



Exploring the Acceptability of a Tax on Sugar-Sweetened Beverages

Insight Work

Summary of Findings

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1. Introduction

Rising trends in obesity among children and adults in the UK and other high-income countries have been accompanied by lifestyle changes such as increased sedentary and unhealthy eating behaviours (often based on high-density processed food and drink) which has contributed to high rates of obesity among young people and adults (Butland et al., 2007; Al-Nakeeb et al., 2012). These patterns of increasing overweight and obesity in the general population are documented among many different populations of developed countries, leading many to hypothesize that the environment, rather than individual-level factors, may be driving the obesity epidemic (Giskes, van Lenthe, Avendano-Pabon & Brug, 2010). A notable global dietary trend has been the rise in consumption of sugar sweetened beverages (SSBs) (Bleich, Wang, Wang & Gortmaker, 2009; Ng, Mhurchu, Jebb & Popkin 2011).

Market research data illustrate a steady upward trend in global consumption of SSBs from 2005 to 2011 (Zenith International, 2013). Consumption of SSBs in the UK reached 14,685 million litres in 2011 (Sustain, 2013). SSBs are beverages that contain added caloric sweeteners (such as sucrose, high-fructose corn syrup or fruit juice concentrates) that include the full spectrum of soft drinks (such as carbonated soft drinks, fruit drinks, sports drinks, energy and vitamin water drinks, sweetened iced tea, cordial, squashes, and lemonade) (Malik, Popkin, Bray, Desperes & Hu, 2010). A review of the evidence (Lavin & Timpson, 2013) found that, within the UK, the highest consumers of SSBs appear to be adolescents and children, followed by young adults (Gibson, 2010; Ng et al., 2011; Popkin, 2012), with consumption of sugar being substantially higher than recommended (Rugg-Gunn, Fletcher, Matthews, et al., 2007).

High consumption of SSBs can have detrimental effects to health, and the evidence review (Lavin & Timpson, 2013) found that there is strong evidence for the association between high SSB intake and weight gain (Welsh et al., 2005; Malik, Schulze & Hu, 2006; Gibson, 2008; Woodward-Lopez, Koa & Ritchie, 2010; Monasta et al., 2010; de Ruyter, Olthof, Seidell & Katan, 2012; Morenga, Mallard & Mann, 2013). A decrease in the consumption of SSBs has the potential to reduce detrimental health effects and reduce the prevalence of overweight and obesity. As there are many factors that drive SSB consumption, modifying the consumer environment through taxation could produce a more lasting effect on behavioural change and levels of obesity (Osei-Assibey et al., 2012), as food prices have been found to be the key determinants of consumption (Epstein et al., 2006; Epstein et al., 2007; Khan et al., 2012). In order to understand how and why a taxation of SSBs could influence intake, insight work has been undertaken with a representative sample of children and adults across the North West of England. This work will be followed by economic modelling, which will be undertaken in 2013, to measure population level impact of obesity policy scenarios upon health outcomes and costs.

2. Methodology

Prior to the development and delivery of this insight work, an evidence review was undertaken to understand SSB consumption, and to inform the methodology. A qualitative approach was used to gather insight into the factors which influence behaviour and behaviour change. Qualitative methods were also deemed the most appropriate method for enabling thorough interrogation of issues regarding consumption, understandings of health implications, and opinions and perceptions of how a tax may influence behaviour change. Further, a key focus of this research was on children and young people as they are shown to be the highest consumers of SSBs, for whom surveys and other quantitative techniques would have not been appropriate.

A range of one-to-one semi-structured interviews and focus groups were undertaken to gather in-depth insight. As there is a lack of evidence on this topic, a Grounded Theory approach was used for the qualitative analysis, to allow the development of theory, based on the views and experiences of participants. The qualitative data were supplemented by surveys, which were entered into the statistical software package SPSS, and analysed descriptively and statistically, to explore associations between consumption, perceptions, age and gender.

2.1 Sampling

In order to fully explore the experiences, perceptions and behaviours of people who may be most affected by a tax on SSBs, insight was gathered from people who were more likely to consume these beverages. A review of the evidence showed that the biggest consumers of SSBs in the UK are young people aged between ten and nineteen years old (largest consumers in the UK), young children between four and nine years old, and young adults aged nineteen and over (Rugg-Gunn, et al., 2007; Gibson, 2008; Gibson, 2010; Ng, et al., 2011; Gibson & Shirreffs, 2013). Other relevant characteristics were also used to inform the sampling; it was important to include females in the sample, as evidence demonstrated that the effects of SSB intake appears stronger in women (Vartanian, Schwartz & Brownwell, 2007), and there are currently also slightly higher rates of obesity in UK women compared to UK men (26% of UK women, 24% of UK men) (Eastwood, 2013). It was also important to include participants from deprived areas, as these areas demonstrate higher rates of obesity and purchase more SSBs than higher income households (Deshmukh-Taskar, Nicklas, Yang & Berenson, 2007; Sustain, 2013).

2.2 Participants

Participants were based around the five counties across the North West of England. Specific areas for inclusion were selected on the basis of obesity and deprivation, two of the key determinants of SSB intake. Two of the areas, Cumbria and Lancashire, had requested additional insight be undertaken; three areas within these counties were initially selected for sampling purposes. Table 1 outlines the areas selected for the insight work, and the relevant obesity and deprivation for each¹.

