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# Positive associations between consumerism and tobacco and alcohol use in early adolescence: cross-sectional study

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## ABSTRACT

**Background:** There is concern about the negative impact of modern consumer culture on young people's mental health, but very few studies have investigated associations with substance use. In those which have, positive associations have been attributed to attempts to satisfy the unmet needs of more materialistic individuals.

**Objectives:** This study examines associations between different dimensions of consumerism and tobacco and alcohol use among Scottish early adolescents.

**Design:** Cross-sectional study.

**Setting and participants:** 2937 (92% of those eligible) secondary school pupils (ages 12–14) completed questionnaires in examination conditions. Analyses were restricted to those with complete data on all relevant variables (N=2736 smoking; N=2737 drinking).

**Measures:** Dependent variables comprised ever smoking and current drinking. Measures of consumerism comprised number of 'premium' (range 0–7) and 'standard' (range 0–5) material possessions and three Consumer Involvement subscales, 'dissatisfaction', 'consumer orientation' and 'brand awareness' (each range 3–12). Analyses also included school-year group and family affluence.

**Results:** Ever smoking and current drinking were both more prevalent among adolescents with more 'premium' and 'standard' material possessions, greater consumer 'dissatisfaction' and 'brand awareness' (mutually adjusted analyses including school-year group and family affluence). The strongest relationships occurred for 'brand awareness': for each unit increase in 'brand awareness' the ORs (95% CI) of ever smoking were 1.17 (1.08 to 1.26) and 1.23 (1.14 to 1.33) in males and females, respectively; and those for drinking were 1.15 (1.08 to 1.23) and 1.21 (1.13 to 1.30). 'Brand awareness' had an equal or stronger relationship with both smoking and drinking than did family affluence.

**Conclusions:** These results suggest associations between consumerism and both smoking and drinking might arise because adolescent identities incorporate both consumerism and substance use, or be the result of promotion (indirectly in the case of tobacco) linking consumerist or aspirational lifestyles with these behaviours.

## ARTICLE SUMMARY

### Article focus

- Studies conducted since the mid-1980s have shown consumerism to be associated with reduced well-being among children, adolescents and adults.
- Almost no studies have examined relationships between consumerism and substance use, and none have determined whether *particular* aspects of consumerism might have stronger associations with substance use than others.
- This study of Scottish early adolescents examines associations between different aspects of consumerism and tobacco and alcohol use, separately for males and females.

### Key messages

- Smoking and drinking were both more likely among more consumer-oriented adolescents (those with greater numbers of modern consumer goods and greater consumer 'dissatisfaction', 'consumer orientation' and 'brand awareness'). Associations were generally similar for males compared with females and those from low compared with high family affluence backgrounds.
- 'Brand awareness' had an equal or stronger relationship with both smoking and drinking than did family affluence.
- More consumerist adolescents may be susceptible to both indirect tobacco marketing and imagery and more direct marketing of alcohol.

### Strengths and limitations of this study

- Our analysis was conducted on a large, representative sample of early adolescents attending mainstream schooling.
- Cross-sectional data limit definitive conclusions about causation. However, our results are consistent with the small number of other studies which have found associations between consumerist values and adolescent substance use.

## INTRODUCTION

Tobacco smoking and alcohol use contribute to premature mortality and chronic ill-health.<sup>1 2</sup> Smoking onset largely occurs during adolescence, and adolescents rapidly show signs of addiction after smoking initiation.<sup>3</sup> Similarly, adolescence is a time of experimentation with alcohol and there are concerns about the increase in drinking in UK adolescents in recent years.<sup>4</sup> This underlines the importance of addressing factors which promote smoking and drinking uptake in adolescents, to minimise future costs to individual and public health. One such factor may be modern consumer culture (henceforth consumerism), but to date, this has received relatively little research attention.

