

Original Article

Indigenous Australian food culture on cattle stations prior to the 1960s and food intake of older Aborigines in a community studied in 1988

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Between 1988 and 1993 the International Union of Nutritional Sciences Committee 'Nutrition and Ageing' established the international 'Food Habits in Later Life' (FHILL) Program.^{1,2} The FHILL program documented current and distant past food habits of more than 2000 Caucasian and Asian elderly people, which also included 54 older Aboriginal Australians in a community called Junjuwa in the Fitzroy Valley, Kimberley region, Western Australia. The program primarily used a quantitative food frequency questionnaire to collect food intake data. However, in some communities this was neither practical nor feasible due to differences in cultural interpretation of questions relating to 'time', 'frequency' and 'quantity'. To overcome this hurdle, FHILL was coupled to a qualitative socioanthropological methodology known as RAP 'Rapid Assessment Procedures'. This paper reviews published qualitative data using RAP to describe distant past food intake on cattle stations prior to the 1960s¹ and food intake of Aborigines aged 50 years and over in 1988 in Junjuwa.⁴ Aboriginal food habits on cattle stations prior to the 1960s appeared to be more nutrient dense, due to greater food variety and higher intakes of lean fresh and salted buffalo meat (probably high in omega-3 fatty acids), offal, vegetables and bush foods; buffalo fat was rationed and used in meat stews. High intakes of tea and sugar appears to have remained unchanged. Food intake was more or less constant from day to day in contrast to the 'feast' and 'famine' days observed in the community studied in 1988, which was related to the pension cycle. In contrast to the more varied cattle station diet, the community-dwelling older Aborigines in 1988 consumed more than 50% of their total energy intake from three foods: sugar, fatty beef/lamb and white flour (damper). Exploring distant past food intake on cattle stations has helped explain desirable and undesirable food preferences of the older Aborigines in 1988. For example, the desire for stewed fatty meat, salty preserved meat, onions, potatoes, white leavened and unleavened bread (damper), rice, oats, salty sauces/curry, sugar and tea, but a lack of desirable oils, leafy greens, yoghurt, legumes and nuts is partly a reflection of the food habits and preferences of Anglo-Australians in the bush more than 50 years ago.

Key words: Aboriginal Australians, cattle stations, elderly, food intake, indigenous food culture, rapid assessment procedures.

Introduction

As the food supply changes and there is considerable pressure on young people to conform to a global fast-food culture, the older members of society represent, in many cases, the principal repository of traditional food knowledge and skills.

Between 1988 and 1993 the International Union of Nutritional Sciences (IUNS) Committee 'Nutrition and Ageing' established the international 'Food Habits in Later Life' (FHILL) Program^{1,2} which was coupled to a socioanthropological methodology known as RAP 'Rapid Assessment Procedures'.³ The methodology encouraged the expression and documentation of the food culture of the study communities. It also enabled investigators to quickly identify major changes to traditional food habits and nutritional problems when it was not possible to use the more time-consuming quantitative food frequency questionnaire developed for the FHILL program.

The FHILL program endeavoured to document current and past food habits and lifestyle of more than 2000 older people around the world, which included 54 older Aboriginal

Australians in a community called Junjuwa in the Fitzroy Valley, Kimberley region, Western Australia. This information is not only interesting from an historical point of view, but also highlights changes to traditional food culture and their possible impact on current health problems. This paper will review published qualitative data using RAP to describe distant past food intake on cattle stations prior to the 1960s¹ and food intake of Aborigines aged 50 and over in 1988 in Junjuwa.⁴

Culture and history

Aboriginal people were one of the world's largest groups of hunter-gatherers. They lived throughout the vast and varied

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environments of the Australian continent, isolated from contact with other peoples, for many thousands of years before British colonization began in the late 1700s in a small convict colony which today is the city of Sydney. The Kimberley region in the north-west was one of the last large areas of Aboriginal Australia to be settled by Europeans, largely because of its remoteness from the population centres of the more settled and gentler, temperate areas of the south and south-east and because of the extreme conditions and climate of the Kimberleys.⁵