Table 1 Area selection: insight sampling (using Health Profile 2012 data)

County	Area	Deprivation ^a	Obese adults ^b	Obese children ^c
Cheshire	Halton	48.2	25.9	23.8
Cumbria	Barrow-in-Furness	38.2	26.1	20.3
	Carlisle and/or	17.5	24.3	20.3
	Copeland	20.4	25.7	23.9
Lancashire	Blackpool	48.5	25.8	19.8
	Burnley and/or	48.4	24.6	18.7
	Blackburn-w-Darwen	51.5	24.5	20.3
Greater Manchester	Manchester	64.8	21.1	23.7
Merseyside	Knowsley	58.7	25.5	24.3

^a % people in this area living in 20% most deprived areas in England, 2010

^b % adults, modelled estimate using Health Survey for England 2006-2008 ^c

% school children in Year 6 (age 10-11), 2010/11

It was originally planned to undertake a minimum of one data collection activity (interview/focus group/survey) with each key group, in each of the five selected geographical

¹ Two of the counties, Cumbria and Lancashire, requested additional insight be undertaken, therefore insight was undertaken in either two or three areas of each county (depending on feasibility), rather than one.

areas (Table 2). This level of research would ensure an adequate amount of insight was gathered to enable a representative reflection of views across the North West, whilst enabling the data to be collected within the required timescale. In addition to this, the same data collection methods were replicated within the additional insight areas in Cumbria and Lancashire (not shown on the table).

Table 2 Proposed methods, sampling and recruitment

Key group	Rationale	Method	Sampling ^b	Total N	Potential location for recruitment	Recruitment method
Young families	To elicit views regarding family behaviours	Family interviews	1 x each area	5	Children's Centres	Gatekeeper support plus advertisement in and around Children's Centres
Parents	To elicit understanding of parental behaviours regarding SSBs and if/how they feel this impacts on the behaviours of their children (also to explore whether families use SSBs as rewards and awareness of health consequences)	1-1 or paired interviews ^a	1 x each area	5	Children's Centres	Gatekeeper support plus advertisement in and around Children's Centres
Children 4-12yrs	To elicit knowledge, attitudes and behaviours regarding intake of SSBs	Focus groups	1 x male (Halton) 1 x male (Barrow-i') 1 x mixed (Blackp'l) 1 x female (Manc'r) 1 x female (Knowsl'y)	5	Schools Children's Centres	Gatekeeper to pre-select children known to consume SSBs
Adolescents 12-19yrs	To elicit knowledge, attitudes and behaviours regarding intake of SSBs	Focus groups	1 x female (Halton) 1 x female (Barrow-i') 1 x male (Blackp'l) 1 x mixed (Manc'r) 1 x male (Knowsl'y)	5	Schools Colleges Children's Centres	Gatekeeper to pre-select adolescents known to consume SSBs Plus local advertisement
Adults 19-30yrs	To elicit knowledge, attitudes and behaviours regarding intake of SSBs	On-street surveys	10 x male, 10 x female in each area	100	On-street	Random selection of people consuming sugary beverages in town centres ^c
Obese adults and children	To explore intake of SSBs and whether how/if these behaviours have changed since being involved in a Lifestyle and Weight Management Service	Focus groups/1-1 or paired interviews ^a	1 x male (Halton) 1 x mixed (Barrow-i') 1 x female (Blackp'l) 1 x male (Manc'r) 1 x female (Knowsl'y)	5	Local Lifestyle and Weight Management Services	Gatekeeper support plus advertisement in and around local LWMS

^a Depending on participant preference

^b Gender groups selected at random across the five areas

^c A method of purposive sampling frequently used in health research (e.g. amongst smokers)

Healthy Weight Leads from each of the five areas were contacted and invited to support the research. In the majority of areas, the Healthy Weight Lead was contacted, who then identified a number of gatekeepers to further support recruitment. These gatekeepers included Children’s Centre managers and staff, Youth Workers, Children’s Care Homes, Primary Schools and Lifestyle and Weight Management Services.

All participants provided consent to participate and permission for the interviews and focus groups to be audio recorded. Ethical approval was granted by the LJMU ethics committee (reference 13/HEA/067). Data collection took place between May and August 2013.

2.3 Materials

The specific topics for exploration in the interviews and surveys were determined by a review of the literature, and interrogated attitudes, norms, perceptions, intentions and behaviours. Questions included: average amount of sugary drinks consumed per week and per day and participant’s thoughts on this, factors that influenced current consumption (such as enjoyment, habit, social influence, family influence, environmental influence, economic influence), and general thoughts regarding tax on sugary drinks, exploring understandings of purpose and health-related benefits, exploring how and why this may change behaviour, and whether people felt this was acceptable.

The first interview question asked participants about their understandings of the term SSBs, and provided opportunity for researchers to give examples of other SSBs that had not been mentioned, and clarify any misunderstandings. For the surveys, a description of SSBs was provided at the start, to ensure that all respondents understood the context of the questions. To ensure that children and young people were aware of what was meant by the term SSBs, a game was devised that was undertaken at the start of the interviews where participants were shown pictures of different types of drinks, and asked to put them into piles of SSBs and non-SSBs. These pictures were then used as prompts for the question which asked participants about the type of SSBs they consumed, as appropriate.

3. Findings

3.1 Sample characteristics

In total, data were gathered from 293 people from across the North West of England, with the largest amount of data collected in Lancashire (n = 106) and Cumbria (n = 69); (Cheshire n = 48; Liverpool n = 41; Greater Manchester n = 29).

In-depth interviews were conducted with 125 people from across the North West of England. Due to the addition of the booster samples in Cumbria and Lancashire, the highest number of in-depth interviews was undertaken in these areas; in Cumbria data were gathered from Copeland and Barrow-in-Furness, and in Lancashire data were gathered from Blackpool, Burnley and Blackburn (Table 3).

Table 3 In-depth interview participant numbers, by area

Cheshire	Lancashire	Liverpool	Greater Manchester	Cumbria
n = 24	n = 49	n = 18	n = 8	n = 26

Data were predominantly collected in Children’s Centres, Primary Schools and Youth Centres. Where face-to-face interviews were not convenient for participants, telephone interviews were undertaken. Table 4 provides an overview of the in-depth data sample characteristics.

