Food security and Indigenous mental health

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Contents

About the cover artwork:

Artist: Linda Huddleston

Title: The journey towards healing

At the centre of the artwork is the Clearinghouse. The black half-circles are the people who come to the Clearinghouse for information about mental health and suicide prevention.

The waves of red, yellow and white dots surrounding the inner circle represent strength and healing.

The footprints represent the journey towards healing.

The red and white circles around the edge represent different programs and policies aimed at helping people heal.

The hands represent success and wellbeing.

Summary

Food security and Indigenous mental health

What we know

- Food security is a fundamental human right recognised in international law.

- In 2012–13, more than 1 in 5 (22%) of Aboriginal and Torres Strait Islander people lived in a household that had run out of food in the past year and could not afford to buy more. Food insecurity is more likely in remote areas, with studies suggesting it is increasing in these areas.

- Food insecurity affects the mental health of Indigenous Australians through increased psychological distress.

- A lack of quality and sufficient food causes stress, with the need to obtain food through means that compromise cultural safety and induce feelings of shame.

- There is evidence linking food insecurity with depression.

- International evidence links food insecurity to suicidal behaviour and suggests it is the largest contributor to psychological distress.

- Children in food-insecure households are likely to have emotional or behavioural difficulties and are more likely to miss days of school.

- Food insecurity also indirectly affects physiological wellbeing through poor diet and malnutrition.

- Colonisation has led to a loss of traditional food sources.

- Aboriginal and Torres Strait Islander populations traditionally maintained a nutrient-rich diet, had robust physical health and a highly integrated understanding of the local environment and the available food supply.

- As a result of colonisation, Indigenous Australians were exposed to and became dependent on highly-processed European foods which has left them with a higher predisposition to chronic illness.

- Most programs that focus on improving food security for Indigenous Australians are for people living in remote areas. However, food insecurity is affected by poverty and social disadvantage and by poor housing infrastructure in both urban and remote areas.

- Indigenous Australians are more likely to be living on low incomes, with median disposable income decreasing with remoteness.

- Contributing factors include a lack of resources, such as transport; limited access to nutritious food at affordable prices; and lack of access to food due to geographical isolation.

What works

- There are 4 dimensions of food security: availability, accessibility, utilisation and stability. The multidimensional nature of food security requires integrated and coordinated efforts across relevant government departments – not just health, but also employment, housing, education and transportation.

- Long-term solutions are needed to tackle the primary causes of food insecurity which are material hardship and inadequate financial resources. However, immediate solutions to food insecurity include subsidy schemes (such as on freight or food items) or increasing incomes through increased social security payments.

- Programs targeting food security need to be developed in a way that empowers Indigenous Australians.

- Community involvement (and, preferably, control of program development and implementation) is the most important factor for success.

- Engaging local people as experts in program delivery ensures programs are suited to the local environment and circumstances.

- Indigenous culture and food preferences need to be acknowledged when developing programs.

- Garden programs can provide a significant contribution towards food security and may enable regular access to fresh fruit and vegetables. However, the success of these programs is dependent on community engagement and ownership, along with continuous support and resourcing.

- The food sovereignty movement – which promotes localising food systems with local decision-making and the use and enhancement of local skills and knowledge – may offer solutions.

- There is a role for traditional foods and for sourcing food directly from the land in improving social and emotional wellbeing.

- Remote stores are highly effective at improving food security in remote communities, particularly in smaller communities. (However, there is a danger that government-led remote stores disempower communities, decrease competition and create a dependence on government.)

- School meal and nutrition projects provide a valuable contribution to community food security and are often the main source of food for school-aged children.

What doesn't work

- The systemic issues underpinning food insecurity will not be resolved by short-term, inconsistent, or unsustainable investments. Emergency responses do not address the root causes of food security.

- Lack of community engagement continues to be a major problem for the implementation of food security programs, with considerable under-representation of Aboriginal and Torres Strait Islander people in program design.

- Paternalistic or authoritarian programs may lead to resistance and/or lowered self-esteem for participants.

What we don't know

- National research on the effect of food insecurity on mental health and suicide is limited.

- Few programs relating to food security for Indigenous Australians assess their effect on mental health and suicidal behaviours as part of the evaluation.

- Little is known about the effects of food security interventions among urban Aboriginal and Torres Strait Islander people.

1

Introduction

1   Introduction

Australia considers itself a food secure nation. We produce a lot more food than we can consume (ABARES 2021). However, many Australians are susceptible to food insecurity; it can be perpetuated by low income, inadequate facilities to prepare and store food, or geographic location. Its effects are varied: it can have physical, social and emotional consequences.

This paper explores the extent and impact of food insecurity on the mental health and wellbeing of Aboriginal and Torres Strait Islander people, including efforts to address food insecurity.

What is food security?

There are various definitions of 'food security' in the literature. However, one of the most widely accepted definitions of food security is found in the Plan of Action of the 1996 *Rome Declaration on World Food Security*:

> Food security exists when all people, at all times, have physical and economic access to sufficient, safe, and nutritious food that meets their dietary needs and food preferences for an active and healthy life (FAO 1996).

The National Aboriginal Community Controlled Health Organisation (NACCHO) notes the following definition, developed by Aboriginal and Torres Strait Island people from a series of workshops held within remote communities in 2010:

> The land and the sea is our food security. It is our right. Food security for us has two parts:
>
> – Food security is when the food from our ancestors is protected and always there for us and our children. It is also when we can easily access and afford the right non-traditional food for a collective healthy and active life.
>
> – When we are food secure we can provide, share and fulfil our responsibilities, we can choose good food, knowing how to make choices and how to prepare and use it (NACCHO 2016).

The Food and Agriculture Organization of the United Nations (FAO), together with other international food, agriculture and health organisations, identifies four dimensions of food security: food availability, economic and physical access to food, food utilisation, and stability over time (FAO et al. 2020).

> **Availability** encompasses not only the consistent, physical availability of food, but aspects of production and transport.
>
> **Access** refers to having access to a reliable and consistent quality of food, including the economic and other resources needed to acquire that food.
>
> **Utilisation** requires people to have the appropriate knowledge to use the food for good nutrition, including the basic sanitary conditions to choose and prepare food.
>
> **Stability** acknowledges that these conditions must be stable over time (FAO et al. 2020; Dieticians Australia 2016).

In this paper, the term 'food insecurity' is used to refer to a lack of food security. Radimer and Radimer (2002) contend food insecurity exists 'whenever the availability of nutritionally adequate and safe foods or the ability to acquire acceptable food … is limited or uncertain'. The *limited or uncertain* aspects are relevant to this paper and to all subsequent references to food insecurity.

Understanding food sovereignty

The emerging and evolving concept of food sovereignty draws on similar principles to NACCHO's definition of food security. An international forum on food sovereignty declared:

> Food sovereignty means defending and recovering the territories of Indigenous Peoples and ensuring fishing communities' access to and control over their fishing area and ecosystems (*Declaration of the Forum for Food Sovereignty*, cited in FAO and UNPFII 2008:4).

The food sovereignty concept supports the United Nations' assertion of the right of people to 'achieve food security in dignity through their own means' (FAO and UNPFII 2008:1), with food sovereignty promoting 'practices that serve people's rights to food and to safe, healthy and ecologically sustainable food production' (UN OHCHR 2010:4).

In an international context, for indigenous populations, food security is deeply embedded with issues of sovereignty and self-determination (Fredericks and Bradfield 2021). The food sovereignty movement considers cultural identity – and involves First Nations people – in policy-making processes (Browne et al. 2021).

Food sovereignty has been proposed as an avenue to improve food security for remote Indigenous communities in Australia (Markham and Kerins 2020). Indigenous food provisioning across the ancestral lands and waters of Indigenous peoples through hunting, fishing and foraging is at the heart of Indigenous food sovereignty (Markham and Kerins 2020). The benefits of food sovereignty include fresh, healthy and nutritious foods; the transfer of Indigenous ecological knowledge; and an opportunity to care for Country.

Why is food security important to mental health and wellbeing?

Food insecurity affects the mental health of Indigenous Australians both directly, through increased psychological distress (ABS 2015), and indirectly through poor diet leading to compromised physiological wellbeing (Davy 2016).

Globally, indigenous groups experience higher rates of food insecurity and poor wellbeing compared with non-indigenous populations (Willows et al. 2011). Food insecurity affects both the quality and quantity of diet and has a significant detrimental impact on nutrition (Jones 2017; Willows et al. 2011). This impact may result in reduced intake of health-promoting 'core' foods and increased intake of discretionary foods that are high in added salt, refined sugar and saturated fat. This imbalance is largely due to the financial and social barriers to accessing, storing and preparing fresh, health-promoting foods (Temple and Russell 2018). A diet high in fresh wholefoods, that supplies the necessary vitamins, minerals and fibre to reduce disease risk factors, is more expensive than processed and most ready-made meals (Ferguson et al. 2016). Additionally, healthy food intake is more dependent on factors such as education and adequate transport, as well as housing infrastructure, to the preparation of fresh, healthy foods (Temple and Russell 2018).

Low income and poor living conditions increase the consumption of cheaper 'fast' foods that have increased palatability, reduced perishability, and do not require as much preparation (Burns 2004). Consumption of these foods can lead to hypertension, blood sugar dysregulation and weight gain. Long-term consumption of these foods increases poor health outcomes and chronic diseases such as obesity, diabetes and cardiovascular disease (Lee and Ride 2018).

There is limited research on the mental health and wellbeing consequences of food security for Aboriginal and Torres Strait Islander people. Among children, a lack of food has been linked to emotional and behavioural issues, with irritability, tantrums and a decline in happiness noted among its effects (Bowden 2020). Food insecurity over a long period places children at risk of malnutrition, which can affect a child's development, health and wellbeing throughout life (NRHA 2016). Malnutrition can cause stunting and microcephaly – where an infant's head is much smaller than it should be – with poorer life outcomes expected for such children. As recently as 1995, 20% of Aboriginal children in the Northern Territory were predicted to suffer malnutrition (Ruben and Walker 1995). In a review of Indigenous child health in 2015, Brewster and Morris suggested that the malnutrition situation in the Northern Territory may persist (Brewster and Morris 2015).

A study of the food security experiences of Indigenous Australian families in urban settings by McCarthy and colleagues (2018) explored its emotional implications. Participants reported 'being stressed, down, sad, lonely and of frustration or feeling inadequate in being a good provider for their children' (McCarthy et al. 2018). Feelings of shame are also frequently mentioned (McCarthy et al. 2018; Bramwell et al. 2017; Sherriff et al. 2022).

It is unquestionable that colonisation has had harmful influences on the traditional food practices of Indigenous Australians, particularly given their removal from traditional lands. Food and nutrition are integral to social and cultural wellbeing (Christidis et al. 2021). The importance of food security to culture becomes clear when considering hospitality via the sharing of meals as an important community activity (Skinner et al. 2016). With access to traditional foods problematic, particularly for urban Indigenous Australians, there are implications for participation in cultural activities.

