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Literature Review: Food insecurity for Aboriginal and Torres Strait Islander people.

Information for policymakers, health professionals, local governments and community service organisations.



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1.0 Executive Summary

Defined as the limited or uncertain availability of nutritionally adequate and safe foods, household food insecurity, herein referred to as food insecurity, is a significant public health issue. Despite efforts to mitigate food insecurity, it continues to be a problem in both low and high-income countries, including Australia. The challenge in clearly defining the factors that affect food security and understanding the complex impacts of food insecurity on health outcomes, highlights the need for further research. Additionally, research indicates that few food security interventions are tailored to vulnerable populations including Aboriginal and Torres Strait Islander people. This paper outlines the extent of food insecurity in Australia, focusing on Aboriginal and Torres Strait Islander people residing in urban areas. It identifies key barriers and enablers to food security for Aboriginal and Torres Strait Islander people and examines past and existing health promotion initiatives designed to alleviate food insecurity. Overall, the literature review found:

- Food insecurity remains a significant issue in Australia, with Aboriginal and Torres Strait Islander people experiencing disproportionately higher rates.
- Common barriers to food insecurity include income and socio-economic status, shared housing, limited access to transport, unemployment and poor food literacy. Racism, the ongoing impacts of colonisation and systemic barriers have also been found to contribute to experiences of food insecurity among Aboriginal and Torres Strait Islander people.
- Shared housing, and the unique kinship and strong sense of community that exists among Aboriginal communities, may contribute to food security. Additionally, food literacy and support from family and friends through the provision of money, groceries and meals may enable food security.
- Charitable food relief, community food programs and food literacy have been identified as three broad strategies for addressing food insecurity in Australia.
- Past interventions developed to address food insecurity among Aboriginal and Torres Strait Islander people lacked community involvement and had minimal impact. Research suggests future interventions must adapt a participatory approach to research and be co-designed with Aboriginal people to ensure they are culturally appropriate and address the needs of the community.

2.0 Introduction

2.1 Definition of food insecurity

Food security is a basic human right (1). Food insecurity refers to the lack of consistent access to enough food to live an active and healthy life, and encompasses both the quality and quantity of food available (2). Food insecurity has been known to encompass four key components, commonly referred to as pillars (3). The four pillars of food security include:

1. the availability of sufficient amounts of nutritionally adequate food
2. adequate physical and financial resources to access food
3. the ability to utilise food and,
4. the stability of food supply.

A recent study that examined the factors that shape experiences of food security proposed two additional pillars: agency and sustainability (4). Food agency can be described as the capacity of individuals and groups to make informed decisions about their food systems (4).



Sustainability refers to the social and ecological preservation of food systems (4). Disruptions to these pillars is likely to lead to food insecurity (5).

Experiences of food insecurity can be transient or chronic and vary in severity, ranging from concern that food will run out to a reduction in the quality and variety of food consumed (3, 6). The food insecurity continuum, which ranges from the most severe form of food insecurity - starvation, to complete food security, is often used to describe the varying experiences of food insecurity (7). An important concept illustrated by the continuum, is that the severity of food insecurity can change (7).

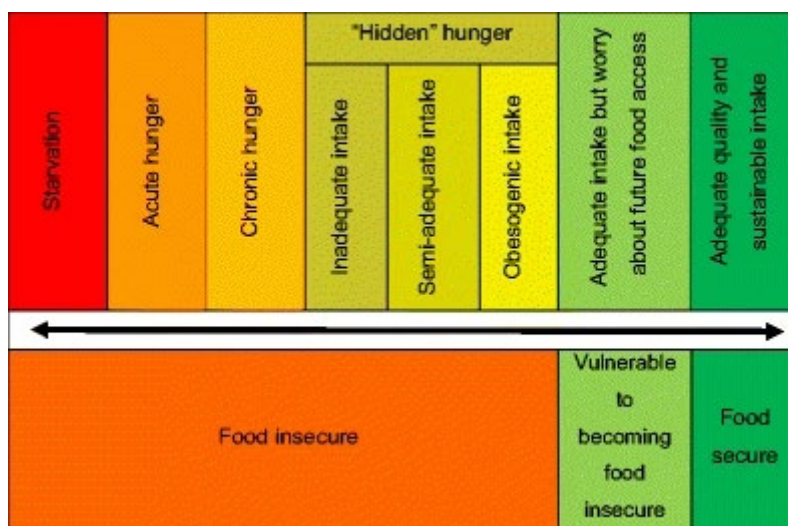


Figure 1 The food security continuum (7)

Food insecurity is recognised as a global priority (8). The importance of addressing food insecurity is demonstrated through the second Sustainable Development Goal which reads 'End hunger, achieve food security and improved nutrition and promote sustainable agriculture' (8). Furthermore, food insecurity is listed as one of the main social determinants of health by the World Health Organisation(9). Within Western Australia, the WA Health Promotion Strategic Framework 2022-2026 acknowledges the need to address food insecurity (10).