Table 4 In-depth data sample characteristics, by area

	Parent interviews	Family interviews	Children's focus groups	Adolescent's focus groups	Lifestyle & Weight Manage't Services	Health and Social Workers
n	32	31	20	34	1	7
Areas data gathered from	Cheshire, Greater Manchester, Cumbria, Lancashire	Cheshire, Greater Manchester, Cumbria, Lancashire	Lancashire, Cheshire, Cumbria	Merseyside, Lancashire	Lancashire	Lancashire, Cheshire
Sample characteristics	- 3 x parent interviews - 1 x focus group with parents and carers from engagement group - 1 x parent focus group	- 1 x family interview Interview - 4 x young family focus groups	- 3 x primary school focus groups (children aged between 7 – 12)	- 3 x adolescent focus groups (adolescents aged 16+in youth clubs)		- 1 x interview with care home manager - 1 x interview with health improvement officer - 1 x focus group with family social workers

In terms of the surveys, data were collected from 168 participants, who were aged 16 years and upwards. More females (67.3%) than males (32.7%) took part in the survey, which was largely determined by the sampling and recruitment selection; mothers were more likely than fathers to be attending the Children's Centres during the day, when the surveys took place. In order to ensure that some older males were represented in the survey, the research team attended sessions such as 'Lads and Dads' groups on a Saturday morning. The majority of survey participants were White British (144/167, 86.2%), followed by Asian/Asian British (12/167, 7.2%) and 'Other' (5/167, 3%).

3.2 Overview of key themes

Key themes that emerged from the data related to consumption, health implications, behaviour change, acceptability, and education and awareness. The findings from the insight work were integrated into an explanatory model to understand the key factors associated with SSB consumption, and the issues related to how and why a tax may impact on behaviour change (figure 1).

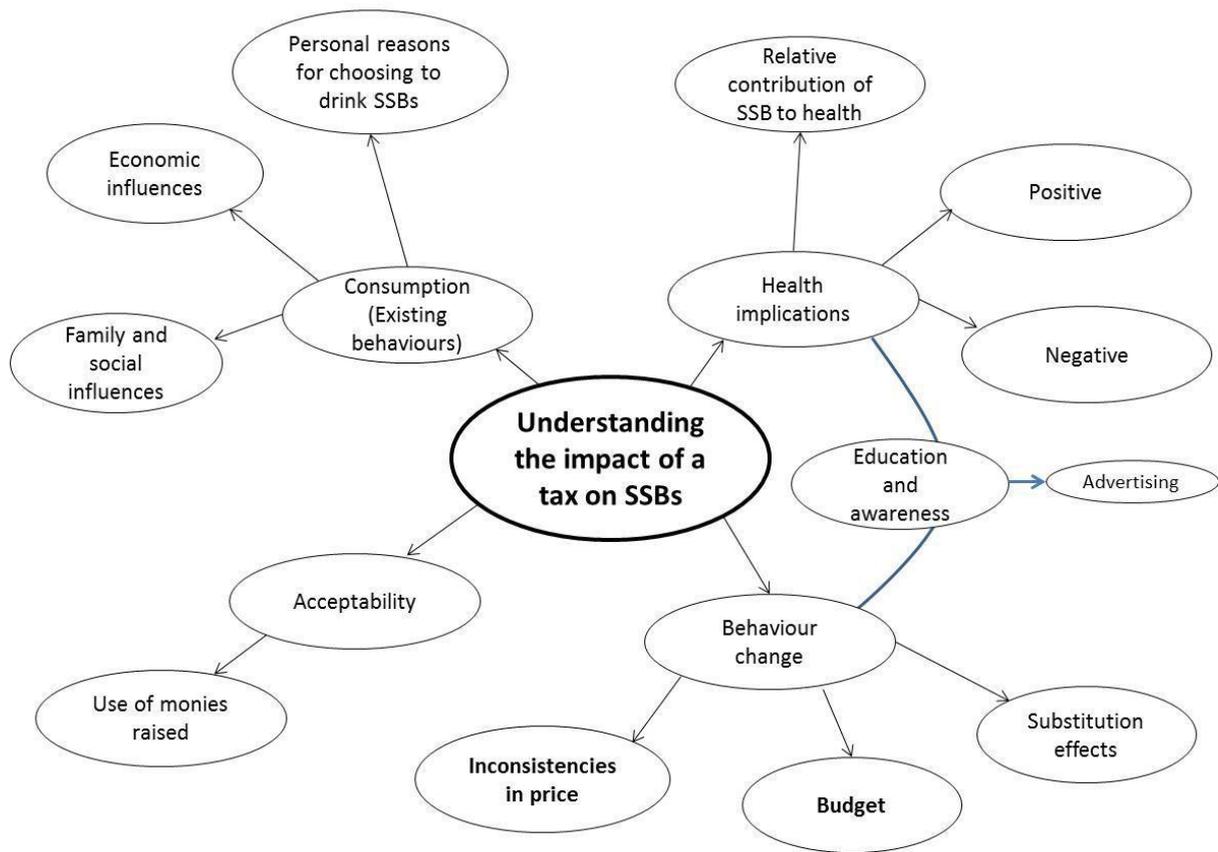


Figure 1 A conceptual model of key factors associated with SSB consumption

Consumption

The majority of participants all reported drinking SSBs. Existing consumption was influenced by age, family and social reasons. Young people consumed SSBs because they enjoyed the taste, felt that they were refreshing or that it gave them energy for studying or sports.

I: Why do you drink it? Is there any particular reason?

B1: Because it tastes nice [others nodding]

G2: Tastes nice

(Mixed focus group, aged 6-10 B).