2

Background and key issues

2　Background and key issues

Globally, Australia's food security is relatively strong (EIU 2021). This is because Australia has a high per capita income and Australians have access to a wide variety of affordable food products sourced from all over the world (Greenville et al. 2020; Martin and Laborde Debucquet 2018). Within Australia, however, the extent of food security varies. At-risk population groups and low-income groups are more likely to struggle with access to healthy foods when compared with more advantaged sections of the community (Browne et al. 2009).

Aboriginal and Torres Strait Islander people are at greater risk of experiencing food insecurity, compared with non-Indigenous Australians (Temple and Russell 2018). The imposed loss of sovereignty and knowledge caused by colonisation has had a severe impact on personal agency for Indigenous Australians to engage with their traditional food system and their right to self-determination.

The exact combination of factors that cause food insecurity for Indigenous Australians is not fully understood. However, unemployment and poverty are key contributors (Bowden 2020; Lee and Ride 2018; Pollard et al. 2014). Other contributing factors include a lack of transport; limited access to nutritious food at affordable prices; and lack of access to food due to geographical isolation (Rosier 2011). In the face of these access and cost issues, food insecurity can drive people to poor nutritional choices. Health, social and emotional wellbeing outcomes associated with poor nutrition are covered in the Australian Institute of Health and Welfare (AIHW) Indigenous Mental Health and Suicide Prevention Clearinghouse article *Connection between food, body and mind* (Teasdale et al. 2021).

How big is the problem of food insecurity?

The Australian Aboriginal and Torres Strait Islander Health Survey 2012–13 found that around 1 in 5 (22%) of Indigenous Australians had run out of food in the past year and could not afford to buy more. In comparison, less than 1 in 20 (4%) of non-Indigenous Australians faced these circumstances. Of the Indigenous Australians living in remote areas, almost 1 in 3 (31%) reported they experienced food insecurity. In comparison, 1 in 5 (20%) of Indigenous Australians living in non-remote areas experienced food insecurity (ABS 2015).

Some researchers consider that these estimates underreport the extent of food insecurity and that – to get a true measure of the issue – more comprehensive and more regular measures of food insecurity are needed in population surveys (McKay et al. 2019; McKechnie et al. 2018). Other studies have found that food insecurity is increasing in remote areas (Markham and Kerins 2020). One small study in remote Aboriginal communities in the Northern Territory estimated food insecurity to be as high as 76% (Ferguson et al. 2017).

The 2012–13 Australian Aboriginal and Torres Strait Islander Health Survey is currently the most recent Australian Bureau of Statistics (ABS) survey in which food security data have been collected. Food security data will be collected in future ABS national health and nutrition surveys using the United States Department of Agriculture (USDA) adult food security tool. The tool is a 10-item survey that identifies whether respondents are food secure or insecure. It also supports scaling of food insecurity to indicate severity.

Food insecurity contributes to the disproportionately high burden of disease that persists in the Indigenous Australian population. Six per cent of the disease burden is attributable to dietary factors (AIHW 2022). Since poor nutrition makes up a significant proportion of the total burden of disease experienced by Indigenous Australians and affects both physical and mental health, resolving food insecurity is likely to significantly benefit the overall health of Indigenous Australians (Browne et al. 2009). However, there is a lack of comprehensive data outlining the extent and severity of food insecurity experienced by Indigenous Australians. As such, it is difficult to quantify the full extent of health gains that are possible by addressing food security issues for Indigenous Australians.

Food insecurity negatively affects both nutritional intake and health (Davy 2016). However, initiatives that seek to address nutrition will not necessarily solve the problem of food insecurity. To address food insecurity, coordination across multiple sectors is needed, as these together determine the level of food security (Davy 2016).

For example:

- Employment affects food security because it provides the necessary income to purchase healthy foods and to purchase the equipment to access and utilise those foods.

- Appropriate housing infrastructure is required to enable preparation and storage of food.

- Education affects socioeconomic status, which, when low, negatively affects food security. Education also contributes to skill-building, including budgeting and cooking (Foley et al. 2009; Seivwright et al. 2020).

- Remoteness influences accessibility in the same way, as long periods of travel may be required to visit stores beyond what is available in the local area. When long periods of travel are required to reach stores that sell fresh food, individuals are more likely to rely on the local store that sells less expensive, unhealthy food.

Historical context

Understanding the implications of past events (including colonisation), and their impact on the wellbeing of Indigenous Australians, is crucial to overcoming current rates of poor nutrition, chronic disease and food insecurity (Donelly and Sebastian 2013; Saethre 2005). There is evidence to suggest that Aboriginal and Torres Strait Islander populations traditionally maintained a nutrient rich diet, robust physical health and had a highly integrated understanding of the local environment and of the available food supply (Brimblecombe et al. 2014; Gracey 2000; Lee 1996). These populations often employed innovative land management and food procurement strategies to ensure consistent food intake throughout seasonal changes (Lee 1996).

The effect of colonisation on the Indigenous Australian population, in driving communities from their lands; in drastically reducing the Indigenous population through genocide and introduced disease; in policing generational teaching of cultural practices; and in removal of individual rights, is immense, systemic and to the great detriment of Indigenous wellbeing (Dudgeon et al. 2010).

The loss of traditional food sources was compounded by the introduction of processed European foods such as flour, sugar, tea, and powdered milk, during the era when Church missions and outstations provided them as rations to Indigenous communities (Gracey 2000; Lee 1996).

This initial transition to dependency on colonial food sources has had lasting effects on the diet of contemporary Indigenous Australians and has resulted in a higher predisposition of chronic illness (Christidis et al.2021; Saethre 2005).

Food security and mental health

Food insecurity is thought to affect mental health through several pathways. It can directly affect mental health through increased psychological distress when there is current and/or future uncertainty about household food supply (Cunningham and Paradies 2012). When this occurs frequently, it can cause high levels of distress – due both to lack of quality and quantity of food, and to having to obtain food through means that may compromise cultural safety. The latter can induce feelings of shame, which also impacts on the individual's mental health (Jones 2017).

Cunningham and Paradies (2012) analysed data from the National Aboriginal and Torres Strait Islander Health Survey (NATSIHS) 2004–2005 and the National Health Survey (NHS) 2004–2005 (conducted in parallel by the ABS) and found that food insecurity was significantly associated with very high psychological distress in all individuals (Indigenous and non-Indigenous) in all areas (both remote and non-remote).

Children in food-insecure households in Australia are also likely to have emotional or behavioural difficulties and are more likely to miss days of school and to miss out on school activities (Ramsey et al. 2011).

Mental health can also be indirectly affected by food insecurity through compromised physiological wellbeing caused by poor diet and malnutrition, which increases the risk of developing a chronic illness (Davy 2016). Studies have shown that living with a chronic illness can increase the likelihood of developing mental health issues (and vice versa) (Chen et al. 2017). In turn, mental health issues can lead to lack of the energy required to acquire and prepare healthy food – further increasing the likelihood of experiencing food insecurity (Melchior et al. 2009; Tarasuk et al. 2013).

There are several international studies describing these bi-directional effects of food insecurity and mental health, including Bruening et al. (2017); Melchior et al. (2009); and Weaver and Hadley (2009). Both Melchior and colleagues (2009) and Weaver and Hadley (2009) emphasised that more research was needed to clarify the reverse causality hypothesis that mental health precedes food insecurity. However, Weaver and Hadley included a study suggesting that becoming food insecure was associated with depression (Weaver and Hadley 2009).

Food insecurity also has a social impact and can exacerbate socioeconomic disadvantage through the flow-on effects of reduced physical and mental health. Examples of this are found in education, employment, income, housing, community engagement, disempowerment, and social stigma, all of which have a significant impact on mental health and feed back to create a reverse causality effect for food insecurity (Markwick et al. 2014).

Food security and suicide

The relationship between food insecurity and suicidal ideation and behaviour for Indigenous Australians is not known. However, international studies have found strong links between food insecurity and suicidal behaviour. A study conducted among students in Nepal in 2019 found that food insecurity was associated with considering or attempting suicide (Pandey et al. 2019). Similarly, a study among Canadian youth found suicidal ideation to be more prevalent among youth from food-insecure households (Men et al. 2021). In another study, Hajizadeh and colleagues (2019) analysed the factors that play a part in psychological distress and suicidal behaviours in Canadian indigenous people living off-reserve. They found that food insecurity accounted for 40% of the psychological distress, 27% of the suicidal ideation and 13% of the suicide attempts concentrated among indigenous Canadians with a low income. Food security made the largest contribution to psychological distress and suicidal behaviours among Canadian indigenous people with a low income and was a more influential contributing factor than all other determinants, including income. The study showed that greater food insecurity increases the probability of poorer mental health and is more prevalent among low-income groups (Hajizadeh et al. 2019).

Shayo and Lawala (2019) found a significant association between suicidal ideation and food insecurity among sub-Saharan African adolescents in school. Adolescents who experienced food insecurity were significantly more likely to have had suicidal ideation or attempted suicide in the 12 months preceding the study. Like the Canadian study, the participants resided in a low-income setting (Shayo and Lawala 2019). Another study found that substance misuse, depression and suicidal ideation co-occurred with food insecurity (Pryor et al. 2016).

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Methods

3   Methods

A literature review was conducted across scholarly databases, government reports and in 'grey' literature. In addition, the database Google Scholar and search engine Google were used to find programs and evaluations that aimed to improve food security for Aboriginal and Torres Strait Islander people.

References from sources describing relevant programs, policy or research on the topic were also used.

The final list of programs reviewed in this article were all supported by government funds and strongly focused on improving food security. Priority was given to programs with published and available evaluation evidence, along with programs with evaluations that made reference to mental health or wellbeing outcomes.

Search criteria

Key terms used in searches of scholarly databases are listed below:

- Food security and unhealthy weight, including:

    – food security/insecurity and Indigenous/Aboriginal and Australia/Australian and malnutrition

    – malnutrition and mental health

    – obesity and mental health and Australia/Australian

    – obesity and Australia/Australian and Indigenous/Aboriginal.

- Food security and socioeconomic factors, including:

    – food security/insecurity and Indigenous/Aboriginal and Australia/Australian and socioeconomic and mental health/social and emotional wellbeing.

- Food security and suicide, including:

    – food security/insecurity and suicide/suicidal and Indigenous/Aboriginal.

4

Policy context

4   Policy context

The *Universal Declaration of Human Rights* recognises food security as a basic human right, stating that 'everyone has the right to a standard of living adequate for the health and wellbeing of himself and of his family, including food' (UN 1948). The United Nations Sustainable Development Goals (SDGs) include the target to 'End hunger, achieve food security and improved nutrition and promote sustainable agriculture' (FAO 2022), and include an indicator measuring the prevalence of food insecurity in the population (SDG 2.1.2).

