Nothing beats taste or convenience: a national survey of where and why people buy sugary drinks in Australia

Joanne Dono,[1,2] Kerry Ettridge,[1,2] Melanie Wakefield,[3,4] Simone Pettigrew,[5] John Coveney,[6] David Roder,[7] Sarah Durkin,[3,4] Gary Wittert,[8,9] Jane Martin,[10] Caroline Miller[1,11]

Abstract

Objective: There is limited knowledge of what influences sugary drink purchasing decisions in the Australian population. This study aimed to identify the most common locations and reasons across different demographic groups for purchasing sugary drinks in Australia.

Methods: A total of 891 respondents (who purchased sugary drinks for personal consumption at least occasionally) from a broader national population telephone survey of Australian adults conducted in 2017 (n=3,430) were included in the analysis.

Results: 'Taste' was a ubiquitous reason for purchase (94%) and the majority also agreed with 'easily available' (76%). Males, younger people and people of lower socioeconomic status (SES) were significantly more likely to agree that sugary drinks were 'cheap' and 'better value than water'. Furthermore, males and younger people were more likely to report buying sugary drinks because they were 'part of a meal deal'. The most common purchase locations were supermarkets (56%), followed by convenience stores (19%) and food or entertainment venues (17%).

Conclusion: Taste is paramount in decisions to purchase sugary drinks, and widespread availability and value for money support consumption.

Implications for public health: Policies and interventions targeting point-of-sale sugary drink purchasing decisions among the most 'at risk' consumers are warranted.

Key words: sugary drinks, purchasing behaviour, policy

International studies show that sugary drink consumption, as with other dietary behaviours, is influenced by a multitude of factors including individual preferences, culture and the physical environment.[1] However, there is limited knowledge of what influences sugary drink purchasing decisions in the Australian population. Purchasing decisions resulting from the quality of the food environment can be linked to health outcomes such as obesity.[2] While the relationship is complex, unhealthy food purchases are linked to shopping at convenience stores predominantly stocked with low-quality energy-dense food.[3,4] Numerous studies have explored neighbourhood food environment factors such as access, availability and affordability,[5] but there is limited understanding of reasons for sugary drink purchases that relate to the food environment. Other studies have explored individual preferences for sugary drink consumption, showing that taste, convenience and price rank highly,[6-8] but it is not known how this relates to purchase locations or demographic differences in preferences. The aim of this study was to identify the most common reasons and locations for purchasing sugary drinks in Australia and to assess whether these differed according to gender, age, socioeconomic disadvantage, drink type and amount consumed.

Methods

A computer-assisted-telephone-interview survey (~21 minutes) was administered to a nationally representative sample of Australian adults (≥18 years; n=3,430) in 2017, using random digit dialling (landline:mobile phones; 35:65 split). Full methodological details are reported elsewhere.[9] This study reports on a subsample of 891 respondents who met the criteria for 'past week sugary drink consumption' and 'bought sugary

1. Health Policy Centre, South Australian Health and Medical Research Institute
2. School of Psychology, The University of Adelaide, South Australia
3. Centre for Behavioural Research in Cancer, Cancer Council Victoria
4. School of Psychological Sciences, The University of Melbourne, Victoria
5. Food Policy, The George Institute for Global Health, New South Wales
6. College of Nursing and Health Sciences, Flinders University, South Australia
7. Cancer Epidemiology and Population Health, University of South Australia
8. Freemasons Foundation Centre for Men's Health, Faculty of Health Sciences, University of Adelaide, South Australia
9. Centre for Nutrition and GI Diseases, South Australian Health and Medical Research Institute
10. Obesity Policy Coalition and Alcohol and Obesity Policy, Cancer Council Victoria
11. School of Public Health, The University of Adelaide, South Australia

Correspondence to: Ms Joanne Dono, South Australian Health and Medical Research Institute, North Terrace, Adelaide, SA 5000; e-mail: jo.dono@sahmri.com

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drinks for their own consumption' either occasionally, often or very often. Respondents reported on where they purchased their last sugary drink, agreement with statements ascertaining reason for purchase, and drink size and type most often purchased (see Supplementary File 1: Questions for definitions and question wording) as well as demographic characteristics. The full dataset was weighted according to chance of selection and demographic characteristics matched to the overall population. Analysis comprised of Pearson chi-square tests with $p<0.05$ indicating statistical significance.