There is both academic<sup>5</sup> and lay<sup>6</sup> concern about the impact of consumerism on health. Consumerism has been equated with a shift from intrinsic to external goals related to possessions, status and 'external trappings',<sup>7</sup> and a number of studies conducted since the mid-1980s have shown it to be associated with reduced well-being among both adults<sup>8-10</sup> and children or adolescents,<sup>11-13</sup> including the sample of early adolescents on which the analyses presented here are based.<sup>14</sup> However, very few studies have examined relationships between consumerism and substance use. One study from the USA provides evidence that consumerism is related to smoking, alcohol and cannabis use in 14 to 18-year-olds,<sup>15</sup> and another reports an association with alcohol use in 10 to 18-year-olds.<sup>16</sup> Among 18 to 21-year-old Belgian students, a substance use scale (combining smoking, drinking and drug use) was negatively related to 'intrinsic values' and positively related to 'extrinsic values' relating to financial success and physical appearance.<sup>17</sup> Finally, a study of Chinese 14 to 19-year-olds found positive associations, cross-sectionally and prospectively, between consumerism and scores on a self-reported risky behaviour questionnaire, one component of which was alcohol and/or drug use.<sup>18</sup> It has been suggested that these associations may reflect attempts to satisfy the unmet needs of more materialistic individuals,<sup>15</sup> in a manner akin to self-medication.<sup>17</sup>

Consumerism has been measured in a variety of ways among both adults and children or young people, including scales representing dimensions such as possessiveness and envy,<sup>8</sup> desires for possessions or wealth,<sup>9</sup> consumer involvement<sup>11</sup> and number of material possessions.<sup>19</sup> Although most studies employ an overall 'consumerism' score, there is evidence that certain aspects (eg, 'envy' or 'dissatisfaction') may have stronger associations with well-being than others.<sup>8 11 13 14 20</sup> In addition, a study of early teenagers in the USA and the UK (using the same Consumer Involvement scale as in the analyses presented here) found distinct associations between different dimensions of consumerism and outside school activities. In particular, electronic media use and listening to music had much stronger associations with acquisition-focused and brand-focused aspects of consumerism than with consumerist dissatisfaction.<sup>13</sup> It is therefore also possible

that different dimensions of consumerism may vary in their associations with tobacco and alcohol use. Thus promotions, including glamourised images linking consumerist or aspirational lifestyles with smoking or drinking, might mean associations between these behaviours and acquisition-focused and/or brand-focused aspects of consumerism are stronger than those between smoking and drinking and consumerist dissatisfaction.

This study examines the associations between several measures of consumerism (number of 'premium' and 'standard' material possessions and three Consumer Involvement subscales) and smoking and drinking among a large sample of Scottish early adolescents. We include both smoking and drinking to examine whether they are associated with consumerism in different ways, since there are differences both in the legal position on commercial promotion of these two products and in their prevalence. In the UK, direct advertising of alcohol is permitted, while that of tobacco is not, and although it has been argued that both smoking and drinking are 'deviant behaviours' in adolescence,<sup>21</sup> drinking is much more prevalent and likely to be regarded as part of a normal and fun existence.<sup>22</sup> We also examine variations in the associations according to gender and family affluence. Despite gender convergence in young people's drinking, men still continue to drink more, and in more detrimental ways, than women,<sup>23 24</sup> and both smoking-related and alcohol-related deaths account for a substantial proportion of gender differences in mortality across Europe.<sup>25</sup> It is therefore important to assess whether there may also be gender differences in vulnerability to potential early influences on the uptake of smoking and drinking. Existing evidence of differences between socio-economic groups in relationships between consumerism and well-being<sup>20 26</sup> raises the possibility of similar differences in respect of relationships between consumerism and substance use. Finally, multivariate analyses allow for examination of the independent associations which family affluence, compared with consumerism, has with smoking and drinking.

