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1 Population exposure to smoking and tobacco branding in the UK reality show ‘Love Island’

2

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13

14

1 **Abstract**

2 **Background:** Reality television shows are popular with children and young adults; inclusion  
3 of tobacco imagery in these programmes is likely to cause smoking in these groups. Series 3  
4 of the UK reality show Love Island, broadcast in 2017, attracted widespread media criticism  
5 for high levels of smoking depicted. We have quantified this tobacco content and estimated  
6 the UK population exposure to generic and branded tobacco imagery generated by the show.

7

8 **Methods:** We used 1-minute interval coding to quantify actual or implied tobacco use,  
9 tobacco paraphernalia or branding, in alternate episodes of series 3 of Love Island; and  
10 Census data and viewing figures from Kantar Media to estimate gross and per capita tobacco  
11 impressions.

12

13 **Results:** We coded 21 episodes comprising 1001 minutes of content. Tobacco imagery  
14 occurred in 204 (20%) intervals; the frequency of appearances fell significantly after media  
15 criticism. An identifiable cigarette brand, Lucky Strike Double Click, appeared in 16  
16 intervals. The 21 episodes delivered an estimated 559 million gross tobacco impressions to  
17 the UK population, predominantly to women, including 47 million to children aged <16; and  
18 44 million gross impressions of Lucky Strike branding, including 4 million to children <16.

19

20 **Conclusion:** Despite advertising legislation and broadcasting regulations intended to protect  
21 children from smoking imagery in UK television, series 3 of Love Island delivered millions  
22 of general and branded tobacco impressions both to children and adults in the UK. More  
23 stringent controls on tobacco content in television programmes are urgently needed.

24

25

## 1 **Introduction**

2 Reality television programmes, which in the UK in 2016 were watched by 39% of adults  
3 including 48% of women and 50% of people aged 25-34,[1] are a highly efficient medium for  
4 advertising and promotion to these demographic groups. Love Island is a British reality  
5 television dating show in which young contestants compete for a £50,000 prize by living in a  
6 Spanish villa where they ‘couple up’ and ‘recouple’ with other contestants on a regular basis  
7 in an attempt to remain in the show. The final episode of series 3 was watched in the UK by  
8 an average of 2.6 million people (12.5% audience share), and attracted more than half  
9 (52.3%) of all television viewing by the 16-24 age group in the broadcast time slot.[2]

10

11 Exposure to media tobacco imagery causes smoking uptake [3-9] and in this series of Love  
12 Island many contestants smoked on screen, attracting widespread media criticism [10-12].  
13 Furthermore, whilst the cigarettes used had evidently been repackaged in plain white packs,  
14 on many occasions a specific brand of cigarette was identifiable from logos on the cigarette.  
15 Tobacco imagery in UK television programmes is subject to the 2002 Tobacco Advertising  
16 and Promotion Act,[13] which prohibits all advertising, promotion and brand placement, with  
17 an exemption for ‘artistic or editorial purposes’; and by Section One of the UK Office of  
18 Communications (Ofcom) Broadcasting Code, which states that smoking “must not be  
19 condoned, encouraged or glamorised in other programmes likely to be widely seen, heard or  
20 accessed by under-eighteens unless there is editorial justification”.[14] We have quantified  
21 the tobacco content and viewing figures in a sample of programmes from Series 3 of the  
22 show, to assess compliance with these regulatory restraints, assess changes in the level of  
23 tobacco content throughout the series, and to estimate audience exposure to the smoking  
24 imagery.

25

## 1 **Methods**

2 Season 3 of Love Island included 42 episodes, broadcast on ITV2 between the 6<sup>th</sup> June and  
3 23<sup>rd</sup> July 2017. In a systematic sample of 21 alternate episodes of the show, every 2<sup>nd</sup>  
4 episode, we used one-minute interval coding previously described by Lyons et al (2013, to  
5 quantify tobacco content. The method includes recording the presence or absence of audio-  
6 visual tobacco content every one-minute in four categories: ‘actual use’ (Actual smoking  
7 shown on screen), ‘implied use (any inferred use without actual use being shown on screen,  
8 including verbal references and behavioural actions)’, ‘paraphernalia’ (The presence  
9 onscreen of tobacco or other related materials) and ‘brand appearance’(The presence of clear  
10 and unambiguous branding) [15]. Tobacco imagery in each category was coded as present if  
11 it appeared during any one-minute coding period; multiple instances of appearance in the  
12 same category during the same one-minute period were considered a single event, and  
13 appearances that transitioned into more than one interval as separate events.