In developed countries, social and economic inequity are the underlying causes of food insecurity. Pollard and Booth (2019) argue that much of the action needed to improve household food security falls outside of the health sector. Food insecurity is multifaceted: income, disadvantage, food costs, education, housing instability (including conditions and quality of living space), infrastructure and remoteness all contribute. Historically, national policies directly addressing food security for Aboriginal and Torres Strait Islander people have focused on interventions that improve food supply, remote store management, and remote store infrastructure. Welfare management policies, through income management, also highlight food security as an intended outcome. Such policies do not make explicit links to mental health or suicide prevention outcomes, with only a few acknowledgments of the impact of food security on wellbeing.

National policies

Food security has been identified as a priority area in closing the gap between Aboriginal and Torres Strait Islander and non-Indigenous Australians (PM&C 2017). Access to healthy food is frequently flagged as an intention of nutrition policies and frameworks, with these policies drawing more direct links to intended health and wellbeing outcomes. The National Strategic Framework for Aboriginal and Torres Strait Islander Peoples' Mental Health and Social and Emotional Wellbeing (PM&C 2017) does not specifically link food security to mental health. However, it does promote the value of 'access to good healthy food' as a protective factor in physical health – feeling strong and healthy and able to physically participate as fully as possible in life.

The National Aboriginal and Torres Strait Islander Suicide Prevention Strategy 2013, which is being renewed by Gayaa Dhuwi (Proud Spirit) Australia, does not mention food security. However, the importance of nutrition is acknowledged in the context of prevention, as a causal pathway to youth problems and suicide, with good nutrition in pregnancy and in early childhood being essential for neurological development (DoHA 2013). The 2021–22 federal budget included funds to implement crisis and to support service initiatives under the strategy.

The refreshed National Aboriginal and Torres Strait Islander Health Plan 2021–2031 (DoH 2021a) aims to support the new Closing the Gap targets. The importance of food security is acknowledged in several of the priorities, with 'Priority 7: Healthy environments, sustainability and preparedness' including the objective to 'Take action to improve food security'. It notes that solutions must enable self-determination in diet and nutrition-related decision-making, with support for stores, which are important community services that have the potential to support health and wellbeing (DoH 2021a).

The National Preventive Health Strategy 2021–2030 expresses the intent to develop a national policy document on food security in priority populations by 2030. It identifies 'Improving access to and the consumption of a healthy diet' as one of its 7 focus areas and acknowledges the impact of diet on mental health, stating that 'Mental health and wellbeing is also impacted by our diet, with the risk for depression increasing while consuming an unhealthy diet' (DoH 2021b).

Some longstanding strategies underpin government efforts to improve food security. Most of these initiatives relate solely to remote communities.

Outback Stores is a company established by the Australian Government in 2006 to manage remote stores in Indigenous communities. The company seeks to improve food affordability and availability, by providing fresh food and produce to remote locations at competitive prices (Outback Stores 2020). Overcoming factors such as financial mismanagement and improving food stocking policies and infrastructure are also objectives of the company (Davy 2016). This Australian Government-owned company is discussed in Section 4 (the programs section) of this report.

The National Aboriginal and Torres Strait Islander Nutrition Strategy and Action Plan (NATSINSAP) 2000–2010 was developed by the National Aboriginal and Torres Strait Islander Nutrition Working Party as a component of the national framework called Eat Well Australia (NATSINWP 2000). The plan was not renewed following its expiry. An objective of the plan was to:

> Ensure that Aboriginal and Torres Strait Islander people have a consistent supply and variety of quality, affordable, nutritious food by addressing the major factors that contribute to food security (NATSINWP 2000).

The plan focused on 7 key areas:

- food security and socioeconomic status
- food supply in rural and remote communities
- urban nutrition issues
- environment and household infrastructure
- improvements to training of the nutrition promotion workforce
- improvements to the dissemination and communication of nutrition information
- national food and nutrition information systems (PHAA 2016; NHMRC 2013).

Other government food security initiatives include the Community Stores Licensing Scheme under the *Stronger Futures in the Northern Territory Act 2012* (SFNT Act), with licensed stores required to stock and promote nutritional food items (Bray et al. 2014), and funding to provide targeted assistance to community stores in selected communities. Food security is also part of the Safety and Wellbeing Program stream of the Indigenous Advancement Strategy (IAS), which is administered by the National Indigenous Australians Agency (NIAA). The IAS funds organisations for projects which promote equal opportunities for Indigenous Australians.

In 2009, a National Strategy for Food Security in Remote Indigenous Communities was developed as part of the government's Closing the Gap response (COAG 2009). It linked food security and nutrition with the Closing the Gap targets. It included a regulatory framework for the operation of remote stores, including minimum standards relating to food security, introduced as part of the Northern Territory Emergency Response.

Income management (also known as 'welfare quarantining') was first introduced as part of the Northern Territory Emergency Response (NTER) in June 2007. Improved food security and food choices were expected outcomes of the scheme (AIHW 2010). An Australian Institute of Health and Welfare review of the policy in 2010 found evidence that there was improved access to food and food choices (AIHW 2010). However, conversely, several studies have found that income management can lead to stress and anxiety (Marston et al. 2020; Mendes et al. 2020; Roche et al. 2021).

The Department of Social Services continues to maintain income management as a welfare reform policy in certain locations of Australia. It describes income management as a tool that helps people budget their welfare payments, ensuring they are getting the essentials of life, such as food, housing, electricity and education (DSS 2022). The BasicsCard and Cashless Debit Card were mechanisms introduced by the Australian Government as a further means of managing the spending of welfare payments. The former was more restricted, allowing holders to make purchases only at merchants that the Department of Human Services has approved and who had signed agreements with the department (Arthur 23 June 2017). The new Social Services Minister announced the plan to abolish the Cashless Debit Card following election of the new Labor government in 2022 (Loram and Varley 8 June 2022). At the time of writing, no similar announcement had been made concerning the BasicsCard.

In December 2020, the Standing Committee on Indigenous Affairs tabled the report from their inquiry into food security and food pricing in remote Indigenous communities (HORSCIA 2020). The report does not make direct references to links between food security and mental health. However, it acknowledges connections to health and wellbeing, citing several submissions that draw this link directly. The submission from the Household Food Security Research Collaboration, for example, highlights that:

> Access to traditional foods is an important safety net to deal with food insecurity in addition to being significant in cultural connections to Country, health and wellbeing (HORSCIA 2020).

The inquiry recommended consideration of a national strategy for food security and nutrition for remote First Nations communities. The Indigenous Affairs Taskforce of the National Federation Reform Council has agreed to develop a national strategy for priority actions on food security (Australian Government 2021).

The inquiry also recommended the maintenance of the Food Security Working Group. This group was established as a response to COVID-19 to identify solutions to issues affecting regional and remote Australia. The recommendation proposes tasking the group with working on food supply improvements to remote communities. The Australian Government has supported this recommendation in principle (Australian Government 2021). For more information on COVID-19 policy changes and food security, see Box 4.1.

> ### Box 4.1: COVID-19 policy changes and food security implications
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> The COVID-19 pandemic saw the suspension of the Community Development Program (CDP) and its mutual obligation requirements, along with a temporary increase in social security payments such as JobSeeker. There has been a suggestion that there were benefits from these changes to food security for some Indigenous Australians. Professor Jon Altman describes marked improvements to food security in remote Indigenous Australia in the post COVID-19 pandemic period: 'Less hunger, less stress' with increased food purchases in remote stores and more time for self-provisioning (Altman 2020). Altman proposes the CDP requirements had previously limited the options for self-provisioning on Country; recipients had less discretionary time. Altman also predicted improved wellbeing as a consequence of these changes (Altman 2020).
>
> Lee and colleagues also noted the benefits of the income supplements in 2020 for the recommended diets of their study subjects in a study of diets in Greater Brisbane during the COVID-19 pandemic. They noted 'the affordability of the recommended diet improved greatly' and concluded that, 'for the first time, welfare dependent families had economic access to recommended diets' (Lee et al. 2021b).
>
> Notwithstanding these findings, researchers are unequivocal in finding that COVID-19 generally exacerbated issues related to securing food and worsened economic vulnerabilities. The pandemic has further exposed the need for collaboration and coordination across government and with communities to drive the structural changes that are needed to address food insecurity (Fredericks and Bradfield 2021; O'Kane 2020; Louie et al. 2022).

Broad state-based strategies

The national policies above are complemented by some state-based food security strategies.

Tasmania was the first state government to develop a food security strategy with *Food for all Tasmanians* in 2012 (Ward et al. 2013). An updated strategy, named *Food Relief to Food Resilience – Tasmanian Food Security Strategy 2021–2024* was released in 2021, with an action plan being co-designed with the food relief sector and community partners. The strategy seeks to improve food security, shifting people from a reliance on emergency food relief to a position of food resilience (Department of Communities Tasmania 2021).

In October 2021, Health and Wellbeing Queensland, the Torres and Cape Indigenous Council Alliance and the Local Government Association of Queensland delivered a series of roundtable discussions, called 'Gather + Grow', addressing the factors that create food insecurity in Queensland remote Indigenous communities. Three key community-identified priorities were the focus of discussions: economic development, freight and supply chain, and healthy housing. The main outcome from the roundtable is to draft a food security action plan for First Nations Torres Strait, Cape York and Lower Gulf communities (Health and Wellbeing Queensland 2022).

Other states and territories have food security initiatives, or related work in progress (McGowan and McGurk 2020; Parliament of New South Wales 2022). For example, several states conduct regular healthy food basket price monitoring for a variety of purposes, including monitoring food insecurity (Lewis and Lee 2016). The Northern Territory Government's 'Market Basket Survey' of remote stores has been in place since 1998. It monitors and reports on food cost, availability, variety, and quality in remote community stores (Bray et al. 2014). While food security and access to nutritious food are cited as the purpose for such strategies, improvements to mental health and suicide prevention are not noted as proposed outcomes.

The COVID-19 pandemic has resulted in some state level activity to improve food access. For example, in April 2020, VicHealth established the Food Systems and Food Security COVID-19 Working Group to understand and coordinate collective efforts to improve access and availability to healthy food for all Victorians (VicHealth 2022). VicHealth notes that many local governments of Victoria had introduced similar initiatives (VicHealth 2020). For example, see the City of Ballarat's Good Food for All Food Strategy (City of Ballarat 2019).

