Nutrition & Dietetics 2007; **64**: 268–279 DOI: 10.1111/j.1747-0080.2007.00223.x

ORIGINAL RESEARCH

Shifts in purchasing patterns of non-alcoholic, water-based beverages in Australia, 1997–2006

Gina LEVY[1] and Linda TAPSELL[2]

[1]Food Logic, Edgecliff, and [2]National Centre of Excellence in Functional Foods, University of Wollongong, New South Wales, Australia

Abstract

Aim: To describe trends in purchasing patterns of non-alcoholic, water-based beverages (WBBs) in Australia, 1997–2006.

Methods: Trends in volume sales of WBBs were determined from data supplied by the Australian beverage industry, not including fruit juice or milk-based drinks. Change was calculated as per cent difference between 1997 and 2006, volume share by proportion of total sales in the category and per capita consumption by dividing total volume sales by population estimate for that year. Sugar supply from WBBs was calculated by multiplying sales by sugar content. Demographic trends from AC Nielsen surveys were shown as per cent households purchasing beverages and as volume share by age and sex.

Results: Total volume sales of WBBs increased by 13% from 1997 to 2006, largely accounted for by increases in sales of plain still water and non-sugar carbonated soft drink (CSD). Sales in the CSD category saw a shift away from sugar-sweetened to non-sugar. There was a concomitant increase in sales of sugar-sweetened sports and energy drinks, and iced tea. Younger people and high-income households were the major purchasers of CSDs, and for sports and energy drinks, it was young males.

Conclusion: The increased sales of beverages by 2006 appear to reflect a greater trend towards purchasing fluids, particularly increases in bottled water and non-sugar CSDs. Sugar supply from beverages has declined, mostly because of decreasing sales of sugar-sweetened CSDs since 2002. Industry-generated data proved useful in forming a picture of apparent non-alcoholic, WBB consumption patterns in Australia.

Key words: food industry, nutrition survey, purchasing behaviour.

INTRODUCTION

Knowledge of food and beverage consumption patterns serves a number of purposes in determining the health of both the economy and the population at large. Market trends indicate opportunities for business, and the protection of public health demands knowledge of dietary intake patterns to inform program direction and regulatory activity. In Australia, the last National Nutrition Survey (NNS) was published in 1995, with a previous survey published for adults using data from 1983.[1,2] The lack of current standardised consumption data collected on an individual level is problematic, but in the meantime, industry-generated data may be of value.

While health authorities drive nutrition interventions and rely on governments to provide information on dietary patterns, the food industry responds to consumer demands for particular food products. Monitoring sales is core business, for which substantial amounts of data are collected. In contrast to nutrition surveys which ask individuals what they eat, sales data provide a picture of product usage. Both cases provide valuable insights into our food environment.

The positioning of beverages presents a particular area of interest because they can deliver a variety of nutrients within a wide range of energy values. They are also consumed in a varied range of contexts, and can have equally varied effects on satiation and appetite management.[3,4] Information reflecting beverage consumption patterns would clearly be of significant interest in unravelling the complex problem of managing energy consumption at a population level. Specifically of interest would be information on trends for high-energy beverages and lower-energy alternatives, as would details of consumer subgroups within the population.

The present study reports on product sales and usage data made available from the Australian beverage industry. Specifically, it reports on trends in sales of non-alcoholic, water-based beverages (WBBs) from 1997 to 2006, noting trends in sugar-sweetened and non-sugar variants, with a focus on

G. Levy, PhD, APD, Principal
L. Tapsell, PhD, FDAA, Director
Correspondence: G. Levy, Food Logic, PO Box 929, Edgecliff, NSW 2027, Australia. E-mail: gina.levy@foodlogic.com.au

Accepted August 2007

carbonated soft drinks (CSDs). The changing contribution of beverages to sugar in the food supply is estimated. Finally, social data supplied by the industry such as household use, purchaser profile and age-related consumption patterns are considered.

METHODS

Sales trends

Volume sales data were provided by the Australian Beverage Council Ltd, representing major WBB companies such as Coca-Cola Amatil Australia, PepsiCo Australia, Cadbury Schweppes Australia and Unilever Australasia. Data, originally from AC Nielsen Scan Track and Home Scan,[5] showed annual grocery volume sales of non-alcoholic, WBBs starting from mid-1997 (data represent sales for year 1996–1997) to mid-2006. The Scan Track and Home Scan studies drew on information from 10 000 households, demographically and geographically representative of the Australian population, based on Australian Bureau of Statistics (ABS) data. With a hand-held scanner, participants recorded all household grocery purchases from all retail outlets, including supermarkets, pharmacies and convenience stores over a one-year period.

Water-based beverages were defined as ready-to-drink (RTD) beverages from the package, containing predominantly water and no alcohol. The analysis did not include milk-based drinks, cordials or syrup-based CSDs (not RTD), tap/dispenser water (unable to be consumed from the package) or fruit juices (data not available). WBBs were categorised as sugar-sweetened (defined as containing added cane sugar or fruit sugar) or non-sugar (defined as plain still/mineral waters or sweetened with non-caloric sweeteners). The subcategories of these were defined as CSDs, mixers (tonic water, soda water), energy drinks, sports drinks, still water, mineral water and iced tea drinks.

Total market volume sales (grocery + foodservice) in millions of litres were calculated by adjusting grocery sales according to industry estimations of the total market coming from grocery. Volume sales trends were assessed by regression analysis showing linear change over time. Significance was set at $P < 0.05$.

The change in volume sales over the decade was calculated as per cent difference between sales from 1997 and 2006, that is,

$$\%\ \text{difference} = (2006\ \text{sales} - 1997\ \text{sales})/2006\ \text{sales} \times 100.$$

Volume share was calculated by proportion of sales within the category, and per capita consumption was calculated by dividing total volume sales by the population estimate for that year obtained from ABS Census data.

