Quantifying and characterising tobacco content in the most in-demand streamed series in 10 low/middle-income countries in 2019

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ABSTRACT

Background In line with the Framework Convention for Tobacco Control (FCTC) Article 13, the advertising and promotion of tobacco products is increasingly restricted. However, popular media continues to pose an exposure risk to youth populations (aged 13–18 years), including in low/middle-income countries (LMICs). This study presents a novel method to record the prevalence of tobacco depictions in streamed media content and the characterisation of that content.

Objectives Evaluate the frequency and characterisation of tobacco depictions in streamed content in LMICs.

Methods Presence of tobacco depictions was evaluated in the four most in-demand series across 10 LMICs for the year 2019; this list included series that were released from 2017 onwards (2017–2019). Each character identified using tobacco was coded against 13 characterisation variables that recorded key demographic information as well as contextual information.

Results The majority of series (72%, 13 of 18) analysed contained at least one depiction of tobacco use. 38% of tobacco depictions (359 of 941) occurred in content deemed suitable for audiences aged 15 years and up. 113 characters were depicted using tobacco across 38 episodes. 'Star' actors, featuring in opening credits with active profiles on the Internet Movie Database, accounted for 73% of tobacco-using characters (83 of 113). 5% of characters depicted using tobacco (6 of 113) were coded as minors (under 18 years).

Conclusion The continued prevalence of positively characterised tobacco content in youth-focused streamed content that is in high demand in LMICs poses a risk as a driver of smoking uptake in youth populations. There is an urgent need to better enforce tobacco advertising, promotion and sponsorship legislation in LMICs, and to update WHO FCTC guidance in line with rapidly evolving media platforms and content that is available internationally.

INTRODUCTION

Mass media is a 'powerful vector' in the spread of the perceived attractiveness of smoking but can also play a critical role in the education of audiences regarding tobacco-related harms.[1 2] In spite of national and international restrictions or bans on the advertising, promotion and sponsorship of tobacco products, exposure to tobacco products and smoking behaviours through popular media remains high.[3–10] Youth populations (aged 13–18 years) in low/middle-income countries (LMICs) are especially at risk due to targeting by the tobacco

> **WHAT IS ALREADY KNOWN ON THIS TOPIC**
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> ⇒ Mass media plays a significant role in the perceived appeal of smoking and tobacco use, and mass media exposure has been repeatedly linked to increased likelihood of tobacco uptake. Audiences in low/middle-income countries (LMICs) have been identified as particularly vulnerable to these influences as these regions are highlighted as growth regions by the tobacco industry and they possess some of the lowest levels of exposure to education on anti-tobacco mass media campaigns. Streamed content is a burgeoning commercial market globally.
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> **WHAT THIS STUDY ADDS**
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> ⇒ This study presents a novel method that not only quantifies tobacco exposure but also provides a framework for the detailed documentation of the characterisation of tobacco-related content, which can be applied to various types of mass media.
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> **HOW THIS STUDY MIGHT AFFECT RESEARCH, PRACTICE AND/OR POLICY**
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> ⇒ Better understanding the extent and subjective context of tobacco exposure through mass media can aid in the development of effective international policies that work to combat the normalisation of positively characterised tobacco use in order to reduce uptake, particularly in LMICs and among youth audiences.

industry to youth and female markets in these regions,[11–13] as well as the increased exposure to content afforded by developments in internet-connected personal technologies.[14 15]

Smoking kills over 8 million people each year, globally.[16] A majority of these fatalities occur in LMICs, where the economic burden of non-communicable diseases is high.[17] Globally, the total economic cost of smoking (a combination of the smoking-related health expenditure and productivity losses attributable to smoking) has been estimated at around US$1436 billion, or 1.8% of the world's annual gross domestic product (GDP). Almost 40% of this cost is shouldered by LMICs.[18]

In youth populations in the 10 LMICs considered in this paper, the reported use of tobacco (any tobacco product) among those aged 13–15 years

ranges from 4% (Vietnam)[19] to 20% (Mexico).[20] Increased exposure to tobacco has been repeatedly linked to higher levels of tobacco uptake among the young.[21–24] Existing evidence demonstrates that smoking imagery in viewed media provides misleadingly positive impressions of smoking[8] and suggests that movie stars can be a strong influencing factor in whether young audiences initiate smoking behaviours.[25 26]

Youth exposure to smoking-related content can occur in several contexts, including through popular music videos,[4] TV,[3] film[7] and through streamed view-on-demand services including Netflix and Amazon Prime Video.[6 10] Recent research into streamed video on demand (SVOD) services indicates that these platforms, in both high-income countries (HICs) like the UK[6] and the USA[9] and LMICs like India,[10] are not only a major avenue for accessing video and audio content[27] but also regularly feature tobacco depictions, including tobacco use and tobacco branding. To date, however, no other work has examined such content across other LMICs. It is imperative that analyses of tobacco content reflect the factors by which audiences are exposed to and strongly influenced to initiate smoking behaviours.