14  
15 To ensure the accuracy and reliability of coding, two of the 21 episodes were coded  
16 independently by two coders (AB and RM) using the play, pause, review method previously  
17 reported [16 17] and any differences resolved by discussion.

18  
19 We estimated UK audience exposure using viewing data from Kantar Media, and used UK  
20 mid-year population estimates for 2016[18] combined with numbers of tobacco appearances  
21 to estimate gross and per capita impressions by age group for each episode coded, using  
22 previously reported methods[19 20]. Viewership was calculated using proportion viewership  
23 figures from Kantar Media and UK mid-year population estimates. Viewership was then  
24 combined with the number of tobacco appearances per episode to provide gross impressions.  
25 Dividing gross impressions by population estimates provided per-capita impressions.

1 Analyses were conducted in IBM SPSS Statistics (version 23) and Microsoft Excel (2013).

2 The confidence level was set to 95%.

3

4 The episode which aired on 19<sup>th</sup> June 2017 attracted widespread media criticism for the high  
5 levels of smoking depicted [10-12]. To investigate changes in tobacco content following this  
6 coverage, we used t-tests to compare mean levels of tobacco content per episode before and  
7 after media coverage.

8

## 9 **Results**

10 The 21 episodes coded included 1001 minutes of content. Individual episodes ranged from 45  
11 to 66 (average 47.7) minutes. Tobacco content occurred in 204 (20%) intervals (Table 1).

12

13 **Table 1: number of one-minute intervals containing tobacco content by coding category**

Content	Total number of intervals
Any tobacco content	204
Actual use	66
Implied use	104
Smoking behaviour	93
Verbal inference	13
Branding	16
Paraphernalia	143
Cigarette packet	117
Lighter	47
Ashtray	17
Implied (Behavioural)	93
Implied (Verbal)	13

14 \*Intervals may have contained more than one type of tobacco content

15

16 Actual tobacco use appeared in 66 (7%) intervals, and involved cigarette smoking, usually by  
17 a single smoker in a same-sex social group. Smoking by more than one person in a social  
18 group occurred in 10 intervals. Implied tobacco use occurred in 104 intervals (10% of total  
19 intervals). Tobacco paraphernalia appeared in 143 (14%) intervals, and most frequently

1 involved plain white cigarette packets (117 intervals), with up to eight packs visible in any  
2 single interval. Branding was identifiable in 16 (1.6%) intervals and in all cases involved a  
3 single brand, identified from logos on the cigarette to be Lucky Strike Double Click (see  
4 Figure S1, online supplement, for examples of imagery), a British American Tobacco brand  
5 that is not widely used in the UK. This was the only tobacco brand identified.

### 7 **Change in tobacco occurrences after media coverage of smoking**

8 After media reporting of high levels of smoking following the 19<sup>th</sup> June episode, there was a  
9 significant reduction in any tobacco content (average 12.4 intervals per episode before, 8.4  
10 after,  $p = <.00$ ); and actual tobacco use (4.9 intervals per episode before, 2.3 after,  $p = <.00$ ).

### 12 **Tobacco impressions**

13 We estimate that the 21 episodes delivered 559 million tobacco gross impressions (95% CI,  
14 512-606) to the UK population, including 47 million (95% CI, 41-53) to children aged <16.  
15 Tobacco impressions per capita were highest (average 6.95 (95% CI 5.91–7.98) in the 16-34  
16 age group. Children received on average 2.34 (95% CI, 1.58–2.96) per capita impressions,  
17 and adults 5.27 (95% CI, 4.85–5.70). Per capita impressions were twice as high among  
18 women than men (6.95, 95% CI, 6.44–7.62; and 3.53, 95% CI, 3.01–4.04 respectively).  
19 There were 44 (95% CI 40-48) million gross impressions of branded tobacco products  
20 delivered, including 4 (95% CI 2.5-5) million to children. Average per capita branding  
21 impressions were highest in the 16-34 age group (0.49 95% CI 0.42-0.56) (see Figures S2  
22 and S3, online supplement). For a full breakdown of viewership and total gross and per capita  
23 impressions per episode, see Table S1 of the online supplement.