The cattle industry used large tracts of the best land, which were fed by creeks and river systems and had abundant grass for grazing (or 'ranching'). Naturally, this was the type of land that supported the abundant wildlife and bush foods on which the Aborigines lived. By the end of the 1800s, large areas of previously traditional Aboriginal hunting and gathering lands were taken up by pastoral leases for raising cattle. Eventually, some areas became degraded due to the effects of overstocking hoofed animals. Groups of Aborigines lived on cattle stations and adapted to the new arrangements, including changing to a diet dominated by station rations that included refined tea, flour, sugar, jam and meat. Traditional sources of food in the diet became decreasingly important except mainly for recreational purposes, such as fishing and shooting game.⁵

From the late 1960s and early 1970s there have been many social and political changes in Australia that have influenced Aboriginal health and nutrition.⁵⁻⁷ These include the granting of citizenship rights, voting rights, equal access to alcohol and high levels of dependence on social security in areas like the Kimberley, where Aboriginal unemployment rates are generally very high. Urbanization, a dependence on welfare payments, Westernization of diet, loss of hunter-gatherer skills and increasingly sedentary lifestyles have been accompanied by a proneness to the so-called 'lifestyle' diseases.^{6-8,12} These include cardiovascular disease, stroke, hypertension and diabetes as well as accidents and violence which have become major causes of poor health and premature deaths, particularly between the ages of 30 and 50.^{6,7} Life expectancy at birth for Australian Aborigines has been more than 20 years lower than the total Australian population since the 1980s.^{6,8,9}

Adjustment to stress, financial and other obligations and pressures associated with their recent entry into the largely unsympathetic, wider cash society has been difficult for Aboriginal people, who are also going through times of turbulent social and political change.^{6,10} These factors all need consideration in understanding the food habits of older Aborigines residing in Junjuwa in 1988.

Demography

The 1986 Australian census enumerated a total Aboriginal population of more than 206 104, with Western Australia having a population of 37 110, the third largest (male 18 473, female 18 637). About 40% of Aborigines were younger than 15 years of age, compared with 23% of the total population. Only 4% were aged over 60 years, compared with almost 15% of the total population. Life expectancy at birth in 1986 for Australian Aborigines was 51 years for men and 59 years for women, compared with 73.2 for men and 79.8 for women for the total Australian population.^{6,7,11} The Fitzroy Valley

and Kimberley regions had the highest life expectancies for Aborigines in 1986: 61 years for men and 65 years for women. The longer life expectancies at birth in the Fitzroy Valley region enabled the inclusion of a relatively high number of elderly Aborigines in the study. The Fitzroy Valley region has one of the largest concentrations of Aboriginal people in Western Australia. In 1986, 1716 Aborigines and 194 non-Aborigines lived in the Fitzroy area, the Aborigines comprising 80% of the total population.

Older Aboriginal Australians living at Junjuwa, Fitzroy Crossing, Kimberleys

The Aboriginal Australians aged 50 and over studied in 1988 lived in an Aboriginal community called Junjuwa. This community was located 2 km from the Fitzroy Crossing townsite, in a sparsely populated area in the far north of Western Australia. Before the 1960s, Fitzroy Crossing consisted of little more than a hotel, located at the crossing in the riverbed where cattle traversed the river, a post office, a hospital, a police station and a Christian Mission to the Aborigines. The town changed radically in the 1970s following the relocation of Aborigines from their homelands in many parts of the Kimberley area, some of them being relocated hundreds of kilometres from their traditional homes in the desert. Living conditions became crowded, often unhygienic and sometimes squalid.

Junjuwa was first established in the 1960s as a Christian mission, but the mission closed in the 1970s when government housing was introduced. Aborigines from six tribes moved to Junjuwa from cattle stations in the 1970s; they were originally from the Fitzroy Crossing and river area and were often referred to as 'river people'. The elderly were defined as 50 years and over because they represented the upper decile of the population at Junjuwa. Of the total population at Junjuwa ($n = 336$) in 1988, 16% were aged 50 and over ($n = 54$, male 7%, female 9%); of these, 5.4% were aged 50-60, 7.3% aged 60-70 and 3.3% aged 70-80. There were similar numbers of men and women aged 70-80, but twice as many men aged 60-70 and twice as many women aged 50-60. Medical records on the elderly indicated a high prevalence of diabetes (27%), heart disease (21%), hypertension (44%) and obesity (body mass index >30) (14%).