With SVOD becoming a dominant form of media access, and given the clear links between media exposure and youth uptake, it is important to examine the scale of this issue so that appropriate policy responses can be developed. This paper aims to contribute to such efforts by monitoring tobacco content and its characterisation in SVOD content.

METHODS

Eighteen series, which represent the four most in-demand series in 2019 in the 10 selected LMICs, were analysed for tobacco content. Tobacco content was measured quantitatively and qualitatively using a novel coding method adapted from existing protocols described by Barker *et al*[6] and Breathe California.[28] This coding method is described below.

The 'in-demand' status of the series in each of the target countries was calculated using 'demand expression' data supplied by Parrot Analytics.[29] Parrot Analytics uses a combination of weighted factors to estimate market demand in a given country, including search engine search data and stream/download data. LMICs were selected based on their inclusion in a list of 'priority' countries by the Bloomberg Initiative.[30] These 'large developing countries' were identified as partnering 'closely with the Bloomberg Initiative to reduce tobacco use' in order to provide 'support for their tobacco control efforts'.[30]

In order to limit the sample of geographies and series, to permit comprehensive application of the method, only the top four series from each country were selected and alternate episodes were coded. Series choice was limited by date of demand (2019) rather than year of release (2017–2019).

Coding protocol

All coders were trained in the use of the adapted coding protocol (training sheet—online supplemental appendix A), and all coding was recorded in hard copy using specially designed coding sheets. Categories on the coding sheet were selected from both existing coding models[6 28] and from discussions regarding content characterisation in the research team. Coding for each episode began at the start of each episode and included opening titles as well as final credits. Episode and series information was recorded along with tobacco depiction information on the coding sheets. Age ratings were recorded to match the assignation of the host platform (Netflix, Amazon Prime Video or Hulu) and confirmed using the Internet Movie Database (IMDb).[31] Content genre and

production country were recorded according to series information held on IMDb.

The presence of tobacco was coded to any verbal mention or visual appearance of tobacco-related content, which included use, implied use, paraphernalia and branding. Of these categories, only branding was coded separately. All types of tobacco content, including electronic nicotine delivery system (ENDS), were recorded. Content was coded in real time, with every tobacco depiction coded, regardless of its temporal proximity to other depictions. The length of exposure for any depiction was not recorded. A depiction was recorded each time tobacco appeared or subsequently left and re-entered the frame. Any differences between the coding tallies of first and second coders exceeding 10% were discussed between coders and were recoded jointly.

Demographics and characterisations

Demographic and characterisation data were recorded for every tobacco depiction. Each character was classified according to 13 variables split between individual demographics (gender, age, sexual orientation, ethnic/national origin, star power and profession) and the characterisation of tobacco depictions by that character in that episode (character ethic, environment, brand presence, brand names, tobacco portrayal, tobacco messaging). The demographic and characterisations of actors were determined either through biographical information sourced from IMDb or, where this information was not declared on an IMDb biography, assigned by the primary coder (coder identification). The assignation of 'character ethic' was at the discretion of the primary coder, and was determined based on character conduct and behaviour, which included the prompts 'Is the character violent? Engaged in illegal activity? Seek to antagonise other characters?'. A 'complex' assignation was encouraged in instances of uncertainty.

Tobacco characterisation data were dependent on the scene in which it took place (so if one character used tobacco in two different episodes, each episode was analysed according to its own characterisation attributes). Where the same character was linked to tobacco depictions in more than one episode, their demographic details were cross-checked for consistency.

For coding purposes, only one characterisation sheet was used for each character depicted using tobacco in a single episode. Multiple tobacco depictions associated with the same character in a single episode were recoded using a tally.