B5: It's to give me that push in the day, if I feel like I need some energy then I'll have one

B1: I just drink energy drinks because I like the taste of 'em

G1: I sometimes buy a can of coke if I'm hungry, or if I'm busy during the day and I don't have time to eat...I'll get an energy drink to give me a boost

(Mixed adolescent/young person's focus group, aged 17-23, B).

Young people described the frequency of their consumption, with some describing that they drank them every day, with one reporting to consume them once an hour. Young people explained how they would drink SSBs in a number of different situations, with some often describing how they would go into the local shop to buy an SSB and then consume this when out with friends, or when walking home from school. Some would have them at lunch time, or at home.

B2: Every time I go the shop
G2: Just buy a drink
B2: Every time I'm thirsty.
(Mixed focus group, aged 16-17 Kb).

B1: I drink about four or five energy cans a day
G1: I'll buy bottle of coke and that during the day...
(Mixed adolescent/young person's focus group, B).

I: How often do you drink them?
B4: Once an hour
(Mixed focus group, aged 16-17 Kb).

I: How often?
1: Everyday
2: All the time
3: Regularly.
(Mixed focus group, aged 6-11, B).

B1: Sometimes I have it for dinner. (Male, aged 7, B)

Conversely, adults explained that they would have SSBs when they were out, such as in the pub for example, or when another family member bought it.

I will say if I am out socialising with friend I will drink it as a mixer in an alcoholic drink.
(Female, care home manager for Looked After Children, B).

The consumption patterns elicited through the qualitative interviews were largely supported by the survey data (n=168), with people aged 16-19 reporting a higher frequency of consumption than other ages. Respondents aged between 50 and 59 years did not report drinking SSBs daily, only weekly or monthly. The correlation between age and reported consumption was significant ($r(166) = .176, p = .047$).

Older participants explained how their upbringing had influenced their current attitudes and behaviours towards SSBs, with many describing how it was either something that was never allowed or was only allowed as a treat, or something that was regularly in the house and so consumed on a regular basis. Parents viewed SSBs as something that should be given as a treat.

For me, I always had a fizzy drink as a treat when I was younger, after we'd been swimming. (Young mother, M1).

I would never have a bottle of pop in the fridge, just to have during the day...my mum's the same, she never has pop. Pop to me when I was growing up was a treat, and that's what I see it as for the girls. If we're going out to a restaurant or anything we let them have a drink with bubbles then. (Mother of 2 young girls aged 8&4 years, H).

A number of participants of all ages mentioned that they would buy SSBs because they are low in price.

G3: Trying to think about the cost of it though, its cos they're cheap
B2: Well whoa 59p for that [points to an own brand bottle of energy drink]
G3: Yeah you can like a full pack can't ya...

(Mixed focus group, aged 16-17 Ka).

G8: Yeah I get Coke if it's on offer; like a pack of six for £1.99

G1: I'll get the unlimited Pepsi deals at pubs, if I don't want to drink...so I'll drink as many as I can.

(Mixed adolescent/young adult focus group, B).

These findings regarding consumer behaviours were again largely supported by the survey data (n=69), with the majority of respondents reporting that they consumed SSBs because they liked the taste (58.4%, 69/118). Older respondents were more likely to describe that they consumed SSBs as a treat or for energy.

Health implications

All of the participants reported that SSBs had a negative impact on health, with the majority describing the impact on dental health. All adults mentioned dental health, and the majority of young people acknowledged this also. Many parents described the negative impact on dental health as the reason they did not allow their children to regularly consume SSBs.

P: Yeah, it affects your teeth, it's not good for your teeth

(Mother of 2 young girls aged 8&4 years, H).

She's just getting her teeth; let's not rot them before they come through.

(Non-SSB drinker, parent of a 9 mth old, H).

B2: Teeth! Bad for them.

B3: It's like acid so it burns things

(Mixed focus group, aged 7-10, H).

Children, young people and adults described how SSBs could make sugar levels go up and down, and recognised that this could leave them feeling tired or ill. Some children and young people described how SSBs could be bad for organs and the heart, but were not able to elaborate on why this was. A number of adults described the negative impact that caffeine could have on the body, and stated that this was one of the main reasons that they did not drink SSBs, or allow their children to drink them on a regular basis.

G9: I think sometimes you have a sugar crash...like a slump

G1: It can give you headaches as well; too much sugar.

(Mixed adolescent/young adult focus group, B).

G2: Give you highs and lows

G3: Diabetes with all the sugar

G2: Gives you loads of energy and then you feel tired so then you need another peak

(Mixed focus group, aged 16-17 Kb).

B1: Bad, sometimes it can make you feel ill

I: Can it.. why can it make you feel ill?

B1: Cos of the too much sugar.

(Mixed focus group, aged 6-10, B).

The energy drinks with the caffeine; they make your siblings hyper!

(Female, girl's focus group, aged 7 – 11, C).

Very few participants described the impact of SSBs on obesity. Despite recognising the negative impacts of SSBs on health, some participants did not feel that this would stop or reduce the consumption, or them or their family members.

M1: For me it's the weight gain, why I drink the diet ones instead

M2: Yeah the calories.

(Young mums focus group, M).

Participants also described a number of health impacts that they felt were positive. These mainly related to their perceptions of SSBs providing them with energy when they needed it, and one young mother described how they drank SSBs during their pregnancy, to help to regulate their blood sugar.

P: Yeah well when I was pregnant I was diagnosed with diabetes, so I used to get really low blood sugar, so I'd drink a sugary drink and it would regulate my blood sugar, so yeah I suppose there are good things about it.

(Non-SSB drinker, parent of a 9 mth old, H).

B1: If you've got your tests and you're really tired you can drink it and it'll make you feel like, all open, more awake.

(Male, aged 7, B).