Peak bodies and health organisations

Other food security guidance is available through leading health peak bodies. *The Food Security for Aboriginal and Torres Strait Islander Peoples Policy – Joint position statement* was released by 6 leading health organisations comprising Australian Red Cross, Dietitians Association of Australia, Indigenous Allied Health Australia, National Heart Foundation of Australia, Public Health Association of Australia and the Victorian Aboriginal Community Controlled Health Organisation (Dietitians Australia 2016). Released in 2012, it was revised and re-endorsed in 2016. The joint statement outlines action needed to address food security and highlights the necessity to develop such policy with Aboriginal and Torres Strait Islander people 'in a way that strengthens and supports culture, health and capacity' (Dietitians Australia 2016).

With Commonwealth and Northern Territory Department of Health funding, the Aboriginal Medical Services Alliance Northern Territory (AMSANT) commenced a food project in 2020, releasing 'The Food Summit' report following a forum in 2021 (AMSANT 2021). The work addressed systemic issues affecting food choices and diets of people in the Northern Territory. The report includes recommendations to support community-led solutions to food security in the Northern Territory, flagging the need for sectors to work together with Aboriginal communities to prevent food insecurity, and the work highlighted the connection that food has to all aspects of life and culture.

Some Aboriginal Community Controlled Health Organisations have released position statements on food security. These statements call for action on food security and highlight the importance of improved housing, local decision-making and cross-sectoral efforts (see for example Apunipima Cape York Health Council 2021; Miwatj Health Aboriginal Corporation 2021; CAAC 2021).

5

Relevant programs and initiatives

5   Relevant programs and initiatives

With food insecurity directly linked to mental health conditions, such as depression (Weaver and Hadley 2009), consolidating evidence of what works from robust evaluations of programs and initiatives that seek to address food security is critical. In addition to reviewing programs and initiatives, this section explores evidence for mental health outcomes from government funded, targeted and mainstream food security programs. Only one of the programs evaluated – Community Kitchens – specifically explored mental health outcomes.

Overwhelmingly, the Indigenous-specific programs are directed at remote communities, with targeted urban food security initiatives not identified. Most programs, such as remote store programs, focus primarily on food accessibility and availability by ensuring a wide range of healthy food options that are affordable.

Indigenous-specific programs – or those predominately targeted at Indigenous Australians, with a strong reliance on government funding – are discussed first, followed by mainstream programs.

Remote store programs

A strong focus of food security programs is increasing the accessibility and affordability of food in remote areas through the operation of remote stores. Three programs operating remote stores were examined, as follows:

- Outback Stores is owned by the Australian Government. The program commenced in 2006, and currently runs in 39 remote Indigenous communities in the Northern Territory, Western Australia and South Australia (Outback Stores 2020).

- Mai Wiru Regional Stores is run by the Mai Wiru Regional Stores Council Aboriginal Corporation (Mai Wiru 2020). The program commenced in 2003, and currently runs in 9 remote Indigenous communities in the Anangu Pitjantjatjara Yankunytjatjara (APY) Lands, South Australia, and Northern Territory.

- Arnhem Land Progress Aboriginal (ALPA) Corporation commenced in 1972 and currently runs in 27 remote locations in the Northern Territory and Queensland.

Evaluations and reviews

Evaluations undertaken of these programs did not address mental health outcomes.
Three evaluations and 2 reviews of these initiatives were examined for this paper, spanning 2010 to 2019. These were as follows:

- Ferguson and colleagues (2017) examined the impact of pricing strategies on food and beverage sales in Outback Stores.

- Lee and colleagues (2016) examined the impact of efforts to improve nutrition on the APY Lands from 1986, especially via Mai Wiru stores.

- Brimblecombe and colleagues (2019) tested an intervention in ALPA stores to reduce sales of discretionary products.

- Hudson (2010) independently reviewed Outback Stores for the Centre for Independent Studies.
- Bayfield (2019) contributed independent observations about food quality and costs in remote stores following travel to remote Australia.

Findings

Direct learnings about mental health were not included in these evaluations and reviews. All of the studies acknowledged the operational and logistical challenges associated with remote stores, including low buying power. Some important and relevant conclusions were that such stores are:

- highly effective at improving food security in remote communities (Ferguson et al. 2017; Lee A. et al. 2016)
- most useful in communities with under 500 members because they ensured the viability of stores selling affordable, healthy food in small communities (Hudson 2010)
- important for improving the availability of healthy choices (Lee A. et al. 2016) and promoting decreased sugar consumption (Brimblecombe et al. 2019).

Some cautions were contained within the independent reviews, with the authors noting that the government-led remote stores initiatives were likely to:

- disempower communities by taking control of community-owned stores (Bayfield 2019)
- decrease competition and create dependence on the government (Hudson 2010).

Healthy eating programs

Nutrition programs are not the focus of this paper; however, such programs may address food security because they frequently target food availability, accessibility, stability, or utilisation. For information on nutrition programs, refer to *Connection between food, body and mind* (Teasdale et al. 2021), produced for the Indigenous Mental Health and Suicide Prevention Clearinghouse.

The following 2 short-term programs largely focused on making healthy food affordable and included the promotion of healthy eating patterns:

- Cape York Healthy Choice Rewards (HCR) operated in Queensland in 2015 as a monetary incentive strategy. The program's aim was 'to ensure food affordability, availability and access comparable to urban Australia' with participants given vouchers for fruit and vegetables.
- The Good Food Systems: Good Food for All project operated in Queensland and the Northern Territory between 2009 and 2013 in 4 Indigenous communities. The aim of the project was to develop and test the feasibility of a multi-sector participatory approach to support the development of a healthy eating environment in remote Indigenous communities (Menzies 2022) and it had a strong focus on food security (Brimblecombe et al. 2017).

Evaluations

Evaluations of these programs were examined, as follows:

- A mixed methods study of the Cape York HCR program by Brown and colleagues (2019) assessed the feasibility of implementing a monetary incentive strategy in the form of fruit and vegetable vouchers in a very remote Australian community store.

- Several aspects of the Good Food Systems (GFS) project were reviewed, with the Menzies School of Health Research flagging 6 peer reviewed outputs (Menzies 2022). Of these, 2 published reviews of the project were accessed for this analysis:
  - Rogers and colleagues (2016) outlined findings from semi-structured interviews with participants concerning their perceptions of the barriers, enablers and benefits of the approach taken by the project.
  - Brimblecombe and colleagues (2017) assess project documentation to assess the feasibility of the multi-sector continuous improvement approach used by the project.

Findings

These evaluations did not explicitly outline mental health outcomes for the community. Key findings for the programs were:

- Consumer food subsidy schemes can help overcome the drivers of food insecurity, such as financial barriers impacting on affordability, but these need to be sufficiently promoted and more community education surrounding implementation is required (Brown et al. 2019).

- The structured approach of the GFS project was considered to show promise for sustained improvements in health (Brimblecombe et al. 2017), with enablers and success factors including:
  - the employment and support of local community coordinators
  - the creation of a supportive environment
  - increasing knowledge and capability
  - the multisectoral and structured approach
  - the use of participatory tools and the facilitation approach (Brimblecombe et al. 2017; Rogers et al 2016).

Garden programs

Garden programs are frequently promoted as sustainable approaches to food security, incorporating skill and capacity building, while making fresh, healthy food accessible. Although not labelled as such, these programs often instil the principles of food sovereignty – that is, through community ownership, the inclusion of cultural foods, use of local skills and food knowledge, and environmental/intervention sustainability (Maudrie et al. 2021).

The following 2 programs support the development of sustainable food systems:

- The Edge of Nowhere (EON) Thriving Communities program commenced in 2005 and, currently runs in 39 remote communities in Western Australia and the Northern Territory. The program focuses on establishing fruit, vegetable and bush tucker gardens in remote communities. It is a school-based program but aims to expand into community homes and gardens through community engagement and education. The program is delivered over periods of up to five years per community (EON 2020).

- Food Ladder operates in 10 remote and regional locations in Australia. The program commenced in 2010 and provides hydroponic greenhouses to remote and regional communities (not solely targeted at Indigenous communities), along with training to grow fruit and vegetables. Food Ladder has also partnered with female Jawoyn Elders and Save the Children to construct a bush foods and medicines garden offering 'true healing' to young Indigenous people struggling with their mental health (Jawoyn Association 2022; Food Ladder 2021).

Evaluations

Evaluations for these programs were as follows:

- For the EON program evaluation in 2013, KPMG took a case study approach, including a literature review, stakeholder consultations and fieldwork, to assess the impact of the program components in each of the 6 locations.

- Schmidt and colleagues (2018) examined interventions for primary prevention of chronic disease, with the Food Ladder programs in Ramingining and Katherine among the programs assessed.

Findings

Neither the KPMG (2013) nor Schmidt and colleagues (2018) evaluations provided insights regarding mental health outcomes from the two programs, with the latter study noting that impacts on mental health conditions were out of scope of the project.

Key learnings included:

- EON's Edible Gardens component made a significant contribution towards a solution to food security by enabling regular access to fresh fruit and vegetables (KPMG Australia 2013).

- The EON program included an emphasis on building local capacity; however, the program was subject to poor local governance and lapses in administration by councils (KPMG Australia 2013).

- The complex and shifting policy and funding environment of the EON program led to apathy, disengagement, and mistrust by residents (KPMG Australia 2013).

- The social business model used by Food Ladder contributes to social, economic and health benefits (Schmidt et al. 2018).

- Food Ladder's 'whole of community approach' was commended. In this approach a variety of stakeholders are invited to participate in the enterprise, encouraging ownership; and partnerships with agencies are formed, creating symbiotic relationships (Schmidt et al. 2018).

A study of remote Aboriginal community gardens in Western Australia and the Northern Territory found benefits included self-determination, along with the building of trust, relationships and networking (Green 2009). However, the use of short-term Community Development Employment Projects (CDEP) funding for such projects can be problematic; the trainer may leave before local participants are fully trained; or equipment and infrastructure may be removed at the end of the funding cycle (Green 2009). In their review of remote Aboriginal community gardens (2013), Hume and colleagues' conclusions were similar: they highlighted community autonomy, consultation and engagement; the employment of long-term, effective, culturally sensitive managers; and ongoing funding to be among the essential elements for sustainability (Hume et al. 2013).

Similarly, McKay and Godrich (2021) warned that community garden programs need to be sustainable to be successful. That is, they must address the systemic problems of the community – for example, through sustainable funding and resourcing, and ensuring 'that everyone is trained to be able to maintain the community garden if funding or resourcing is removed'.

The need for consistent, ongoing support was highlighted in a study of long-term horticulture efforts in the Lockhardt River (Hunter et al. 2014). Fundamental impediments to the success of the enterprise included changing political commitments, changing council requirements and demands of the CDEP (later privatised as Jobfind Centres Australia).

Mainstream food security programs

This section summarises findings from a cross-section of evaluations of government-funded food support programs, highlighting outcomes for food security, wellbeing and improved mental health. None of the programs mentioned below are specifically targeted at Indigenous Australians. The programs support food-insecure members of the community through emergency food relief; food parcels or subsidised grocery schemes; school breakfast programs; and food cooking skills. While such programs address elements of food security, few explicitly target mental health through these services. Formal evaluation evidence about their effect on mental health and suicide prevention is lacking.