'Rapid Assessment Procedures' for deducing current and distant past food habits

Current food habits

The anthropological methodology utilized to obtain information on current food intake has been described in detail elsewhere.¹⁻⁴ In summary, there were problems with the quantitative questionnaire approach because of the requirement to understand non-Aboriginal concepts like 'time', 'frequency' and 'quantity'. More valid information was obtained by interviewing 'key' informants (for example, health workers, supermarket managers) and groups of selected elderly Aborigines (a total of 25 people were interviewed), which allowed cross-checking or 'triangulation' to reconstruct the typical elderly diet. The quantitative food frequency questionnaire was modified, using RAP, to be usable with 'key' informants and at the group level, so as to build a consensus statement about group food intake patterns. This method, however, was unable and probably not sensitive

enough to identify gender differences in food intake. The sample elderly who were interviewed was limited to 25, because food patterns were so similar that it was unlikely that further useful information would be obtained. Focus groups of six elderly subjects were an effective way to obtain information. Portion sizes were estimated using food photographs, food scales, play dough and items from the supermarket. Food photographs of non-Aboriginal foods were used to help quantify food consumed. Food scales and play dough were used to quantify damper (unleavened bread; Figs 1,2). An Aboriginal health worker was interviewed regarding bush foods in the river area commonly eaten today and in the past to devise a food frequency checklist of bush foods.

Distant past food habits

Distant past food habits prior to the 1960s were obtained in the form of a modified diet history (to establish meal patterns) and semi-quantitative food frequency checklist. This instrument was used with the key informants and focus groups with elderly Aborigines. The police sergeant and several cattle station owners were interviewed with this instrument to cross-reference/triangulate information obtained from the elderly, especially about food rations on stations prior to the 1960s.

Food intake on cattle stations prior to 1960s

The elderly living at Junjuwa were either born on a cattle station, police station or 'pub camp' in the Fitzroy valley region of the Kimberleys or moved to these places as young children from the tribal lands in the bush. Most of the elderly would have lived at these locations for at least 40 years before moving to Junjuwa. Work was offered in exchange for food rations, clothing, shelter and medical attention, which were also extended to the family of the 'worker'. There were no government regulations about the type of food provided — it depended entirely upon the station.

On the cattle stations, Aboriginal and non-Aboriginal stockmen would muster cattle from March to November in 6-week blocks. They would return to the station for about 2 weeks between the 6-week mustering periods. A limited supply of food could be taken when mustering. This included tea, sugar, golden syrup, flour and occasionally some potatoes. Cattle would be killed for food, the left-overs salted and carried with them. The non-Aboriginal stockmen would return to the stations after 6 weeks with a disease afflicting the hands, called 'Barcoo rot'. The disease was treated with vitamin C and penicillin and was caused by not eating fruit or vegetables while mustering. The Aboriginal stockmen rarely got this disease because they would eat bush food.

Aboriginal women usually worked in the morning at the stations (for example, cooking, cleaning) and spent most afternoons searching for bush foods. Food rations were provided on weekdays and many stations also provided food on weekends and during holidays (November–March). Most families would spend their weekends in the bush. During holidays, they would leave the station for a couple of weeks and live in the bush (see Table 1 for cattle station rations).

Food intake of older Aborigines in a community in 1988

The food and nutrient intakes of elderly Aborigines has been reported elsewhere.^{1,4} In summary, the qualitative anthro-

pological method RAP revealed that food quality and quantity of consumption were closely connected to the weekly pension, resulting in a feast–famine type of eating pattern. When the pension was received (on Friday) food shopping was done for the week. Most perishable items were eaten over 3 days in large quantities (feast days). On the remaining days, non-perishable items were consumed in smaller quantities (famine days). Less than 50% of the elderly Aborigines consumed 'meals on wheels' on weekdays only (Government service). There are a number of factors that may be contributing to such 'feast and famine' eating: (i) a natural inclination to feast–famine; (ii) inadequate budgeting skills; (iii) pension money is spent and food eaten quickly before it is taken by relatives or neighbors to purchase alcohol (excessive alcohol intake was evident in this community); and (iv) refrigeration and storage facilities in Junjuwa homes were limited. The feast-eating was tightly related to money availability and the pension cycle. The amounts and types of foods consumed by the elderly at each meal depended upon: (i) the number of persons sharing that meal; (ii) day of the week — from Friday to Sunday most perishable items were consumed and from Monday to Thursday mainly non-perishable items, for example damper (Figs 1,2) and tinned meat, were consumed; and (iii) whether they received meals on wheels. The type of food bought depended upon the