2.2 Measuring food insecurity

Food insecurity is often measured using the United States Department of Agriculture (USDA) Household Food Security Survey Module (HFSSM) (11). The HFSSM is a household level self-report survey that contains 18 questions about the food insecurity situation in the household over the previous 12 months (3). The HFSSM can be shortened to a 10-item and 6-item sub scale that differentiates between low and very low levels of food insecurity (3). The inability of the HFSSM to capture reasons beyond financial constraints and poor resources leading to comprised eating patterns, is a limitation of the tool (3). Additionally, the HFSSM does not collect information about coping strategies for those who are experiencing food insecurity (12).

In Australia, food insecurity is commonly measured using a single item 'In the last 12 months was there any time you have run out of food and not been able to purchase more?', which is incorporated in the three-yearly National Health Survey (NHS) (13). Research conducted into the validity of this item found that results are likely to under-report on food insecurity (3). Multi-item tools are more effective in measuring food insecurity and are more likely to explore all four components of food security (3).



The Food Stress Index (FSI), developed with the impetus of Fair Food WA (formerly the Western Australian Food Relief Framework Project), has been designed to geographically map the incidence of food insecurity across Western Australia (14). The FSI combines several socio-economic data sets, to estimate the prevalence of food insecurity based on socio-economic status and food affordability (14). Food affordability is assessed by applying food prices from the WA Food Access and Cost Survey to basic meal plans, determining the proportion of weekly household income required to purchase the food that comprises the meal plan (14). This figure is then linked to the proportion of households experiencing other factors associated with food insecurity (14). These combined variables form the index, which can predict the proportion of households in an area likely to be experiencing food insecurity (14).

2.3 Prevalence of food insecurity globally

Food insecurity is commonly regarded as an issue for low-income countries, however research highlights this is not the case (15). In 2020, 720-811 million people worldwide were estimated to have experienced hunger (16). This was an increase of 118 million people from 2019 (16). The same report found that in 2020, 2.37 billion individuals worldwide had insufficient access to adequate food, classifying them as food insecure (16). This was an increase of 230 million people from 2019 (16). The most recent data on global food insecurity collected by the Food and Agriculture Organization of the United Nations, found the prevalence of moderate to severe food insecurity in 2023 to be 28.9% of the population, or 2.33 billion people (8).

2.4 Prevalence of food insecurity in Australia

Within Australia, the prevalence of food insecurity increased from 700 000 people in 2014-2016 to 3.1 million in 2018-2020 (16). The prevalence of food insecurity in Australia is estimated to range between 4-36% of the population, depending on the measurement tool used (17). The 2014-2015 National Health Survey which included the single item measure, identified the prevalence of food insecurity in Australia to be approximately 5% of the population (3). The 2024 Foodbank Hunger Report found 32% of households in Australia had experienced food insecurity in the previous 12 months (18). The same report revealed that in 2024, 26% of Australian households accessed food relief (18). Results from the 2011-2012 Australian Health Survey, found 4.8% of households in Western Australia had experienced food insecurity within the past 12 months and 2.1% went without food when they couldn't afford to buy more (19). Findings from the WA Health and Wellbeing Surveillance System reveal that food insecurity in the state is increasing, with those running out of food and not being able to afford more almost doubling from 2.5% of respondents aged 16 years and over in 2019, to 4.3% in 2022 (20).

The 2022-2023 National Aboriginal and Torres Strait Islander Health Survey reported 4 in 10, or 41% of Aboriginal and Torres Strait Islander households in Western Australia, were food insecure at some point in the previous 12 months (21). Based on data collected from the 2021 census and incorporated within the FSI, the northern suburbs of Girrawheen, Balga, Koondoola, Mirrabooka, Nollamara, Merriwa, Butler and Ridgewood experienced high rates of food insecurity (22). These areas have also reported a high population of Aboriginal and Torres Strait Islander people (23).

2.5 Impacts of food insecurity

The impacts of food insecurity are often described as wicked, multifaceted and complex (6). Food insecurity is both a social determinant of health and a public health issue influenced by social determinants (24). Food insecurity has been found to be associated with increased risk of poor health outcomes and is considered a public health priority (25). Research indicates that households experiencing food insecurity are more likely to consume low-cost foods that have



minimal nutritional value and are high in energy, fat, and sugar, contributing to a poor diet (26). Food insecurity has been found to reduce diet quality and as a result, increase the risk of chronic conditions associated with poor dietary intake, including diabetes and hypertension (27). Food insecurity has also been found to contribute to delayed development and problematic behaviours among children (28). Experiences of food insecurity can cause high levels of stress, and cycles of fasting and bingeing due to fear of running out of food (13, 29). Aboriginal and Torres Strait Islander people have been found to experience higher rates of food insecurity and are at greater risk of poor health outcomes associated with food insecurity (30).

