

#### Online Supplementary Appendix 4: Observational Studies

Citation	Objective/aims	Population/community	Study design (date, study type, method)	Results
Colles et al. (2014) <sup>1</sup>  [Ref #68 in article]	Explore strategies to provide culturally sensitive approaches to support food choice and health among residents of a remote Aboriginal and Torres Strait Island community.	<b>Population:</b> One remote Aboriginal and Torres Strait Island community in the Northern Territory (Total est. population n=2,000).  <b>Sample:</b> Community residents age ≥18 years (n=21 women; n=9 men).	2011-2013; Qualitative interpretive content analysis; Mix of purposive sampling (a range of language, family groups, ages, and “community social standing”), and opportunistic sampling (e.g. if a person accompanying another participant to an interview wished to contribute they were included).  <b>Semi-structured interviews:</b> views of store-based foods and broader concepts that they are related to; knowledge of the contemporary food system; how do adults guide the food choice behaviour of children in store; what are the channels through which people take on/wish to take on, information about food?	<b>Awareness of health risks:</b> Soft drinks understood to be high-sugar and exclusively linked to diabetes. High fat and high-sugar foods referred to as ‘killing the body inside’.  <b>Barriers to change:</b> It can be difficult saying ‘no’ to a child’s request for fizzy drinks. This could be for a variety of different reasons including the traditional view of letting children choose, or whether parents know fizzy drinks are unhealthy. Parents may have their own style of managing this situation such as offering fruit as a sweet alternative, or telling the child that fizzy drinks are bad for them.

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Myers, et al. (2014) <sup>2</sup>  [#69]	Investigate child nutrition concerns of Aboriginal and Torres Strait Island families with young children; their sources of nutrition and child health information; training needs of early childhood practitioners.	<p><b>Population:</b> Aboriginal and Torres Strait Island families with young children aged 0–8 years attending Aboriginal health and early childhood services in regional or urban Victoria; early child practitioners working in these services.</p> <p><b>Sample:</b> Parents (n=35) of whom (n=34) Aboriginal, and (n=1) Torres Strait Islander.</p> <p>Early childhood practitioners, managers, and Aboriginal Health workers (n=45; 75% Aboriginal) recruited from (n=14) sites within (n=2) Aboriginal Community Controlled Health Organisations (n=1 rural; n=1 urban).</p>	<p>Research dates not provided; Qualitative needs assessment through community-based participatory research; thematic analysis. Convenience sample of Aboriginal Community Controlled Health Organisations; Parent/carers, practitioners and staff members were invited to participate through community contacts (non-random). Community meetings were held afterwards where findings were discussed &amp; subsequently endorsed.</p> <p>Semi-structured interview guides: nutrition and active play issues for families; child health &amp; parent perceptions; resource needs; staff training needs; service delivery issues.</p>	<p><b>Awareness of health risks:</b> Reliance on sweet drinks (including coke and cordial), and bottles (i.e. pacifying children with a sweet drink or milk in a bottle) was the most frequently-reported nutrition concern raised by both groups. E.g. “Especially with the bottle, cordial in the bottle, that’s rotting teeth, my kids have got em’.” And “The pacifying thing with the drink bottle. Another milk drink, another milk bottle. They’re just giving them more bottle, the kids’ screaming more so they think more bottle, screams again, more bottle.”</p> <p>Several participant quotes specifically referenced high-sugar soft drinks including Coke, and Cordial. E.g. “I try and buy heaps of fruit but it’s just that Coke always ends up at home. I’ll get a can and it’s... drunk by everyone else. It’s the Coke that’s a killer in our black kids.”</p>

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Smith et al. (2003) <sup>3</sup>  [#70]	To explore the Aboriginal and Torres Strait Island community and health service providers' knowledge and attitudes towards child growth.	<p><b>Population:</b> Yolngu community; Northern Territory (Approx. population not given).</p> <p><b>Sample:</b> Yolngu community members (n=43) comprised of: adults without children (n=7 male, 2 female); new parents (n=3 male, 4 female); parents with ≥2 children (n=6 male, 7 female); and grandparents (n=4 male, 10 female).</p> <p>Clinic staff (n=13) working in one community health clinic, including: Aboriginal Health Workers (n=6); Nurses (n=5); and a Doctor (n=1), visiting child health service provider (n=1).</p>	<p>2000; Qualitative.</p> <p><b>Interviews:</b> Community members and clinic staff were interviewed with themes on: reasons children grow well, food, caring for children, ways of knowing whether a child is growing well, knowledge of the Growth Assessment and Action Program, knowledge of the other group's (Yolngu community or clinic staff) ideas for growth promotion action. Content analysis was conducted based on the interview themes.</p>	<p><b>Awareness of health risks:</b> 7 participants mentioned soft drinks/Cola as 'bad' foods for children.</p> <p><b>Barriers to change:</b> A common explanation for eating junk food (including soft drinks) is that it is habitual, with the habit thought to have developed during the mission time (when packet sugar was a staple food provided by missions).</p>