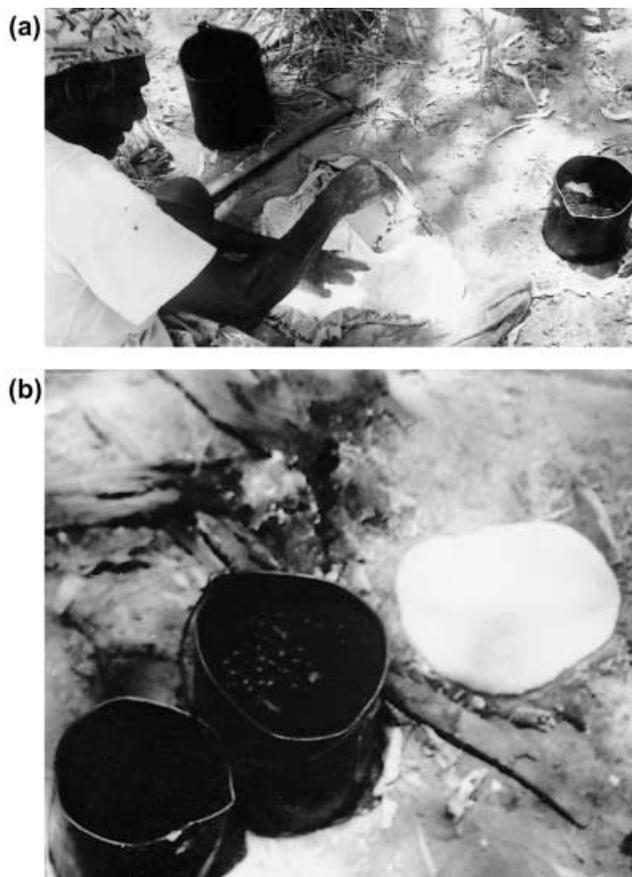


Figure 1. (a) Cooking damper (unleavened bread) in the bush; white flour is mixed with water on a piece of cloth and kneaded into a dough and flattened into a thin pita style bread; (b) dough is covered with ashes and allowed to cook for about 20 min; a wire rack was sometimes placed over the coals of an open fire to cook damper or meat; a small pot 'billy can' was used to make tea and meat stews.

Table 1. Reconstruction of distant past food intake on cattle stations prior to the 1960s and typical diet of older Aboriginal Australians in the Kimberleys using qualitative anthropological methodology (Rapid Assessment Procedures)

