherton, T. F. (2006). A Structural Equation Model of Social Influences and Exposure to Media Smoking on Adolescent Smoking. *Basic and Applied Social Psychology, 28*(2), 117–129. https://doi.org/10.1207/s15324834basp2802_2

Truth Initiative. (2019, July 2). *While you were streaming: Smoking on demand*. Truth Initiative. https://truthinitiative.org/research-resources/tobacco-pop-culture/while-you-were-streaming-smoking-demand.