Interestingly, a large number of participants, including adults, adolescents, and young children described how the negative impact of SSBs on health was relative. Some described how they felt that alternatives to SSBs, such as diet drinks, may also have a negative impact on health. A number of male and female adolescents felt that aspartame may have negative health impacts, or that cheaper brands may contain more sugar. Some adolescents also described how regular teeth brushing and exercise could counteract the negative effect of SSBs.

G1: ...sometimes drinks that are bad can be sugar free

(Girl, aged 9, B).

B3: You've gotta think though with the fizzy drinks like that there's always bad effects but they can be counteracted by other things you do in daily life like sure it can damage your teeth but you can brush your teeth, and they've got sugar in them, but if you do enough exercise it burns it off anyway.

(Mixed focus group, aged 16-17 Kb).

Behaviour change

Findings from the survey revealed that a significantly higher number of participants 55.8% (92/165) felt that a price increase would not change levels of consumption ($t(164) = 40.161$, $p < .000$). This was significantly correlated with age, with younger participants reporting that it would change consumption, and older participants reporting that it would not ($r(166) = .167$, $p = .032$). Out of the respondents who felt a price increase would change consumption, 18.5% (31/67) felt that people would drink less; 10.7% (18/67) felt that people would buy something else, and 10.1% (17/67) thought that people would buy them elsewhere. Many interview participants, of all ages, described how a twenty per cent increase was too small, and would not be enough to make a difference.

P: No, not at all. It's such a small increase in price, what difference would 20p, what 23p make? None, if people want to buy it then they still will do.

(Mother of 2 young girls aged 8&4 years, H).

Not at all, not at all [it won't make a difference] because what they'll do, you've got the likes of McDonalds, Burger King, KFC, they'll put a couple of pence on their burger and keep the price of the Coca-Cola the same, you've also got your value drinks of Coke which won't make a hint of a difference because it's cheap pop.
(Adult male, LWMS attendee, BI).

B5: I don't think such a small increase would affect it...

G3: I think if it was a large increase it would.

G4: Yeah unless it went up from a pound to two pound

B3: Yeah you wouldn't bother then.

(Mixed adolescent/young person's focus group, B).

Some participants described how they felt that the people who this tax would be targeted at would not be motivated to change their behaviour, that they would continue to want to eat and drink the same types of foods, but that they would now have to pay more to do so.

I just think that if it's a habit, if people want the drink, they wouldn't be bothered by this.

(Mother of 2 young girls aged 8&4 years, H).

I don't know if it would affect people, it's changing people's habits isn't it, its if it's what you're used to, if it is what you're used to drinking and that's what you do, you do.

(Adult female, BI).

B1: Nope

B3: If people want it they'll drink it anyway

B2: That wouldn't make like a huge difference

(Mixed focus group, aged 16-17 Kb).

Some participants described that some people who had a lower income, and had a strict budget, may be forced to buy alternative choices.

I mean, maybe families on a budget might re-think, so like if they have a set amount each week for their weekly shopping then maybe, but probably not. (Mother of 2 young girls aged 8&4 years, H).

The people that are really really watching the pennies...then it may make them think twice

(Community Health Improvement Worker).

A number of participants described the current inconsistencies in pricing, which was a key theme throughout the data. Participants described how they felt that the same brand and size of SSBs could be purchased for varying prices, depending on location. Some participants explained how they were used to prices fluctuating, and that people would go along and pay the price with a small increase, without necessarily noticing. It was felt that a large increase would have a difference, and that people would find this unacceptable.

P2: I don't think people would notice [if a tax was introduced] because the prices vary from shop to shop anyway

P5: Well you can go to the bottom shop and get two bottles for a pound, and another shop it's £1.80 for one.

(Parent focus group, C).

You've also your Pound Shops and your Pound Land where everything's cheaper, if you go in Pound Land now, or B&Ms, or Home Bargains, and you can buy 8 bottles of small Pepsi for £1 so they're still gonna stock it, putting a tax on it is only gonna send them somewhere else. (Adult male, LWMS attendee, BI).

G1: I think you find from place to place where you go, they vary in price anyway, in one place you go and it could be £1.50, another place you go and it could be 80p

*G4: Or you go to London and they're about £10.
(Mixed focus group, aged 16-17 Kb).*

Many of the younger participants explained that they would spend whatever money they had, if they wanted an SSB. One group of young girls described that they would spend more money on an SSB, but only if it meant that they also had enough money for their lunch.

I: If the price went up by 20p, would you still buy them?

*G2: Depends on how much pocket money you get.
(Girl, girls' focus group, aged 7 – 11, C).*

I: What's the most you would pay for, like a bottle of Coke?

G1: £2.70 I've paid for a bottle of Coke

I: You paid £2.70 for a bottle of Coke?

G2: A little one?

G3: Like a 500ml bottle?

B1: I've paid four quid, in London.

(Mixed focus group, aged 16-17 Ka)

Many of the participants described how they felt that people would go out and bulk buy SSBs, if it meant that they were cheaper. However, there was an age-related influence here, with older people feeling that this was something that they would do, and younger people agreeing that this may be something that their parents would do. However, it was felt that younger people themselves would not bulk buy, as they tended to buy just one from the local shop, that they would then drink with friends, at lunch-time, or when walking home from school. Indeed, one child, aged seven, said that they would not bulk buy because "it'd be much harder to carry".

P: I think they are going to go and buy in bulk, and go to more places like Costco. They're going to be like 'oh such and such' has got an offer on Coke, and they will go to Morrison's or Tesco's, where they wouldn't normally go, to get what is on offer. Because there is always those supermarket offers.

I: So do you think people would target those bulk deals?

P: Yeah I do. I think they would actively hunt them out.

(Non-SSB drinker, parent of a 9 mth old, H)

G4: It depends on age though, cos we're not gonna spend £2 on 3litres to walk around the streets and drink, we just want a can of coke, so for this age group I don't think we'd consider just, would ya?

B2: No...

