

Abstract

Background

Half of the UK population will get cancer during their lifetime, with the current survival rate at 50%. Behavioural factors such as obesity contribute to two-fifths of the UK's most common cancers. Food 'pricing' and 'place and promotion' policies aim to avert this risk by reducing the rate of obesity in the UK.

Methods

A cross-sectional survey collected data on the acceptance of obesity-related pricing and place and promotion policies from 3293 UK adults in 2016. Cross-tabulations and chi-squared tests were performed to investigate the support for these policies in the four UK countries and different socioeconomic groups.

Results

Only two-fifths of respondents supported all policies. Food place and promotion policies were better supported by the public than taxation, with over 70% support for the promotion of healthy foods as opposed to 40% support for 'fat tax'. The most deprived social groups were least supportive of all policies. There was not a noticeable difference in policy support between the four UK countries.

Conclusion

The support for obesity policies is low, most notably amongst lower socioeconomic groups and for policies involving a price increase, across the UK.

Policy summary

Obesity prevention policies could reduce the rate of related cancers, but their success requires public support and acceptance. Increasing tax on unhealthy foods is less well supported in the UK population than policies which affect the in-store placement and promotion of these products. Lower levels of support for all these policies among low-income groups, among whom obesity and cancer rates are highest, indicate a particular need for strategies to increase policy support in these groups.

Introduction

Cancer is a major cause of death in the UK [1]. According to current statistics from Cancer Research UK (CRUK), one in two people in the UK will be diagnosed with cancer during their lifetime, and only half will survive [2]. Nearly 40% of the UK cancer cases are associated with lifestyle behaviours— such as obesity, smoking, alcohol consumption, low fibre consumption and physical inactivity [2].

After smoking, obesity is the major cause of cancer and responsible for over 6% of cancer cases in the UK [2, 3]. Given the rising prevalence of obesity in the UK, the number of such cancer cases is expected to increase [4, 5]. According to the Health Survey for England (HSE), over 60% of adults in the UK were overweight or obese in 2017 [6], with a 14 percentage points increase in obesity prevalence between 1993

and 2019 [7].

Some of the policies and campaigns to prevent obesity in the UK have been found to be controversial; for example, the most recent CRUK obesity campaigns were heavily criticised by the public as being 'harmful and misleading' and associated with stigmatisation and 'fat-shaming' [8]. Given the importance and sensitivity of this public health concern, research concerning the public's attitude towards obesity policies is needed to help policymakers develop effective and acceptable interventions.

This study assesses public attitudes towards obesity-related pricing and place and promotion policies, which are health interventions recommended by the WHO [9]. National statistics indicate higher obesity and cancer rates in poorer households [2, 10]. To investigate whether income influences policy acceptance, a comparison of obesity policy acceptance amongst different socioeconomic groups was also performed.

Methods

Study design

Secondary analysis of a cross-sectional survey of 3293 UK adults with a focus on obesity designed by CRUK and the University of Sheffield was performed.

Data collection

A market research company (YouGov) conducted the survey in February-March 2016. The survey collected data on obesity awareness, support for obesity policies and sociodemographic characteristics. The survey tools were derived from the Australian National Drug Strategy Household survey and a 2015 UK study on alcohol

awareness by Buykx et al. [11, 12].

Quota sampling by age, gender and region was used to ensure the representativeness of the sample [11]. YouGov's ethical guidelines were followed throughout the data collection process [11]. Ethical approval for conducting secondary data analysis was granted by the University of Nottingham Division of Epidemiology and Public Health Ethics Committee.

Measures and statistical analysis

As part of a wider survey, participants were presented with five food pricing and place and promotion policies and were asked if they strongly opposed, opposed, neither opposed nor supported, supported, strongly supported the policy, or did not know.

The policy acceptance variables were dichotomised for analysis. Answers stating 'support' or 'strongly support' were grouped together as 'supporting' the policy. Answers stating 'strongly oppose', 'oppose', 'neither oppose nor support' and 'don't know' were grouped together as 'not supporting' the policy. Cross-tabulations and chi-squared tests were undertaken in STATA 15.0 to describe policy acceptance in the four UK countries. Findings were presented for the overall sample and by socioeconomic groups. Using the National Readership Survey system, socioeconomic status (SES) was grouped into four categories: AB (higher and intermediate managerial, administrative, professional occupations), C1 (supervisory, clerical and junior managerial, administrative, professional occupations), C2 (skilled manual occupations), DE (semi-skilled and unskilled manual occupations, unemployed and lowest grade occupations). A p-value < 0.05 indicated statistical significance.

