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# Comparing and contrasting responses to tobacco control and obesity policies: a qualitative study

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Conflicts of interest: None

DJ & FG jointly conceived the study. DJ conducted the interviews, and led in the analysis of the data and drafting the paper. FG contributed to the analysis and interpretation of findings, and contributed to the writing of the paper. Both authors approved the final version of the paper.

This study was conducted according to the guidelines laid down in the Declaration of Helsinki and all procedures involving human participants were approved by the University of Bath, Department for Health Research Ethics Committee (REACH). Written informed consent was obtained from all participants.

## **ABSTRACT**

Objectives: To explore people's perceptions of, and responses to, obesity and tobacco policies with a particular focus on motivation. To compare and contrast responses to explore the potential for translating learning across domains.

Design: A theoretically-informed comparative qualitative study involving semi-structured interviews with two groups of participants (smokers and ex-smokers, and those who have previously or are currently attempting to lose weight). Data were analysed inductively using thematic analysis and interpreted through the lens of Self-Determination Theory.

Setting: Community based.

Participants: Interviews were conducted with five smokers and four ex-smokers around tobacco policy, and 17 people acting to control their weight around obesity policy.

Results: Three primary themes were identified: 1) Participants believed social norms to be crucial to supporting health behaviour change and responses to policy; *not* smoking was perceived as socially normal, whereas being physically active and eating healthily were perceived to go against social norms. 2) Policies influencing the physical environment were perceived to support stopping smoking (e.g. smoke-free laws, advertising bans), but to undermine attempts to lose or control weight (e.g., high visibility, availability and low cost of energy dense foods). 3) While policies for both domains were considered necessary and legitimate, both groups found policy interventions neither motivating nor undermining of their sense of autonomy.

Conclusions: The results suggest those trying to lose weight respond similarly to obesity-related policy as smokers do to tobacco policy. Environmental interventions are perceived to be more helpful than appealing to people's motivation to change for their own sake.

## **Keywords**

Obesity policy; tobacco policy; Physical activity; motivation

## INTRODUCTION

Obesity is a global health epidemic; in 2010, 38.0% of women and 36.9% of men were overweight or obese worldwide<sup>(1)</sup>. While government intervention is essential to tackle an issue of this scale, it also poses ethical and philosophical questions including the hierarchy of individual choice, individual responsibilities and the responsibilities of the state<sup>(2)</sup>. Although ultimately peoples' diets, physical activity levels and sedentary behaviour are the result of individual choice, these choices depend on the range of factors such as opportunities, costs, social pressure, mass media advertising and others that can be influenced by governments and their policies. One such example of policy level influence on health behaviour is in smoking cessation; tobacco control has been named as one of the greatest achievements of public health policy of the 20<sup>th</sup> century<sup>(3)</sup>. In the UK, a leader in tobacco control<sup>(4)</sup>, the implementation of a broad range of policies<sup>(5-7)</sup> has accompanied a decline in the prevalence of adult tobacco smoking of 26% over a 40 year period (from 45% in 1974 to 19% in 2014)<sup>(8)</sup>. Numerous experts have called for lessons to be drawn from the tobacco control approach to improve the organisation of obesity policies<sup>(9-11)</sup>, however a way of successfully doing so has yet to emerge. The aim of this study is to contribute to our ability to translate approaches from one domain to another by exploring one of the processes by which policy effects are brought about; specifically, we will explore and compare peoples' views on, and motivational responses to tobacco and obesity-related policy, in each case on those people they most aim to influence (i.e. smokers/ex-smokers, and people trying to control their weight).

Motivation is a key factor underpinning whether or not people engage with opportunities to make healthy choices (e.g. reduce their smoking, increase their activity or improve their diet)<sup>(12)</sup>, or respond with indifference (i.e. ignoring new opportunities) or reactance (i.e. further consolidating, or exaggerating previous level of behaviour)<sup>(13)</sup>. Most motivation research explores the effect of proximal influences such as friends, family and immediate communities, but our understanding of people's motivational responses to societal-level influences such as legislation is limited. Policy evaluation research itself has typically focused on health or behavioural outcomes (e.g. smoking rates)<sup>(14-17)</sup> rather than process outcomes such as people's attitudes, beliefs and motivation which are precursors to change.