Identifying and clearly defining the factors that contribute to food insecurity is essential for reducing the burden of the issue and developing interventions tailored to those who are more likely to experience food insecurity, including Aboriginal and Torres Strait Islander people (7). Additionally, evaluating past and existing food security initiatives will ensure that future interventions are culturally appropriate and address the needs of these populations at greater risk. The specific objectives of this review are as follows:

1. To identify the barriers to food security, particularly among Aboriginal and Torres Strait Islander people residing in urban areas
2. To identify the enablers to food security, particularly among Aboriginal and Torres Strait Islander people residing in urban areas
3. To examine past and existing food security interventions, with a focus on those tailored to Aboriginal and Torres Strait Islander people residing in urban areas.

3.0 Methodology

A systematic approach was used to conduct this literature review. A series of terms were defined and searched across four electronic databases to identify peer reviewed journal articles and grey literature that examine food insecurity. The four databases searched included: PubMed, Google Scholar, the Australian Indigenous HealthInfoNet and MPDI. The following search terms were used across the four databases: Food insecurity* Australia*, Food insecurity* Australia* Aboriginal and Torres Strait Islander*, Food insecurity* barriers*, Food insecurity* enablers*, Food insecurity* interventions*, Food insecurity* Aboriginal and Food insecurity*, Indigenous*. A snowball technique was employed to trace the reference lists of the articles identified in these searches. This technique was used to minimise the risk of missing any relevant data.

Only peer reviewed journal articles and grey literature published in English were included in the literature review. Title and abstract screening were conducted to refine the search. Literature with a focus on food insecurity among children and younger adults was excluded, while articles related to food insecurity among older adults and families residing in urban and remote areas of Australia were included. The journal articles and grey literature that met the inclusion criteria, were exported to EndNote. The author independently reviewed these articles and extracted relevant data.



4.0 Results

4.1 Barriers to food security

Commonly referred to as indicators or determinants, the term 'barriers' can be used to describe factors that impact an individual's ability to be food secure (31). In Australia, Aboriginal and Torres Strait Islander people, people experiencing homelessness, culturally and linguistically diverse groups, the elderly, disabled people, young people, and low-income earners have been found to be at higher risk of food insecurity (32). Common factors that contribute to food insecurity among these groups include low income and socio-economic status (SES), lower education levels, unemployment, shared housing, limited access to transport and poor food literacy (17).

Low income has been found to be the strongest and most consistent predictor of food insecurity (13). Limited financial resources to purchase food and the need to prioritise other bills such as rent, water and electricity over food, are two mechanisms through which income can impact food security (33). One study that explored food insecurity in Western Australia, identified and categorised the barriers to food security against the four pillars: availability, access, utilisation and stability (17). Food access was the most referenced pillar in the study, encompassing factors such as low income, unexpected bills and costs, large social networks and shared housing, poor accessibility to culturally appropriate food, and challenges associated with accessing transport (13, 17). The findings from this study are consistent with other articles which identified lack of financial resources, physical limitations including inability to carry groceries and transport limitations, as indicators of food insecurity (34). These indicators were shown to be more prevalent among low SES households and were associated with more frequent fast-food purchasing (35). The effects of low income on food security have been exacerbated by the rising cost of living (18). According to the 2024 Foodbank Hunger Report, over 82% of households experienced food insecurity due to the cost of living (18). This is an increase from 79% in 2023 and 64% in 2022 (18).

Research also highlights the association between geographical location and risk of food insecurity (5). Geographical access and the availability of healthy food options within stores have been shown to be better in more advantaged neighbourhoods (5). People living in areas of lower socio-economic status are less likely to purchase a variety of fruits, vegetables, lean meats, grains and legumes, and are more likely to purchase items that are low in fibre and high in fat, salt, and sugar (35). The perceived high cost of healthy foods, including fruits, vegetables and lean meats, compared to the low cost of unhealthy food, was identified as a barrier to food security in Western Australia (17). Knowledge of healthy and unhealthy food was found to contribute to these perceptions (32). Defined as the ability to comprehend the nature and significance of food, and effectively utilise this knowledge to achieve improved health outcomes, poor food literacy and lack of appropriate cooking facilities, were identified as barriers to the utilisation pillar of food security (32). Individuals with poor food literacy, or limited nutrition knowledge and skills, are more likely to purchase nutrient poor and energy-dense ultra-processed foods (32).

Other predictors of food insecurity include family type and age (36). Single parent households and those of younger age, are more likely to experience food insecurity (36). Research suggests these factors affect food security indirectly through income (36). Additionally, the opening hours and distance to supermarkets were identified as barriers to adequate availability of sufficient, safe and nutritious food (17).