24

25

## 1 Discussion

2 There is a causal relation between exposure to on-screen smoking and smoking initiation,[4-  
3 9] and earlier age at initiation,[21] in young people. This study demonstrates that in spite of  
4 UK regulatory controls on tobacco advertising, promotion and brand placement[13], and on  
5 condoning, encouraging or glamorising smoking in programmes widely seen by people aged  
6 under 18[14], the 42 episodes of this reality TV show probably delivered around 559 million  
7 tobacco total impressions to the UK population, including approximately 47 million to  
8 children; and nearly 44 million impressions, including nearly 4 million to children, of Lucky  
9 Strike branding. These estimates are underestimates of total exposure from the show, as they  
10 do not include impressions delivered through online viewing, or those arising from a  
11 companion show “Love Island: Aftersun”, a weekly review of show highlights.

12

13 ITV Media described the Love Island series as a ‘*massive success with young audiences,*  
14 *regularly capturing a 56% share of 16-34 viewers*’ and that it was ‘*full of flirting, jealousy,*  
15 *rejection and romance...an emotional feast of lust and passion in the sun*’.[22] The  
16 production company, therefore, accepts and promotes the fact that the programme is  
17 glamorous and seen by younger viewers. Inclusion of tobacco content therefore represents a  
18 clear breach of the Ofcom Broadcasting Code[14], and if paid for, of UK law[13].

19

20 Exposure to tobacco branding creates and reinforces brand awareness.[23] Since product  
21 placement is prohibited in the UK[13], and given the prominence in the show of the Lucky  
22 Strike Double Crisp brand, we contacted ITV to inquire why and by whom this brand had  
23 been chosen, and how the cigarettes came to be repackaged in plain white packs, with no  
24 health warning, that are not legal for retail sale in the European Union[24] and do not comply  
25 with UK sales regulations[25]. They replied that “*cigarettes are purchased from local*



1 *tobacconists*”; and that “*there are strict broadcasting regulations regarding the prominence*  
2 *of manufacturers or commercial references so we do not purchase one brand of cigarettes,*  
3 *nor would we ever disclose the brands on screen*”.<sup>[26]</sup> The latter statement is clearly  
4 inconsistent with the evidence reported in this paper.

5  
6 Tobacco imagery for ‘artistic or editorial purposes’ is exempt from the 2002 Tobacco  
7 Advertising and Promotion Act,<sup>[13]</sup> and permitted under section 1.10 of the Ofcom  
8 Broadcasting Code if there is editorial justification. After media criticism of smoking in the  
9 show the Sun newspaper reported that a spokesperson “*defended the choice to show the*  
10 *islanders lighting up however, and said that the scenes were only kept in if they were*  
11 *considered ‘important to the narrative of the show’*”.<sup>[11]</sup> The significant fall in tobacco  
12 appearances after criticisms is inconsistent with this claim, since there is no obvious reason  
13 why lighting up cigarettes would become significantly less important to the narrative  
14 immediately after 19<sup>th</sup> June.

15  
16 There are reports that a 2018 UK series of Love Island is being planned, and that the format  
17 of the programme is being sold to several other countries. The UK experience of smoking  
18 promotion in the show is therefore likely to be repeated around the world. We suggest that  
19 programme makers be reminded of their legal obligations on the representation of smoking in  
20 these shows, and that regulators take a more pro-active line in enforcement to protect children  
21 from gratuitous promotion of tobacco.

22  
23 The results presented in this paper may have underestimated the amount of tobacco content  
24 shown in Love island due to the sampling methods used to view and code episodes,  
25 comprehensive viewing and coding of each episode will have resulted in more accurate

1 results, however, with the media attention the show was receiving [10-12], a timely analysis  
2 of the amount of content was required.

3  
4 What this paper adds:

- 5 • Exposure to tobacco imagery in the media is an established cause of smoking uptake.
- 6 • Advertising legislation and broadcasting regulations are in place to protect children  
7 from smoking imagery in UK television
- 8 • Series 3 of Love Island received widespread criticism regarding contestants smoking  
9 on screen.
- 10 • Series 3 of Love Island delivered millions of general and branded tobacco  
11 impressions both to children and adults in the UK.
- 12 • More stringent controls on tobacco content in television programmes are urgently  
13 needed.

14  
15 Author contributions:

16 AB led coding of data, supported the analysis of data and contributed to drafting the initial  
17 manuscript. MOB led the analysis of data. JB contributed to drafting the manuscript. JC  
18 contributed to drafting the manuscript. RM conceived the study and contributed to drafting  
19 the initial manuscript. All authors read and approved the final manuscript.

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5

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8

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