Changes in contribution to sugar supply over time

The sugar contribution from WBB sales was determined by multiplying the annual volume sales in litres by the brix value (grams of sugar per 100 mL) for each WBB, that is,

$$\text{Sugar contribution (tonnes)} = \text{volume sales (L)} \times 10\ (\text{brix value } (\text{g}/100\,\text{mL})) \times 10^{-6}.$$

The annual change was determined by taking the sugar contribution for a particular year and subtracting that from the previous year. This was performed in three categories: total WBBs, sugar-sweetened CSDs and non-CSD sugar-sweetened WBBs (mixers, sports drinks, flavoured still and mineral waters, energy drinks, iced teas).

Patterns of household purchase

Data on household purchase were analysed from AC Nielsen Scan Track and Home Scan data. Only data for 2005–2006 were available for the total WBB category, and data for 2004–2006 were available for CSDs. The percentage of households purchasing sugar-sweetened and non-sugar WBBs (2005–2006) and CSDs (2004–2006) were provided, including those purchasing both subcategories (termed 'duplicators' by the industry). These data were further presented by AC Nielsen in terms of volume share purchased according to socioeconomic differences (high income ≥$50 000 per annum, medium income $26 001–$50 000 per annum, and low income ≤$26 000 per annum) and household structure, defined as

- Young singles and couples (under 35 years old, no children, 1–2 members)
- Older singles and couples (adults aged over 45 years, no children, 1–2 members)
- Young families (adult shopper, at least one child under 11 years of age, maybe another child aged 11–14 years)
- Older families (adult shopper any age, at least one person aged 11–20 years, no children aged 0–11 years)
- Adult household (all people older than 21 years, excluding young single and couples, no limit to size)

Trends in reported beverage consumption with age and sex

Data for this analysis were obtained from a commissioned Nielsen Media Research Panorama Study conducted by AC Nielsen. Four-hundred interviewers collected data from 34 000 consumers (response rate 64%) in a 25-minute home interview during which interviewers asked questions relating to demographics, purchasing habits and media readership. Participants were asked to complete a questionnaire within one week of the interview investigating attitudes and behaviours, particularly with regard to eating and drinking. The analysis reported here refers to consumers aged ≥14 years (the beverage industry do not routinely collect data from children). The proportion of males and females in the age groups of 14–17, 18–24, 25–39, 40–54 and 55+ years, reporting consumption of CSDs, plain still water, mineral waters, sports drinks and energy drinks, was provided for years 2004 through to 2006.

All data were analysed using Microsoft Excel (Microsoft Office Professional Edition, Microsoft Corporation, 2003,

Richmond, VA, USA) and SPSS (Version 15, SPSS Inc Chicago, IL, USA).

RESULTS

Sales trends

From 1997 to 2006, sales of WBBs showed a positive trend ($P < 0.001$) and increased by 13% (336 million litres) (Figure 1). This translated to increased per capita sales of 120–126 L/head. The sales of non-sugar WBBs also showed a positive trend ($P < 0.001$) and increased by 34% (344 million litres), translating to changes from 36 to 50 L/head, whereas sales of sugar-sweetened WBBs decreased by 0.6% (–9 million litres or from 84 to 76 L/head). The negative trend was not significant ($P = 0.95$); however, a significant trend was more evident between 2002 and 2006 ($P = 0.016$), with a reduction in sales of 64 million litres. The relative proportion of total sales (volume share) of sugar-sweetened to non-sugar WBBs decreased over the 10-year period, from approximately 70:30 in 1997 to 60:40 in 2006, indicating loss of volume share by sugar-sweetened WBBs.

During this period, sales of CSDs increased by 5% from 1834 to 1930 million litres (trend was significant at $P = 0.001$). There was a 28% increase in sales of non-sugar varieties from 432 to 591 million litres (positive trend significant at $P = 0.001$), and a 5% decrease in sugar-sweetened varieties from 1410 to 1339 million litres (negative trend not significant at $P = 0.09$) (Figure 2). The shift away from sugar-sweetened CSDs was particularly evident between 2002 and 2006, which saw a decrease in sales of 118 million litres over that period (negative trend significant at $P = 0.002$).

The per capita sales for CSDs decreased from 99 to 95 L/head. Sugar-sweetened CSDs decreased from 76 L/head in 1997 to 66 L/head in 2006 and for non-sugar CSDs increased from 23 L/head in 1997 to 29 L/head in 2006. The volume share of sugar-sweetened to non-sugar CSDs sales changed from approximately 76:23 in 1997 to 69:31 in 2006, indicating substantial loss of volume share by sugar-sweetened CSDs.

CSD sales made up 81% of the total WBB market in 1997, but fell to 76% by 2006. This was largely due to the loss of market share by sugar-sweetened CSDs, which made up 63% of the WBB market in 1997 and fell to 52% by 2006.

During this same period, sales of plain still water showed a positive trend ($P < 0.001$) and increased by 62% from 107 to 279 million litres (Figure 2). Sugar-sweetened (flavoured) still water also showed growth, with sales increasing steadily from 315 500 L in 1997 to 8.7 million litres in 2006. Interestingly, sales of plain mineral water decreased from 53 million litres in 1997 to 41 million litres in 2004, and then increased to 50 million litres by 2006. Sales of sugar-sweetened mineral water increased slightly from 40 million litres in 1997 to 47 million litres in 2006.

Sales of sugar-sweetened sports drinks increased by 42% from 27 million litres in 1997 to 48 million litres in 2006, with the most significant increases seen from 2002 onwards. Sales of sugar-sweetened energy drinks also increased from 2.6 million litres in 1997 to 12.6 million litres in 2006. Non-sugar energy drinks showed growth from 201 000 L in 2003 up to 1.3 million litres in 2006. Sales of sugar-sweetened tea drinks went from 2.8 million litres in 1997, down to 1.6 million litres in 2000 and then rose to 8.2 million litres by 2006. The non-sugar iced teas were only introduced in 2000 with sales of 1000 L, which steadily increased to 974 000 L in 2005 and dropped to 847 000 L by 2006.