## METHODS

### Design and sample

We conducted self-completion surveys in examination-type conditions within seven Scottish Secondary (state-funded, mainstream) schools in early 2010. To maximise representativeness, we selected schools with different socio-economic catchments (as indicated by the proportion of pupils in receipt of free school meals) from two urban and semirural areas in Scotland's central belt. Within the seven selected schools, all pupils in Secondary 1-3 (S1-S3, ages 12-14) were invited to participate via letters sent to parents, including opt-out parental consent forms. Informed written (opt-in) consent was obtained from pupils before questionnaire completion. The study received approval from the University of Glasgow Faculty of Law, Business and Social Sciences Ethics Committee, participating local education authorities and schools.

The total sample comprised 2937 (92% of the eligible sample of 3189). The majority of non-response was attributable to school absence on the day of the survey; only 11 parents and 15 pupils refused consent. Mean (SD) ages were 12.0 (0.33) years in S1, 13.0 (0.29) in S2 and 14.0 (0.34) in S3.

### Measures

Responses to the question 'how many cigarettes have you smoked in your life' were dichotomised to never-smoker ('none') and *ever-smokers* ('just a few puffs', '1–19 cigarettes', '20–100', 'more than 100'). Responses to 'how many drinks do you usually drink at one time' were dichotomised into non-drinkers ('I never drink alcohol', 'less than 1 drink') and *current drinkers* ('1–2 drinks', '3–4', '5–6', 'more than 6').

Pupils indicated whether or not they owned each of 12 *material possessions* (generated during questionnaire development via informal discussions with young adolescents about possessions which they considered desirable). For the purpose of analysis, items which were at the time more expensive or recently released, were categorised as 'premium' (Xbox 360, PS3 or Wii; PSP; iPod; iPod dock; own laptop; LCD TV in bedroom; touch-screen mobile phone—range=0–7, mean=4.1, SD=1.7) and the remaining items as 'standard' (any other games console; any other MP3 player; own PC; any other TV in bedroom; any other mobile phone—range=0–5, mean=2.7, SD=1.2).

Pupils also rated their agreement with 16 statements (4 point scale) based on a 'Consumer Involvement' scale originally administered to around 300 American 10 to 13-year-olds.<sup>11</sup> Previous studies have suggested that this scale has a three-factor structure<sup>11 13</sup> and that an abridged nine-item variant (three items per factor) is psychometrically superior to the full scale in both US and UK samples.<sup>13</sup> Similar confirmatory factor analysis among our sample found the items with the highest loadings on the three factors were identical to those in an earlier UK sample (see online supplementary table S1). Following previous studies,<sup>13</sup> three Consumer Involvement subscales, each with ranges 3–12, were therefore constructed: 'dissatisfaction' (the sum of responses to 'I wish my family could afford to buy me more of what I want', 'I wish my parents gave me more money to spend' and 'I wish my parents earned more money'—mean=6.4, SD=2.2); 'consumer orientation' ('I usually have something in mind that I want to buy or get', 'I want to make a lot of money when I grow up' and 'when I go somewhere, I usually like to buy something'—mean=9.8, SD=1.5); and 'brand orientation' ('brand names matter to me', 'I like clothes with popular labels' and 'being cool is important to me'—mean=8.1, SD=2.2). Correlations between the subscales were 'dissatisfaction' and 'consumer orientation'  $r=0.252$ ; 'dissatisfaction' and 'brand awareness'  $r=0.172$ ; 'consumer orientation' and 'brand awareness'  $r=0.395$ .

*Family affluence*<sup>27</sup> was derived via items in respect of: number of family cars, vans or trucks; having own (not

shared) bedroom; number of family computers and number of family holidays in the past year. In line with the majority of studies which have used this measure,<sup>27</sup> the resulting scale was collapsed into low (scale scores 0–3), medium (4–5) and high (6–7) affluence categories.