Food	Food intake of Aborigines on cattle stations <1960s	Food intake of elderly Aborigines in Junjuwa community in 1988
Damper (unleavened white bread) and bread (leavened)	White flour was used to make damper (mixture of wheat flour and water and cooked in ashes); (Fig.1)some stations found it more economical to bake bread and ration it, since damper requires twice as much flour; damper eaten 3–5 times a day, otherwise 3–5 thick slices of white bread a day were rationed.	Damper was a staple food in the 1980s; eaten 2–3 times a day (serving size varies 100–400 g); on average, 500 g consumed daily. Baking powder is added to flour and kneaded to a dough with water. This was fried in an electric fry pan (known as Johnny cake) (Fig. 2), or cooked in the ashes (Fig. 1). Damper was preferred to bread, because it was reported to be more ‘filling’ especially on ‘lean’ days when little else was eaten. White bread was eaten about twice a week.
Fresh and salted meat	Bullock was killed every week. First few days of the week fresh meat given out in quarters to feed family units. The remaining days of the week, fresh meat was preserved with salt. Meat eaten 2–3 times a day, 200–400 g serving. Most of the meat was stewed or boiled in ‘billy cans’; small proportion cooked on the coals. Curry, onions and potatoes were usually added.	Fatty beef steaks/lamb chops/cutlets were the most popular, followed by mince, chuck steak and rump. Fresh meat was eaten about twice a week (or more often if received meals on wheels; serving 100–400 g). Fat on meat was eaten because it was ‘filling’. Meat was boiled/stewed by the elderly in order to tenderise it for chewing; meat was rarely fried or put on the coals; very little oil/margarine added to cooking.
Offal	Liver, oxtail, rib bones (very popular), tripe, brains, marrow and bones (used to make soup) were weekly rations.	Popular, but eaten only occasionally (for example kidneys, liver).
Tinned meat	Not rationed and rarely eaten.	Very popular, especially tinned corned beef. Eaten about 4 times a week. Serving size 30–200 g. Tinned braised steak stew was also popular and eaten about once a fortnight. Serving size 90–200 g. Sausages eaten once a month.
Chicken	Not rationed and rarely eaten.	Popular with the elderly, because it was softer and easier to chew. Skin always eaten. Usually boiled or bought from the fast food outlet as fried chicken and chips about once a week. If the fast food outlet had been more accessible it would have been eaten more often.
Fish	Not rationed — but would have been consumed when they spent time in the bush on weekends.	Frozen fish was rarely bought. Tinned fish was popular, especially sardines, which were eaten about once a week (serving size 60–120 g). Tinned oysters were also popular. Fresh fish caught from the river was considered a treat. On weekends families would drive to the river and sometimes bring fish back for the elderly, most of whom were either too frail to go fishing or were not taken by the younger adults.
Animal fat, butter, oil, margarine	Most stations did not ration butter or oil. However, bullock fat was provided (as it was liked by Aborigines) and was used in cooking. Fat from native animals was highly prized and always eaten.	Dripping/lard rarely used; preferred margarine to butter because it comes in tubs and is easier to use. It is used for frying and some elderly spread it on damper. A little oil was sometimes used to fry damper. Fat on beef/lamb was always eaten and fat on native animals was highly prized and always consumed.
Oats and rice	Rationed weekly on some stations and consumed 1–3 times a week as porridge.	Rice eaten twice a week or daily if received meals on wheels; consumed boiled with added curry and vegetables. Porridge or weetbix eaten once a week.
Spaghetti	Not eaten.	Tinned spaghetti in tomato sauce was popular, followed by tinned spaghetti with meatballs. Consumed about once a week.
Vegetables	Most stations had large vegetable gardens. Aborigines would receive the surplus. When available, tomatoes, pumpkins, sweet potatoes (which were very popular), carrots and cucumber were rationed. Cabbage, lettuce and cauliflower were not as popular. Potatoes and onions were rationed once a week. Most elderly would have eaten at least 2 potatoes and onions a week — they were usually added to stews or cooked on the coals. Vegetables were eaten on most days. Legumes and nuts rarely eaten.	Potatoes (especially sweet potatoes) and onions were popular and eaten twice a week or daily if received meals on wheels; usually boiled or added to stew. Tinned/frozen carrots and peas were added to stews about twice a month. Pumpkin was rarely bought. Tinned corn eaten twice a month. Green leafy vegetables rarely eaten. Cabbage and cauliflower added to stews twice a month. Legumes and nuts rarely eaten.

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Table 1. Continued

Food	Food intake of Aborigines on cattle stations <1960s	Food intake of elderly Aborigines in Junjuwa community in 1988
Fruit	Fresh fruit was rarely rationed, unless there was a surplus from fruit tress. Tinned fruit was rationed on most days on some stations.	Fruit more popular than vegetables, especially bananas, apples, oranges, grapes and watermelon. Consumed twice a week or daily if received meals on wheels.
Milk/cheese/yoghurt	Not rationed. On pub/police camps, goats milk was rationed, particularly for children. Yoghurt/cheese not eaten.	Fresh milk rarely consumed by the elderly; full-cream milk powder added to tea (4 tablespoons a day). Cheese, icecream and yoghurt rarely eaten.
Eggs	Not rationed.	Consumed about once a week.
Salt	Weekly ration.	Sprinkled liberally in cooking and on food; elderly appeared to like salty/savoury foods; consumed about 2 g/day
Curry	Weekly ration — popular in stews.	Popular and added to stews and rice.
Sauces/packet soup	Not rationed.	Tomato/chilli/Worcestershire sauces were popular with the elderly who appeared to like strong-tasting savoury foods; dried packet soup added to stews or drunk as a soup.
Sugar	Weekly ration — popular in tea.	Used liberally, especially in tea.
Golden syrup/treacle/jam	Weekly ration. Of the three, golden syrup was the most popular. Honey was a luxury — too expensive to ration.	Used about twice a week; jam was used instead of golden syrup.
Sweets/softdrinks/juice	Rarely consumed	Rarely consumed, soft drinks about twice a week.
Tea/coffee	Weekly ration — at least one litre of very strong tea was drunk daily. Coffee not rationed.	Very popular; made very black and strong with loose tea leaves (which were not strained). About 1 litre drunk daily in place of plain water. Mugs used held about 500 ml into which 2 tablespoons of sugar and milk powder were added. Coffee was liked but not drunk because it was more expensive than tea.
Tobacco/alcohol	Tobacco was a weekly ration; alcohol not consumed.	Alcohol consumption/smoking not observed in the elderly.