For mineral waters, sugar-sweetened to non-sugar volume share was 43:57 in 1997 and changed to 48:52 by 2006. Similarly for mixers, sugar-sweetened to non-sugar volume share went from 43:57 in 1997 to 46:54 by 2006. In 2002, there were few sales of non-sugar energy drinks, but by 2003, 2% of energy drink sales came from non-sugar variants and this increased to 9% by 2006. The same for non-sugar tea drinks, which had few sales in 2002, increased to 1% of tea drink sales in 2003 and then to 6% by 2006.

These findings can be compared through a view of the absolute difference in volume sales between 1997 and 2006 (Figure 3). Most WBBs have shown increases in sales in the last decade, with the exception of sugar-sweetened CSDs, which showed a decrease of 71.3 million litres, and non-sugar sparkling mineral water with a decrease of 2.3 million litres. The greatest growth in sales was seen for non-sugar CSDs, with an increase of 167.2 million litres, and plain still water, with an increase of 171.6 million litres. Sugar-sweetened sports drinks, mixers, energy drinks and sugar-sweetened still water also showed increases of 20.1 million litres, 12.1 million litres, 9.9 million litres and 8.4 million litres, respectively. Smaller increases were seen for sugar-sweetened mineral water (6.8 million litres), iced teas (5.4 million litres), non-sugar mixers (4.9 million litres), non-sugar energy drinks (1.3 million litres) and non-sugar tea drinks (800 000 L).

Changes in contribution to sugar supply over time

By 1997, WBBs contributed approximately 157 751 tonnes of sugar to the Australian food supply, of which 148 076 tonnes came from CSDs. Increasing WWB sales increased the sugar contribution to 163 332 tonnes by 2002, of which 152 993 tonnes came from CSDs. However, from 2002 onwards, the sugar contribution from both total WBBs and the CSD category began to decrease to 154 823 and 140 591 tonnes respectively by 2006. Figure 4 shows the changes in sugar contribution annually for WBBs, sugar-sweetened CSDs and other sugar-sweetened beverages. Positive contributions before 2002 for WBBs and CSDs were evident, which changed post 2002 as their sugar contribution declined year on year. Concomitantly, sugar contribution from other beverages (mixers, sports drinks, energy drinks, tea drinks and flavoured waters) showed positive contributions as more of these drinks were introduced to market. Overall, since 2002, there was a decrease in sugar contribution to the food supply of 8509 tonnes from WBBs. This was made up of a total decrease of 12 402 tonnes of sugar from

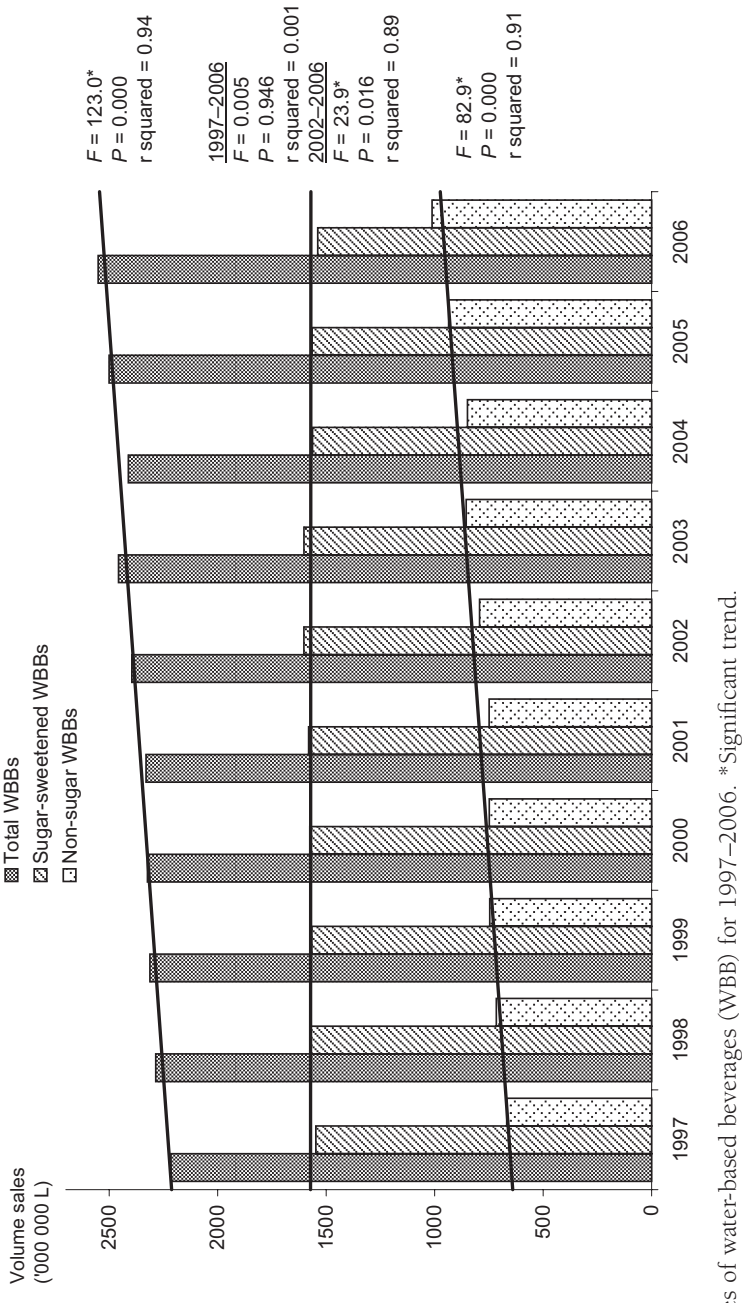

Figure 1 Volume sales of water-based beverages (WBB) for 1997–2006. *Significant trend.