Due to limited resources, 50% of total represented episodes (the total episodes in all the selected series) were coded, with 10% of sampled episodes additionally coded by a secondary coder. Authors DB conducted 80% (89 of 111) of first coding, FH for 13% (14 of 111) of first coding and IF for 7% (8 of 111) of first coding. All non-English language series (4 of 18) were subtitled in English; Mirzapur and Sacred Games were first coded by a native language speaker (FH). There were no instances of coder disagreement exceeding the 10% threshold set for review.

Following hard-copy first coding, all coding data were transferred from the hard-copy coding sheets to SPSS (IBM V.22) for descriptive and statistical analysis. Percentages have been rounded to the nearest whole number.

RESULTS

Alternate episodes from a total list of 214 were analysed, totalling 111 episodes across 18 series. The episodes totalled a viewing time of 4903 min, with episode run time ranging from

Table 1 Summary details for each series

Series title	Season	No of coded episodes/total no of episodes	Top 4 in which markets?	Language	SVOD platform	Genre	BBFC age rating
Black Mirror	5	2/3	Indonesia, Ukraine	English	Netflix	Science fiction	18
Club de Cuervos	4	6/12	Mexico	Spanish	Netflix	Comedy	18
Daredevil—Marvel	3	7/13	Bangladesh	English	Prime Video	Science fiction	18
House of Cards	6	4/8	China	English	Netflix	Drama	18
Love, Death + Robots	1	9/18	Vietnam	English	Netflix	Fantasy	18
Lucifer	4	5/10	Brazil, India, Philippines	English	Netflix	Fantasy	15
Mirzapur	1	5/9	India, Pakistan	Hindi	Prime Video	Thriller	15/18
Narcos: Mexico	1	5/10	Bangladesh, China, Mexico, Pakistan, Ukraine	Spanish	Netflix	Biopic	18
Sacred Games	1	4/8	India, Pakistan	Hindi	Netflix	Drama	18
Star Trek: Discovery	2	7/14	China	English	Netflix	Fantasy	15
Stranger Things	2	5/9	Bangladesh, Brazil, India, Mexico, Philippines, Ukraine	English	Netflix	Fantasy	15
Talking Tom and Friends	2	13/26	Bangladesh	English	Netflix	Animation	U
The Grand Tour	3	7/14	China, Indonesia, Ukraine, Vietnam	English	Prime Video	Entertainment	15
The Handmaid's Tale	2	7/13	Brazil	English	Hulu	Drama	15
Thirteen Reasons Why	2	7/13	Pakistan	English	Netflix	Drama	18
Titans	1	6/11	Brazil, Indonesia, Philippines	English	Netflix	Science fiction	15
Ultraman	1	7/13	Indonesia	English	Netflix	Animation	15
Umbrella Academy	1	5/10	Mexico, Philippines, Vietnam	English	Netflix	Science fiction	15

BBFC, British Board of Film Classification; SVOD, streamed video on demand.

8 (Love, Death + Robots) to 92 min (The Grand Tour), with a mean run time of 44 min (SD 19.19).

Series/episode information (age rating, genre, language)

The majority of series were English language (78%, 14 of 18), two series were Spanish-spoken language (Club de Cuervos and Narcos: Mexico) and two were Hindi-spoken anguage (Mirzapur and Sacred Games). The majority of episodes (59%, 65 of 111) were youth rated according to the British Board of Film Classification (BBFC) (deemed suitable for those under 18 years). BBFC classifications were sourced from IMDb in order to ensure the consistent application of a single classification across international content. Forty-six episodes were rated 18, 52 rated 15, 13 rated PG. There were no U rated series in the sample. The series were spread between a range of genres. Table 1 provides an overview of the series analysed.

Tobacco depictions

Thirty-four per cent (38 of 111) of the coded episodes contained tobacco content. In these episodes, there were a total of 941 tobacco depictions, averaging 0.2 tobacco depictions per minute of viewing time, or 1 depiction for every 5 min of viewing time. The prevalence of tobacco depictions in individual episodes (where they occurred) varied widely, ranging from 2 (Lucifer, The Grand Tour and Umbrella Academy) to 143 (Stranger Things). Table 2 illustrates the density of tobacco depictions across the series analysed.