Figure 2. Investigators weighing fried damper to determine average portion sizes consumed by the elderly; cooking damper (unleavened bread) at home; dough is flattened and then fried in an electric fry pan in oil or margarine (known as Johnny cake) as this is easier and faster than cooking it in the ashes of a fire. White damper is preferred to wholemeal, because it was reported to taste better, was easier to chew and thought to be 'lighter'.

packaging they have become accustomed to, as many elderly could not read English.

Apparent total energy intake was on average 16 800 kJ per day; energy intake varied from 4200 kJ on a famine day up to 25 200 kJ on a feast day. Sugar, beef/lamb (fat content varied from 15 to 40%) and white flour, as damper, provided 50% of total energy intake (see Table 1 and Figs 1,2). In the wider Australian community a much more extensive range of foods contribute significantly to total energy, especially fruits, vegetables, dairy products and wholegrain cereals. Fat intake was about 200 g/day, providing 45% of total energy intake. About two-thirds of this fat was derived from meat and the remaining from full-cream milk powder; this is similar to the general profile for Australia more than 50 years ago. Refined carbohydrate intake was high at 200 g/day (mainly as table sugar) contributing 20% energy intake. Except for sodium and iron, the majority of micronutrients were consumed at <70% of the recommended dietary intakes (RDI). Sodium intakes were 300% of the RDI and iron was 160% of the RDI. Wholegrain cereals were rarely consumed except for oats. Fruit and vegetables were eaten in small amounts and not every day (See Table 1).

Bush foods

According to cattle station owners, key informants and focus group sessions with elderly Aborigines, bush foods were eaten at least a couple times a week prior to the 1960s. Bush foods made up more than 50% of total food intake (in contrast to less than 20% in 1988). Bush fruits and bulbs (see Figs 3,4) were eaten on a daily basis, except for bush water-



Figure 3. Bush Onion (*Cyperus bulbosus*). Small plant with grass-like leaf and small onion-like bulb beneath, eaten raw or roasted in warm ashes (1 cm diameter). Ready to eat when grass on top turns brown, optimal time is during the dry season, but is available throughout the year. Not eaten during the wet season because it causes nausea. Very popular with the elderly, but difficult to obtain because it is located in bush far away from Junjuwa.



Figure 4. Bush Potato (*Vigna lanceolata*). Ground creeper, roots eaten raw or cooked in hot ashes, small thin tuber, has sweet-potato-like flavour.

melon and passionfruit, which were not available. Also, nectar and pollen from flowers were regularly made into drinks. Seeds, however, were rarely collected and ground to make flour for damper. Men went hunting on weekends and women gathered bush foods daily. Kangaroo was eaten a couple of times a week and the following foods were eaten about once a week when available: wild cat, dingo, cockatoo, flying fox, echidna, snake, turtle, duck, yabbies (freshwater crayfish),



Figure 5. (a) Older Aboriginal Australian successfully traps a goanna (native lizard) in the bush; (b) goanna taken back to Junjuwa where it is cooked on the ashes and shared with grandchildren and the investigators (Professor Wahlqvist on right).

ant eggs, brown ants, manna, caterpillars, insect galls, duck and turtle eggs. On most days of the week mussels, witchetty grubs, grasshoppers, sand frogs, bush honey, tree gum, goanna and fresh water fish were eaten. About once a month bush turkey, emu, emu eggs, pigeon and crocodile were eaten.