Knowledge of where to seek help for food relief, has been identified as a challenge for households likely to experience food insecurity (3). The shame, stigma, and embarrassment of accessing food relief, has also been identified as a barrier to utilising these services (37). To overcome this, food relief services often apply a dignified approach (38). For example, Foodbank have adopted a choice model, allowing clients to select and pay for their own food items (39). The lack of culturally appropriate food for minority groups and the provision of poor-quality food, has been found to limit the impact of the food relief sector (37). Stability of the food supply was the least referenced pillar (32).

4.1.1 Barriers to food security for Aboriginal and Torres Strait Islander people

Indigenous populations, including Australian Aboriginal and Torres Strait Islander people, are at heightened risk of food insecurity (30). Despite efforts to reduce food insecurity among Aboriginal and Torres Strait Islander people at a community, local government and federal government level, Aboriginal people are significantly more likely to experience food insecurity than their non-Aboriginal counterparts (40). The high rate of food insecurity experienced by Aboriginal and Torres Strait Islander people is a proximate determinant and risk factor of poor nutrition and its associated outcomes (30). A poor diet has been estimated to contribute to approximately 19% of the Indigenous health gap in Australia (25).

Common barriers to food security for Aboriginal and Torres Strait Islander people include low income, inadequate housing and limited access to transport (35, 41). Aboriginal and Torres Strait Islander families report prioritising fixed expenses such as rent and childcare over food and transport to get to the supermarket, contributing to food insecurity (35). Additionally, Aboriginal and Torres Strait Islander people face the ongoing impacts of colonisation, racism and systemic barriers that hinder their ability to be food secure including limited access to traditional food (24, 35, 42, 43). Despite the resurgence of traditional Aboriginal foods in Australia, this market is directed to tourists and isn't accessible to Aboriginal people (43). Aboriginal families residing in metropolitan areas have reported an overabundance of unhealthy food options in suburbs with high populations of Aboriginal people (35). This situation is perceived to result from a lack of investment and an attempt to marginalise Aboriginal people from urban areas (35). The stigma and shame associated with accessing non-Aboriginal food relief services have also been identified as a barrier to food security for Aboriginal people (35). Aboriginal people are more likely to access food relief services through Aboriginal community-controlled organisations that are designed to be more culturally safe (42).

Aboriginal people are protective of their culture and traditions, including those related to food (33). This strong connection to culture has been found to impact their involvement in healthy eating initiatives as Aboriginal people are often hesitant to modify recipes to make them healthier out of fear of disrupting cultural traditions (35). Additionally, the unique kinship that exists in Aboriginal culture means families are often not only providing food and resources to their household, but also to their wider kinship which can influence food security (35). Aboriginal families have reported challenges with budgeting and preparing enough food for their household, as the number of people they are providing for can change with events and circumstances such as funerals and protocols associated with death in the community (35).

Hesitance in seeking assistance from local agencies, stemming from intergenerational trauma and assimilation policies of previous governments, is also likely to contribute to experiences of food insecurity (12, 35). Racism, frequent community deaths, high rates of youth suicide and harassment from authority have been found to cause stress among Aboriginal and Torres Strait



Islander people, impacting their motivation and ability to purchase and prepare healthy food (33). Social injustices, such as colonisation, have disrupted food security for Aboriginal and Torres Strait Islander people (44). The generational loss of knowledge of Country, food systems and healthy eating, along with the impacts of intergenerational trauma and colonisation, contribute to the high rate of food insecurity and mortality gap among Aboriginal and Torres Strait Islander people (35, 41).

4.2 Enablers to food security

Enablers of food security can be described as factors that enhance access, availability, utilisation and stability of nutritious food (45). While low income is the most consistent barrier to food security, a high income does not ensure food security and is not considered an enabler (36). Instead, money can be described as a supportive influencer of food security and is likely to enhance all four pillars of food security (45). A higher household income is associated with greater financial resources to acquire food (36). Achieving a high level of education and securing employment can enhance food security by increasing income, which in turn increases food access (41).

Research indicates that living in close proximity to food retailers and having access to appropriate transportation is likely to support experiences of food security (45). Households that have a variety of food retailers close to them are more likely to visit supermarkets and purchase a greater variety of foods (45). Similarly, having access to appropriate transportation such as a car or public transport, is likely to enable food security (45). Participants of one study explained that having access to transport meant they were able to visit a number of food retailers for high quality food at a lower cost (35). Minimal traffic and easily accessible parking have also been found to influence access to food and contribute to food security (45).

Appropriate storage and cooking facilities may facilitate experiences of food security (35). Access to cooking and storage facilities such as a kitchen with a stove, fridge and freezer promotes food preparation and may reduce food insecurity (35). One study that evaluated a food literacy program revealed that support from family and friends, and the provision of charitable food, can facilitate food security (15). Assistance in the form of groceries, money or cooked meals from friends and family allowed study participants to experience food security beyond the food literacy program (15). Food literacy is recognised as a crucial strategy to improve food security and promote behaviour change (32). It enhances knowledge and skills related to healthy eating, and builds resilience to cope with food insecurity (32).

