

NUTRITIONAL PROBLEMS OF AUSTRALIAN ABORIGINES

MICHAEL GRACEY *

Summary

The health standards of Australian Aborigines, especially infants and children, are unfavourable when compared with white Australians. Young Aborigines suffer much more from nutritionally related diseases including infections of the respiratory tract, skin, ears and gut and parasitic infestations. Less is known of the health problems of adult Aborigines but they do have a high incidence of obesity, diabetes, alcoholism and venereal disease. These disease patterns are largely determined by social factors and have an important nutritional component which has so far been poorly documented.

I. INTRODUCTION

In the late 1960's reports from the northern part of the Northern Territory (Kettle 1966) and Central Australia (Kirke 1969; Maxwell and Elliott 1969) showed that growth rates of young Aboriginal children were well below those of white Australian children. The typical pattern was for normal growth in the first several months of life followed by a decline in growth velocity up till the age of two or three years. It has since been shown that this fall-off in growth is due to malnutrition which, to a mild degree, is common in young Aborigines and infrequently is seen to a severe degree. This is closely related to the high prevalence of infectious diseases and the unfavourable morbidity and mortality statistics encountered in this group. These findings have stimulated much professional and public interest, indeed controversy, in "the Aboriginal health problem." This paper will outline the disease patterns of Australian Aborigines and how these seem related to nutritional problems. Present knowledge of the nutritional state of the Aboriginal people will be reviewed and will indicate large information gaps especially about what they eat and drink. Attention must be focussed on this area if practical solutions to this problem are to be found.

II. MORBIDITY AND MORTALITY

Information about disease and death patterns in Aborigines can be obtained in various ways. Government departments collect detailed statistics about disease categories and birth and death rates but little of this is publicly available. From time to time claims have been made that the Aboriginal Infant Mortality Rate (I.M.R.) is amongst the worst in the world. These should be viewed with caution as they often involve very small communities where one or two deaths can significantly distort the I.M.R. which is quoted as deaths *per thousand* in the first year of life. Furthermore, many developing countries likely to have worse I.M.R. figures simply do not publish them.

In 1970 Edmonds *et al* showed the mortality rate of young Aboriginal children in Western Australia (W.A.) to be several times that of white children of the same age. Up till recently W.A. had the advantage

* Princess Margaret Children's Medical Research Foundation, Perth, Western Australia.

of being the only State to code hospital admissions according to race. This enabled Forbes *et al* (1973) to show great differences in morbidity patterns between Aboriginal and non-Aboriginal children admitted to the only children's hospital in W.A. in 1969. Most Aboriginal children were hospitalized because of infectious diseases and nutritional disorders. A more recent study from the same hospital (Shannon and Gracey, 1977) has shown the situation to be much the same five years later despite the implementation of numerous Government sponsored health programmes in the meantime.

The predominant diseases in Aboriginal infants and children are infections, parasitic infestations and undernutrition. Reports from various parts of Australia (e.g. Moodie 1969; Jose and Welch 1970; Walker and Harry 1972; Gracey 1973) indicate a similar pattern. Diarrhoeal disorders are a major problem and cause of death. "Gastroenteritis" is much more severe and prolonged in Aboriginal children, perhaps because of impaired immune function and their higher rate of exposure to infectious agents. Sugar intolerance, especially to lactose, occurs in approximately 25% of young Aborigines with "gastroenteritis." Other complications including simultaneous serious infections and metabolic disturbances such as hypokalaemia make clinical management difficult and help cause a death rate of 5 to 10 times that in white children (Walker and Harry 1972; Gracey 1973). Parasitic infestations, especially by *Giardia lamblia* and hookworm are important, the latter being a major cause of iron deficiency anaemia in communities in tropical regions (Jose and Welch 1970). Other infections such as pneumonia, otitis media and trachoma are significant and are related to nutritional and environmental factors.

Less is known of the disease patterns of adult Aborigines, especially as they relate to nutrition. Alcoholism is emerging as a major problem (Albrech 1974; Chegwiddden and Flaherty 1977) with wide social and health implications including the high incidence of venereal disease. It also has important nutritional effects on Aboriginal families, groups and communities by its disruptive influence on the development of good dietary practices. Obesity is also emerging as an important problem, particularly amongst the women (Finlay-Jones and McComish 1972). This is related to overconsumption of highly refined carbohydrates and other non-nutritious foods including alcoholic beverages (Hitchcock and Gracey 1975).

III. NUTRITIONAL STATUS

Despite the seemingly obvious connection between the disease and death patterns outlined above and nutritional deficiencies so clearly documented in many developing communities, our knowledge of the true nutritional state of to-day's Aborigines is inadequate. This is mentioned not to criticize what has been reported of their nutritional problems but to indicate the need for more work on this subject. The available evidence can be considered in several categories including those which follow.

(a) Nutritionally related diseases

The morbidity and mortality patterns outlined above are widely recognized in the so-called developing countries as being closely related to impaired nutritional standards. Indeed, the synergism between infection and nutrition in such communities is acknowledged as one of the

main health problems in those parts of the world (Scrimshaw *et al* 1968). This is reasonable evidence to suspect that the nutritional standards of people of Aboriginal descent are poor. This seems to be supported by several other pieces of evidence. It should be pointed out, however, that although malnutrition is an important problem in Aborigines, gross malnutrition is uncommon and the main causes of ill-health and death are the infectious diseases which go hand in hand with malnutrition rather than malnutrition *per se*.