**A more mechanistic approach to understanding the process by which policies bring about their effects**

has been recognised as necessary to improving policy impact, which incorporate the importance of individually experienced barriers to healthy eating<sup>(18)</sup>, but as yet we are not aware of inclusion of motivation within the analysis of such processes of effect. A greater understanding of how people respond to policies in terms of their motivation to change or retain their behaviours may provide insight for developing new policy approaches.

Our understanding of the process by which public health policies exert their effects can be increased by the use of conceptual frameworks<sup>(19)</sup>. A framework that has proven useful in theorising how environments (e.g. policy initiatives) can foster or undermine motivation for behaviour change is self-determination theory (SDT)<sup>(20)</sup>. According to SDT, the quality of motivation can differ in the degree to which it represents perceptions of control versus autonomy, and is aligned along a continuum from external forms of regulation at one end (i.e. acting only to gain reward or avoid punishment), to acting for intrinsic motivation at the other (for the enjoyment or benefit inherent within the activity itself). Between the two extremes, extrinsic motives for acting may be partially internalised to be more or less controlled; for example, acting to avoid feeling guilty or to sustain one's pride may be perceived as controlling, whereas acting to gain outcomes that are personally valued and meaningful (e.g. health, learning for a profession) may be perceived as more autonomous<sup>(20)</sup>. Importantly, there is a wealth of evidence to support the premise that health behaviours need to be autonomously motivated in order to be sustainable in the long term<sup>(21-23)</sup>. People can move along this continuum as a result of the degree of support for autonomy or control exerted over them from their social environment. From this perspective, public health policies can be considered as one aspect of the social environment that can enhance or diminish autonomous and controlled motivations<sup>(13)</sup>.

SDT could provide insight into the mechanism by which policies support, or fail to support, the development of autonomous motivation. For example, approaches which are perceived as controlling (e.g. threats of punishment) can be successful in bringing about behaviour change in the short term, but the behaviour is less likely to be maintained by penalties, or the fear of detection<sup>(24)</sup>. A previous cross-sectional study exploring the effects of policy on motivation for health behaviour change from a SDT perspective reported that obesity-related policies were perceived to move people towards more

controlled, rather than the desired autonomous motivation for weight control behaviours<sup>(25)</sup>. Understanding the mechanism of these effects could be important to inform the design of more autonomy supportive policy approaches.

In an attempt to learn from the success of tobacco control policies and given the level of support for tobacco control policy even among smokers<sup>(15)</sup>, the aim of the current study was to compare how tobacco control and obesity policies are perceived in relation to people's motivation to change their behaviour. While obesity-related policies affect all people as they target physical activity and food environments, we focussed our study on those people whose behaviour would be expected to change as a result of the policy. **To provide comparability between the smokers and ex-smokers we sought to interview regarding tobacco control policy, we sought to recruit people who were both currently trying to lose weight, and those who had attempted to do so in the past (whether successful or not) to the obesity interest group.** We aimed to explore the similarities and differences between people's views in the two domains, and explore whether these differences provide an indication of how engagement with obesity-related policy could be improved.

## **METHODS**

The consolidated criteria for reporting qualitative studies (COREQ)<sup>(26)</sup> were followed.

### **Participants**

*Tobacco control group:*  $\geq 24$  years (in order to have been of legal smoking age prior to the UK smoke free legislation), either a current smoker or ex-smoker (classified as having stopped smoking completely  $> 6$  months ago, previously smoked  $\geq 5$  years), English speakers. **An approximately equal number of current and ex-smokers was sought.**

*Obesity interest group:*  $\geq 20$  years (in order to have established an adult weight); BMI between 18 and 35; finding it difficult to control weight currently or in the past; English speakers. **An equal number of participants within the healthy weight category [BMI between 20 and 25] who had either lost weight or find it difficult to maintain weight, and participants with a BMI classified as overweight [BMI between 25 and 30] who were actively trying to control their weight was sought.**

Purposive sampling was used to select a maximally diverse set of interviewees from those volunteering in terms of age, ethnicity, gender, socioeconomic position and smoking status or BMI.

### **Recruitment**

*Tobacco control group:* The recruitment of smokers and ex-smokers took place through i) a ‘smokers’ panel’ which is a standing panel set up by the UK Centre for Tobacco Control Studies to provide ongoing feedback and opportunities for consultation on smoking-related research, and ii) from an online noticeboard.