Results

'Like the taste' and 'easily available' had the highest rates of agreement with few differences across demographic characteristics and purchasing behaviours (see Table 1). Males, younger people and

Table 1: Reasons for purchasing a sugary drink, by demographic and purchase characteristics (n=891).

Proportion of participants who agreed with reasons for purchasing		Reasons for purchasing								
		Like the taste	Easily available	Preferred brand	Part of a meal deal	Cheap	Better value than water	Ingredients they contain	Info on packaging	Look of packaging
		% (CL)	% (CL)	% (CL)	% (CL)	% (CL)	% (CL)	% (CL)	% (CL)	% (CL)
Proportion agreed										
Strongly agree		69.6 (±3.0)	45.2 (±3.3)	34.5 (±3.1)	23.0 (±2.8)	22.5 (±2.7)	17.3 (±2.5)	14.6 (±2.3)	6.2 (±1.6)	5.1 (±1.4)
Somewhat agree		24.4 (±2.8)	30.3 (±3.0)	25.9 (±2.9)	24.2 (±2.8)	23.3 (±2.8)	14.0 (±2.3)	16.2 (±2.4)	9.3 (±1.9)	10.1 (±2.0)
Neither agree/disagree		1.2 (±0.7)	2.6 (±1.0)	3.5 (±1.2)	2.3 (±1.0)	4.4 (±1.3)	4.2 (±1.3)	4.9 (±1.4)	3.1 (±1.1)	3.0 (±1.1)
Somewhat disagree		1.9 (±0.9)	11.4 (±2.1)	19.0 (±2.6)	17.0 (±2.5)	25.4 (±2.9)	22.8 (±2.8)	25.4 (±2.9)	24.4 (±2.8)	26.2 (±2.9)
Strongly disagree		2.6 (±1.0)	10.0 (±2.0)	15.7 (±2.4)	32.7 (±3.1)	23.8 (±2.8)	39.5 (±3.2)	36.5 (±3.2)	56.2 (±3.3)	54.9 (±3.3)
Don't know		0.2 (±0.3)	0.4 (±0.4)	1.5 (±0.8)	0.8 (±0.6)	0.5 (±0.5)	2.0 (±0.9)	2.2 (±1.0)	0.8 (±0.6)	0.4 (±0.4)
Cumulative proportion agreed (somewhat or strongly)		94.0 (±1.6)	75.5 (±2.8)	60.4 (±3.2)	47.2 (±3.3)	45.9 (±3.3)	31.4 (±3.0)	30.9 (±3.0)	15.6 (±2.4)	15.2 (±2.4)
Demographic characteristics	**Overall sample % (CL)**	**Variation in agreement[a] with reasons for purchasing by demographics**								
Gender		NS	NS	NS	$p=0.011$	$p=0.017$	$p<0.001$	NS	NS	NS