Results

Data were collected from 3293 UK adults (94% response rate). 52% of the study population were women (Table 1). About 60% of the participants were from higher socioeconomic groups (AB and C1). Half of the participants were overweight or obese (52%). 7.8% of respondents did not provide information on their weight.

Table 1- Study population characteristics

Study population characteristics		Frequency n (%)
Overall		3,293 (100)
Gender	Male	1580 (47.98)
	Female	1713 (52.02)
Age	18-39	1006 (30.55)
	40-59	1274 (38.69)
	60 and over	1013 (30.76)
Region	North East	89 (5.02)
	North West	234 (13.20)
	Yorkshire and The Humber	173 (9.76)
	East Midlands	145 (8.18)
	West Midlands	179 (10.10)
	East of England	206 (11.62)
	London	272 (15.34)
	South East	294 (16.58)
	South West	181 (10.21)
	England total	1773 (53.85)
	Wales	503 (15.27)
	Scotland	513 (15.58)
	Northern Ireland	304 (15.31)
Socioeconomics	AB	913 (27.73)
	C1	1,037 (31.49)
	C2	538 (16.34)
	DE	805 (24.45)
BMI (Body Mass Index)	Underweight	75 (2.28)
	Normal weight	1,244 (37.78)
	Overweight	1,015 (30.82)
	Obese	700 (21.26)
	Not calculated	259 (7.87)

Table 2- Acceptance of obesity-related pricing and place and promotion policies by country and socioeconomic group

Overall N (%)	Pricing policies n (%)		Place and promotion policies n (%)		
	Tax on sugary drinks	Tax on high-fat content foods	Restricting advertising of high-calorie food on TV	Retailers / producers restricting promotions on high-calorie food and drinks	Supermarkets positioning healthier products at the end of aisles and checkouts
UK 3293 (100)	1687 (51.23)	1366 (41.48)	1969 (59.79)	1929 (58.58)	2374 (72.09)
AB 913 (27.73)	547 (59.91)	421 (46.11)	575 (62.98)	595 (65.17)	677 (74.15)
C1 1037 (31.49)	530 (51.11)	442 (42.62)	601 (57.96)	586 (56.51)	732 (70.59)
C2 538 (16.34)	271 (50.37)	230 (42.75)	334 (62.08)	308 (57.25)	394 (73.23)
DE 805 (24.45)	339 (42.11)	273 (33.91)	459 (57.02)	440 (54.66)	571 (70.93)
	P < 0.001	P < 0.001	P=0.028	P < 0.001	P= 0.264
England 1773 (53.74)	912 (51.44)	721 (40.67)	1029 (58.04)	1040 (58.66)	1262 (71.18)
AB 573 (32.32)	345 (60.21)	259 (45.20)	348 (60.73)	366 (63.87)	426 (74.35)
C1 520 (29.33)	260 (50)	215 (41.35)	289 (55.58)	300 (57.69)	357 (68.65)
C2 295 (16.64)	141 (47.80)	120 (40.68)	176 (59.66)	167 (56.61)	209 (70.85)
DE 385 (21.71)	166 (43.12)	127 (32.99)	216 (56.10)	207 (53.77)	270 (70.13)
	P <0.001	P= 0.002	P= 0.271	P= 0.012	P= 0.20
Wales 503 (15.27)	260 (51.69)	211 (41.95)	312 (62.03)	288 (57.26)	372 (73.96)
AB 49 (9.74)	29 (59.18)	21 (42.86)	36 (73.47)	38 (77.55)	41 (83.67)
C1 195 (38.77)	114 (58.46)	94 (48.21)	125 (64.10)	112 (57.44)	144 (73.85)
C2 84 (16.70)	47 (55.95)	40 (47.62)	52 (61.90)	50 (59.52)	66 (78.57)
DE 175 (34.79)	70 (40)	56 (32)	99 (56.57)	88 (50.29)	121 (69.14)
	P= 0.002	P= 0.010	P= 0.152	P= 0.008	P= 0.142
Scotland 513 (15.58)	265 (51.66)	224 (43.66)	316 (61.60)	301 (58.67)	370 (72.12)
AB 120 (23.39)	74 (61.67)	60 (50)	81 (67.50)	77 (64.17)	85 (70.83)
C1 183 (35.67)	91 (49.73)	80 (43.72)	103 (56.28)	102 (55.74)	128 (69.95)
C2 84 (16.37)	48 (57.14)	40 (47.62)	60 (71.43)	45 (53.57)	61 (72.62)
DE 126 (24.56)	52 (41.27)	44 (34.92)	72 (57.14)	77 (61.11)	96 (76.19)
	P= 0.009	P= 0.093	P= 0.38	P= 0.340	P= 0.664
Northern Ireland 504 (15.31)	250 (49.60)	210 (41.67)	312 (61.90)	300 (59.52)	370 (73.41)
AB 171 (33.93)	99 (57.89)	81 (47.37)	110 (64.33)	114 (66.67)	125 (73.10)
C1 139 (27.58)	65 (46.76)	53 (38.13)	84 (60.43)	72 (51.80)	103 (74.10)
C2 75 (14.88)	35 (46.67)	30 (40)	46 (61.33)	46 (61.33)	58 (77.33)
DE 119 (23.61)	51 (42.86)	46 (38.66)	72 (60.50)	68 (57.14)	84 (70.59)
	P= 0.056	P= 0.317	P= 0.882	P= 0.059	P= 0.772