*Obesity interest group:* Participants were recruited from i) community settings (community centres and community gyms), ii) online advertisements (university noticeboard, Gumtree) and iii) Facebook.

### **Data collection**

Participants who were members of the smokers’ panel had prior experience of considering and discussing what sort of policies may influence them as smokers, so to match this experience, participants in the obesity-policy arm of the study were asked to attend a discussion group before taking part in an individual interview. The discussion group involved a presentation by the researcher outlining the complex causes of obesity and a range of possible policy solutions, **and elicitation of thoughts in response to a press article presenting rising obesity rates as a threat to public health**. Interview topic guides were developed by the study authors based on literature review to explore policy level factors that might effect motivation to quit or lose weight/ change diet/ increase physical activity (Supplementary file 1). Interviews were conducted by the first author and transcribed verbatim. Interviews were conducted in south west England between May 2011 and July 2012.

### **Data analysis**

The interviews from the tobacco control and **obesity interest groups** were initially analysed separately following the same approach aided by NVivo qualitative software. First, recordings were listened to, transcripts were read and re-read in detail for familiarisation. Notes were taken at this stage and meaning units assigned indicative codes. Illustrative extracts and clusters of codes were identified, and a thematic map produced containing potential clusters and the codes they contained. Initial themes were organised and re-organised into themes and sub-themes as described in Thematic Analysis<sup>(27)</sup>. Although the interview guide contained questions designed to explore constructs from SDT the data analysis was

guided by the emergent themes and was not constricted to codes or themes related to motivation. Instead, SDT was used in the second step of the analysis to consider the similarities and differences between groups in terms of intrinsic and extrinsic motives for health behaviours, and to frame possible mechanisms through which the wider social environment may influence motivation for behaviour change. Arising themes relative to clusters of codes were discussed among the study authors to check that themes were supported by the data. Respondent validation was sought among study participants to check whether the interpretations made were viable<sup>(28, 29)</sup>. Participants were provided with a first draft of interpretive report and were asked if the interpretations made were accurate.

The initial analysis resulted in the generation of two sets of themes, each specific to one context. The final stage of analysis was to bring these together to identify salient similarities and differences within and between core themes; first, the two sets of themes were compared, and where there was not already clear overlap such that they could be combined, data were re-evaluated to ensure aspects from both participants groups were included where relevant. Thus, comparisons could focus on differences such as presence vs absence of a particular concern (theme) between groups, or comparison of responses within a common concern (theme).

## **RESULTS**

Twenty-six participants were recruited; five smokers and four ex-smokers (six females, three males), and 17 participants actively trying to control their weight at the time of interview (n=3 BMI  $\geq 18$  and  $< 25$ ; n=6 BMI  $\geq 25$  and  $< 30$ ; n=8 BMI  $\geq 30$ ; nine females, eight males). Participants were aged between 27 and 64 years old. Only salient similarities and differences that emerged from the two datasets will be presented to provide a more focused analysis.

### **Emerging themes**

#### *Social normalisation*

Participants' support for policy reflected what they considered to be normal, and participants in both groups perceived social norms to be relevant to their efforts to change their behaviour. The tobacco control group expressed a view that smoking is no longer an integral part of everyday life and has been removed from day to day interactions such that *not* smoking is now normal:

P9 (ex-smoker): I find it strange now when I go to places and smell cigarette smoke. Like if you walk past someone on the street that's actually smoking and you smell it, it's so... it used to be just all the time, and now it's really quite odd when you come across that.

In contrast, the majority of individuals in the obesity interest group felt that physical activity and healthy eating are not socially normal:

P2 (female, BMI 28): I realised generally that we look around ourselves and we see, you know, what everyone is doing and... what I mean by that is that for example we may think that having takeaways, I don't know 3 times a week is acceptable, but actually we don't know that we don't burn all this energy.

Conversely, being overweight was seen as normal and participants who were overweight themselves commonly felt their weight was not that high and they were still part of the norm:

P8 (female, BMI 35): You're noticing more these sort of girls [models] coming on, but they try to tell us that they are kind of chubby... And I'm thinking God, you're nothing near a size 14 or 16 either, so they are not even chubby, they are size 12, so is that really the norm? Size 12? Most women are like 14 and above.