Male	61.2 (±3.2)	94.5 (±1.9)	77.4 (±3.5)	59.3 (±4.1)	50.6 (±4.2)	49.1 (±4.2)	38.5 (±4.1)	32.5 (±3.9)	15.2 (±3.0)	15.6 (±3.0)
Female	38.8 (±3.2)	93.4 (±2.6)	72.8 (±4.7)	62.1 (±5.1)	41.9 (±5.2)	40.9 (±5.2)	19.9 (±4.2)	28.3 (±4.7)	16.2 (±3.9)	14.8 (±3.7)
Age (years)		$p=0.039$	NS	NS	$p<0.001$	$p=0.002$	$p=0.029$	$p=0.003$	NS	$p<0.001$
18-30	35.5 (±3.1)	94.6 (±2.5)	80.7 (±4.4)	55.5 (±5.5)	65.8 (±5.2)	54.4 (±5.5)	35.4 (±5.3)	24.4 (±4.7)	17.7 (±4.2)	20.3 (±4.4)
31-45	28.5 (±3.0)	95.7 (±2.5)	75.3 (±5.3)	62.4 (±5.9)	47.8 (±6.1)	40.3 (±6.0)	33.9 (±5.8)	30.7 (±5.7)	16.1 (±4.5)	16.9 (±4.6)
46-60	22.7 (±2.8)	95.0 (±3.0)	71.4 (±6.2)	62.6 (±6.7)	30.2 (±6.3)	40.6 (±6.8)	24.6 (±5.9)	36.9 (±6.6)	11.3 (±4.4)	8.9 (±3.9)
61 and over	12.5 (±2.2)	88.4 (±5.9)	70.9 (±8.5)	66.7 (±8.8)	23.2 (±7.8)	42.9 (±9.2)	25.9 (±8.1)	39.6 (±9.1)	17.0 (±7.0)	6.3 (±4.5)
Disadvantage deciles		$p=0.023$	NS	NS	NS	$p=0.002$	$p=0.012$	NS	NS	$p<0.001$
Most (1-3)	23.8 (±2.8)	96.2 (±2.6)	76.5 (±5.7)	64.8 (±6.4)	48.4 (±6.7)	56.6 (±6.7)	34.4 (±6.4)	26.8 (±5.9)	11.7 (±4.3)	14.1 (±4.7)
Mid (4-7)	42.3 (±3.2)	91.5 (±2.8)	75.5 (±4.3)	59.3 (±5.0)	46.2 (±5.0)	43.2 (±5.0)	34.8 (±4.8)	34.3 (±4.8)	18.4 (±3.9)	20.7 ±4.1
Least (8-10)	33.7 (±3.1)	95.7 (±2.3)	74.8 (±4.9)	58.8 (±5.6)	47.7 (±5.7)	41.8 (±5.6)	24.9 (±4.9)	29.2 (±5.1)	14.7 (±4.0)	9.4 (±3.3)
Sugary drink consumption (past week)		NS	NS	NS	$p=0.007$	NS	NS	$p=0.036$	$p<0.001$	NS
Moderate (1 to 6 times)	60.3 (±3.2)	93.5 (±2.1)	74.3 (±3.7)	58.7 (±4.2)	51.0 (±4.2)	45.0 (±4.2)	29.4 (±3.9)	28.3 (±3.8)	19.2 (±3.3)	15.3 (±3.0)
High (7 or more times)	39.3 (±3.2)	95.7 (±2.1)	77.9 (±4.4)	63.1 (±5.1)	41.7 (±5.2)	47.6 (±5.2)	34.6 (±5.0)	35.0 (±5.0)	10.0 (±3.1)	15.1 (±3.8)
Purchase location[b]		NS	p=0.004	p=0.005	p<0.001	NS	NS	p<0.001	NS	NS