School nutrition projects

School nutrition projects (SNPs) provide meal services to students in the Northern Territory. They were originally part of the Northern Territory Emergency Response and are still active today. In response to COVID-19, the delivery of SNP was expanded throughout the student-free periods and school holidays (Wyatt 2020).

Program benefits highlighted by Jaenke and Brimblecombe's evaluation of SNP were as follows:

- The program makes a valuable contribution to community food security.
- It is often the main source of food for school-aged children.
- It takes the pressure off parents to provide healthy food for their children during school hours (Jaenke and Brimblecombe 2019).

Community Kitchens

Community Kitchens brings small groups of people together to learn about planning and preparation of food and to eat the meal they have prepared together. Volunteer facilitators are provided with training to educate others on healthy eating, budgeting for food, and kitchen and food safety (Rosier 2011). Outcomes from evaluations of this program highlight the benefits to the mental health of participants (Rosier 2011):

- The program promotes social inclusion by providing a purpose in life and improved social wellbeing (Lee et al. 2010).
- More than half (52%) of participants reported improvements in their health and in their sense of personal happiness (53%) (AIFS 2014).

- Almost a third (30%) of interviewed participants took part in discussions about health problems, such as relapses in existing illnesses (AIFS 2014).

- The self-help element of the program made an important contribution to program success (Iacovou et al. 2012).

While such programs may reduce food insecurity in the short term through the provision of food skills, income-related food insecurity requires long-term solutions (Iacovou et al. 2012).

Food relief charities – Foodbank case study

Several large food relief charities receive government funding for the provision of emergency food relief. Foodbank is one of these services. Foodbank works together with farmers to ensure a stable supply of staple foods they can offer Australians in need (Foodbank 2020). They work with transport services to get food out to various locations, including remote communities. School breakfast programs are also supported by the charity.

Notable findings concerning Foodbank's services are as follows:

- Foodbank's Social Return on Investment (SROI) Study found the program contributes to improvements in the emotional wellbeing of clients, their sense of self-worth, social relationships, academic achievement and standard of living (Foodbank 2014).

- Almost a third (29%) of principals and teachers interviewed for an evaluation of the breakfast program considered their students' physical and mental health to have improved (MacDonald 2018).

Internationally, school breakfast programs were found to contribute to increased household food security and to reduce the uncertainty surrounding availability of sufficient food (Bartfeld and Ahn 2011).

6

Overarching approaches and best practice

6   Overarching approaches and best practice

Many factors cause food insecurity for Indigenous Australians. Environmental, geographical, economic, political, social and cultural factors all contribute. Many of these factors are associated with the ongoing impacts of colonisation. Although there are differences in its presentation, poverty, social disadvantage, housing and related social determinants of health affect food security in both urban and remote areas (Bramwell et al. 2017; Pollard et al. 2014).

This multi-dimensional problem requires long-term commitment. Several elements are key to the success of food security programs.

Addressing food insecurity

Multi-sector and multidimensional approach

Improving the 4 dimensions of food security – availability, accessibility, utilisation, stability – requires an approach that addresses the multiple causal factors and coordination of the different sectors that play a role in managing these factors:

- Availability and accessibility are frequently addressed together: 'availability' refers to the physical existence and supply of food, while 'accessibility' can depend on an individual's financial situation and ability to travel to a store that sells affordable, healthy food (Fraanje and Lee-Gammage 2018).

- Utilisation requires individuals to prepare and store healthy foods, and they require cooking supplies and equipment (Booth and Smith 2001). Education on the preparation of healthy foods also falls under food utilisation, but studies have found that people often know how to make their meals as nutritious as possible with the limited choices they have (Pollard et al. 2014).

- Stability is the fourth dimension, requiring all the other dimensions to remain stable over time to ensure ongoing food security.

Very few programs take a multi-sector approach to food insecurity. The Good Food Systems (GFS) project took this approach, setting up a group of stakeholders who would come together to meet, discuss, and implement food security actions (Menzies 2022). Actions were delegated to the stakeholders who were able to influence the relevant sector. However, this was a short-term project involving 4 remote Indigenous communities and there were some challenges in gaining full attendance across sectors at meetings. More guidance is needed for practitioners and policymakers on how to establish and maintain multisectoral approaches (Rogers et al. 2016).

Partnerships, community ownership and leadership

One of the key success factors for programs that address food security is the formation of partnerships and relationships with the community:

- The Good Food Systems and EON Thriving Communities programs established good relationships with the communities they operated in, which contributed to program uptake (Brimblecombe et al. 2017; KPMG Australia 2013).

- Food Ladder's success was attributed, in part, to encouraging community ownership and partnerships (Schmidt et al. 2018).

- A critique of Outback Stores was that it disempowered community by taking control of community-owned stores (Bayfield 2019).

Other literature reviews strengthen the argument for community leadership when addressing food security. In a study of food practices by families in communities in the APY Lands, Bryce and colleagues (2020:18) observed that:

> … a genuine commitment to improving food security through reform that ensures Aboriginal and Torres Strait Islander people are the decision-makers [is required] to address the required structural and systemic changes.

Browne and colleagues' (2018) systematic review of Aboriginal food and nutrition programs concluded that community involvement and preferably control of program development and implementation is the most important factor for the success of Aboriginal and Torres Strait Islander food and nutrition programs. These principles align with those of the food sovereignty movement, which promotes localising food systems, local decision-making, and the use and enhancement of local skills and knowledge (Charlton 2016).

Such insights are not new. The World Health Organization (WHO) conducted an extensive review of interventions associated with diet and physical activity to disseminate best practice advice. The review concluded that effective interventions consistently involved participants in the planning and implementation stages (WHO 2009). Engaging local people as experts in program delivery helps to ensure programs are more suited to the varying geography, climate, and socioeconomic circumstances in which Indigenous people live. However, lack of community engagement continues to be a major problem for the implementation of food security programs. There is considerable under-representation of Aboriginal and Torres Strait Islander people in the health sector – including at the program design level (Temple and Russell 2018).

Financial insecurity

Material hardship and inadequate financial resources are the primary reason for food insecurity (Bowden 2020). For many Australians, poverty is deeply rooted and intrinsically linked to the interconnected conditions of food insecurity and poor mental health (Isaacs et al. 2018; Ridley et al. 2020). Indigenous Australians are more likely to be living on low incomes, with median disposable incomes that decrease with remoteness (AIHW 2021b). They also experience high levels of financial stress and vulnerability (AIHW 2021b).

Among programs addressing food security, there is often a primary focus on availability, by ensuring a wide range of healthy food options that are affordable – most frequently in remote locations. Despite this, food purchased in remote stores is considerably more expensive (Markham and Kerins 2020). More efforts are needed across Australia to make healthy food options more affordable. Lee and colleagues (2021a) examined affordability across different socioeconomic and remote communities in Queensland. Recommended diets were unaffordable – and not only in very remote areas. Low-income families were also likely to be experiencing food stress, regardless of where they live.

Immediate solutions include:

- subsidy schemes (in the form of funding initiatives, subsidies on freight or food items) and monetary incentive strategies have a large impact on food security outcomes

- monetary incentive strategies – such as discounting healthy foods and a food voucher system, as trialled in the Cape York HCR project – can help community members purchase food items (Brown et al. 2019).

Increasing incomes through increased social security payments is another option (Markham and Kerins 2020). Markham and Kerins (2020) also contend that the Remote Area Allowance – a supplementary payment for income support recipients in eligible remote areas – needs a substantial increase and to be indexed if it is to keep pace with rising costs in remote Australia.

Ultimately, addressing income-related food insecurity requires sustainable, inclusive policy changes, with a long-term focus on the more equitable distribution of wealth and Australia's resource base.

Cultural safety and acceptability

Given the ongoing impacts of Indigenous colonisation, food security initiatives that are culturally safe will be more effective. This means asking people 'to step into their responsibility and to be agents for change in systems' (Lowitja Institute 2020). Paternalistic or authoritarian programs may lead to resistance and/or lowered self-esteem for participants (Skinner et al. 2016).

The following factors should be considered:

- Studies of food security strategies noted the importance of programs that 'preserve dignity' (Lee and Ride 2018; Skinner et al 2016; Sherriff et al. 2022; Bramwell et al. 2017). Lee and Ride (2018) suggest that personal dignity can be preserved by integrating programs into broader health and welfare systems and presenting the program as a 'service', rather than a charity; and providing recipients with the opportunity to contribute to the running of the program.

- To alleviate food insecurity among urban and regional communities there is a need to address system-level changes in the food environment and to acknowledge Indigenous culture and food preferences when developing programs (Sherriff et al. 2022).

- Teasdale and colleagues (2021) assert that there is a role for traditional foods and for sourcing food directly from the land in improving social and emotional wellbeing. The Lowitja Institute also refers to the Mayi Kuwayu national study of Aboriginal and Torres Strait Islander wellbeing, which identifies traditional foods and medicines and food provisioning as elements of connection to Country – a cultural factor essential for health and wellbeing (Lowitja Institute 2020).

- Skinner and colleagues note that good food programs empower Indigenous people, through increasing capacity and reconnecting people with cultural practices. The author asserts that such practices reflect food sovereignty principles, which focus on 'restructuring/reorienting power relationships' and may 'facilitate the decolonisation process' (Skinner et al. 2016).

Continuous and sustainable

The fourth dimension of food security is stability, which points to an essential facet of successful food security interventions. The frequent response to food insecurity via emergency food relief is not a sustainable nor a stable solution: it does not address the root causes of food insecurity. Charities providing such assistance have described the demand for support as 'chronic' (Foodbank 2020). Addressing the systemic issues underpinning food insecurity requires long-term, consistent and sustainable investment.

Such requirements were frequently highlighted in garden programs: Hume and colleagues (2013) flagged long, stable funding cycles as an essential element in their review of remote Aboriginal community gardens. A review of food security programs by McKay and Godrich found small-scale interventions have limited reach and were unlikely to provide an ongoing impact. They concluded that 'any intervention … will need to involve Aboriginal and Torres Strait Islander people and be sustained once external parties have left' (McKay and Godrich 2021:1448).

7

Gaps and limitations

7   Gaps and limitations

Some fundamental limitations and gaps in efforts to address food security were evident, with a fundamental gap in exploration of the effects of programs on social and emotional wellbeing, mental health and suicide prevention.

The changing or narrow focus of some food security programs, and their short duration, limit the ability to achieve stable food security in Australia. Literature reviews flagged problems with the complex and shifting policy and funding environment of programs (KPMG Australia 2013; Hunter et al. 2014). The intractable problem of financial and material insecurity – an underlying cause of food insecurity – requires a long-term solution (Iacovou et al. 2012).