As such, overweight participants felt that obesity policies should not focus on 'people like them', but only on more extreme body sizes:

P2 (female, BMI 28): I don't see such a big issue in people being slightly overweight rather than being obese... when you see really large umm large people I think, you know, there's where the issue is.

P6 (female, BMI 30): 'cause I think I'm a [size] 16, so you know an 18, one size up... I wouldn't think ok they are not that unhealthy or bad, you know, but somebody like this (*points to a picture of a person living with obesity*) it's very bad.

### *Environmental support*

Both groups were aware of the health messages behind the relevant policies:

P1 (current smoker): I've always known, that's the thing. I mean... I've always known that... I mean it's all over the place. It's engrained into the popular thinking now that it [smoking] is bad for you.

The tobacco control group felt the social and physical environment facilitate healthy behaviours, and attributed the establishment of this positive environment to policy changes (i.e. through the smoke-free ban, banning vending machines, etc.).

P5 (current smoker): [as a result of the smoke-free legislation] you end up probably smoking less. Because you physically have to go and brave the wet weather or the cold (laughs) and it's actually, you, if you, if I was smoking at my desk I'd smoke a lot, lot more.

Although some negative views of policy were expressed (e.g. that it makes outcasts of smokers), most smokers and former smokers recognised that the steps taken were justified. As such, they did not perceive the policies to undermine their autonomy (i.e., freedom to choose):

P2 (current smoker): I think it [the smoke-free law] is a good thing because banning it from indoor spaces, cause of the issues with inhaling other's people smoke, forcing people to actually smoke your smoke, it's you know, you need to remove that problem. So in that case I think it's a good thing.

In the obesity domain, the social and physical environments were perceived to hinder health behaviours. Participants talked of the many daily temptations they face, such that even to act in line with policies (i.e. read and respond to labelling, or eat five pieces of fruit and vegetables a day) considerable self-control is needed:

P8 (female, BMI 35): I had to cut back on the sweets and stuff like the biscuits and stuff and little cakes, I lied today, I did buy some yesterday because they were on offer and they had them right at the front at the store! As soon as you walk in I'm like oh God that is temptation, I didn't pick one, but I picked up two. I picked up two packs of Caramel Buns and then I thought no I'll take one [laughs] 'cause I've got one at home already.

P1 (female, BMI 31.5): it's a very easy lifestyle to just get into the car and zap around to collect something...

P7 (female, BMI 29.5): So if I wanted to eat healthily, what I would do is buy each of these vegetables and put them together and roast them and I don't know, come up with the soup or casserole or something, whereas if I wanted to eat unhealthily, it would be much quicker for me to prepare, it feels much more convenient.

#### *Policy influence on motivation to change*

Participants did not believe that the policies they were aware of had motivated them to change their health behaviours in either group. In smokers, where policy was believed to have changed behaviour participants recognised and usually welcomed the improvements, but attributed these to external factors rather than their own effort:

P1 (current smoker): I find it [the smokefree legislation] frustrating at times, don't get me wrong, but I can... it doesn't take 2 minutes to walk outside or find a place, you know an open air... and it does, it has allowed me, as it has done with many people I think, to cut down on the amount they smoke... which could only be a good thing obviously.

In the absence of policies that were perceived to have had an impact on the physical environment relevant to those in the obesity interest group, participants reflected on their response to health messaging and increases in the provision of nutritional information. While nutritional initiatives were seen as relevant to those trying to lose weight and may have provided ideas of how to enact existing intentions to manage weight, in the absence of a more supportive environment participants tended to find them insufficient to prompt them to action or unsustainable in the longer term.

P10 (female, BMI 33): Labelling is important. You know the Traffic Light thing is quite good, cause that's... Calories, sugars, salt, ok. I don't really pay much attention to the writing, I might notice the colour system... I tend less probably to notice that, unless it was glaringly red, you know, if it had a little bit of... If all three colours were red, I would probably still buy it unfortunately (laughs). Yeah, labelling is important.