Having a large social network and living in a shared house can promote food security (17). In Aboriginal culture, the unique kinship and strong sense of community, where money and food are often shared, serves as an enabler to food security (35). Additionally, reciprocity holds significant importance in Aboriginal culture and is a key factor in ensuring food security (46). Aboriginal and Torres Strait Islander people often live with family and friends, relying on them for food assistance with the promise of returning the favour (46). Community support, such as assistance from family and friends in the form of groceries or cooked meals, plays a significant role in mitigating food insecurity (15). Additionally, knowledge of traditional food practices and access to traditional foods may enhance food security among Aboriginal people, and should be considered as a strategy to address food insecurity among Aboriginal communities (25). Ensuring that food relief services are culturally appropriate enables help-seeking (42).



4.3 Past and existing initiatives to address food insecurity

Findings from the literature review reveal three broad strategies for addressing food insecurity (31). They include partnering to deliver local solutions, alleviating hunger through food relief and enhancing food and nutrition literacy (31).

4.3.1 Strategy 1: Partnering to deliver local solutions

The first strategy aims to address food insecurity through improvements to the access and availability pillars of food security (31). It recognises the unique challenges faced by communities, and the need to tailor initiatives accordingly through a collaborative approach (31). Research underscores the importance of co-designing initiatives with stakeholders, including local service providers and community members, to ensure they address the needs of the intended audience (26). Furthermore, the complex nature of food insecurity necessitates partnerships across sectors to address all aspects of the food supply chain (42).

A number of studies on past and existing food security initiatives have reported on the use of a community-based participatory approach to research (47). This approach ensures that all perspectives and experiences are considered, and that knowledge is valued, to develop appropriate initiatives for addressing health issues (47). Action to address food insecurity is likely to be more effective when organisations from a range of sectors, including government and non-government organisations, along with community members, come together to build capacity and foster a more integrated and effective response (31). This collaboration helps to leverage resources, share expertise and ensure that initiatives are sustainable and culturally appropriate (31, 48).

Examples of sectors partnering to deliver local solutions include Foodbank WA, Fair Food WA and the Victorian Food for All program (14, 31). Foodbank WA engages in extensive cross-sector collaboration to address food insecurity in Western Australia (49). The WA branch works closely with government and non-government organisations, agencies and businesses to secure funding, food donations and logistical support for emergency food relief, community programs and advocacy efforts (49). Similarly, Fair Food WA, initiated by the Western Australian Council of Social Service, aims to address food insecurity in Western Australia by uniting government bodies, universities, and not-for-profit organisations in a cross sector-committee that partners to implement local solutions (14). The Food for All project was delivered across Victoria to address high rates of food insecurity (31). The project involved eight councils working in partnership with local organisations to implement various strategies to reduce food insecurity, including policy development, transport initiatives and community kitchens (31).

4.3.2 Strategy 2: Alleviating hunger through food relief

The second strategy relates to food relief and targets the food security pillars of availability and access (31). In Australia, charitable food relief is one of the most common responses to food insecurity (50). This sector relies on donations, volunteers, and variable funding sources to provide immediate, short-term relief through free or subsidised food (37, 50). The adoption of the Good Samaritan legislation in Australia has enabled businesses to donate food to charities such as Foodbank, OzHarvest and SecondBite, minimising food waste whilst also helping to reduce the impact of food insecurity (37, 51). These programs, however, are often not equipped to provide ongoing food support and are increasingly being recognised as unable to meet the growing demand for food relief (29). In 2021, Foodbank reported more than one million people accessing their services (2)..

Community food programs are another common response to food insecurity in Australia. The term 'community food program' can be used to describe any community program that provides



free or subsidised food in an effort to alleviate food insecurity (52). Community food programs can include food parcels and hampers, food cooperatives, breakfast programs, community kitchens and community gardens (52). A report released in 2017 found that the Australian food relief system is estimated to comprise of 3000-4000 community food programs (44). Additionally, data collected in 2015 found that community food programs fed approximately 4-8% of the Australian population (45). One study that aimed to measure and understand food insecurity in Australia, evaluated a social café meals program in Victoria (3). This program involved a subsidised dining experience for those experiencing food insecurity and was found to be effective in improving food access and enhancing social cohesiveness (3). Another study described the 600 school breakfast programs offered by Foodbank and additional 200 supported by the Red Cross (37). In addition to providing food relief, community food programs provide an opportunity for coordinated outreach of health services to community members (52). Community food programs have been found to be effective in addressing the social determinants of health, improving food knowledge and skills and enhancing social skills and support networks (37). Limited physical and financial resources, including staff, has been identified as a limitation of community food programs (37).