This analysis also highlighted the overwhelming focus of programs on food security in remote populations. Targeted programs addressing the challenges faced by urban Aboriginal and Torres Strait Islander people are also needed. Contemporary, appropriate solutions must recognise the distinct experiences of food insecurity faced by both urban and remote Indigenous Australians.

Food sovereignty advocates highlight the importance of community leadership. In this analysis, community-led programs were not a strong feature of food security programs. While community engagement and partnerships were frequently objectives, the voices and knowledge of the community must be central to the design, implementation and ongoing management of any intervention. This will help with understanding of local requirements and local constraints; build resilience; embed cultural knowledge in solutions.

Finally, this analysis revealed the deficit of Australian research on food security and its effect on Aboriginal and Torres Strait Islander mental health and suicidal behaviours, particularly the latter. Implications for wellbeing were only occasionally mentioned by evaluations of programs – despite improvements to wellbeing being a frequently stated intent of an intervention. Where wellbeing was mentioned, there was no in-depth exploration of the social and emotional wellbeing outcomes of programs.

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Recommen-
dations
for further
research

8   Recommendations for further research

Among the literature reviewed, was the claim by Fredericks and Bradfield (2021) that food security, and how to address it, have been well documented:

> Recommendations pertaining to monitoring and evaluating food pricing; addressing freight costs; promoting greater competition; improving infrastructure, housing and utility services; addressing overcrowding; building capability and increasing the Indigenous workforce; improving knowledge of nutrition, amongst others, are consistently documented in all reports (Fredericks and Bradfield 2021:61).

Is further research required? The premise of this paper was to gain an insight into food security interventions and their impact on social and emotional wellbeing, including effects on mental health and suicide prevention; and to explore and promote best practice. Such evidence is strongly lacking; in particular, little is known about the connections between food insecurity and suicide among Aboriginal and Torres Strait Islander people.

We have suggested that best practice interventions include programs that are Indigenous-led, ongoing, sustainable, coordinated and cross-sectoral. Such interventions must incorporate robust evaluations and explore the impact on Indigenous social and emotional wellbeing.

The overwhelming focus of research and interventions was on *remote* Indigenous communities, meaning little is known about the effects of food security interventions among urban Aboriginal and Torres Strait Islander people. Too often, solutions in non-remote areas take on more of an emergency response. Further research on sustainable, Indigenous-focused and led, urban food security solutions is needed.

Food sovereignty principles offer another avenue for exploration. Internationally, the concept of food sovereignty emphasises community food self-sufficiency or cultural autonomy (Markham and Kerins 2020). In Australia an approach to food provisioning that emphasises connection to Country will serve to promote social and emotional wellbeing. However, a uniform understanding of food sovereignty in Australia is lacking, and research is needed into its potential benefits for food security among Indigenous Australians.

Finally, the COVID-19 pandemic response by the Australian Government saw temporary increases to welfare payments, along with suspension of the obligations associated with the CDP. This gave us some initial insights into the effects on Indigenous communities of improving financial security (see Box 4.1). More research is needed to explore the impact of social security reforms and the possibility of a living wage as a means of driving food security and improving Indigenous social and emotional wellbeing.

9

Conclusions

9   Conclusions

Food security has been identified as an objective in closing the gap between Aboriginal and Torres Strait Islander and non-Indigenous Australians.

Combatting food insecurity is not a current focus of Australia's mental health and suicide-prevention initiatives. Few programs relating to food security for Indigenous Australians assess their effect on mental health and suicidal behaviours as part of the evaluation. Given the paucity of clear evidence for this link in Aboriginal and Torres Strait Islander populations, this is not surprising. However, with evidence indicating a link between mental health and food security in other populations (Hajizadeh et al. 2019; Pryor et al. 2016), this is a research gap that needs exploring.

Continuous support and community ownership are important facets of successful food security interventions. Initiatives need to tackle the 4 dimensions of food security (availability, accessibility, utilisation and stability). They also need to coordinate across the different sectors with a role in addressing the causes of food insecurity. Recognition of the complex underpinnings of food insecurity for all Aboriginal and Torres Strait Islander people is required. Addressing poverty and social disadvantage will be central to this challenge.

Appendixes

Appendix A: Policies and frameworks

Table A1: Description of policies and frameworks

Name	Details	Key recommendations	Implementation
National Strategic Framework for Aboriginal and Torres Strait Islander Peoples' Mental Health and Social and Emotional Wellbeing 2017–2023	The framework supports Indigenous mental health policy and practice. It provides a stepped care model that is culturally appropriate for Indigenous Australians. It was designed to provide support to the implementation of the Fifth National Mental Health and Suicide Prevention Plan (PM&C 2017).	The framework does not specifically link food security to mental health. However, it does promote the value of 'access to good healthy food' as a protective factor in physical health – feeling strong and healthy and able to physically participate as fully as possible in life.	Gayaa Dhuwi (Proud Spirit) Australia is responsible for implementation of the Framework.
The National Aboriginal and Torres Strait Islander Suicide Prevention Strategy 2013	This strategy has a holistic and early intervention focus, aiming to reduce the cause, prevalence and impact of suicide on Aboriginal and Torres Strait Islander individuals, their families and communities (DoHA 2013).	The strategy acknowledges the importance of nutrition in the context of prevention, as a causal pathway to youth problems and suicide, with poor nutrition in pregnancy and good nutrition in early childhood being essential for neurological development in early life. Food security is not specifically mentioned.	Gayaa Dhuwi (Proud Spirit) Australia is renewing the strategy, with consultations and a submission process occurring in 2021 and 2022.
National Agreement on Closing the Gap	The new National Agreement on Closing the Gap was released in 2020 with the objective of overcoming entrenched inequality faced by many Aboriginal and Torres Strait Islander people. The agreement includes Priority Reforms which will change the way governments work with Indigenous Australians (PM&C 2020).	The National Agreement includes 17 national socioeconomic targets, including Target 14: 'People enjoy high levels of social and emotional wellbeing'. The agreement is complemented by the National Aboriginal and Torres Strait Islander Health Plan 2021–2031, which includes plans to take action on food security (see below).	A Joint Council on Closing the Gap includes Aboriginal and Torres Strait Islander peoples as joint decision makers, supporting coordination on Closing the Gap. Implementation of the agreement includes an Implementation Tracker, which provides progress information for each party to the agreement on delivering against commitments. Parties include Commonwealth, state, territory, local government and the Coalition of Peaks – a representative body of over 70 Aboriginal and Torres Strait Islander peak organisations. The Joint Council has a role in monitoring performance and implementation.

(continued)

Table A1 (continued): Description of policies and frameworks

Name	Details	Key recommendations	Implementation
National Aboriginal and Torres Strait Islander Health Plan 2021–2031	The plan was developed in partnership with Aboriginal and Torres Strait Islander health leaders and experts. It outlines national policy to improve health and wellbeing for Aboriginal and Torres Strait Islander people. The plan aims to support the new Closing the Gap targets, with a focus on strengthening the community-controlled health sector and assisting mainstream health services to provide safe and responsive care (DoH 2021a).	Food security is acknowledged in several of the priorities, with 'Priority 7: Healthy environments, sustainability and preparedness' including the objective to 'Take action to improve food security'. It notes that solutions must enable self-determination in diet and nutrition-related decision making, with support for stores important for health and wellbeing (DoH 2021a).	At a national level, implementation of the Health Plan is the responsibility of the Australian Government. A robust accountability framework supports the Health Plan and includes a partnership approach with leadership by Aboriginal and Torres Strait Islander organisations (including Aboriginal Community Controlled Health Services) and communities. There is flexibility in the Health Plan to support adaptation to the differing needs of each jurisdiction, as well as across urban, regional, rural and remote settings (DoH 2021a).
National Preventive Health Strategy 2021–2030	The strategy enhances the health system's focus on prevention, aiming to improve health and wellbeing of all Australians at all stages of life through building a systems-based approach to prevention (DoH 2021b).	The strategy will develop a national policy document on food security in priority populations by 2030. It identifies 'Improving access to and the consumption of a healthy diet' as one of its 7 focus areas and acknowledges the impact of diet on mental health, stating 'Mental health and wellbeing is also impacted by our diet, with the risk for depression increasing whilst consuming an unhealthy diet' (DoH 2021b).	Underpinning the strategy is a 'Framework for Action' which guides its implementation. Implementation is supported by the National Preventive Health Expert Steering Committee, an 'independent, expert-led [group] that will advise the Australian Government, through an equity lens, on current, emerging and future priorities in prevention' (DoH 2021b).
The National Aboriginal and Torres Strait Islander Nutrition Strategy and Action Plan (NATSINSAP) 2000–2010	The NATSINSAP was developed by the National Aboriginal and Torres Strait Islander Nutrition Working Party (NATSINWP) as a component of the national framework called Eat Well Australia and national public health nutrition strategy. It aimed to improve access to healthy food choices for Indigenous Australians.	NATSINSAP included the objective to 'Ensure that Aboriginal and Torres Strait Islander people have a consistent supply and variety of quality, affordable, nutritious food by addressing the major factors that contribute to food security' (NATSINWP 2000). Priority action areas included food security and socioeconomic status; food supply in rural and remote communities; and environment and household infrastructure (PHAA 2016; NHMRC 2013).	The NATSINSAP was signed off by Health Ministers in 2001. The Remote Indigenous Store and Takeaways project was developed and implemented as part of the NATSINSAP and targeted food supply in remote communities. The plan was not renewed following its expiry in 2010.

(continued)

Table A1 (continued): Description of policies and frameworks

Name	Details	Key recommendations	Implementation
National Strategy for Food Security in Remote Indigenous Communities	Published in 2009, this strategy was developed at the request of the Council of Australian Governments (COAG) as a schedule to the National Indigenous Reform Agreement.	The strategy linked food security and nutrition with the Closing the Gap targets. It was designed to coordinate efforts to develop a secure, sustainable and healthy food supply to remote Indigenous communities. It included a regulatory framework for the operation of remote stores, including minimum standards relating to food security, introduced as part of the Northern Territory Emergency Response.	A review of implementation of the strategy by the Australian National Audit Office (ANAO) in 2014 found that only the national healthy-eating action plan for remote communities was completed; the strategy did not establish a framework to coordinate initiatives; and strategies were mostly focused on the Northern Territory (ANAO 2014). Program delivery arrangements were revised by the Australian Government in 2014, with food security initiatives forming part of the Safety and Wellbeing Program of the Indigenous Advancement Strategy (ANAO 2014).
Healthy Canberra: ACT Preventive Health Plan 2020–2025	This plan outlines 5 areas of focus to help Canberrans achieve the highest standards of health (ACT Health 2021).	This broad-based plan and accompanying action plan outline action areas for government. One action area is 'Increasing healthy eating', which includes the focus area: 'Strengthen approaches to address food insecurity in the ACT'. Social disadvantage is noted as a key driver of food insecurity (ACT Health 2021).	The plan is being delivered with a range of non-government stakeholders. Implementation is outlined in 3-year rolling action plans. A progress report on achievements in 2020 notes scoping work related to food security.
Gather + Grow, Queensland	Work is under way through the Gather + Grow program to identify priorities and actions to improve access to healthy food and drink. The focus is on Torres Strait, Cape York and Lower Gulf communities. A framework has been developed to address food security (Health and Wellbeing Queensland 2022).	The Gather + Grow Framework outlines system level, community level, and family and individual level changes needed to improve food security. A food security action plan outlining 'gather and grow' locally led strategies and actions to establish food security is also being developed.	The Queensland Department of Health and Wellbeing is leading implementation of the initiative in partnership with Aboriginal and Torres Strait Islander Community Controlled Organisations. It is supported to gather and grow locally led strategies and actions to establish food security across the Torres Strait, Cape York and Lower Gulf regions of Queensland.