Tobacco types

Where episodes featured tobacco depictions, it was mainly of a single type. Cigarettes were the most commonly represented tobacco type; 95% of episodes that featured tobacco depictions included cigarettes (36 of 38). Only 18% (7 of 38) of episodes contained any depictions of more than one type of tobacco. There were no recorded incidents of smokeless tobacco use nor any depictions of ENDS. Three episodes across

two series (Mirzapur and Stranger Things) contained tobacco branding. Five brands—Camel, Marlboro, Salem, Parliament and Newport—were depicted in total. None of the episodes containing tobacco depictions were rated PG or U; they were all rated either 15 (45%, 17 of 38) or 18 (55%, 21 of 38). Thirty-eight per cent of the total recorded tobacco depictions appeared in episodes age-rated 15 (359 of 941), with the remaining 62% appearing in episodes rated 18 (582 of 941).

Tobacco depictions in series and across platforms

Nearly three-quarters (72%, 13 of 18) of the series analysed contained at least one depiction of tobacco content; two series (11%, 2 of 18) featured tobacco in every coded episode (Stranger Things and Narcos: Mexico). Five further series had tobacco content in a majority of episodes (Umbrella Academy, Sacred Games, Mirzapur, Lucifer and House of Cards). Only five series did not contain any tobacco content (Daredevil, Star Trek: Discovery, Talking Tom and Friends, Titans and Ultraman). All five of the series that did not contain any tobacco content were available via Netflix, which hosted 78% (14 of 18) of the analysed series, the other seasons (all of which featured tobacco depictions) were hosted on either Hulu (6%, 1 of 18) or Prime Video (17%, 3 of 18).

All of the series containing any tobacco content (72%, 13 of 18) were released in 2018 and 2019. The number of series featuring tobacco depictions across those 2 years did not show much variation; 80% of the 2018 series (8 of 10) analysed contained tobacco and 71% of the 2019 series (5 of 7).

Characterisation of tobacco depictions

In the 38 episodes containing tobacco depictions, 113 characterisations of tobacco were recorded, including some instances in which a character was depicted using tobacco more than once. Of the total 83 characters depicted with tobacco, nearly one-quarter (23%, 19 of 83) used tobacco in more than one episode. Table 3 provides a summary of all coded characterisations.

Table 2 Summary of tobacco depictions per minute of viewing time across series

Series title	Range of episode length (min)	Mean episode length (min)	Range of tobacco depictions (min–max)	Total tobacco depictions	Tobacco depictions/minute of viewing time
Black Mirror	62–67	65	0–6	6	0.047
Club de Cuervos	43–62	52	0–29	29	0.092
Daredevil—Marvel	49–54	51	0	0	0
House of Cards	52–58	55	0–17	33	0.15
Love, Death + Robots	8–17	12	0–30	63	0.56
Lucifer	48–50	49	0–31	61	0.25
Mirzapur	43–53	48	0–11	26	0.11
Narcos: Mexico	54–67	62	53–126	395	1.28
Sacred Games	43–51	46	0–18	33	0.18
Star Trek: Discovery	40–60	50	0	0	0
Stranger Things	48–62	56	5–143	216	0.77
Talking Tom and Friends	11–17	12	0	0	0
The Grand Tour	58–92	69	0–2	2	0.0041
The Handmaid's Tale	48–63	56	0–16	21	0.054
Thirteen Reasons Why	56–70	59	0–3	3	0.0072
Titans	41–55	47	0	0	0
Ultraman	23–25	23	0	0	0
Umbrella Academy	45–60	55	0–36	53	0.19

Both male and female characters, predominantly played by actors with 'star' assignation, were depicted using tobacco in the series analysed. Tobacco depictions were more frequently associated with heterosexual characterisations, but a majority of depictions (54%, 61 of 113) were assigned to characters of 'unknown' sexual orientation.

Male characters were more frequently depicted with tobacco than female or transgender characters across all tobacco types. Cigarettes were the most common form of tobacco used across characterisations of all ages, with other types of tobacco (cigars and pipes) used by characters deemed to be over the age of 18 years (one use of a pipe by a character aged 18–29 years and three cigars used by characters aged 30 years or over). Only one character using tobacco was deemed to be younger than 12 years old (young Claire smoking a cigarette in House of Cards). Cigar use was portrayed exclusively by male characters.