4.3.3 Strategy 3: Enhancing food and nutrition literacy

The third strategy addresses the utilisation pillar of food security and highlights the importance of food literacy in alleviating food insecurity (31). Food literacy plays an important role in improving the knowledge and skills needed to plan and manage food shopping, as well as prepare and cook nutritious meals (31). A 2022 study revealed that 56% of Australian adults aged 18 and over did not consume the recommended daily serves of fruit, while 94% fell short of the recommendations for vegetable intake, as outlined in the Australian Dietary Guidelines (20). Food literacy programs have the potential to not only alleviate experiences of food insecurity but also improve diet quality and reduce the burden of diet-related illness (53). Food literacy programs are intended to improve an individual's ability to feed themselves and others in their household with a variety of nutritious foods (53). Food literacy programs such as OzHarvest's *NEST* and Foodbank WA's previous *Food Sensations for Adults (FSA)*, aim to empower participants to achieve food security by teaching skills related to getting value for money, consuming a balanced diet, budgeting, storing food safely, and preparing healthy food (53).

Founded in 2014, the OzHarvest *Nutrition Education and Skills Training (NEST)* program is a series of workshops conducted over a six-week period, that aim to improve nutrition, food literacy and cooking skills of adults (15). The program is aligned with the Australian Dietary Guidelines, and is underpinned by the Social Cognitive Theory, which focuses on building self-efficacy (15). An evaluation of the OzHarvest *NEST* program, which included a pre- and post-program survey, indicated that the program significantly improved participants food literacy and food security (15). The program was found to improve participants cooking confidence and their ability to budget, select, prepare and cook healthy food (15). Program participants reported feeling more confident in their ability to shop for affordable and healthy food options, follow a recipe and prepare food safely using healthier cooking methods (15). The same study noted that food literacy programs alone cannot address all determinants of food insecurity (15). Initiatives that aim to alleviate food insecurity should consider a multi-faceted approach to ensure all dimensions of food insecurity are addressed (15). Furthermore, the impact of the program can be improved by tailoring the sessions for different communities (15).

Similar to the OZHarvest *NEST* program, Foodbank WA's *FSA* was a food literacy program delivered across the state for seven years, and is one of the most published and successful food literacy programs in Western Australia (54, 55). *FSA* incorporated both nutrition education



and cooking workshops, with a focus on building self-efficacy and motivation to prepare and cook healthy food (54). An evaluation of the program revealed food literacy programs are likely to improve knowledge and skills related to purchasing, preparing and cooking nutritious food (56). The program was found to not only impact food literacy behaviour, but also fostered social connections and increased socialisation (55). One study highlighted the need for ongoing assistance and support in applying the knowledge and skills gained from food literacy programs to maintain food security as a result of these initiatives (54).

4.3.4 Initiatives tailored to Aboriginal and Torres Strait Islander people

A rapid review of interventions to address food insecurity among Aboriginal and Torres Strait Islander people in Australia revealed there is a lack of interventions tailored to Aboriginal people (24). Additionally, it highlighted the lack of interventions for Aboriginal and Torres Strait Islander people in Western Australia (24). Out of the 25 studies reviewed, only one reported on an intervention in Western Australia (24). The study examined a range of interventions aimed at improving food security, including retail and store-based initiatives, as well as community food programs such as school-based cooking classes, community gardens and breakfast programs (24). Similarly, a report released by the Victorian Aboriginal Community Controlled Health Organisation in 2015, detailed a number of initiatives implemented across Victoria to address food insecurity (52). These initiatives included community barbeques, yarning circles, community kitchens and community gardens (52).

Retail-based programs

Out of the 25 studies reviewed in one study, 5 reported on retail or store-based interventions (24). One store-based program was the SHOP@RIC program, which offered a 20% discount on healthy food and drink items at supermarkets (24). The impact of this program varied across Australia, but overall, there were no significant improvements to food security (24).

Food literacy

Five studies included in the review detailed above examined the role of cooking classes in increasing food security (24). While these classes enhanced nutrition and cooking skills, many studies reported that acquiring food was a challenge for Aboriginal and Torres Strait Islander people in both urban and rural areas (24). Foodbank WA's FSA program was delivered in both urban and regional areas of Western Australia, including the Pilbara region which has a high population of Aboriginal and Torres Strait Islander people (57). An evaluation of the program demonstrated its effectiveness in enhancing food literacy and promoting behaviour change among participants in both urban and regional settings, though data specific to Aboriginal people was not reported (57). A key factor in the program's success in regional areas was its ability to be tailored for people living in these regions (57). This is further supported by a study that highlighted the importance of tailoring food literacy programs to meet the needs of Aboriginal and Torres Strait Islander people (42). Research suggests that food literacy programs are likely to be more effective when delivered by an Aboriginal person who understands the language, cultural and family context of the local community (42). This approach ensures that the programs are culturally appropriate (42).