(continued)

Table A1 (continued): Description of policies and frameworks

Name	Details	Key recommendations	Implementation
South Australian Food Relief Charter and Nutrition Guidelines	The South Australian Government acknowledges food security as a key determinant of health. The Food Relief Charter and Nutrition Guidelines for the Food Relief Sector are available on the SA Health website (SA Health n.d.).	The South Australian Food Relief Charter includes guiding principles, which cover aspects important to wellbeing. For example, Principle 3: 'Delivering a service built on fairness and equity', notes the important values of 'choice, safety, dignity, respect, compassion, transparency, privacy, cultural sensitivity, empowerment and independence' in service delivery. Principle 4: 'Connecting people, building skills and confidence' acknowledges the connections between 'low income, unemployment, a reliance on social assistance, housing affordability, chronic ill health …[and] poverty and food insecurity (SA Health n.d.).	The charter and guidelines were developed as part of the implementation of recommendation of the South Australian Food Security Project, which included a range of research and consultation activities in 2016 and 2017 (DHS SA n.d.).
Food Relief to Food Resilience – Tasmanian Food Security Strategy 2021–2024	The strategy was released in 2021, with consultation occurring to develop an action plan. The draft action plan, released for consultation in 2022, was co-designed with the food relief sector and community partners. The strategy seeks to improve food security, shifting people from a reliance on emergency food relief to a position of food resilience (Department of Communities Tasmania 2021).	The 3-year plan includes actions to achieve the goal of the Food Relief to Food Resilience. A draft action plan proposes actions to support key priority areas, with Priority 1 'Integrated Support – Collaborative Leadership and Innovation' recognising the connection between food resilience and health and wellbeing.	Implementation is still to occur. The draft action plan was released for consultation in June 2022. Some initial funding has been committed by the government to pilot food security initiatives.

Notes

1. Many local government areas of Victoria have developed food security strategies. VicHealth has developed resources to assist with advancing these strategies (see VicHealth 2014).

2. In November 2021, the New South Wales Legislative Assembly Committee on Environment and Planning commenced an inquiry into food production and supply which will inquire into improving food security (see Parliament of New South Wales 2021).

3. In February 2020, Western Australia's Premier announced a roundtable to explore long-term solutions to food insecurity (McGowan and McGurk 2020). Subsequently, in April 2022, Western Australia's Joint Standing Committee on the Commissioner for Children and Young People commenced an inquiry into the most effective ways for Western Australia to address food insecurity for children and young people affected by poverty (Parliament of Western Australia 2022).

Appendix B: Programs

Table B1: Description of programs, associated evaluations and outcomes

Program	Program details		Evaluation	Evaluation details		Evaluation outcomes
Outback Stores (OBS) is owned by the Australian Government and manages remote, community-owned stores under a fee-for-service arrangement	Location	Northern Territory, Western Australia and South Australia	Ferguson et al. 2017 Objective: To examine the impact of pricing strategies on food and beverage sales and to identify enablers and barriers to the implementation. Evaluation method: Explanatory, sequential mixed methods approach. Quantitative point-of-sale data and qualitative interviews.	Location	18 remote Aboriginal communities in the Northern Territory and Western Australia	There were no changes in the sales of groceries; fresh fruit and vegetables; and low-sugar soft drinks after discounts were applied. There was a perceived lack of understanding of the discount strategies by customers. Good store infrastructure (working fridge, display units) was considered an enabler to strategy implementation. Store staff did not promote limited discounts.
	Participants	39 remote Indigenous communities		Participants	Participants (n=54) include local store committee members, staff managers, store managers and customers. 42 of the 54 participants (78%) were Indigenous	
	Duration	2006–current		Duration	Quantitative component: July 2009 – December 2010 Qualitative component: March 2011 – April 2011	
	Indigenous specific?	Yes		Indigenous specific?	Yes, but also included non-Indigenous participants	
	Focus	Remote store program, improving access to nutritious and affordable food		Focus	Describing factors to be considered and the commitment required to improve health in a remote retail context	

(continued)

Table B1 (continued): Description of programs, associated evaluations and outcomes

Program	Program details		Evaluation	Evaluation details		Evaluation outcomes
Mai Wiru Regional Stores Council Aboriginal Corporation (Mai Wiru) provides healthy food and other essential items through Mai Wiru stores and their subsidy scheme	Location	APY Lands, South Australia, Northern Territory	Lee et al. 2016 Objective: To examine the impact of efforts to improve nutrition on the APY Lands from 1986, especially in Mai Wiru stores. Evaluation methodology: Multiple methods including a systematic literature review; a store turnover method; and assessment of Market Basket costs, implementation of store nutrition policy requirements and healthy food checklists.	Location	APY Lands	Mai Wiru Market Baskets decreased in cost by 9% between 2008 and 2013. Despite cross-subsidisation in Mai Wiru stores to make healthy choices cheaper – by increasing the price of unhealthy choices – the latter were still relatively cheaper than the former. Since 2005, Mai Wiru stores have received food supply on a weekly basis, up from a fortnightly basis prior to that. Mai Wiru stocking has improved, with 98% of healthy food items (fruit, vegetables, lean meat, poultry, eggs, milk) being consistently available, compared with around 80% in 1986. Mai Wiru stores largely removed stocks of high trans-fat margarine and energy and sport drinks, but were less effective in removing fruit juices, providing healthy take-aways and a range of breakfast cereals, and replacing most of the sugar-rich beverages with diet versions.
	Participants	9 remote Indigenous communities, with 6 Mai Wiru stores in South Australia and 3 in the Northern Territory		Participants	APY community stores, including small supermarkets in Alice Springs and Mai Wiru stores	
	Duration	2003–current		Duration	Data and literature from 1986–2014	
	Indigenous specific?	Yes, but also includes non-Indigenous participants		Indigenous specific?	Yes	
	Focus	Improving the health and wellbeing of Indigenous communities by ensuring continuous access to nutritious and affordable food and essential items. Remote store program		Focus	Describing successful programs that demonstrate marked improvements in diet and objective health indicators, conducted by Indigenous communities	

(continued)

Table B1 (continued): Description of programs, associated evaluations and outcomes

Program	Program details		Evaluation	Evaluation details		Evaluation outcomes
Arnhem Land Progress Aboriginal (ALPA) Corporation is an independent employer of Aboriginal people in Australia that offers various services, including health and nutrition services. ALPA also owns 27 stores	Location	Northern Territory and Queensland	Brimblecombe et al. 2019 Objective: To subsidise fruit and vegetables in an effort to promote healthy eating, to work towards preventing chronic diseases and to help make prices on healthy food more affordable. Evaluation methodology: A community-level randomised controlled pragmatic trial design with three components: an implementation evaluation, a customer intercept survey, and a qualitative study.	Location	Northern Territory and Queensland	With the Healthy Store 2020 initiative, ALPA was able to produce a 1.8 tonne reduction in sugar consumption. More results will be available once the study has been published.
	Participants	27 remote locations		Participants	Seven ALPA-owned stores in North East Arnhem Land, 13 ALPA-managed stores in the Northern Territory and Queensland, and 6 stores in Cape York and the Torres Strait Islands. Count not published	
	Duration	1972–current		Duration	12-week intervention 24-week post-intervention	
	Indigenous specific?	Yes, but also includes non-Indigenous participants		Indigenous specific?	Yes, but also includes non-Indigenous participants	
	Focus	Operating successful and responsible businesses emphasising local employment, training, career pathways, customer service and safety. Includes remote stores		Focus	Testing an intervention to reduce sales of discretionary products by reducing ALPA store merchandising and substituting with core (non-discretionary) products in remote Australian communities	

(continued)

Table B1 (continued): Description of programs, associated evaluations and outcomes

Program	Program details		Evaluation	Evaluation details		Evaluation outcomes
Cape York Healthy Choice Rewards (HCR) introduced vouchers to be used on the purchase of fruit and vegetables to make these more affordable for remote communities	Location	Cape York, Queensland	Brown et al. 2019 Objective: To assess the feasibility of implementing a monetary incentive strategy in the form of fruit and vegetable vouchers in a very remote Australian community store. Evaluation method: A mixed methods approach including collection of qualitative data using semi-structured interviews; participant observation; a weekly electronic survey on store and wider community contextual information; and a quantitative assessment of store sales data.	Location	Cape York, Queensland	All respondents to the evaluation wanted the program to continue.
	Participants	Customers of the only store in a remote community with approx. 1400 residents, with 90.4% identifying as Indigenous		Participants	Customers of the only store in a remote community with approx. 1400 residents, with 90.4% identifying as Indigenous	The majority (61%) of the respondents in the evaluation indicated that the program helped them and their families consume more fruit and vegetables. Strong partnerships and relationships with store staff led to increased promotion of the program by store staff, which subsequently led to an increased uptake of the program by the community.
	Duration	32 weeks		Duration	32 weeks	
	Indigenous specific?	Yes, but also included non-Indigenous residents		Indigenous specific?	Yes, but also included non-Indigenous residents	The paper voucher system was not entirely clear to all customers.
	Focus	Feasibility of incentives to influence consumer food choices in a remote Indigenous community		Focus	Feasibility of incentives to influence consumer food choices in a remote Indigenous community	Promotion efforts were constrained by the limited funding, leading to a reduced voucher uptake. Participants mentioned that they thought the vouchers were especially important for mothers with young children.