P5 (male, BMI 27): I've tried to eat five pieces of fruit a day and you know I mean at first you feel really self-righteous and feel good about yourself and then two weeks into it you think "God this is boring". It is boring, isn't it? ... all the time thinking you know, you can't live your life that way, I've got work to do, I've got to study, I've got to see my friends and family.

Others showed little confidence that they could change their behaviour without external support:

P9 (female, BMI 27.5): I told you, I need a boot camp (laughs). Boot camp (laughs) on the government.

P3 (current smoker): It's carrot and stick, you can't just beat them with the message this is bad, this is bad, there has to be an incentive as well I believe. I know for example, I believe in Scotland people are encouraged to stop smoking and they give them a 15 pound voucher or something for food in Asda, I think that's the scheme.

While policies were not found to provide a prompt for **autonomous motivation in either domain (i.e., participants reported changes either in response to physical barriers, or feeling one 'should' comply/make an effort to follow guidelines, rather than new realisation of the personal importance of change)**, neither did the policies appear to have a negative effect through undermining perceptions of autonomy or appearing to impose control. The following quote provides an illustration of the way in which many participants expressed personal endorsement of the policy message (i.e. of the need to change behaviour to promote one's health), but felt neither coerced nor encouraged to make changes:

P3 (male, BMI 34.5): Better health reason alone should be enough to motivate me... I haven't my own motivation or been motivated to lose weight um... part of the reasons I've come to take part in the study is to see if I could find a key that would unlock it for me you know, so bit selfish really...

## DISCUSSION

The aim of this study was to compare and contrast people's experiences of tobacco and obesity-related policies on their motivation and health behaviours. Three themes were identified; the first highlighted the importance of social norms for people attempting to change their lifestyle behaviours, and clarified that these norms worked in the opposite direction in each setting. Implicit in these responses was the acknowledgement of the role that the smoke-free policy had had in promoting a norm for not smoking, and the absence of anything similar related to healthy eating or physical activity. The second theme reflected participants' beliefs that environmental changes are more important than their own agency in changing their behaviour. In contrast to the physical restraints on smoking brought about by smoke-free legislation, the easy availability of unhealthy options was felt to undermine participants' intentions to make healthy choices. The final theme explored people's experiences of policy in relation to its impact on their motivation. Both groups were aware of, and largely endorsed the health messages behind the policies (e.g. to not smoke, to avoid 'red traffic light' foods), **but while there was evidence that participants made attempts to act in line with guidelines in some cases, neither group considered policies to be autonomously motivating; this finding is discussed in full later.** There was overlap between the three themes suggesting that participants are looking to policy to change the environment, but do not have confidence that policies would be useful in motivating and helping to support individual attempts to change against the flow of social norms. **In discussing these findings, we note that we are focusing on the factors shaping people's behaviour of which they report being aware; there are likely to be other less conscious influences beyond the scope of this study.**

The finding of the importance of descriptive social norms in initiating and maintaining behaviour change is consistent with past work in both the tobacco<sup>(30-32)</sup> and obesity domains<sup>(33-36)</sup>. In the tobacco domain, the recent increase in social unacceptability of smoking is believed to have helped to decrease tobacco use and peer support, including reducing the affiliation, social support, attachment and social bonding while smoking<sup>(30, 32)</sup>. In the obesity domain, social norms have been found to influence both eating behaviour and physical activity. For example, providing information on what others are eating (i.e. setting norms for high fat vs low fat foods) can have a moderate but meaningful impact on food choice<sup>(33)</sup>, and descriptive social norms for physical activity, particularly within friendship groups, are strongly associated with physical activity levels<sup>(36)</sup>. Further, some exploratory

research suggest that when perceived norms for body weights increase, small but significant increases in BMI towards this norm are observed<sup>(34)</sup>. Our study builds on this work to emphasise the importance that people explicitly attribute to social norms, and further highlights the very different social environments in which smoking cessation and obesity prevention policies are situated that could influence how they are received and how likely they are to bring about desired effects.