### Analyses

Analyses were conducted via Stata V.11.0. We used a series of logistic regression analyses including interactions to identify any significant differences by gender or family affluence in the associations between the five measures of consumerism and smoking or drinking. First, to determine whether associations differed by gender, models entered: (1) 'premium' possessions, gender, 'premium' possessions by gender; (2) 'standard' possessions, gender, 'standard' possessions by gender; (3) 'dissatisfaction', 'gender', 'dissatisfaction' by gender; etc, for each substance (ie, five models for smoking and five for drinking). Of these, three interactions were (near) significant ( $p<0.10$ —identified on table 2). The exercise was then repeated, replacing gender with family affluence (one significant interaction—'consumer orientation' in respect of smoking,  $p=0.058$  for medium compared with low and  $p=0.046$  for high compared with low family affluence). Given some evidence of gender differences, we conducted all subsequent analyses separately for males and females.

Descriptive bivariate analyses examined the proportions of ever-smokers and drinkers according to school-year and family affluence category and the mean material possessions and Consumer Involvement subscale scores for ever-smokers and never-smokers and for current drinkers and non-drinkers. Logistic regression was used to determine both the unadjusted and mutually adjusted relationships which material possessions and the Consumer Involvement subscales had with smoking and drinking. These analyses also included school-year group and family affluence. Thus, the mutually adjusted models entered school-year group, family affluence, 'premium' possessions, 'standard' possessions, 'dissatisfaction', 'consumer orientation' and 'brand awareness' all together in respect of both smoking and drinking. Robust SEs were generated via the Stata survey command to account for the clustering within school classes. Since weighting the data according to school response rate made no difference to the results, analyses are based on unweighted data. Both unadjusted and adjusted analyses were conducted on those with complete data on all relevant variables, thus reducing the sample sizes to 2736 in respect of smoking and 2737 in respect of drinking. There were no significant differences in respect of family affluence between the full and analysed samples ( $p=.701$ ).

### RESULTS

One-fifth of the sample (19.7% males and 22.2% females) had ever smoked and two-fifths (40% males,

40.7% females) reported drinking one or more alcoholic drinks on a usual drinking occasion (table 1).

As expected, rates of smoking and drinking increased with age (here indicated by school-year group). For smoking, these increases with year group were greater for females than males (table 2). Socio-economic inequalities in smoking were well-established: 16.2% of males and 20.9% of females from the most affluent backgrounds had ever smoked, as compared with 29% and 33.6% of males and females from the least affluent backgrounds.

Ever smokers and current drinkers had higher mean numbers of both 'premium' and 'standard' possessions and higher scores on all three of the Consumer Involvement subscales. Associations between Consumer Involvement and both smoking and drinking were somewhat stronger for females, although the gender difference was only significant ( $p < .05$ ) for the 'dissatisfaction' subscale in respect of drinking.

In mutually adjusted analyses, the relationships which both ever smoking and current drinking had with family

affluence were strengthened, while those with 'consumer orientation' were weakened to non-significance (table 2, right-hand section). The size of the other associations changed little. Examination of the t-statistics shows that relationships between family affluence and current drinking were less significant than those seen between 'premium' possessions, 'dissatisfaction' or 'brand awareness' and drinking. Family affluence also had an equal (males) or less (females) significant relationship with ever smoking than did 'brand awareness'. For both males and females, the most significant effects, apart from those in respect of year group, occurred in relation to number of 'premium' possessions (for drinking) and the Consumer Involvement subscale 'brand awareness' (for both smoking and drinking).