Supermarket	55.8 (±3.3)	93.6 (±2.1)	71.8 (±4.0)	62.7 (±4.2)	35.7 (±4.2)	49.3 (±4.4)	29.9 (±4.0)	35.8 (±4.2)	18.5 (±3.4)	14.1 (±3.1)
Convenience store	19.4 (±2.6)	94.2 (±3.5)	84.4 (±5.4)	65.9 (±7.1)	49.7 (±7.5)	43.9 (±7.4)	33.5 (±7.0)	29.9 (±6.8)	12.1 (±4.9)	16.8 (±5.6)
Food/entertainment venue	17.3 (±2.5)	98.1 (±2.2)	80.5 (±6.3)	48.4 (±7.9)	78.6 (±6.5)	43.2 (±7.8)	33.1 (±7.4)	16.9 (±5.9)	12.3 (±5.2)	14.3 (±5.5)
Other	5.8 (±1.5)	96.1 (±5.3)	73.1(±12.1)	62.7(±13.3)	53.8(±13.6)	40.4(±13.3)	37.3 (±13.3)	29.4 (±12.5)	11.5 (±8.7)	26.9(±12.1)
Usual drink type and size[c]		NA	$p=0.049$	$p=0.029$	$p<0.001$	NS	$p=0.009$	$p<0.001$	$p<0.001$	$p=0.009$
Soft drink – small (≤400ml)	34.1 (±3.1)	95.4 (±2.4)	75.3 (±4.8)	65.1 (±5.4)	55.9 (±5.6)	44.1 (±5.6)	34.9 (±5.4)	23.4 (±4.8)	6.9 (±2.8)	10.9 (±3.5)
Soft drink – medium (401-800ml)	14.0 (±2.3)	97.6 (±2.7)	84.0 (±6.4)	60.5 (±8.6)	59.7 (±8.6)	46.8 (±8.8)	37.9 (±8.5)	28.0 (±7.9)	17.6 (±6.7)	16.9 (±6.6)
Soft drink - large (>800ml)	11.6 (±2.1)	94.2 (±4.5)	65.4 (±9.1)	58.3 (±9.5)	40.4 (±9.40	57.7 (±9.5)	35.9 (±9.3)	35.6 (±9.2)	20.2 (±7.7)	12.5 (±6.4)
Juice – small/medium (≤800 ml)	4.7 (±1.4)	90.2 (±9.1)	65.9(±14.5)	51.2 (±15.3)	35.7(±14.5)	34.1 (±14.5)	17.1 (±11.5)	52.4 (±15.1)	31.0 (±14.0)	19.0 (±11.9)
Juice – large (>800ml)	8.0 (±1.8)	94.4 (±5.3)	76.4 (±9.8)	52.1(±11.6)	23.6 (±9.8)	42.3(±11.5)	29.6 (±10.6)	54.2 (±11.5)	36.1 (±11.1)	29.2 (±10.5)
Energy drink	6.0 (±1.6)	90.7 (±7.7)	73.6(±11.9)	77.8(±11.1)	29.6(±12.2)	33.3 (±12.6)	22.2 (±11.1)	39.6 (±13.2)	14.8 (±9.5)	11.1 (±8.4)
Sports drink	3.6 (±1.2)	100.0 (±0)	84.4(±12.6)	62.5(±16.8)	56.3±(17.2)	50.0 (±17.3)	43.8 (±17.2)	25.0 (±15.0)	15.6 (±12.6)	21.9 (±14.3)
Other	14.9 (±2.3)	90.2 (±5.1)	75.9 (±7.3)	54.1 (±8.5)	38.3 (±8.3)	50.0 (±8.5)	22.0 (±7.1)	28.6 (±7.7)	14.3 (±5.9)	14.4 (±6.0)