Community Barbeques

The *Billabong BBQ* is an outreach service that has been operating in Collingwood since 2000 (52). The idea for the program originated from local Aboriginal people gathering in the park and is a joint effort between local service providers (52). A free community BBQ is held every week and provides an opportunity for local health and welfare services to connect with Aboriginal



people living in the area (52). The initiative has helped community members overcome barriers to accessing food relief and health care services, as it is free and located in a safe and familiar environment (52). The greatest challenge for the program has been inadequate financial resources to provide a variety of healthy food to participants (52).

Yarning Circles

Funded by the Victorian Government, The *Bush Tucker Yarning Circle Program* forms part of the *Healthy Together Knox* healthy living program (52). Staff from local community and health organisations run a fortnightly yarning circle for community members to learn about the services available in the area (52). The program was developed based on findings from a literature review and consultation with local Elders and community members, which highlighted the importance of the program being driven by community so that it is relevant and appropriate (52). Lack of security of funding has been identified as the key challenge for the program (52).

Community Kitchen

The *Deadly Community Kitchen* provides a space where Aboriginal people can gather, cook and share a meal together (52). The idea and location for this initiative was a result of extensive community consultation and has been effective in enhancing the attendee's knowledge of healthy eating and cooking skills (52). However, challenges have included the time required for community consultation and managing group dynamics during kitchen operation (52).

Similarly, the *Koori Kitchen* aims to alleviate food insecurity by offering a culturally safe place for community members to gather and share a meal (52). Initially, only four to five people attended the kitchen, but as word spread throughout the community attendance has grown to more than fifty (52). Despite its success, The *Koori Kitchen* faces the challenge of inconsistent attendance by community members (52).

Community Garden

Several community gardens, including the Njernda Community Garden and Mungabareena Community Garden, have also been established across Victoria to address high rates of food insecurity among Aboriginal people (52). These gardens aim to empower community members by increasing access to food and encouraging them to grow their own produce (52). For many communities, the establishment of these community gardens has also fostered greater social connections, and in some cases, provided employment opportunities (52). Challenges, including funding and maintaining community involvement, have been noted (52). In Western Australia, the EON Aboriginal Foundation delivers the Thriving Communities Program, which focuses on nutrition, healthy lifestyles and disease prevention (58). This program includes establishing edible gardens in remote communities to address food insecurity, and provides a foundation for EON healthy eating classes (58).

4.4 Methodology for working with Aboriginal and Torres Strait Islander people

Improving food security for priority populations, such as Aboriginal and Torres Strait Islander people, requires a participatory approach to ensure interventions are tailored and culturally appropriate (44). Previous government-led attempts to improve food security, such as the 'Closing the Gap' campaign, the National Aboriginal and Torres Strait Islander Peoples in Australia Nutrition Strategy and Action Plan' and the social marketing campaign 'Measure Up', have had limited impact due to insufficient community involvement and lack of consideration of the factors that influence food security for Aboriginal and Torres Strait Islander people (59). One study, titled *Indigenous Community-Led Programs to Address Food and Water Security:*

Protocol for a Systemic Review, outlined a protocol for effectively co-designing projects that meet the needs of Aboriginal people and promote health in Indigenous communities (47). The five phases included in the protocol are as follows:

1. Preparation – developing the cultural competency of researchers, and establishing and building trusting relationships with community
2. Community involvement and governance – establishing a research agreement with interested communities, forming an Aboriginal advisory group to ensure the project is culturally appropriate, and attaining ethics approval
3. Data collection – using culturally appropriate intelligence gathering methods to obtain data from communities
4. Data analysis and dissemination of findings
5. Implementation of findings

Interventions that are co-designed have been found to have greater relevance among target audiences, leading to greater involvement and enhanced health outcomes (26).

5.0 Discussion

This review aimed to identify the barriers and enablers to food security, and examine past and existing food security initiatives, with a focus on Aboriginal and Torres Strait Islander people. Findings of this review reveal there are few studies that have explored food security among Aboriginal and Torres Strait Islander people living in urban areas of Western Australia. Additionally, there is a lack of interventions tailored to groups who are at greater risk of food insecurity, including Aboriginal and Torres Strait islander people.

The prevalence of food insecurity in Australia remains high, with actual rates likely to be underestimated due to the measurement methods used (11, 60). In Australia, food insecurity is measured using a less reliable single item measure in the National Health Survey, rather than the USDA HFSSM (3). Research conducted into the validity and reliability of measures of food insecurity, suggests a tool that assesses all four dimensions of food insecurity should be developed (3). Multi-item tools are likely to give a more accurate representation of food insecurity in Australia (3). Consistency in the measurement of food insecurity is crucial for gaining a comprehensive understanding of the scale and impact of the issue. Inconsistent measurement methods can lead to discrepancies in data, making it challenging to identify the most affected populations and develop targeted interventions. A standardised, multi-item tool that evaluates all aspects of food insecurity is likely to provide more reliable data. This in turn, would enable policymakers and researchers to design effective, evidence-based strategies to combat food insecurity. Furthermore, accurate and consistent data collection is essential for monitoring progress and evaluating the effectiveness of programs and initiatives over time.