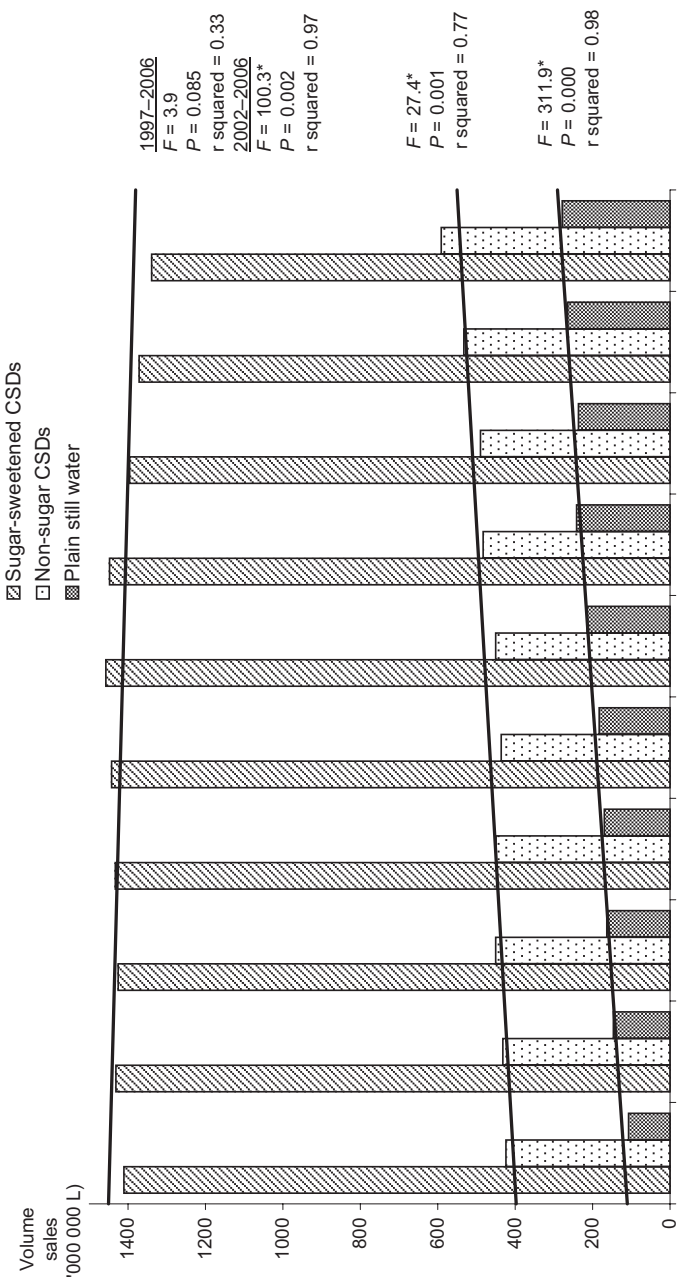

Figure 2 Volume sales of sugar-sweetened and non-sugar carbonated soft drinks (CSDs) and plain still water for 1997–2006. *Significant trend.

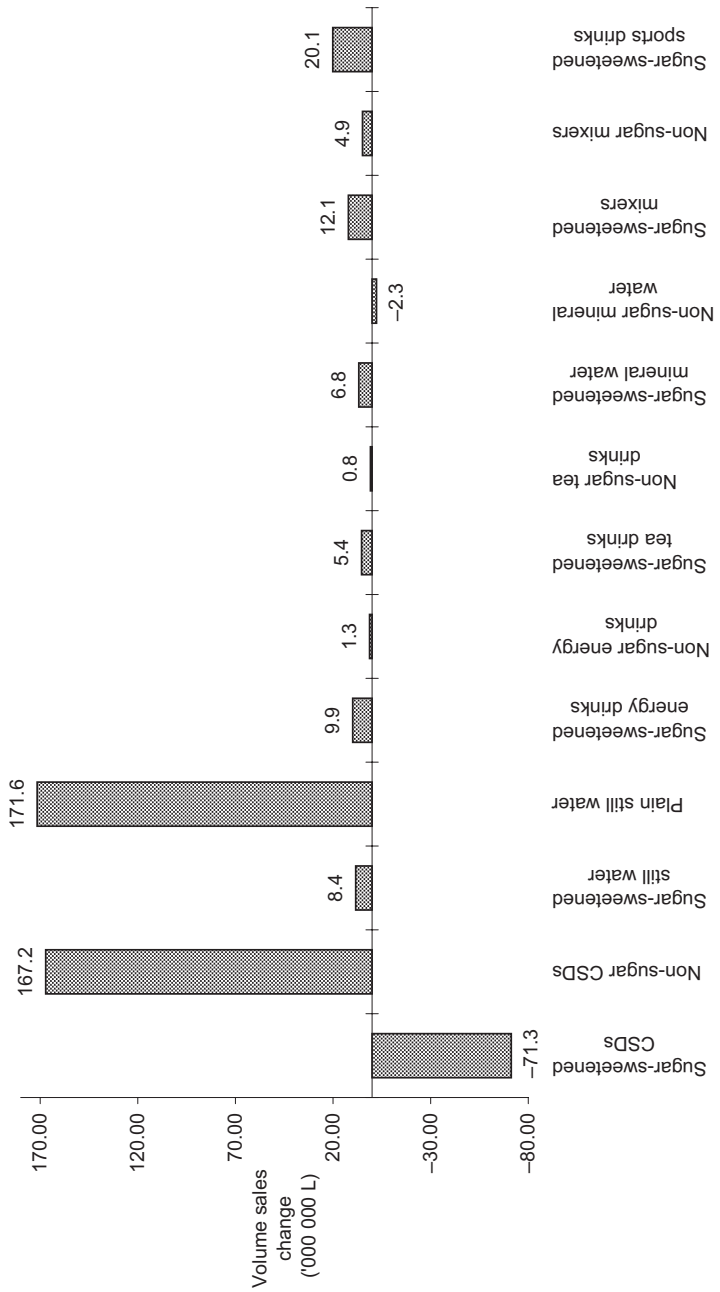

Figure 3 Absolute difference in volume sales of water-based beverages (WBBs) between 1997 and 2006. CSD = carbonated soft drink.