The second and third themes together suggested that people do not perceive policies to be useful through impacting their motivation, but believe their role is to influence behaviour through changes to the physical environment or other external contingencies (e.g. incentives, physical restrictions and services). **In line with theory, evidence that a policy has influenced a person's autonomous motivation to change could be seen if people refer to factors that are hypothesised to drive the internalization of motivation<sup>(37)</sup>; this includes recognition of a new, personally meaningful rationale for change that they had not been aware of before, facilitation of structure through which to enact change, feelings of choice and appreciation of how difficult it is to change behaviour (see 12, 22 and 23 for applied examples). Further, autonomous motivation can be developed through the provision of support for three basic psychological needs; autonomy (i.e., feelings of choice and personal agency), competence (i.e., feeling capable and able to demonstrate one's ability) and relatedness (feeling one is acting consistent with the values of a group with which one identifies). For example, as shown in the excerpts above there was evidence that participants in the tobacco control group were autonomously motivated to comply with smoke-free legislation as they personally endorsed the rationale for this in line with their values of protecting/respecting others. Yet beyond this example (which we note relates to the behaviour of adhering to regulations as to where and when to smoke, rather than motivation to quit/reduce smoking), there was no evidence that policies in either domain had resulted impacted the factors driving internalization of motivation for either group.**

Both the current smokers and people trying to lose weight that we interviewed recognised the rational reasons why they should change their behaviour, and found it hard to explain why this was not enough for them to feel motivated to take action; **i.e., they already understood the rationale of why they should change and this was not enhanced by policy approaches.** Thus while from an SDT perspective, the personal endorsement of a rationale for change is a necessary condition for change<sup>(37)</sup>, our findings

confirm it is not sufficient in itself. One reason for this disconnect may be due to the specificity of measurement; for example, feeling motivated to eat ‘five a day’ or read labels may not equate to the motivation to sustain a reduction in calorie intake in order to lose weight just as motivation to comply with smoke-free legislation does not equate to motivation to stop smoking. Better mapping of obesity-related policy initiatives such that compliance with a policy would also result in a positive health gain (as in the case of smoke-free legislation) may have a greater impact in the obesity domain; changing default menu options to serve main meals with healthier side orders and reduce portion sizes<sup>(38, 39)</sup>, or policies that promote activity through restrictions on car use<sup>(40)</sup> are examples of this.

Importantly, there was no evidence of a so-called ‘boomerang’ effect of policies on motivation in either case<sup>(41)</sup>; that is, when a policy is perceived to threaten a person’s autonomy (**thwarting basic psychological needs**) and results in cementing and exacerbating target behaviours<sup>(41)</sup>. These findings are consistent with our findings of the autonomous motivation to comply with smoke-free regulations in our sample, and results observed in a longitudinal qualitative study by Ritchie et al.<sup>(42)</sup> in which data pre- and post- smoke-free legislation were collected in Scotland between October 2005 and March 2007; smokers rationalised change in their behaviour and felt that once the smoke-free legislation was in place they became more considerate smokers who had respect for the non-smokers’ right to clean air. It could have been expected that more objections would have been observed, given smoke-free legislation unarguably restricts smokers’ freedom in relation to where and when to smoke. As such, the lack of reactance suggests that the smoke-free legislation was introduced in a way that facilitated its internalization (i.e. of smokers’ motivation to comply with restrictions), shifting their compliance from external (i.e. prohibited by law to smoke in public places) to internal (internalised value of the regulation). Prospective research conducted alongside changes in policy would be needed to test this theoretical hypothesis, but if this is the case, this example shows that policy can lead to internalised motivation if introduced in a way that presents and endorses people’s values. Our findings that people trying to control their weight are similarly accepting of the rationale for policy intervention in the obesity domain, suggest that there may be a similar starting point from which more drastic policy interventions could be accepted, and that legitimacy does not seem to be a barrier. However, identifying

which socially acceptable and normative values obesity policies could be seen to endorse, which have a similar weight and appeal to the ‘considerate smoker’, may be the greater challenge.

### **Policy Implications**

This study indicates that policies that aim to promote health behaviour change are largely not experienced as supporting sustainable autonomous motivation by those they aim to target. Without autonomous motivation, people are unlikely to benefit from policies that require active engagement, such as food labelling and weight management services. This finding is supported by past work, for example in studies showing that only smokers who have high motivation to quit were willing to try stop smoking services<sup>(43)</sup>, that cigarette health warnings only result in cigarettes being perceived to be less attractive by those already motivated to quit (having counterproductive effects in those who are not)<sup>(44)</sup>; and that food labels are primarily used to guide purchases by people who already have healthier diets<sup>(45)</sup>. As such, policies bringing about structural change, that do not require volitional engagement, may be necessary for population level changes in behaviour among people who are not already motivated to change. This is not to say that we should not also seek to promote autonomous motivation by different means, but suggests that we should have realistic expectations of what a policy can achieve relative to the effort it would require people to put in to benefit.