(b) Anthropometric and necropsy findings

Numerous studies have shown that growth standards of Aboriginal children are inferior to white Australian children (Kettle 1966; Kirke 1969; Maxwell and Elliott 1969; Gracey 1973). The argument is sometimes put that this may be due to genetic differences. This is not supported by the growth curves of Aboriginal children fostered in Adelaide (Maxwell and Elliott 1969) and the increasingly held view that, with few remarkable exceptions, the growth potential of children throughout the world can reasonably be compared with international standards such as those from London or Boston. The typical pattern is of mild malnutrition which in many cases conforms to the Wellcome International Classification (Editorial 1970) of "undernutrition" rather than the classical, florid forms of malnutrition such as marasmus or kwashiorkor as seen in developing countries. For example, we recently found (Shannon and Gracey 1977) that 32% (180/557) out of a total of 624 Aboriginal subjects were malnourished including 9 children with nutritional marasmus. However, using the recently reported method of McLaren and Read (1975) more than 50% of patients were malnourished (Table 1). This method relates weight/height/age whereas the Wellcome method simply relates weight/age and consequently tends to underestimate the problem of undernutrition in such groups where mild and moderate malnutrition is common although severe, clinically obvious malnutrition is not. Assessment of the most appropriate and accurate methods of measuring nutritional standards in Aboriginal communities is urgently needed to identify individuals and groups most in need of assistance.

TABLE 1. Nutritional status of 273 Aboriginal patients using the method of McLaren and Read (1975)

Nutritional status	Percentage of weight for length for age	Number of patients	Percentage of patients
Overweight	> 110	19	7
Normal	90 - 110	115	42
Mild malnutrition	85 - 90	44	16
Moderate malnutrition	75 - 80	65	24
Severe malnutrition	< 75	30	11

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In another study we found significant fatty infiltration of the liver in 9 out of 12 Aboriginal children dying from diarrhoeal disorders (Gracey and Bower 1973). This abnormality had not previously been reported in Australian Aborigines but is a well recognized feature of children with kwashiorkor (Halliday 1967). The possible contribution of sub-clinical hepatic and pancreatic dysfunction to the nutritional problems of malnourished Aborigines is unknown.

(c) Biochemical studies

In recent years many reports (Davis *et al* 1965; Jose and Welch 1970; Kamien *et al* 1974 1975; Mack and Masters 1974) have shown that Aboriginal groups of all ages, but particularly children and pregnant and lactating women, have biochemical evidence of vitamin deficiencies. Biochemical Vitamin C deficiency is apparently widespread although clinically apparent scurvy is not (Hitchcock and Gracey 1975). Similarly, biochemical deficiencies of pyridoxal and Vitamin A are common while clinical deficiency states are not although mild and moderate degrees of keratomalacia have been seen in Western Australia over recent years. All this indirect information is further evidence of unsatisfactory nutritional standards.

(d) Anecdotal evidence

There are many statements from the popular press, radio, television, books, novels, Government reports and transcripts of evidence to Committees of Enquiry mentioning the unsatisfactory dietary practices of Aboriginal people to-day. In most cases these statements cannot be refuted although some reports in the media seem exaggerated. Another problem is their uncontrolled and subjective nature. However, their very presence indicates a need for objective studies of Aborigines' present eating and drinking patterns.

(e) Qualitative studies

Some reports are available which give some idea about dietary practices in Aborigines (Kamien *et al* 1974; Pidek 1974; Brown 1974). These emphasize the marked and rapid transition from a nomadic hunter-gatherer style of living (Stuart 1971) to heavy dependence on highly processed foods often prepared in large cities long distances from remote Aboriginal communities living on missions, stations and on the fringes of country towns. In traditional Aboriginal society these people fended for themselves hunting game and gathering indigenous foods which were often highly nutritious ("bush tucker"). Now, with few exceptions which include occasional holiday and ceremonial excursions for hunting and fishing, these people rely on commercial foods including highly refined carbohydrates, milk powder and tinned foods. Fortunately they are still fond of protein-rich foods, especially meat with stews figuring high in their regular diet. Unfortunately this and tinned meats are often very expensive in remote areas thus limiting their usage. Flour is also prominent in their diet with damper and johnny-cakes in various forms being popular. As mentioned previously alcoholic beverages, especially beer and fortified wines, in many areas are significant components of the diet. The traditional method of distribution of meals is also important particularly for the children who are often last in the queue.

(f) Quantitative Studies

Remarkably little is known about how much of the various components of the diet outlined above is consumed. A recent study from a country town in the south-west of W.A. (Hitchcock and Gracey 1975) found that dietary patterns and nutrient intakes were closely related to living conditions and social factors which fell into three distinct categories as they do in many other similar groups in other parts. Eating patterns were worst on the Aboriginal reserve, best in families living in State housing accommodation in the town and intermediate in those living in so-called "transitional" houses on the outskirts of the town. Inasmuch as these findings relate to the social pressures affecting Aborigines

with different life styles in different parts of Australia, they have important implications to the development of conditions which will help improve their presently unfavourable nutritional and health standards. Similar studies need to be done in other communities with reference to their geographical, social and other backgrounds. The paucity of quantitative information about what they eat and drink, which clearly affects their health, makes this a priority area.

IV. CONCLUSION

Sufficient indirect information is available to indicate that Australia's Aboriginal population has important nutritional problems. Unfortunately there are important gaps in our knowledge about *what they eat and drink, why, and how changes can be effectively made where needed*. These are basic and important questions but, perhaps because of their apparent simplicity (don't you believe it!) and "unscientific" nature have received little attention from health professionals. Because of their fundamental relevance to health, a change in attitudes is needed with the involvement of appropriately trained personnel to help improve this situation.

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