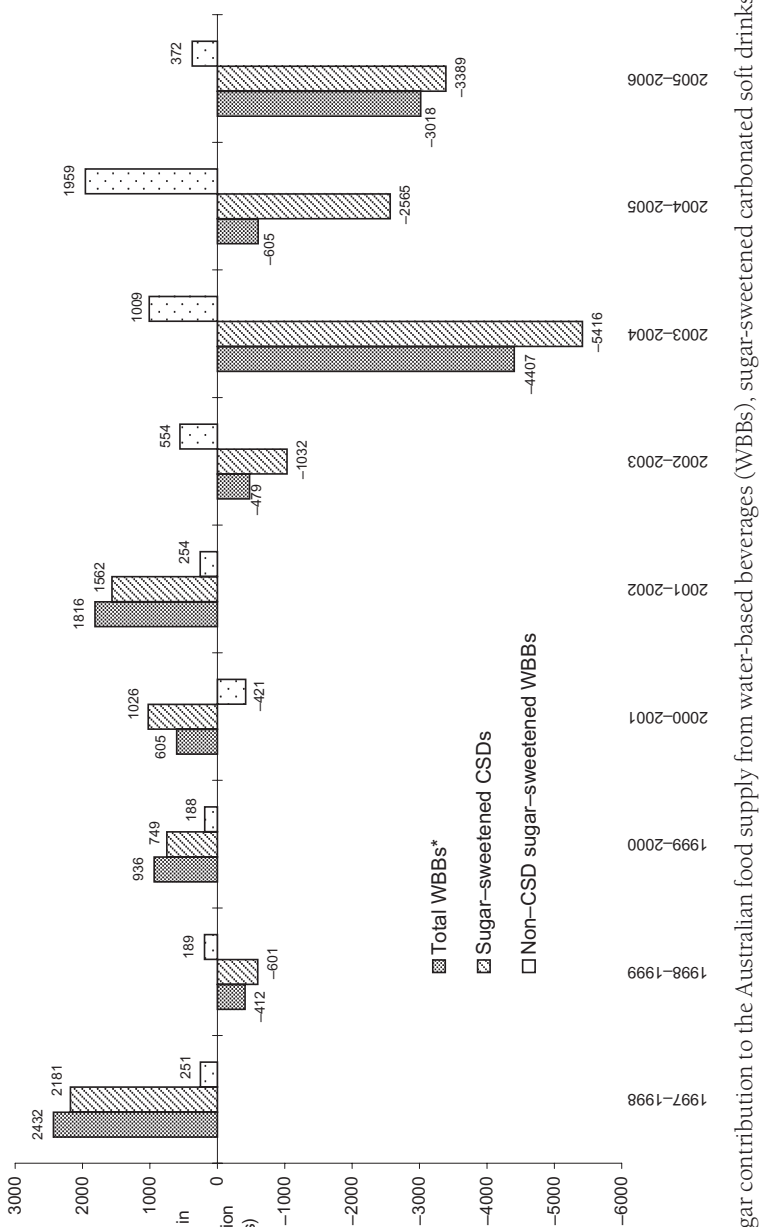

Figure 4 Annual change in sugar contribution to the Australian food supply from water-based beverages (WBBs), sugar-sweetened carbonated soft drinks (CSDs) and non-CSD sugar-sweetened WBBs. *Total WBB = sugar-sweetened CSDs + non-CSD sugar-sweetened WBBs (mixers, sports drinks, energy drinks, tea drinks and flavoured waters).

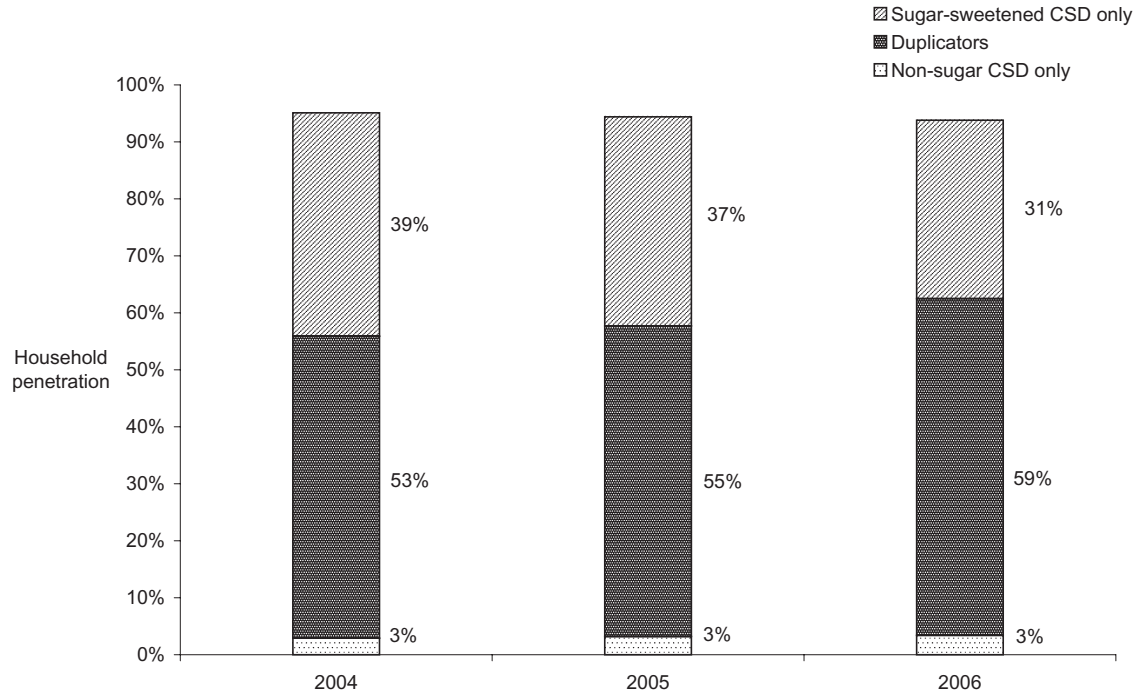

Figure 5 Household penetration of carbonated soft drinks (CSDs) showing households purchasing only sugar-sweetened, only non-sugar and duplicators, 2004–2006.

declining sales of sugar-sweetened CSDs, and was offset by an increase of 3894 tonnes from increasing sales of non-CSD WBBs.