Table B1 (continued): Description of programs, associated evaluations and outcomes

Program	Program details		Evaluation	Evaluation details		Evaluation outcomes
Good Food Systems (GFS): Good Food for All was a longitudinal study exploring the potential of multi-sector groups in tackling food security issues	Location	Queensland and the Northern Territory	Rogers et al. 2016 Objective: To explore the feasibility of a multi-sector participatory approach to support the development of a healthy eating environment in remote Indigenous communities. Evaluation methodology: Collecting stakeholders' perspectives through the administration of semi-structured interviews.	Location	Four Indigenous communities in Queensland and the Northern Territory	According to the participants, the GFS approach had influenced the capacity of community agencies to work positively with the store in their community, to ensure a range of healthy food offers.
	Participants	Four Indigenous communities (1 in Queensland, 3 in the Northern Territory)		Participants	Purposively sampled stakeholders (N=61) of whom 23 (38%) were Indigenous and 38 (62%) were non-Indigenous. Each community had 10–18 participants	Most participants said they had seen an increase in the availability of healthy food in their community store since the GFS project began, changing food purchasing behaviour.
	Duration	2009–2013		Duration	May–June 2012	
	Indigenous specific?	Yes		Indigenous specific?	Yes, but also included non-Indigenous participants	A few enablers were identified as essential to the GFS approach: local champions, participatory tools, a structured framework, and facilitation skills.
	Focus	Multi-sector participatory approach to improve food security		Focus	Multi-sector participatory approach to improve food security	Barriers to the GFS approach were competing demands, time constraints, and lack of ensuing action.

(continued)

Table B1 (continued): Description of programs, associated evaluations and outcomes

Program	Program details		Evaluation	Evaluation details		Evaluation outcomes
End of Nowhere (EON) Thriving Communities is a currently active, practical, hands-on, gardening, nutrition education, cooking and hygiene program funded by the EON foundation	Location	Western Australia and the Northern Territory	KPMG Australia 2013 Objective: To make a lasting contribution in remote communities through the reduction of preventable and chronic disease caused by poor nutrition, by targeting food insecurity and the lack of education about good health and nutrition. Evaluation methodology: Case studies for each community, consisting of the following elements: literature and data review, initial stakeholder consultations (telephone interviews), and fieldwork (formal and informal interviews and observations).	Location	Six Kimberley communities: Djarindjin/ Lombadina, Ardyaloon, Beagle Bay, Yungngora, Looma and Kadjina	The program enabled regular access to fresh fruit and vegetables. EON's partnership with schools worked best where both Edible Gardens and Healthy Eating were integral components of the school's academic program and were widely utilised by teaching staff. The KPMG evaluation highlighted several advantages: the program: attempts to secure long-term funding for a community in advance of delivery; the speed of program delivery that is dependent on community readiness; and its emphasis on building local capacity. The program was subject to poor local governance and lapses in administration by councils. The residents struggled with the complex and shifting policy and funding environment of the program, leading to apathy, disengagement and distrust.
	Participants	38 remote communities. Count not published		Participants	Members of the 6 Kimberley communities	
	Duration	Up to 5 years per community		Duration	2012–2013	
	Indigenous specific?	Yes, but also includes non-Indigenous participants		Indigenous specific?	No	
	Focus	Improving the poor health conditions faced by Indigenous children, particularly those living in remote communities		Focus	Providing an assessment of the process and outcomes of the program to provide the EON board and potential funders with clear evidence of the program's benefits, and to distil lessons learned	

Table B1 (continued): Description of programs, associated evaluations and outcomes

Program	Program details		Evaluation	Evaluation details		Evaluation outcomes
Food Ladder operates in 10 regional and remote locations in Australia, providing hydroponic greenhouses to communities to enable the production of commercial quantities of food	Location:	10 regional and remote locations across Australia	Schmidt et al. 2018 Objective: The authors reviewed primary and secondary preventive interventions in chronic disease in remote Australia to identify best practice. Food Ladder was one of the interventions assessed in their study. Evaluation methodology: The study comprised a literature review, consultation with stakeholders in remote Australia, and collation and analysis of materials.	Location	Katherine and Ramingining, Northern Territory. (Note that data for Katherine were not available)	Social, economic and health benefits were noted. Mutually beneficial partnerships between stakeholders. Involvement of community members across all ages – including children and elders. The ALPA store in Ramingining ALPA store reported a 5% increase in the sale and consumption of fruit and vegetables since the Food Ladder system commenced.
	Participants	10 communities		Participants	Key stakeholders including Ramingining ALPA store	
	Duration	2010–current		Duration	Literature review 2007–2017; consultations 2017	
	Indigenous specific?	No		Indigenous specific?	No	
	Focus	Improving food security and skills		Focus	Best practice chronic disease interventions	
School Nutrition Projects (SNP) provide one or more meal(s) to school children, during school hours	Location	Northern Territory	Jaenke and Brimblecombe 2017 Objective: To evaluate aspects of the SNP relating to dietary requirements of students in remote Indigenous schools, and enablers and barriers to program delivery and student's nutrition during school holiday periods. Evaluation methodology: Stage 1: A comprehensive assessment of the nutritional quality of SNP meals, taking a cross-sectional approach.	Location	Northern Territory	The SNP was considered in many cases to be the main source of food and nutrition for school-aged children in the community. The SNP took pressure off families to provide nutritious and appropriate food for their children during school hours. Good communication and relationships between the provider, the school and the whole community were seen as crucial elements to successful program delivery. Seasonal disruptions to the supply route, due to wet weather, impacted on food deliveries and visiting support staff.
	Participants	School children from Transition to year 12 (4–18 years) from 63 communities (N=5,800)		Participants	Stage 1: 16 SNP service providers servicing 20 sites (N=16) Stage 2: 7 sites operating a SNP (N=133)	
	Duration	2007–current		Duration	2016–2017	
	Indigenous specific?	Yes, but also included non-Indigenous participants		Indigenous specific?	Yes, but also included non-Indigenous participants	

(continued)

Table B1 (continued): Description of programs, associated evaluations and outcomes

Program	Program details		Evaluation	Evaluation details		Evaluation outcomes
	Focus	To achieve better school attendance, engagement and learning and to open up employment opportunities for local Indigenous people	Stage 2: In-depth interviews with community-based stakeholders, parents/caregivers, and key personnel involved in Territory-wide SNP management, policy development/ implementation and evaluation.	Focus	To identify a method that contributes to improved school attendance, engagement and learning and to provide employment opportunities for local Indigenous people	The majority of the parent/caregivers felt there was no need for an additional food provision program during the school holidays.
The Community Kitchen offers sessions where people could learn how to plan, cook and share healthy, affordable meals while also maintaining social inclusion	Location	National	Lee et al. 2010 Objective: To improve participants' food security and physical and mental health through acquiring food knowledge and skills while breaking down their social isolation. Evaluation methodology: Written survey and focus group discussion (participants) or structured telephone interview (facilitators and project partners).	Location	Local Government Areas of Frankston City and Mornington Peninsula Shire in Victoria.	The project enabled the development of food knowledge and cooking skills. Food donations and linking with Community Gardens helped ensure the sustainability of the program. Size of the kitchen can limit the number of additional participants. Access to transport was recognised as a potential hurdle for some participants.
	Participants	100+ sites		Participants	17 Community Kitchens (N=93). 63 participants, 20 facilitators, and 10 project partners	

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Table B1 (continued): Description of programs, associated evaluations and outcomes

Program	Program details		Evaluation	Evaluation details		Evaluation outcomes
	Duration	2004–current		Duration	1 month	Project partners thought Community Kitchens provided their clients with a purpose in life and improved their social wellbeing. The project provided preliminary evidence of the ability of multidisciplinary and intersectoral health promotion strategies.
	Indigenous specific?	No		Indigenous specific?	No	
	Focus	Improving food security while working towards social inclusion		Focus	Determine the reach of the project, satisfaction of key stakeholders, quality of project components and key stakeholder experiences of participating in the project	
Foodbank is the largest national relief organisation in Australia providing food for vulnerable Australians	Location	National	MacDonald 2018	Location	Victoria	29% of the interviewed teachers reported that most of their students' physical health improved.
	Participants	Vulnerable Australians. Count not published	Objective: to tackle the disadvantage children experience through the effects of hunger when they arrive at school without having eaten a healthy breakfast. Evaluation methodology: An annual survey for principals and coordinators; a survey for teachers sharing the impact on their students; and in-depth case studies. (see Foodbank 2014).	Participants	Principals and teachers from the 500 most disadvantaged primary schools (N=376)	29% of the interviewed teachers reported that most of their students' mental health improved.
	Duration	1994–current		Duration	2016–17	88% of the 500 schools reported that they were meeting the breakfast needs of their students. This is an increase from 84% in 2016 and from 43% in the years prior to the School Breakfast Clubs Program.
	Indigenous specific?	No		Indigenous specific?	No	
	Focus	Improving the food security of vulnerable Australians		Focus	Preventing school children from being hungry at school	

(continued)

Table B1 (continued): Description of programs, associated evaluations and outcomes

Program	Program details		Evaluation	Evaluation details		Evaluation outcomes
			Foodbank 2014 In addition to the evaluation of Foodbank's school breakfast program by MacDonald in 2018, a Social Return on Investment (SROI) study was undertaken by Net Balance on behalf of Foodbank. This included a scoping study completed in July 2012, and SROI analysis conducted between December 2012 and June 2014 (see Foodbank 2014).			

Acknowledgements

Abbreviations

ABS	Australian Bureau of Statistics
ACT	Australian Capital Territory
AIHW	Australian Institute of Health and Welfare
ALPA	Arnhem Land Progress Aboriginal Corporation
AMSANT	Aboriginal Medical Services Alliance Northern Territory
ANAO	Australian National Audit Office
APY	Anangu Pitjantjatjara Yankunytjatjara
CDEP	Community Development Employment Projects
CDP	Community Development Program
COAG	Council of Australian Governments
EON	Edge of Nowhere
FAO	Food and Agriculture Organization of the United Nations
GFS	Good Food Systems
HCR	Healthy Choice Rewards
IAS	Indigenous Advancement Strategy
KPMG	KPMG Australia Limited
Mai Wiru	Mai Wiru Regional Stores Council Aboriginal Corporation
NACCHO	National Aboriginal Community Controlled Health Organisation
NATSIHS	National Aboriginal and Torres Strait Islander Health Survey
NATSINSAP	National Aboriginal and Torres Strait Islander Nutrition Strategy and Action Plan
NATSINWP	National Aboriginal and Torres Strait Islander Nutrition Working Party
NHS	National Health Survey
NIAA	National Indigenous Australians Agency
NTER	Northern Territory Emergency Response
OBS	Outback Stores
SDGs	United Nations Sustainable Development Goals
SNPs	School nutrition projects
SROI	Social Return on Investment
SFNT Act	Stronger Futures in the Northern Territory Act 2012
USDA	United States Department of Agriculture
WHO	World Health Organization

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Food security is considered a fundamental human right. Food insecurity increases psychological distress and compromises physiological wellbeing. This report looks at the extent of food insecurity affecting Aboriginal and Torres Strait Islander people and its effect on mental health and wellbeing, as well as what is being done to address it. It also considers the effectiveness of programs that address this multidimensional issue.

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Stronger evidence,
better decisions,
improved health and welfare