Sensitivity analyses, conducted in order to test the effects of family affluence when entered as a continuous variable, rather than the collapsed low, medium and high affluence categories, showed almost identical results (see online supplementary table S2). Family affluence had a markedly less significant relationship with

**Table 1** Ever smoking and current drinking overall and according to school-year group, family affluence, number of 'premium' and 'standard' possessions and Consumer Involvement subscales—males and females

Ever smoker	Males		Females	
	Ever smoker N (row %)	Never smoker N (row %)	Ever smoker N (row %)	Never smoker N (row %)
<b>Overall</b>	272 (19.7)	1107 (80.3)	301 (22.2)	1056 (77.8)
Secondary 1 school-year*	49 (11.5)	376 (88.5)	44 (9.7)	408 (90.3)
Secondary 2	81 (17.1)	392 (82.9)	88 (19.5)	364 (80.5)
Secondary 3	142 (29.5)	339 (70.5)	169 (37.3)	284 (62.7)
Low family affluence	42 (29.0)	103 (71.0)	40 (33.6)	79 (66.4)
Medium family affluence	115 (21.9)	410 (78.1)	116 (21.3)	429 (78.7)
High family affluence	115 (16.2)	594 (83.8)	145 (20.9)	548 (79.1)
	<b>Mean (SD)</b>	<b>Mean (SD)</b>	<b>Mean (SD)</b>	<b>Mean (SD)</b>
Premium possessions	4.4 (1.8)	4.1 (1.8)	4.3 (1.8)	3.9 (1.7)
Standard possessions	2.9 (1.3)	2.7 (1.3)	2.9 (1.2)	2.6 (1.2)
Dissatisfaction	7.0 (2.3)	6.5 (2.1)	7.1 (2.3)	6.1 (2.1)
Consumer orientation	10.1 (1.4)	9.8 (1.5)	10.2 (1.6)	9.6 (1.5)
Brand awareness	9.1 (2.1)	8.2 (2.2)	8.6 (2.3)	7.4 (2.1)
<b>Current drinker (usually one or more alcoholic drinks)</b>	<b>Drinker</b>	<b>Non-drinker</b>	<b>Drinker</b>	<b>Non-drinker</b>
	<b>N (row %)</b>	<b>N (row %)</b>	<b>N (row %)</b>	<b>N (row %)</b>
<b>Overall</b>	552 (40.0)	827 (60.0)	553 (40.7)	805 (59.3)
Secondary 1 school-year*	87 (20.3)	341 (79.7)	91 (20.0)	363 (80.0)
Secondary 2	185 (39.1)	288 (60.9)	175 (38.7)	277 (61.3)
Secondary 3	280 (58.6)	198 (41.4)	287 (63.5)	165 (36.5)
Low family affluence	61 (42.4)	83 (57.6)	57 (47.9)	62 (52.1)
Medium family affluence	202 (38.5)	322 (61.5)	207 (38.0)	338 (62.0)
High family affluence	289 (40.6)	422 (59.4)	289 (41.6)	405 (58.4)
	<b>Mean (SD)</b>	<b>Mean (SD)</b>	<b>Mean (SD)</b>	<b>Mean (SD)</b>
Premium possessions	4.5 (1.7)	3.9 (1.7)	4.4 (1.7)	3.7 (1.7)
Standard possessions	2.9 (1.3)	2.7 (1.3)	2.8 (1.2)	2.7 (1.1)
Dissatisfaction	6.9 (2.2)	6.4 (2.1)	6.9 (2.3)	5.9 (2.0)
Consumer orientation	10.1 (1.4)	9.7 (1.5)	10.1 (1.5)	9.5 (1.5)
Brand awareness	8.9 (2.1)	8.0 (2.2)	8.4 (2.2)	7.3 (2.1)

\*Mean (SD) ages: secondary 1, 12.0 (0.33); secondary 2, 13.0 (0.29); secondary 3, 14.0 (0.34) years.