G3: ...If there's a special on in Morrison's I think Dad'd nip down but I don't think we would, I'd go the shop and just buy a £1.20 bottle!

(Mixed focus group, aged 16-17 Kb).

Participants generally felt that if they could buy the SSB at a cheaper price from an alternative shop then they would do this. A small number of participants thought that people

would just switch to a cheaper alternative, with a number of adolescent males describing how they already drank own-brand energy drinks because they were cheaper.

*B3: Yeah, like I buy the fake Red Bull
G1: Yeah the stimulant drinks
B2: It's just all the same thing innit.
(Mixed focus group, 16-17 yrs, Kb).*

However, the majority felt that people would not switch to diet or own-brand SSBs because they would not like the taste. Although a group of adolescent males described how they would be happy to consume own-brand energy drinks, the insight suggested this may be influenced by gender. A group of adolescent girls, and a young mother, both described how they felt that people would not switch to an own-brand SSB because of image. It was felt that people would not want to be seen carrying an own-brand drink, and that people were too materialistic to worry about a small increase in price.

*I: Do you think people may switch to diet if these were cheaper?
P10: I won't drink diet, end of. I don't like the taste of it, and my kids wouldn't touch it...and we're not going to change that just because someone has put a price increase on it.
(Parent and carer focus group, H).*

*I: Would you switch to a cheaper brand?
P2: Myself, personally, I wouldn't
P3: Yeah they taste funny.
(Parent focus group, C).*

*I: Would they buy a cheaper alternative?
G3: No
B1: No
I: Why
G3: Cos they're too materialistic.
(Mixed focus group, aged 16-17 Ka).*

Acceptability

A total of 51.9% (84/162) of the survey participants felt that a 20% price increase would be acceptable, with 48.1% (78/162) stating that it was not (six respondents did not provide a response to this question). Of those who felt that it was not acceptable, ten people suggested that a lower increase would be more acceptable, with suggestions of five and ten per cent. Nine people stated that only a zero per cent increase would be acceptable. Five respondents described how they felt that better education and increased awareness should be done instead of a price increase; two people felt it would be another way for the government to raise money, and one person said that the industry should make more drinks with no added sugar.

A number of interview participants felt that it was acceptable to increase the price of SSBs by a small amount, such as twenty per cent. This was found to be true regardless of whether they regularly consumed SSBs or not. These participants described how the price of drinks was inconsistent anyway, and that they were sometimes used to paying more than the recommended retail price for a can or bottle of SSB.

*G1: I don't really have an opinion. I don't think we'd really notice, if it wasn't ridiculous like amounts of money
G2: There's different prices for it everywhere anyway
I: So you wouldn't be too bothered if the price went up?*

G1: As long as it wasn't too much.
(Mixed focus group, aged 16-17 Ka).

I think it [20%] is acceptable, but I am not sure what the impact would be.
(Care home manager Looked After Children, B).

These participants however did describe that a large increase in price would be unacceptable, with some adolescents explaining that they would not be prepared to pay more than £2 for a can or bottle of SSB. A number of participants felt that it was unacceptable to increase the price of SSBs at all, and that it should be about consumer choice.

I think it's totally wrong, it's the wrong path to go, it's just an easy route out. Okay, everyone's consuming too much, the dental bills gone up, the obesity bills gone up, let's tackle it by putting a tax on Coke, let's not look at the real problem, let's not just go into the communities and ask the people
(Adult male, LWMS attendee, B).

P10: I don't think it's fair putting a tax on it, I think it's just another excuse to put a tax on something, and I don't think it's going to make any difference, and I think they know it's not going to make any difference, it's just going to be another tax stuck on our food and stuff just so they can make more money.
(Parent and carer focus group, H).

G3: It's not gonna make a difference, it's not gonna make as much of a difference as like putting £2 on top of it....it's quite a small increase.
(Mixed focus group, aged 16-17 Ka).

All participants agreed that they felt the monies raised through a tax on SSBs should be used for a health purpose. A small number of participants were concerned that this spend would not be transparent, and it would not be clear how much of the tax was being spent on a health purpose. Many participants described how they felt that a tax should be spent on better educating young people and families about how to eat a healthy and balanced diet.

P: Yeah the money should be spent on educating young people and poorer families about healthy eating. I think more should be done in schools about this, people need more education about shopping and cooking, how to do this healthily and if they're on a budget. So I think that's where the money should be spent.
(Mother of 2 young girls aged 8&4 years, H).

Education. I think you have got to start with the grassroots, you have got to start when people have babies, you've got to start in areas where you know a lot of people purchase these things. You've also got to improve legislation around the advertising in the supermarkets. And you've got to make sure that Tesco's Asda's don't have two for one offers and things like that.
(Non-SSB drinker, parent of a 9 mth old, H).

B3: I think they're doing it [considering a tax] because they are running low on money or something...
(Male, aged 8, mixed focus group H).

If the price of sugary drinks goes up then the price of health items should be made cheaper.
(Young mother, M1).

Education and awareness

Throughout the process of gathering insight, the theme of education and raising awareness of the contents and health effects of SSBs was reflected in the data. It was clear that these issues were viewed as having an impact on whether a change in behaviour could happen as a result of a tax on SSBs. Sometimes, when participants were asked whether there was anything else that they would like to add about SSBs, they would use this as an opportunity to ask questions about the types of SSBs that they should drink, or the amount of sugar that was actually in them. A number also asked about how the tax would work, questioning whether it would be a tax within all retailers, a tax on the size of the SSB, or the amount of sugar in them. Some participants felt that a tax on SSBs would have no impact, if it was not done in conjunction with any education and awareness raising about the health implications of such a tax.

You often find...that people with lower incomes...may not be as informed about health implications so they may be more inclined to buy SSBs...
(Home manager for Looked After Children, B).

People just don't know how many calories are in these drinks, they're in denial.
(Young mother, M2).