This review identifies common barriers to food security, such as low income and SES, lower education levels, unemployment, shared housing, limited access to transport and poor food literacy(17). The higher rate of food insecurity among Aboriginal and Torres Strait Islander people can be attributed to factors beyond these, including the ongoing impacts of colonisation, racism, and systemic barriers that limit access to food (35, 48). Aboriginal and Torres Strait Islander people have reported challenges with accessing traditional food and a lack of investment in infrastructure and local services in areas with a high Indigenous population, contributing to higher rates of food insecurity (35, 43). Understanding the barriers to food security is crucial for designing interventions that effectively address the community's needs. Furthermore, recognising and understanding the unique factors that contribute to the ongoing



health inequalities of Aboriginal and Torres Strait Islander people is critical in developing effective interventions and health promotion programs. By identifying the specific barriers for different communities, stakeholders can tailor interventions to meet the needs of those at greater risk. This targeted approach ensures that resources are used more efficiently and that the interventions are more likely to succeed in improving food security.

A large social network, shared housing, and the unique kinship that exists among Aboriginal and Torres Strait Islander people, may contribute to food security (17). Similarly, support from family and friends in the form of money, food and cooked meals is likely to mitigate experiences of food insecurity (15). While income is a significant determinant, there is no research to suggest it is a proxy for food security (13). Recognising the enablers of food security is equally important for informing interventions. By understanding the factors that promote food security, stakeholders can strengthen and build upon existing groups and systems within communities, to help alleviate food insecurity.

In Australia, charitable food relief is the most common response to food insecurity (52). While this sector is practical and low cost as it relies on volunteers and food that would otherwise go to waste, it only has the potential to alleviate short-term hunger and cannot always meet the nutritional and cultural needs of households (40). Community food programs and food literacy initiatives have also been identified as strategies for improving food security in Australia (31). The evaluation of interventions designed to alleviate food insecurity highlights the need for action that addresses all facets of food insecurity (12). A multifaceted approach that includes immediate food assistance, food literacy and structural level initiatives is recommended (15).

The findings from this review reveal a significant gap in interventions tailored to Aboriginal people in Western Australia, especially those living in urban areas (24, 42). Food security initiatives developed for Aboriginal and Torres Strait Islander people in the past have lacked community involvement, and as a result have had minimal impact (59). Furthermore, evaluation of initiatives developed for Indigenous communities reveals that the methods used to gather information on the effectiveness of food insecurity programs are often not culturally appropriate or tailored for Aboriginal people (42). To address this barrier, future research and interventions should prioritise a bottom-up approach. This means involving Aboriginal and Torres Strait Islander communities from the outset in the planning, implementation and evaluation of food security programs. By empowering these communities to take an active role in these processes, initiatives are more likely to be culturally relevant and effective. Programs should be co-designed with Aboriginal and Torres Strait Islander people and involves a collaborative effort where community members and researchers work together. This process helps to build trust, ensures that the program addresses community needs, and enhances the likelihood of impactful outcomes.

This review highlights the need for a greater understanding of the factors that influence food security for Aboriginal and Torres Strait Islander people, and interventions that are developed with, rather than for, populations at heightened risk of food insecurity. To ensure initiatives are culturally appropriate and tailored, it is essential to integrate cultural competence and responsiveness into the planning, implementation and evaluation processes. This involves understanding and respecting the cultural values, beliefs and practices of the target population. By adopting a participatory approach to research and co-designing interventions with Aboriginal people, cultural appropriateness can be achieved. It also highlights the value of publishing the successes and challenges of food security initiatives among Aboriginal and Torres Strait Islander communities as it is crucial to strengthen the health promotion evidence base, providing valuable insights into effective strategies, highlighting areas needing improvement, and ensuring culturally appropriate approaches are recognised and replicated.



6.0 Conclusion

This review aimed to identify the barriers and enablers to food security and examine past and existing food security initiatives. The findings from this review highlight the persistent health inequalities faced by Aboriginal and Torres Strait Islander people, including higher rates of food insecurity. Although past interventions to address food insecurity among Aboriginal and Torres Strait Islander people have been developed and implemented, a collaborative approach was often neglected. Further research into the barriers and enablers of food security for Aboriginal communities is essential to better understand the needs of those at greater risk of food insecurity. Future interventions and health promotion programs must adopt a community-based participatory approach to ensure they are culturally appropriate and reflect the needs, knowledge, and practices of Aboriginal and Torres Strait Islander people.



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