**Table 2** Ever smoking and current drinking according to year group, family affluence, material possessions and Consumer Involvement subscales: unadjusted ORs\* (with significance of interaction with gender) and mutually adjusted† ORRs\*—males and females

	Unadjusted associations			Mutually adjusted associations					
	Males	Females	(Significance of interaction with gender)	Males			Females		
	OR (95% CIs)	OR (95% CIs)		OR (95% CIs)	t	(Significance)	OR (95% CIs)	t	(Significance)
<b>Ever smoker</b>									
Secondary 1 school-year	1.00	1.00		1.00			1.00		
Secondary 2	1.59 (1.05 to 2.40)	2.24 (1.36 to 3.70)	(0.226)	1.52 (0.99 to 2.33)	2.0	(0.052)	2.00 (1.22 to 3.27)	2.8	(0.006)
Secondary 3	3.21 (2.23 to 4.62)	5.52 (3.47 to 8.78)	(0.034)	3.31 (2.27 to 4.82)	6.3	(0.000)	5.69 (3.56 to 9.10)	7.3	(0.000)
Low family affluence									
Medium family affluence	0.69 (0.43 to 1.09)	0.53 (0.35 to 0.82)	(0.427)	0.60 (0.37 to 0.98)	-2.1	(0.041)	0.51 (0.30 to 0.86)	-2.6	(0.011)
High family affluence	0.47 (0.30 to 0.76)	0.52 (0.34 to 0.81)	(0.760)	0.36 (0.22 to 0.60)	-4.0	(0.000)	0.44 (0.26 to 0.75)	-3.0	(0.003)
Premium possessions									
Standard possessions	1.08 (0.99 to 1.17)	1.13 (1.04 to 1.22)	(0.495)	1.09 (0.99 to 1.18)	1.9	(0.056)	1.12 (1.02 to 1.24)	2.4	(0.018)
Dissatisfaction	1.15 (1.03 to 1.28)	1.19 (1.05 to 1.33)	(0.690)	1.19 (1.06 to 1.33)	3.0	(0.003)	1.23 (1.09 to 1.39)	3.4	(0.001)
Consumer orientation	1.13 (1.06 to 1.20)	1.23 (1.15 to 1.31)	(0.068)	1.08 (1.01 to 1.15)	2.2	(0.029)	1.11 (1.03 to 1.20)	2.7	(0.007)
Brand awareness	1.18 (1.07 to 1.30)	1.32 (1.19 to 1.47)	(0.109)	1.06 (0.94 to 1.18)	1.0	(0.327)	1.09 (0.96 to 1.23)	1.4	(0.173)
(N)	1.20 (1.12 to 1.29)	1.29 (1.21 to 1.39)	(0.134)	1.17 (1.08 to 1.26)	4.0	(0.000)	1.23 (1.14 to 1.33)	5.4	(0.000)
				(1379)			(1357)		
<b>Current drinker</b>									
Secondary 1 school-year	1.00	1.00		1.00			1.00		
Secondary 2	2.52 (1.84 to 3.45)	2.52 (1.72 to 3.69)	(0.997)	2.49 (1.78 to 3.48)	5.4	(0.000)	2.26 (1.54 to 3.31)	4.2	(0.000)
Secondary 3	5.54 (3.97 to 7.73)	6.94 (4.81 to 10.01)	(0.299)	5.87 (4.15 to 8.29)	10.1	(0.000)	7.61 (5.20 to 11.14)	10.5	(0.000)
Low family affluence									
Medium family affluence	1.00	1.00		1.00			1.00		
High family affluence	0.85 (0.59 to 1.24)	0.67 (0.45 to 0.99)	(0.371)	0.70 (0.46 to 1.07)	-1.7	(0.098)	0.60 (0.39 to 0.92)	-2.4	(0.020)
Premium possessions									
Standard possessions	0.93 (0.65 to 1.34)	0.78 (0.52 to 1.16)	(0.493)	0.66 (0.45 to 0.97)	-2.1	(0.036)	0.60 (0.39 to 0.94)	-2.3	(0.025)
Dissatisfaction	1.21 (1.13 to 1.30)	1.26 (1.18 to 1.35)	(0.429)	1.19 (1.10 to 1.28)	4.5	(0.000)	1.28 (1.17 to 1.40)	5.6	(0.000)
Consumer orientation	1.15 (1.04 to 1.26)	1.07 (0.96 to 1.18)	(0.326)	1.21 (1.09 to 1.34)	3.7	(0.000)	1.13 (1.01 to 1.27)	2.2	(0.029)
Brand awareness	1.11 (1.05 to 1.16)	1.24 (1.19 to 1.31)	(0.002)	1.10 (1.03 to 1.16)	3.1	(0.002)	1.18 (1.11 to 1.25)	5.6	(0.000)
(N)	1.19 (1.10 to 1.28)	1.30 (1.20 to 1.40)	(0.089)	1.06 (0.97 to 1.15)	1.3	(0.211)	1.05 (0.96 to 1.15)	1.0	(0.304)
	1.21 (1.15 to 1.28)	1.29 (1.22 to 1.36)	(0.130)	1.15 (1.08 to 1.23)	4.4	(0.000)	1.21 (1.13 to 1.30)	5.6	(0.000)
				(1379)			(1358)		