The policy which received the greatest support across the UK was positioning

healthier foods in more visible spots in supermarkets (72%); the lowest was for tax on high-fat content foods (41%). In general, support was higher for policies related to place and promotion than those involving price, and 'sugar tax' was better received than 'fat tax'. There was no noticeable difference in policy acceptance between the four UK countries.

There were statistically significant differences in policy support between socioeconomic groups; the lowest level of policy support was among deprived groups (DE) in each country. The lowest was 32% support for 'fat tax' amongst the DE groups in England and Wales. Apart from a higher level of policy support for 'fat tax' by the C1 socioeconomic group in Wales, all statistically significant results indicated greater policy support in the AB group across the UK. In each country support was 15-21 percentage points higher for 'sugar tax' in the socioeconomic group AB compared to DE. Similarly, 'fat tax' received 10-15 percentage points lower support from socioeconomic group DE compared to AB.

Discussion

Obesity is a known risk factor for cancer; the rising prevalence of obesity in the UK represents an important future public health issue that obesity prevention policies could help to address. Our findings suggested that the UK public was more supportive of policies on place and promotion than those involving an increase in food prices. Policy support was lowest among the most deprived socioeconomic groups, whilst the least deprived groups were the greatest supporters of most policies. These findings are similar to the results of a 2017 study by Watson et al., which found greater support for place and promotion policies than taxation amongst Australians, as well as better overall policy support among more affluent

respondents [13].

The success of policies to reduce obesity- and thus obesity-related cancers- requires public support and acceptance, thus appropriate measures should be taken to enhance public support. Educating the public about the reasons for, and consequences of policy implementation may be one of the ways to enhance public support. A 2017 cross-sectional study by Pell et al., conducted before the introduction of the Soft Drink Industry Levy (SDIL, 'sugar tax'), provided information regarding the health-promoting consequences of SDIL and reported a 70% support for this policy across the UK [14]. This figure is 20 percentage points higher than in our survey, which may be reflective of the information provided.

The higher prevalence of both obesity and cancer, and poorer policy support among the lowest socioeconomic groups indicate a particular need for effective action to reduce obesity and related cancer risks in these groups. Considering the similarities between smoking and obesity as behavioural cancer risk factors, lessons learnt from tobacco control could be used for tackling obesity. A systematic review of the impact of tobacco control interventions in socioeconomic inequalities indicated that taxation is the most effective intervention in overcoming health inequities in smoking. Food pricing policies could similarly reduce socioeconomic inequities in obesity. The review did not find enough evidence for the impact of tobacco promotion policies on health disparities. However, community-based advertisement using personal testimonies were shown to be effective in reaching disadvantaged communities in controlling smoking, which could be an example of a tailored strategy for averting the health risks of obesity in these groups [15].

This study has some limitations. The online survey was only accessible to Internet

users, who could differ from people who do not have such access. The proportion of affluent people was higher in this survey compared to the general population of the UK according to the 2011 census. The findings, therefore, may not reflect the views of the whole UK population. However, a large sample size and high response rate were strengths. Furthermore, quota sampling for age, gender and region was used to make the survey's population more representative of the UK population.

To the researchers' knowledge, this is the first study to describe the acceptance of obesity-related policies in different socioeconomic groups in the four countries of the UK. However, this survey was conducted in 2016. A newer survey could provide more up-to-date information on the current public acceptance of these policies. Furthermore, a longitudinal study with repeated cross-sectional surveys would be more effective in monitoring the patterns in policy acceptance, as well as the changes in the rate of obesity and obesity-related cancers after implementing these policies.

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