In the 1980s bush foods no longer formed a major part of the Aboriginal diet in the Kimberleys — less than 20% of total food intake.⁴ Aboriginal families went fishing and bush fruit-picking on weekends, but the elderly were rarely taken in the vehicles because they were 'too much trouble'. Some bush fruit trees have been planted in yards at Junjuwa. This enables the elderly to eat some bush fruit. The acquisition of bush food has become highly dependent upon access to a vehicle due to the lack of bush foods in the region — so 'truckabout' was more common than 'walkabout'. The indirect impact of European settlement due to overgrazing has caused widespread pasture degradation and soil erosion — many plant foods have become rare and localized. This has been matched by a loss in native animals. Displacement by introduced animals has played a role here. Kangaroos are no longer found in the Fitzroy Valley region. Elderly Aborigines in 1988 consumed bush foods about once a month. The most commonly eaten native foods were bush gooseberries (*Physalis peruviana*), bush passionfruit, cucumbers, river figs (*Ficus coronulata*), conkerberries (*Carissa lanceolata*), onions (*Cyperus bulbosus*), bush sweet potato (*Vigna lanceolata*, Fig. 4), tree gum, honey, fresh fish (barramundi, black bream), cherrabun (freshwater crayfish), mussels, goanna (native lizard; Fig. 5) and sand frogs.^{1,4}

Implications

Indigenous food culture on the cattle stations prior to the 1960s contrasts quite dramatically with food habits of older Aborigines in a free-living community in 1988. In the past, more red meat and dripping were consumed; chicken, milk, cheese, chicken eggs and margarine were not consumed; less fruit but more offal, vegetables and bush foods were eaten. Soft drinks, takeaways and alcohol were not available. Energy intake was probably higher, but Aborigines were more physically active and their diet was more nutrient dense due to a greater variety of foods consumed, especially bush foods. Food intake was more or less constant from day to day in contrast to the 'feast' and 'famine' days observed in the community studied in 1988. Tea and sugar consumption appears to have remained unchanged. Additionally, prior to the 1960s buffalo meat was consumed, which was much lower in fat than the beef and lamb bought in the 1980s. Buffalo meat had only 4% fat, most of which was structural fat high in omega-3 fatty acids. In contrast, even lean cuts of beef currently have about 10% fat and fattier cheaper cuts consumed by Aborigines in Junjuwa were as high as 40% fat, most of which was saturated depot fat.

What have we learnt from this study? Dietary studies can be time-consuming and expensive, especially when quantitative methods are used. The qualitative anthropological method used (RAP) provided meaningful information with minimal resources and in a short period of time. Its flexibility also meant that we were able to identify nutritional problems that we may not have picked up with a pre-formatted coded questionnaire. Therefore, RAP is highly recommended if

results are needed quickly, if there is limited funding and if cultural sensitivity is required.

Exploring distant past food intake on cattle stations and types of bush foods consumed has helped explain desirable and undesirable food preferences of the older Aborigines in 1988. The undesirable food preferences may have been inadvertently passed on to the next generation. For example, the desire for stewed fatty meat, salty meat, onions, potatoes, white bread/damper, rice, oats, salty sauces/curry, sugar and tea, but a lack of desirable oils, leafy greens, yoghurt, legumes and nuts is partly a reflection of the food habits and preferences of Anglo-Australians in the bush more than 50 years ago. It makes one wonder what the food habits and health of Aborigines would have been like if the cattle stations had been managed by Mediterranean or Asian Australians.

Anglo-Australians have considerably improved the variety of their diet over the past couple of decades by incorporating foods and dishes introduced to Australia by migrants. In contrast, older Aborigines appear to have remained in a time warp. Ideally, Aborigines need increased access to bush foods, preferably planted in their own gardens. If this is not practical, increased food variety may be achieved by teaching Aborigines to prepare dishes with cheaper meat alternatives (for example, legumes, nuts and eggs) — such dishes have sustained several migrant groups in Australia in times of hardship and financial insecurity. These dishes could be made available as reduced-preparation frozen vegetarian meals. Furthermore, increased availability of leaner (but cheaper) cuts of meat and the regular inclusion of frozen/tinned fish would assist in reducing saturated fat intake. The 'feast-famine' pattern of food intake also needs to be addressed as this may have a significant impact on health status.

Even though the study in Junjuwa is more than 10 years old, its findings are still relevant today, because more recent studies have reported similar findings.^{13,14} It also forms part of the historical record of the nutritional status and well-being of indigenous Australians.

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