Patterns of household purchase

Of the households sampled, 97% purchased WBBs in 2005 and 2006. The penetration of sugar versus non-sugar changed in that time (97% to 92% for sugar-sweetened and 78% to 81% for non-sugar). Similar shifts occurred in the 94–95% of households purchasing CSDs between 2004 and 2006 (92% to 90% for sugar-sweetened and 58% to 63% for non-sugar). The proportion duplicators increased from 53% in 2004 to 59% in 2006. This increase appeared to come from households who originally only purchased sugar-sweetened CSDs and now purchased non-sugar as well (Figure 5). In other words, some of the sugar-sweetened drinking occasions in those households were being replaced with non-sugar occasions.

Young families with children purchased the most sugar-sweetened CSDs, followed by older families (Figure 6). Older singles and older couples with no children purchased more non-sugar than sugar-sweetened CSDs. Higher-income households purchased the greatest volume share of sugar-sweetened and non-sugar CSDs, and this increased from 2004 to 2006 (49% to 53% for sugar-sweetened and 48% to 56% for non-sugar). Medium-income households purchased 29% of sugar and non-sugar CSDs in 2004, and this decreased by 2006 to 28% for sugar-sweetened and 25% for non-sugar. The lowest-income households purchased the least CSDs in 2004 (22% of both sugar-sweetened and non-sugar), which decreased by 2006 (19% for sugar-sweetened and 18% for non-sugar).

Trends in reported beverage consumption with age and sex

Similar proportions of males and females from the same age groups were drinking sugar-sweetened CSDs (Figure 7a,b), but the proportion of people consuming decreased across most age groups between 2004 and 2006. The greatest proportion of sugar-sweetened CSD drinkers came from the age group of 14–24 years.

The younger age groups tended to have more non-sugar CSD drinkers than the older age groups (30% vs 20%), with young women being the greatest consumers. The number of males and females consuming plain still water increased for all age groups by 2006, except for males aged 25–39 years. More females drank plain still water than males, and fewer older people, compared with the younger age groups, drank plain still water.

The group with the highest proportion of sports drink consumers was male individuals aged between 14 and 17 years, which increased from 17% in 2004–2005 to 23% in 2005–2006. The group with the highest proportion of energy drink consumers was males aged between 18 and 24 years (17–19% in 2004–2006). There were also increases in the proportion of males and females drinking energy drinks in the younger age groups from 14 to 24 years from 2004 to 2006, with the greatest increase observed in teenage

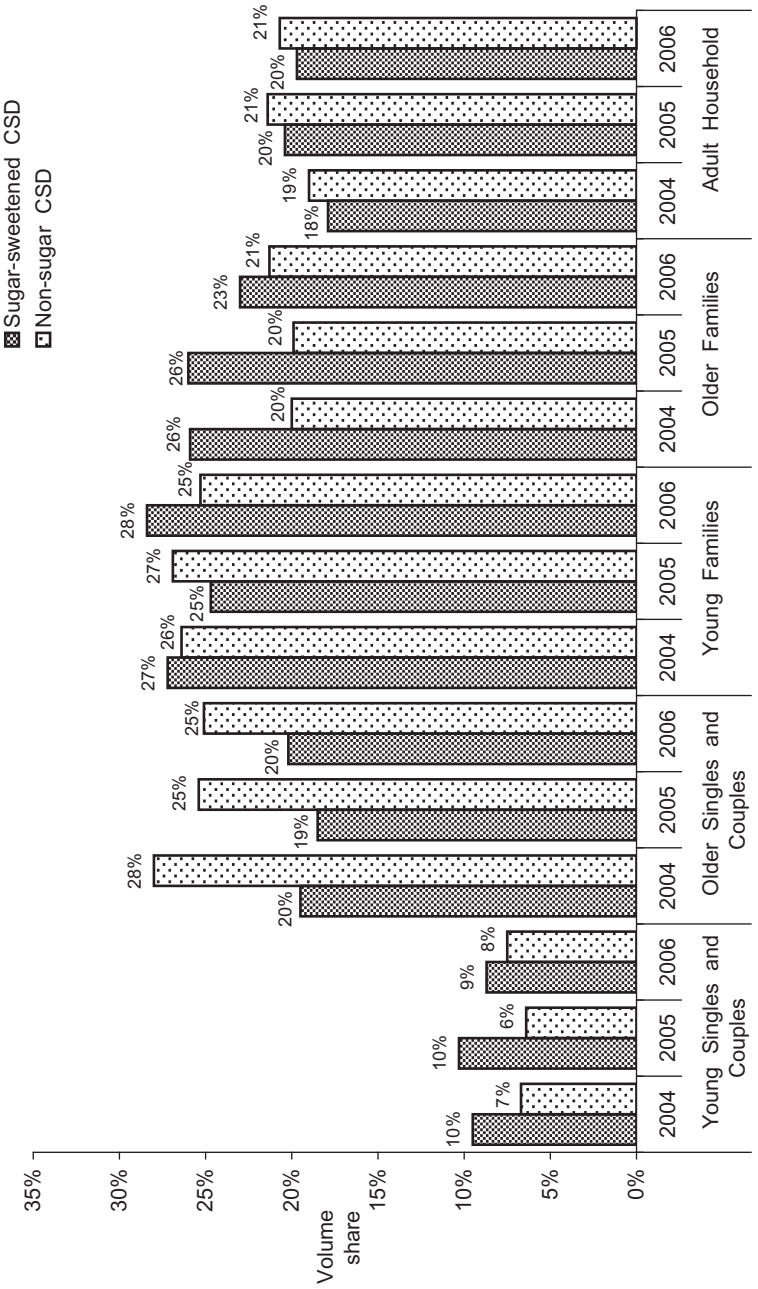

Figure 6 Volume share of sugar-sweetened and non-sugar carbonated soft drinks (CSDs) for households of varying structure, 2004–2006.