Characters coded as having Hispanic/Latino heritage were the largest single group of tobacco users, accounting for more than one-third of users (34%, 38 of 113). Those of American or Canadian heritage (31%, 35 of 113) were represented to a similar extent. The ethnic/national origin of tobacco-using characters tended to correspond with the country in which that series originated. All the American or Canadian characters using tobacco, for example, featured in series that originated wholly (83%, 29 of 35) or partly (17%, 6 of 35) in the USA. Similarly, all the Indian characters who used tobacco appeared in series whose country of origin was India (100%, 12 of 12). The three Caribbean characters who used tobacco appeared in series originating in either wholly the USA (33%, 1 of 3), or between the USA and UK jointly (66%, 2 of 3).

Character ethic and actor profile
The characterisation of tobacco use was additionally assessed against two categories that describe relationship between the type of role a character plays (good, bad or complex) and their relative commercial power of an actress or actor (this was deemed 'star power').

The characterisation of tobacco use was largely 'bad' and by 'star' actors (named in series credits with their own IMDb profile page).

Cigarettes were the most common form of tobacco used by all characters, regardless of their 'star power'; however, 96% (80 of 83) of star characters were portrayed using cigarettes, 100% (1 of 1) of credited non-stars used cigarettes and 90% (26 of 29) extras. Extras were the only category of actor to use pipes (one character).

Portrayal
Each character depicted with tobacco was assessed for the portrayal of the tobacco itself, coded against the following 11

Table 3 Summary of tobacco characterisations, across demographic categories

Category	Attribute	Total count of characterisations
Sexual orientation	Unknown	61
	Attracted to same	4
	Attracted to opposite	48
Gender	Unknown	1
	Transgender	1
	Female	23
	Male	88
Age	Unknown	2
	30+	85
	18–29	20
	13–17	5
	12 and under	1
Ethnicity/nationality	Other/unknown	4
	Hispanic/Latino	38
	White/Latino	9
	Caribbean	3
	Indian	12
	Other/unknown white	6
	American/Canadian	35
	British/Irish	6

Only characteristics coded appear in the table. Null value data have been excluded.

Table 4 Summary of tobacco characterisations, across subcategories

Category	Attribute	Total count of characterisations
Character ethic	Bad character	40
	Good character	27
	Complex character	23
Environment of tobacco depiction	Around children	8
	Around pregnant person	2
	Around group of teens	2
Portrayal	Sexy	11
	Fun	5
	Celebration	1
	Representation of wealth or power	21
	Cool	18
	Trendy/unique	2
	Rebellion	14
	Relieves tension and stress	43
	For relaxation	12
	Habit or addiction	58
	Part of bad guy persona	41
Star power	Star	83
	Credited non-star	1
	Extra	29

variables shown in table 4. There were a total of 226 total coded values of portrayal, ranging from one (33 of 113) to five (2 of 113). On average, each characterisation was coded for two portrayal values (226 portrayal values for 113 characterisations) (SD 0.86).

Only a single character was portrayed as using tobacco as a celebration (Suliman Isa in Sacred Games). The portrayal of habitual tobacco use was associated with tobacco use as stress relief (co-coded in 23 of 58 cases) and the representation of 'bad guys' (co-coded in 20 of 58 cases), nearly all the episodes featuring tobacco use (34 of 38) coded for at least one of these attributes. All three attributes were co-coded in only seven episodes. The association of tobacco use as a sign of wealth or power was most commonly paired with the representation of a 'bad guy', with the pairing occurring in a majority of cases coded for 'wealth and power' (12 of 21).

All episodes featuring 'sexy' characterisations of tobacco use were hosted on Netflix (11 of 11) and 45% (5 of 11) of them were youth rated. 'Sexy' was most frequently co-coded with 'cool' (55%, 6 of 11). Forty-four per cent of episodes where tobacco use was portrayed as either 'fun' or 'cool' or 'sexy' were youth rated (15 of 34).

Narcos: Mexico averaged more than one tobacco depiction for every minute of content (with 1.28 incidents/min) and was one of the top four in-demand shows in four LMIC markets: Bangladesh, China, Pakistan and Ukraine. Similarly, Stranger Things was one of the top four in-demand series in the majority (60%, 6 of 10) of the chosen LMICs (Bangladesh, Brazil, India, Mexico, the Philippines and Ukraine) and averaged 0.77 depictions/min of viewing time.