B2: It should be about giving people information in order to make an informed decision

G9: I think as well making it easier for people to make the healthier choice, because sometimes packaging can be misleading and you think you are making the healthier choice, but you are not.

(Mixed adolescent/young adult focus group, B).

Because you try and do your best as a parent, wherever you start out, and sometimes it's just through lack of education. And if somebody hasn't got the fact on it or doesn't think, like was brought up like I was in the 80's being shovelled full of sugary drinks. You know, it's hard for them to break those habits. Obesity is about education, it's not about making things unobtainable because that just makes people want them more.

(Non-SSB drinker, parent of a 9 mth old, H).

Parents often described the amount of advertising undertaken by SSBs companies, describing how drinks are often marketed directly at children, using packaging that is attractive, and advertising on children's television channels. Parents felt that this made it difficult when they are asked by their children if they can have SSBs, and felt that more should be done here to counteract this process.

You need to stop the soft drink companies advertising the way they do and stop making them so appealing, because you know, you can put the price on what you want, but because the advertising is so strong for soft drinks, and it is so in your face constantly. Coca-Cola you can't get away from, your Fanta's, your Oasis, your Fruit Shoots, you name it, you cannot get away from the advertising. Any kids channel has got it on. If you stick the price up, it just makes it more difficult for the parents to say no to their children; you need to stop making it so appealing. And if you ask my opinion you need to ban them from making them full stop. I'd ban it to be sold to anyone under eighteen personally. Coca-Cola say they don't advertise to under 7's but who is that Coca-Cola Santa advert aimed at? Every single kid under seven believes in Santa. And that's aimed specifically at children!

(Non-SSB drinker, parent of a 9 mth old, H).

I think advertising...the secondary school that I have been in is a sports college, so a lot of them are very sporty...and they actually believe, like the recent advert that it makes you run faster if you have Lucozade as opposed to water...it's false marketing...they are taken in [young people] I think by this false marketing. (Community Health improvement worker).

P9: I know Coca-Cola say they don't advertise to children; but why put a name on a bottle?

(Parent and carer focus group, H).

4. What this research adds to existing knowledge

Our research aimed to specifically explore attitudes, behaviours and perceptions of people who would mostly likely be affected by a tax on SSBs. The study design reflected the key determinants of SSB consumption, gathering insight in areas where SSB consumption was likely to be higher (areas with high deprivation and high levels of obesity) and from people who were most likely to consume and/or be affected by a tax (children, young people, young adults and families). The findings from our study reflect existing evidence regarding levels of consumption, with the majority of our participants reporting consuming SSBs. While evidence shows that children and young people are the biggest consumers of SSBs (Rugg-Gunn et al., 2007; Ng et al., 2011), our research adds to the existing knowledge regarding understandings of the drivers of consumption, providing additional evidence and context. This insight adds an important contribution to our understandings behind the driving forces of SSB consumption.

4.1 Drivers of SSB consumption

Our research found that children and young people reported drinking SSBs for the taste or for energy; energy drinks (such as Monster, Red Bull and Lucozade) were mentioned heavily by adolescents, particularly males. Most adults described how they drank SSBs out of habit and, although not explicitly mentioned, the behaviours that children and young people described, such as drinking SSBs 'once an hour', suggested that they also drank them out of habit. Evidence shows that it can be difficult to control and change habit behaviours once they are formed (Butland et al., 2007). Evidence has also warned of the need to ensure that children do not habitually drink SSBs, due to the fact that beverage preferences and consumption patterns develop in childhood and persist over time, and that it would be difficult to break this cycle. Our findings have demonstrated how this is also true of adults who described drinking SSBs as a treat, with many describing how this was linked to their attitudes and behaviours towards SSBs as a child; their adult behaviours were based upon their childhood experiences.

Our study found that SSB consumption was also related to health, with the majority of adults who did not drink SSBs reporting that this was due in part to health reasons. A large proportion of respondents acknowledged the negative effect of SSBs on dental health, regardless of age. Our research also found that a large number of participants did not understand the relationship between health and SSBs, beyond dental health. Many participants discussed sugar and the positive and negative effects of this on energy levels, with some adolescents and young adults discussing caffeine and a perceived need to drink SSBs for energy. Participants viewed SSBs as a source of energy; but did not equate this excess energy intake as leading to additional calories that could lead to weight gain. Very few mentioned obesity and calories; those who did were female adults. Despite these links between consumption and health, our research found evidence to support the notion of passive overconsumption; previous studies have suggested that levels of food literacy and health knowledge can impact on the consumption of unhealthy options (Kalavana et al.,

2010), and that an inability to recognise the energy density of food means that people do not compensate appropriately to maintain energy balance (Viskaal et al., 2009).

Furthermore, these findings may also be linked to control and perceived vulnerability to risk, whereby the act of being able to care for dental health (brushing teeth, visiting the dentist) may make it easier for people to believe that they are counter-balancing a negative behaviour with a positive one (Butland et al., 2007). This finding was echoed in the research as many participants, including adults and children, spoke of behaviours to counter-balance consuming SSBs, such as brushing their teeth after consuming SSBs, drinking SSBs through a straw, or reducing their consumption of SSBs due to dental problems.

Asking people to consider reasons for drinking SSBs was found to generate discussions about the relative contribution of SSBs to health. This was discussed particularly amongst adolescents and adults, who would often defend their behaviour choices by describing their perceptions about alternative options to SSBs. These participants often discussed SSBs in the context of 'being better than not drinking anything', or better than drinking diet options containing artificial sweeteners; although participants could not describe why they thought that artificial sweeteners were bad for health. This finding adds to existing knowledge regarding drivers of consumption, and suggests the need for more education around these issues if people are to be encouraged to switch from SSBs to an artificially sweetened option. Although previous research has explored the impact of artificial sweeteners on health, including diabetes (Koning, Malik, Rimm et al., 2011), body weight (Raben, Vasliaras, Moller & Astrup, 2002) and coronary heart disease (Fung, Mailk, Rexrode et al., 2009), there is still a lack of evidence surrounding any negative health consequences of artificial sweetener consumption over a lifetime (Mattes & Popkin, 2009).