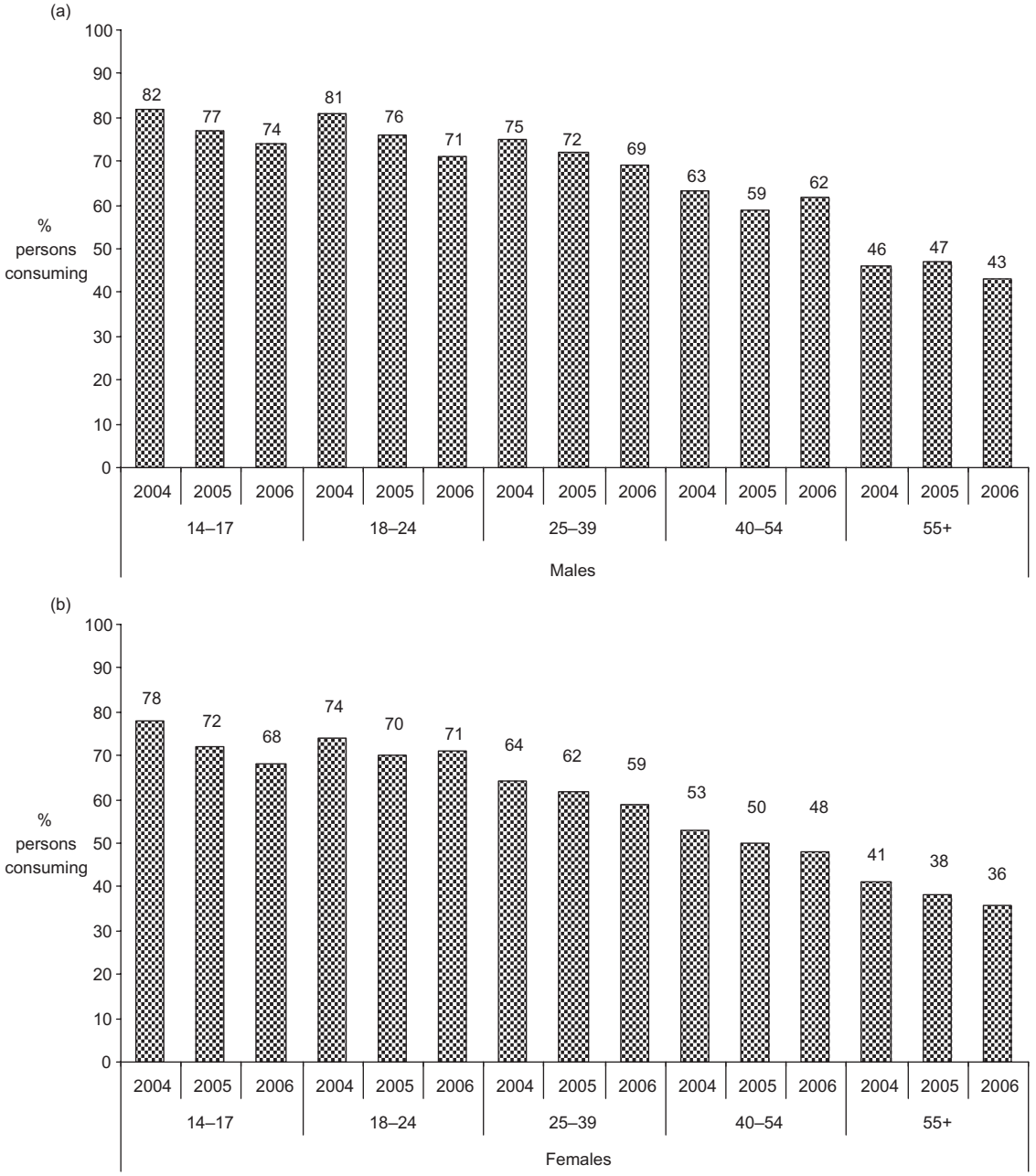

Figure 7 Proportion of male and female respondents greater than 14 years drinking sugar-sweetened carbonated soft drinks (CSDs). (a) Males and (b) females.

girls aged 14–17 years (9% in 2004 to 16% in 2006). This growth may also have come from non-sugar varieties.

DISCUSSION

The increase in sales of non-alcoholic WBBs in Australia, as shown in this paper, reflects a society that is purchasing its fluids. The changes in purchasing patterns could come with greater trends in eating out,[6] or increasing social venues for drinking and practices such as ordering bottled water with meals. Whatever the reason, Australians are purchasing more non-alcoholic, WBBs than before.

By far, the largest contributor to this phenomenon was the purchase of plain still water. Non-sugar CSDs come next, and represent an area of substantial growth. Total volume sales of CSDs have increased, but not coming from the sugar-sweetened varieties (Figures 2, 4, 7), rather from individuals purchasing more non-sugar. In fact, the increase in non-sugar seems to be coming from larger volumes purchased by both established non-sugar drinkers and those choosing more non-sugar to replace sugar-sweetened drinking occasions.

Per capita CSD consumption also decreased slightly; however, this could also be due to an ageing population,

with older Australians tending to consume less CSDs. Nevertheless, sugar-sweetened CSDs still made up the largest share of WBB sales, although that share is showing decline, especially as sales have been decreasing since 2002.

Could purchasers of sugar-sweetened CSDs also be changing to other sugar-sweetened beverages? While the data presented here cannot answer this question, it does show that the growth in WBB sales lies more with plain still water and non-sugar CSDs. Increases in the smaller beverage categories still did not contribute enough volume to match the decline in sugar-sweetened CSDs (62.4 vs −71.3 million litres). In market terms, the other categories are small, but increasing. These purchasing patterns seem to reflect the social use of products and the requirement for more functional beverages like sports drinks and energy drinks for young males and increasingly for young females with the introduction of non-sugar varieties. Likewise, younger males and females are the main consumers of CSDs (Figure 7), and high purchasing patterns were linked to higher-income levels.