\*Note that ORs are per one-unit increase for continuous variables (material possessions and Consumer Involvement subscales).

†Adjusted for all other variables in each model.

drinking than did 'premium' possessions or 'brand awareness'. Among females, it also had a less significant relationship with smoking than 'brand awareness'. Further analyses, conducted in respect of different measures of smoking and drinking also found that among females, current smoking (reported by only 6.7% males and 8.9% females) had a stronger relationship with 'brand awareness' than with family affluence, and that among both genders, ever drinking, which was very frequently reported (86% males, 86.8% females), had a stronger relationship with 'brand awareness' than with family affluence (see online supplementary table S3).

Finally, further investigation of the interaction between 'consumer orientation' and family affluence in respect of current drinking found that it was not significant in analyses conducted on males and females separately. In the sample as a whole, the ORs (and 95% CIs) of drinking in respect of a one-unit increase in 'consumer orientation' among those from low, medium and high family affluence households were 1.45 (1.24 to 1.70), 1.23 (1.13 to 1.34) and 1.22 (1.12 to 1.32), respectively.

## DISCUSSION

As highlighted by our data, early adolescence is a period of rapid increase in the prevalence of both smoking and drinking. Understanding influences on uptake of these behaviours during this period is therefore crucial. We found that rates of both smoking (ever) and drinking (one or more alcoholic drinks on a usual occasion) were higher among more consumerist Scottish early adolescents, as measured by a range of indicators. Thus, both behaviours were more likely among those who possessed more modern electronic gadgets and consumer goods, regardless of whether these were 'standard' or potentially more desirable 'premium' items. Rates of smoking and drinking were also higher among more 'dissatisfied', 'consumer orientated' and 'brand aware' adolescents. Relationships between our consumerism measures and both smoking and drinking were largely similar for males and females and for those from less affluent compared with more affluent households.

In line with other recent UK studies which have found evidence of higher levels of smoking among adolescents from lower socio-economic status (SES) backgrounds, but little or no social gradient in adolescent drinking,<sup>28 29</sup> we found much clearer differences according to family affluence for smoking than drinking. Indeed, family affluence had a weaker relationship with drinking (both ever and current) than did several of our consumerism measures, and an equal (males) or weaker (females) relationship with smoking (ever and current) than 'brand awareness'. These results therefore highlight the importance of focusing on not only socio-economic, but also cultural factors in relation to health,<sup>7</sup> at least in adolescence.