Notes:

NA=Not Available; test invalid due to high (25%) number of cells with expected cell count less than 5; NS=Not significant; CL=Confidence limits

a: % somewhat or strongly agree vs other response (somewhat or strongly disagree, neither agree nor disagree, don't know).

b: 1.5% don't Know.

c: 3.1% don't know

people of lower socioeconomic status (SES) were significantly more likely to agree that sugary drinks were 'cheap' and 'better value than water'. Furthermore, males and younger people were more likely to report buying sugary drinks because they were 'part of a meal deal'. Younger people were more likely to report being influenced to purchase by the 'look of packaging'. Compared to other locations, those purchasing from food/entertainment venues had greater agreement with 'meal deal' and lower agreement with 'preferred brand' and 'ingredients they contain'. Convenience store purchasers had greater agreement with 'easily available' than supermarket purchasers. Associations between purchase reason and drink type varied. Compared to other drink types, juice purchasers had greater agreement with 'ingredients they contain', 'information on packaging' and 'look of packaging'. Conversely, soft drink and sports drink purchasers had greater agreement for 'better value than water' and 'part of a meal deal', and energy drink purchasers had greater agreement for 'preferred brand'.

Purchase location was associated with age, gender, consumption and drink type (all $p<0.001$), but not socioeconomic disadvantage (see Supplementary File 2). Supermarket purchasers had a greater likelihood of purchasing large soft drinks and juices and being female, older and high consumers. Convenience store purchasers had a greater likelihood of purchasing energy and sports drinks and being male, 31 to 45 years of age and high consumers. Those purchasing from food/entertainment venues had a greater likelihood of purchasing small/medium soft drinks and juices and being 18 to 39 years of age and moderate consumers.

Discussion

Reasons for purchasing sugary drinks were associated with numerous factors, suggesting that multi-level interventions will be required to effectively target sugary drink consumption. Consistent with other studies,[6-8] there was near ubiquitous agreement that taste was a driver to purchase sugary drinks, and easy access also ranked highly. Price and value perceptions were less prominent reasons for purchase but did vary across subgroups. Population groups with high sugary drink consumption, namely young adults, males and the most disadvantaged,[10] were more likely to report 'cheap' and 'better value than water' as reasons for purchase. Young adults were also more likely to agree with 'meal deals' as a reason to purchase sugary drinks. Price is a proven driver of purchasing behaviour overall, and sensitivity to price varies across consumers.[11] Meal deals offer consumers 'value' while frequently pairing sugary drinks with unhealthy foods and upsize deals, compounding dietary risks for those consumers. Our results support the argument for making water the default option in meal deals and adding a health levy to sugary drinks to increase their price and expand the price differential with water.

Unlike purchasers of other drink types, juice purchasers were reportedly less influenced by 'preferred brand', and more influenced by ingredients and information on packaging. These results likely reflect the different marketing strategies used for beverage types. Soft drinks, sports drinks and energy drinks market heavily on brand, with Coca-Cola being an iconic example of brand marketing. By comparison, juice marketing often uses 'better-for-you' marketing strategies, whereby companies emphasise the healthy contents and characteristics of their products.[12]

While supermarkets were the most common purchase location, almost half of drinks were purchased elsewhere. Widespread availability of sugary drinks contributes to consumption.[13] Purchase location was related to drink type, with small/medium drinks associated with food/entertainment venues, sports and energy drinks associated with convenience stores and large drinks associated with supermarkets. These results suggest that low-cost supply from supermarkets is important for higher-volume purchasers, who are likely also supplying households, but other reasons are more important when purchasing from other locations. Research on Australian food retail types is scant, particularly in relation to convenience stores and food/entertainment venues,[14] and regarding the availability of different food retail types in different locations. There are likely to be differences in availability between urban and rural settings, for example. However, international research shows that convenience stores are predominantly stocked with low-quality energy-dense food,[3,4] which may correspond with increases in impulse purchases.[15]

Further investigation of study findings is recommended as self-report data is susceptible to incorrect reporting due to memory effects and social desirability. Qualitative research would be valuable in investigating what factors have the greatest impact on purchasing preferences and practices. Nevertheless, the results from this study show that while taste is paramount, preferences for convenience and value for money are supported by widespread availability, emphasising the need for multi-level policy interventions, particularly in Australia where there has been a lack of policy progress in this area. Policies and interventions targeting point-of-sale sugary drink purchasing decisions among the most 'at risk' consumers are warranted.

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Supporting Information

Additional supporting information may be found in the online version of this article:

Supplementary File 1: Questionnaire.

Supplementary File 2: Table 1: Purchase location by demographic and purchase characteristics (n=891).