An interesting observation was that the trends in sales of plain sparkling mineral water were not the same as for plain still water (Figure 3). This might suggest that consumers prefer sweeter taste with carbonated drinks, but are happy with the flavour of plain still water. It also seems that older people do not appear to share the interest in purchasing water, possibly having always used water from the tap, and perhaps not eating out as much as younger consumers.

We recognise that this work has several limitations which come with gathering data from different sources. First, the authors recognise that having no data for children or for fruit juice or syrup-based WBBs were limitations likely to result in underestimation of sales and usage. Perhaps, future analyses will prompt various industries to work with health professionals to analyse data over broader categories. Second, differing time frames of reference between sales data and usage data may present interpretation difficulties. In this instance, usage data only reflected the latter years; however, these findings come from independent methodologies with independent outcomes, being used to build a total picture of the market—reminiscent of the way data are used by industry. While industry data are not designed to monitor public health, they can provide health professionals with valuable insight into market drivers and product usage, which, if anything, would be a 'best guess' scenario without continual surveillance.

Attempting to build a profile of our food environment without regular nutrition surveillance is a challenge. Using isolated sets of data from smaller surveys does not generally reflect real changes in the national food supply.[7] On the other hand, population-based surveys may report data which fail to address change within food categories, especially for new products that currently make up a large share of today's market like non-sugar beverages. In the Bridging Study, which compared data from the 1983 and 1995 nutrition surveys in Australian adults, intakes of non-alcoholic beverages increased in both male and female populations.[8] However, it was not clear whether those increases were from sugar-sweetened or non-sugar beverages. Apparent consumption data for Australia also showed increases in beverage consumption from 1979 to 1999,[9] but also only classified WBBs as 'carbonated and aerated waters', not indicating whether they were sugar-sweetened or not. Interestingly, this same data set also showed that Australians were consuming less cane sugar than in previous years,[9] a finding that could partly be explained by shifts in sales of sugar-sweetened beverages as was identified in our analysis.

These inconsistencies in classification of beverages made our data difficult to compare with published NNS and apparent consumption data. Nonetheless, if we had to calculate sales of 'carbonated and aerated beverages' from our data to match results from apparent consumption data by removing still water, iced tea and sports drinks from our analysis, we would get total volume sales of 2078 million litres in 1997, 2112 million litres in 1998 and 2123 million litres in 1999. These results are similar to ABS apparent consumption data of 2107 million litres in 1997,[10] 2209 million litres in 1998[9] and 2131 million litres in 1999,[9] indicating that sales data, provided by the beverage industry, reflected apparent consumption data from 1997 to 1999.[9] Given this, sales data could act as a reasonable proxy for apparent consumption data when assessing beverage trends on a national level.

In conclusion, the increased sales of WBBs in 2006 reflect a greater trend to purchasing fluids and particularly bottled water and non-sugar CSDs, despite a concomitant decline in sales of sugar-sweetened CSDs. Purchasing trends are likely to represent the social conditions under which beverages are consumed, and this needs to be considered for both product marketing and health promotion activities. Either way, the analysis reported here suggests that industry-generated data have proven useful in forming a picture of Australian WBB purchasing patterns, which can then be used to inform on usage and consumption. Further investigation into purchasing drivers may help with the interpretation of change in sales and usage patterns, which may then provide insight for targeted health promotion activities.

ACKNOWLEDGEMENTS

Funds for this study were provided as an open grant from the Australian Beverages Council Ltd (ABCL). Dr Gina Levy conducted this research as a consultancy to ABCL. Professor Linda Tapsell assisted as a consultancy to ABCL for the National Centre for Excellence in Functional Foods. The authors would like to acknowledge key members of ABCL, who provided data for the analyses and gave feedback on the industry perspectives presented. In particular, Toni Fox and Veronique Droulez provided extensive input.

REFERENCES

1 Australian Bureau of Statistics. *National Nutrition Survey: Nutrient Intakes and Physical Measurements 1995*. Canberra: Commonwealth Department of Health and Aged Care, 1998.

2 Department of Community Services and Health. *National Dietary Survey of Adults 1983. No. 2. Nutrient Intakes*. Canberra: AGPS, 1987.
3 Almiron-Roig E, Drewnowski A. Hunger, thirst, and energy intakes following consumption of caloric beverages. *Physiol Behav* 2003; **79:** 767–73.
4 St-Onge MP, Rubiano F, DeNino WF *et al.* Added thermogenic and satiety effects of a mixed nutrient vs a sugar-only beverage. *Int J Obes* 2004; **28:** 248–53.
5 AC Nielsen. Scan Track and Home Scan studies. (Cited June 1997–June 2006, provided by the Australian Beverage Corporation Ltd.) Available from URL: http://www.acnielsen.com.au
6 Department of Agriculture Fisheries and Forestry. *Australian Food Statistics 2005*. Canberra: Commonwealth of Australia, 2005.
7 Coyne T. Big frogs in a little pond: individual studies help to fill the gaps in Australia's small pond of dietary data. *Nutr Diet* 2005; **62:** 9–10.
8 Cook T, Rutishauser IH, Allsop R. *The Bridging Study-Comparing Results from the 1983, 1985 and 1995 Australian National Nutrition Surveys*. Canberra: Commonwealth Department of Health and Aged Care, 2001.
9 Australian Bureau of Statistics. *Apparent Consumption of Foodstuffs, Australia, 1997–1998 and 1998–1999*. Canberra: ABS, 1998. Cat. No. 4306.4300.
10 Australian Bureau of Statistics. *Apparent Consumption of Foodstuffs, Australia, 1996–1997*. Canberra: ABS, 1997. Cat. No. 4315.4310.