In the obesity context, it would also be worthwhile exploring whether a shift in social norms regarding behaviours that support a healthy weight could be influenced by public policies, and particularly through making the effects of these policies on the social environment more visible. Studies on tobacco control have demonstrated that advertising tobacco products and the display of tobacco in shops normalizes tobacco products in the eyes of the public<sup>(46, 47)</sup>; practices which are now illegal. This evidence is consistent with findings from the present study, as smokers and ex-smokers listed these steps among those that had re-shaped the environment to be more supportive for people not to smoke. The introduction or extension of similar policies to reduce advertising and point-of-sale promotion of unhealthy choices may assist those trying to manage their weight in a similar fashion<sup>(48,49)</sup>. The equivalent in the obesity domain would require reducing our exposure to seeing the consumption of unhealthy food, by for example placing restrictions on where people can eat (e.g. ban eating on public transport in cities), reducing opportunities to purchase unhealthy food (e.g. by limiting the number of

fast food outlets and vending machines), and extending bans on junk-food advertising. While such steps may appear relatively extreme, the experience of smokers and ex-smokers suggests that even relatively restrictive policies can be accepted if the rationale for them aligns with people's values.

### **Strengths and limitations**

A strength and novelty of this study was the direct comparison of two health domains which reflect different stages of policy development and implementation; one (tobacco control) in which great success has been achieved, with another in which little impact has been made on health behaviours at a population level. Through analysing interviews in parallel we were able to explore the nuances of the differences between the social environments surrounding each, and provide some insight into what specific 'process' outcomes policy intervention may be usefully directed towards. Nonetheless, there were also limitations to the study; it was an exploratory study and included a self-selected sample from a small geographical location and therefore the results cannot be generalised to the wider population.

While coding and formation of themes was discussed between the authors (including joint consideration of a sample of individual coded transcripts), transcripts were not double coded. The smokers and ex-smokers who took part in the current study were all White British and were recruited from one area, which is one of the least deprived authorities in the UK<sup>(50)</sup>; while we achieved our aim of recruiting an equal number of current and ex-smokers, this resulted in relatively few (four and five respectively) of each being interviewed. However, the socioeconomic status of the individuals recruited was not measured, therefore it may have varied from the local average. Smokers and ex-smokers recruited from the smokers' panel might have had stronger or more defined views on tobacco control compared with participants who were not panellists.

Participants in the obesity interest group were also homogenous in being aware of their weight status and having actively tried to control their weight. The findings are therefore not generalizable to people who are not aware of their weight status or not concerned about the negative health effects that excess weight poses. Data were collected in 2006-2007, so may not reflect views on obesity prevention policies introduced since then (though examples of what could be introduced, such as the recent sugar sweetened beverages levy, were presented). A final limitation may be the inclusion of a discussion group prior to interviews; although we aimed to present this material in a neutral manner, we necessarily

presented participants with a complex picture regarding causes and possible solutions to obesity which may have influenced their subsequent interview responses. This was purposefully included to allow participants time to reflect on what was meant by an 'obesity policy', and to notice while going about their daily lives how such policies may emerge in their own environment and shape their behaviour before the interviews.

## **CONCLUSION**

This study emphasises the importance of social and physical environments in influencing health behaviours and attempts to change them. Challenges posed to our ability to translate some of the success of tobacco control policy to the obesity domain have largely focused on the differences between the target health behaviours (i.e., discontinuing the discrete behaviour of smoking vs adopting life-long adaptations to activity and food intake), but this study suggests the contexts in which people are attempting to enact change may also be a significant factor. Neither tobacco control measures nor obesity policies appeared to promote participants' motivation to initiate effortful changes to their behaviours, but they were largely considered to be supportive and were not perceived to curtail personal freedoms. Our findings suggest a future direction for obesity policy to contribute towards normalising healthy eating and regular activity, while reducing visibility and acceptance for unhealthy environments, to provide a more supportive context as a basis for further policy action.

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