The social patterning of smoking and (harmful) drinking are important contributors to socio-economic and gender inequalities in health. For example, it has

been estimated that across 30 European countries, smoking accounts for around 40–60% of gender differences in life expectancy and drinking for 10–30%.<sup>25</sup> As the UK is well advanced in the smoking epidemic,<sup>30</sup> current smoking is increasingly concentrated in people from lower socio-economic groups. For these reasons it is important to examine whether contemporary cultural influences on smoking and drinking differentially affect males compared with females, or those from lower compared with higher SES backgrounds, particularly at an age when experimentation with and uptake of these behaviours is so widespread. Any differential impacts could alert us to future trends in inequalities and/or indicate whether interventions need to be targeted to particular subgroups. It is thus of interest to note the general lack of differential effects by both gender and family affluence, although we did find suggestions of slightly stronger associations between the Consumer Involvement subscales, particularly 'dissatisfaction', and both smoking and drinking among females.

Our analysis was conducted on a large sample of early adolescents attending mainstream schooling. Comparison of our sample with the 2010 WHO Health Behaviours in School-aged Children (HBSC) Scottish survey shows very similar levels of family affluence (52% high affluence, 39% medium and 10% low affluence in our dataset; 53% high, 35% medium, 9% low, 3% missing in HBSC) and current smoking (18% among S2 pupils in our dataset, 19% in HBSC; measures of drinking used in the two studies are not sufficiently similar to compare directly).<sup>31</sup> The authors of our measure of family affluence note that it shows validity both in respect of agreement between pupils and parents on the component items, and in its relationship with other measures of SES such as parental occupation and country-level macroeconomic indicators such as GDP.<sup>27</sup> However, since it is based on family vehicles, bedrooms, computers and holidays, it is possible that the scale is, at least in part, a measure of (family) consumerism in addition to affluence.

Cross-sectional data limit definitive conclusions about causation. However, we believe that a more plausible hypothesis for future longitudinal analyses is that consumerist attitudes lead to uptake of smoking and drinking rather than the reverse. It is also possible that the relationships which we have identified are the result of confounding by additional factors (such as negative affectivity). However, this is likely to be more of an issue in studies of consumerism and well-being.

Our results are consistent with the small number of other studies which have found associations between consumerist values and adolescent substance use.<sup>15–18</sup> However, previous studies have not examined whether *particular* aspects of consumerism might have stronger associations with substance use than others. Relationships between smoking and drinking and the Consumer Involvement subscale 'dissatisfaction' support suggestions by other authors that substance use might be an attempt to satisfy the unmet needs of more materialistic

individuals.<sup>15 17</sup> However, we also found that smoking and drinking were most strongly associated with 'brand awareness' (comprising items emphasising the importance of brand names, popular labels and being cool), and also with possession of modern consumer goods. This, together with evidence from other studies that 'brand awareness' has strong relationships with cinema-going, internet use, chat room visits, listening to music and TV-watching among early adolescents,<sup>13</sup> and that smoking is associated with fashion-consciousness, particularly among young women,<sup>32</sup> suggests that image and identity may be important mechanisms linking consumerism with these two aspects of adolescent substance use.

The association may also be the result of indirect or direct promotion linking consumerist or aspirational lifestyles with smoking or drinking. Previous studies have highlighted the influence of tobacco and alcohol marketing on young people's smoking<sup>33 34</sup> and drinking.<sup>35</sup> Patterns of association between consumerism and both smoking and drinking (whether defined as 'ever' or 'current') were very similar, despite the fact that within the UK, direct advertising of alcohol is permitted, while that of tobacco is prohibited. However, distinctive marketing of tobacco products persists via packaging and point of sale displays, and the entertainment media continues to portray many largely positive representations of smokers in films.<sup>36</sup> Such images have been shown to be associated with young people's health behaviours.<sup>37–40</sup> Marketing is designed to develop and sell brands, thus both increasing consumption and establishing the credibility and legitimacy (normalising) of products or behaviours;<sup>4 41</sup> indeed, to be successful, marketing has to foster aspirations to buy and to consume. More consumerist children and adolescents have been found to be more susceptible to advertising and promotion.<sup>42</sup> Our study suggests this may also include both the subtle marketing and imagery used by tobacco companies and the stronger direct marketing used by drinks manufacturers.

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