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Ferguson et al. (2016) <sup>4</sup>  [#71]	To determine the average price difference of commonly purchased foods and beverages between remote Aboriginal and Torres Strait Island community stores and capital city supermarkets.	<b>Sample:</b> Remote community stores in Northern Territory (n=20) and major supermarkets in Darwin (n=2) and Adelaide (n=2).	2013; Cross-sectional survey of store sales data. The average price of commonly purchased food and beverage items was calculated for: remote stores (average price for 3-months sales data, all stores); and urban supermarkets (collected via websites from supermarkets in Darwin and Adelaide). Urban store selection in both cities was based on presence of one store from each of the two major supermarket chains within one postcode (local area), <20km from central business district. Only one Darwin local area met the inclusion criteria; an Adelaide local area with the required two stores was selected based on matched socio-economic status.  Average urban prices were calculated for each city based on the two supermarket prices. Mean remote store price was then compared to the mean urban supermarket prices.  Comparisons of remote prices to Darwin stores are reported for: <i>advertised price</i> (the price consumers pay including discount); <i>non-discounted prices</i> (the normal or non-discounted price); and prices of <i>generic products</i> (i.e. own label, or supermarket branded). For Adelaide stores, only <i>advertised price</i> comparison is reported.	<b>Percent increase in cost (remote vs. urban stores)</b> Soft drinks, regular: 138% vs. Adelaide advertised price 131% vs. Darwin advertised price 130% vs. Darwin non-discounted price 397% vs. Darwin generic products price  Soft drinks, diet: 117% vs. Adelaide advertised price 110% vs. Darwin advertised price 87% vs. Darwin non-discounted price 395% vs. Darwin generic products price  Bottled water: -5% vs. Adelaide advertised price -9% vs. Darwin advertised price -9% vs Darwin non-discounted price 45% vs. Darwin generic products price  Cordial: 63% vs. Adelaide advertised price 60% vs. Darwin advertised price 33% vs. Darwin non-discounted price 70% vs. Darwin generic products price

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Brimblecombe & O'Dea (2009) <sup>5</sup> [#72]	Explore the relationship between dietary quality and energy density of foods and their energy cost.	<b>Population:</b> One remote island community in Northern Territory (est. population total n= 1,700; 93% Indigenous).  <b>Sample:</b> community store (n=1), takeaway stores (n=2), school canteen (n=1), aged care program (n=1).	2005; Store sales data.  Store sales and weekly food orders were collected for a 3 month period. Nutrient content of products were obtained from the Australian Food and Nutrient Database. Energy cost was calculated as the cost (\$) per unit of energy (megajoule; MJ) provided by each product.	<b>Energy cost of beverages (\$/MJ)</b> Cola = \$2.20 Cordial = \$0.43 Orange Juice = \$2.80 Fruit drink = \$2.32  <b>Energy cost of foods (for comparison; \$/MJ)<sup>1</sup></b> Canned tuna = \$2.81 Beef steak = \$3.77 Tomato = \$11.15
Gwynn et al. (2011) <sup>6</sup> [#73]	Validation study of a short food-frequency questionnaire (SFFQ).	<b>Population:</b> Australian children age 10-12 years living in the north coast of New South Wales.  <b>Sample:</b> (n=205) children age 10-12 years, of whom (n=78) were Aboriginal and/or Torres Strait Islander.	2005; 3 x face to face interviews, using 3 x 24-hour detailed prompted recall; a short food-frequency questionnaire (SFFQ).  Interviews provided detailed consumption data. SFFQ included measurement of beverage consumption frequency i.e. "usually drink".  Data from SFFQ was compared to data obtained from 24-hour recall interviews.	<b>Soft drink consumption recall</b> There were differences in consumption data between SFFQ and interview methods, for the lower SFFQ consumption categories only, e.g. for children who on the SFFQ claimed they consumed only 1 cup of soft drink or less per week, actually consumed approx. 1 cup per day according to their 24-hour prompted recall interviews.

<sup>1</sup> Three products were selected (from a list of other foods within the article) to display in this table, to provide a comparison to the beverage energy costs