The relationships between social and environmental determinants of health behaviours have been widely reported, with research recognising the important role of obesogenic environments in promoting high energy consumption and sedentary behaviours. The interactions between personal, social, political, economic and physical elements of the environment have all been identified as important influencers of health behaviour (Stokols, 1992, 1996, 2000), and need to be considered in any health promotion intervention. The findings of the present study support previous research findings which have highlighted the ease at which people can make unhealthy behaviour choices to consume SSBs, due to the heavy advertising and availability of unhealthy items in retail outlets (Burns & Inglis, 2007; Pearce et al., 2007).

Our research adds further understanding about the environments in which SSBs are consumed, and behaviours related to this. Previous research has found that the majority of SSB consumption occurs in the home environment, which is followed by food service establishments and schools (for children) (Wang, Bleich & Gortmaker, 2008; Ezendam, Evans, Stigler, Brug, & Oenema, 2010; Pomeranz, 2012; Gibson & Shirreffs, 2013). Our findings show that adults are more likely to bulk buy SSBs and have them in the home, where they and their children will consume them. Evidence has shown the strong impact of parental influence and knowledge on family behaviours, and the level of control that parents have over their children's diet (Butland et al., 2007). However, less is known about social influences on SSB consumption. Our research found that young people are more likely to buy one SSB to consume when they are out with friends, or walking home from school, and would be less likely to buy more than one. This has implications for a tax on SSBs, as it is unlikely that children and young people would bulk buy as a result of a price increase.

Evidence suggests that prices are key determinants of consumption (Epstein, et al., 2006; Epstein, et al., 2007) however our research suggests these influences are different depending on age. According to evidence, price frames the context in which consumer responses are made (Khan et al., 2012), and our research suggests this is true to an extent.

For adults, many described the influence of price as affecting decisions about SSB consumption, buying SSBs when there is a supermarket offer on, or when it is part of a meal deal. For children and young people, many described that they bought an SSB if they wanted one, and had the money to pay for it, regardless of price. Children and young people had less concept of budget and 'meal deals'. Many children and young people described being given money from their parents (either to buy something from the shop, or as dinner money) and using this to buy SSBs; some young people described how they were happy to pay relatively large sums (such as £4) to buy an SSB. This issue again links to the passive overconsumption associated with obesogenic environments, and that young people appear to drink SSBs for taste but also convenience and because they are available.

4.2 Could tax influence behaviour?

There is currently a lack of evidence regarding acceptable levels of taxation (Mytton et al., 2012). The present study found that people generally find the notion of a tax on SSBs acceptable, but felt that 20% would not be enough to impact on consumption. Many adults felt that it would be another way for the government to increase revenue and felt they could not be certain where the monies raised would be spent. Many participants of all ages felt that the money generated from an SSB tax should be spent on education and on reducing the price of healthier items, which supports the notion of a tax in unison with subsidies on healthier items (Mytton et al., 2012; Fletcher et al., 2013).

Many of the participants in the present study felt that a price increase of 20% would not make a difference to consumption, largely due to inconsistencies in current pricing. Many participants, regardless of age and gender, felt that people would not notice a 20% increase in price, describing how SSBs were available at discount shops at much lower prices than at supermarkets and other retail outlets. Some participants suggested that people may change their behaviour if they could not afford to buy SSBs, and that they would buy a cheaper alternative instead. However, very few people felt that a 20% increase was enough to make this happen.

Many adults described how they felt that SSB consumption was due to habit, and that people would generally not be motivated to reduce their SSB consumption by a 20% increase in price. Many participants, regardless of age, described that they felt people would not switch to a diet drink because they felt it would not necessarily be a healthier option.

Although evidence suggests that food prices are determinants of consumption, the mechanisms appear to work differently depending on age. Many adults suggested that if SSB prices were increased, they may switch to buying from a different location or bulk buying instead from discount stores. However, young people felt that they would not bulk buy as most often they only wanted to buy one SSB at a time, and it would not be practical or convenient for them to buy more than this.

Our findings suggest that lower income parents could be influenced to change consumption behaviour by SSB taxation. This would impact on the availability of SSBs to young people in the home, but would not impact on SSB consumption outside of the home, if a young person could afford it. This could be influenced by how much money a young person carries/is given by their parents, suggesting that those from lower income households who could have less personal spends may be more sensitive to a price increase (Smed, Jensen & Denver, 2007; Powell & Chriqui, 2011).

In terms of switching to a non-SSB, many participants felt that people would not buy a different brand or switch to a diet alternative because of taste. Image was also mentioned by some young people and some adults as reason why people may not switch a non-branded SSB.

Behavioural approaches to tackling obesity have had limited success because “people struggle against environments which increasingly promote a high energy intake and sedentary behaviours” (Swinburn, et al., 1999, p.563). Given the associations between the availability, convenience and advertising on SSB consumption, the impact of a tax would also be dependent on environmental factors. Behaviour change theories have been criticised for expecting the individual to motivate themselves to change their behaviour, without considering external economic and social processes. Evidence suggests that creating an environment which supports and facilitates behaviour at these levels creates a passive intervention which will be effective and sustainable in the longer-term (Stokols, 1996). Advertising and education would be important considerations, in terms of highlighting the health implications of SSBs, beyond dental health, and dispelling myths about the health implications of alternative options.

This insight work will be followed by the development of a simulation model, which will be undertaken in 2013, and will measure population level impact of obesity policy scenarios upon health outcomes and costs.

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