Tobacco use was present in 34% (38 of 111) of analysed episodes from 18 in-demand series across 10 LMICs; 45% of that content (17 of 38) was youth rated. While three-quarters of smoking characters were deemed to be aged 30 years or over (75%, 85 of 113) and only 5% (6 of 113) of characters using tobacco were under 18 years, the data suggest that tobacco depictions in streamed content continue to glamorise smoking;

characterisations of tobacco use by 'stars' were overwhelming (73%, 83 of 113), while nearly half of tobacco use characterisations were positive, depicted as either fun, cool or sexy. Not only is tobacco frequently portrayed in a positive light, these positive portrayals occur in youth-rated content nearly 50% of the time. This means that exposure to the positive depiction of tobacco use by influential actors is likely a common occurrence among youth audiences.

DISCUSSION

The method presented provides a standardised means by which researchers and policymakers can thoroughly assess the value-laden environments in which tobacco is portrayed in streamed content. The method may be applied in popular media contexts beyond the described example of SVOD, including film or music videos, for example.

Tobacco depictions were present in a range of genre types and across all three hosting platforms; this is illustrative of its prevalence across content, regardless of production location, series language and age rating. This is not only consistent with previous work describing the continued presence of tobacco-related content in television,[3] film[24 32] and other online media[4 8] but also demonstrates the ongoing normalisation of smoking behaviours in media content readily available to, and in high demand among audiences in LMICs, including youth. Our findings also bolster arguments that highlight ongoing health inequities related to tobacco marketing and tobacco use, particularly those related to ethnicity and sexual orientation/sexual identity, which have both been identified as risk factors in exposure to tobacco media and marketing.[33–36] Sexual orientation was included in the method and analysis, but we were unable to determine how tobacco was depicted in relation to sexual orientation as this variable was most frequently coded as 'unknown', which suggests that a more comprehensive approach to the coding of this variable would be needed in future studies.

While audiences in LMICs can readily view SVOD content featuring high levels of positively portrayed tobacco use, those same audiences have some of the lowest exposure to educational anti-tobacco mass media campaigns globally.[37] When considered alongside existing research linking exposure to smoking uptake[21–24] as well as the geographical disparities in the implementation and enforcement of Article 13, the frequency and characterisation of tobacco use in popular media highlights the potential of SVOD in driving smoking uptake and exacerbating global inequalities related to tobacco. The data presented here suggest, in line with expert opinion, that existing tobacco advertising, promotion and sponsorship (TAPS) legislation and regulatory guidelines are not sufficient in the face of rapidly evolving personal media technologies, and that more can be done to ensure the effective implementation of the Framework Convention for Tobacco Control (FCTC),[2] with particular attention to cross-border TAPS (Article 13) and the education of audiences in order to promote behavioural and cultural change relating to tobacco use (Article 12).

The movement of digital content across national and cultural borders poses a challenge for the improved implementation of TAPS policies and regulations[2] and the reduction of health inequities between demographic groups . Monitoring the prevalence and framing of tobacco-related content in popular media could be a key component in the ongoing assessment and management of TAPS legislation but production companies and hosting platforms also have a role to play. The inclusion of tobacco content in the libraries of streaming services such as Netflix, Amazon

Prime and Hulu presents a risk to the health of millions of people in both HICs and LMICs. In line with Conference of the parties (COP) to the World Health Organisation's FCTC expert committee recommendations,[2] we urge SVOD services to include tobacco health and content warnings, the incorporation of anti-tobacco messaging and the use of adult (18+) ratings for any episode or film featuring actual or implied tobacco use or tobacco branding. The introduction of internationally relevant regulatory guidelines dealing specifically with emerging media forms, including SVOD and its related services, could help combat the proliferation of positively characterised tobacco content among youth audiences.

Strengths and limitations

The method presented here is comprehensive and includes several novel points of data capture concerning tobacco-related content in entertainment media. The method has been described and applied in the context of streamed episodic content, but can also be applied to other entertainment media including film, music videos and social media content. Due to resourcing constraints, only 50% of episodes from the sampled series were analysed; double coding of some content ensured coders were adequately trained and recording the same depictions and associated information. The selections of alternate episodes for analysis helped mitigate the impact of storyline-specific tobacco content. The use of coder identification of demographic information concerning characters is highly subjective; we note that the assignation of certain complex and sensitive characteristics is open to interpretation.

Data used to identify the most in-demand series in the target geographies were provided on request by a third party (Parrot Analytics). We are not able to disclose the exact parameters used to obtain the figures provided to us as part of our arrangement with that supplier. The same data were not specifically youth centred; it is possible the demand expressions of youth audiences exclusively would differ from those selected.

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