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Tonkin et al. (2018) <sup>7</sup> [#74]	Validation study of a short dietary assessment tool, the Menzies remote short-item dietary assessment tool (MRSDAT)	<b>Population:</b> Australian Aboriginal Children age 6-36 months living in remote Aboriginal communities.  <b>Sample:</b> (n=40) Aboriginal children age (50% female; age at first session 0-36 months), and their parents, living in one remote Aboriginal community (Northern Australia)	2017-2018; 3 x face to face interviews conducted over 4 months. First interview used MRSDAT and 24-hour prompted recall; second and third interviews used 24-hour recalls.  Interviews provided detailed consumption data. MRSDAT included measurement of beverage consumption frequency i.e. “usually drank” over preceding fortnight.  Data from MRSDAT was compared to data obtained from 24-hour recall interviews.	<b>Soft Drink Consumption Recall</b> There was no statistically significant differences in consumption data between MRSDAT and interview methods (p=0.31): <b>SSB Median serves per day (IQR)</b> MRSDAT = 0 (0, 0.05) 24-hour recall (average of 3 days) = 0 (0, 0)
Rodgers et al. (1998) <sup>8</sup> [#75]	Measure environmental factors influencing purchasing decisions, including advertising and food price and availability.	<b>Population:</b> 4 New South Wales communities. Est. population total (% Aboriginal): Bourke (n=2,981, 28.1%), Brewarrina (n=1,172, 41.7%), Enngonia (n=120, 90%), and Goodong (n=339, 90%). <b>Sample:</b> Takeaway food outlets (n=13).	Date not specified; Observation (of external advertising) and surveys.  External advertising recorded in all towns (defined as food and beverage advertisements visible from the main roads and pathways).  Takeaway food outlet owner/managers surveyed.	<b>External advertising:</b> 18% of external advertising was for Coca-Cola. <b>Internal availability and advertising:</b> All stores stocked regular soft drinks; 92.3% stocked energy reduced soft drinks. In-store advertising (i.e. refrigerators) was present for soft drinks, some of which was provided to retailers at no cost.
Arnhem Land Progress Aboriginal Corporation (2016) <sup>9</sup> [#76]	Arnhem Land Progress Aboriginal Corporation annual report, inclusive of the health and nutrition policies.	ALPA Stores (n=not provided) in the Northern Territory and Queensland.	2015-2016; Annual report.  Detail of methods and beverage sales measures not provided.	<b>Beverage sales:</b> 7% decrease in soft drink sales 13% increase in water sales Results are not directly linked to any specific intervention or activity.

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Hoy et al. (2014) <sup>10</sup> [#77]	Ongoing managerial in-house audit of the local store and takeaway outlet.	<b>Population:</b> One remote community in Northern Territory (est. population total n= 1,527).  <b>Sample:</b> Local store (n=1) Takeaway outlet (n=1)	2011; Store audit reported in a letter to the editor.  Audit methods not described.	<b>Beverage sales (total Litres in 6-month period):</b> Coca-Cola = 108,000L
Brimblecombe et al. (2013) <sup>11</sup> [#78]	Determine the dietary change required to meet the recommended Australian Nutrient Reference Values, at minimum cost, in a remote Aboriginal population.	Remote desert (n=2) and coastal (n=1) communities in Northern Territory (est. population total n=2,644).	2010-2011; Modelling study using 12-month store sales data, and community population estimates; Baseline community-level dietary intake estimated using store sales and food services (e.g. meal programs) orders, then converted to weight and nutrient values. Estimated weighted energy requirements were calculated from the Nutrient Reference Values (NRV) for Australia and New Zealand.  Optimisation modelling: NRV used to set 20 constraints relating to specific target nutrient densities (nutrient per 1000kJ) and used to calculate estimated average nutrient requirements for a population with the demographic structure of the communities. Modelling conducted to determine the minimum cost of changes in food and drinks consumed, to meet these constraints, whilst minimising deviation from the current purchased diet.	<b>Beverage sales (modelled):</b> The two best models both require people to reduce their SSB intake by 90%. This change in behaviour would be cost-neutral (i.e. would not cost consumer any more nor less). Therefore, to incentivise a change in purchasing behaviour, policy level interventions may be required.
Henryks & Brimblecombe (2016) <sup>12</sup> [#79]	Map the current literature on the point of purchase influencers on food choice in Remote Indigenous Communities.	Australian Remote Indigenous Communities.	2015; Narrative literature review (search dates until August 2015).  Papers were reviewed for factors that either directly or indirectly influenced consumer food choice at the point of purchase.	<b>Beverage purchase influencers:</b> Children have a large amount of autonomy in remote communities including their own money, thus children buying for themselves are more likely to buy high sugar beverages in preference to water (anecdotal evidence, no reference to study provided).

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Rogers et al. (2018) <sup>13</sup>  [#80]	Elicit the perceptions of a range of stakeholders on the enablers, barriers and perceived benefits of a multisector participatory approach (the Good Food Systems: Good Food For All Project (GFS)) that was developed and trialled with four communities to improve food security.	Very remote Indigenous communities in Queensland (n=1) and the Northern Territory (n=3). Communities ranged in size from 250 to over 2,000 residents.  <b>Sample:</b> (n=61) people involved in GFS activities including: community residents with an interest in the food system and in a position to influence change; service providers; project team members, including community coordinators)	Interviews conducted in 2012 (fourth year of the GFS project); Qualitative design, with thematic analysis used to identify the perceived enablers, barriers, and benefits of the GFS approach.	Participants believed that the GFS created a supportive environment for desired change in the food system, with one participant (a community liaison officer) citing an example that soft drinks had been relocated from the front to the back of the store, and the front of store now featured water and milk.  Both Indigenous and non-Indigenous participants noted that the GFS had led to increased knowledge and capacity, and that this was perceived to benefit the wider community. An example cited by a community coordinator was a family who no longer “takes sweet drinks”, and now only buys water.

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