Understanding food security issues in remote Western Australian Indigenous communities

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Abstract

Issue addressed: Food insecurity in remote Western Australian (WA) Indigenous communities. This study explored remote community store managers' views on issues related to improving food security in order to inform health policy.

Method: A census of all remote WA Indigenous community store managers was conducted in 2010. Telephone interviews sought managers' perceptions of community food insecurity, problems with their store, and potential policy options for improving the supply, accessibility, affordability and consumption of nutritious foods. Descriptive analyses were conducted using SPSS for Windows version 17.0.

Results: Managers stated that freight costs and irregular deliveries contributed to high prices and a limited range of foods. Poor store infrastructure, compromised cold chain logistics, and commonly occurring power outages affected food quality. Half of the managers said there was hunger in their community because people did not have enough money to buy food. The role of nutritionists beyond a clinical and educational role was not understood.

Conclusions: Food security interventions in remote communities need to take into consideration issues such as freight costs, transport and low demand for nutritious foods. Store managers provide important local knowledge regarding the development and implementation of food security interventions.

So what? Agencies acting to address the issue of food insecurity in remote WA Indigenous communities should heed the advice of community store managers that high food prices, poor quality and limited availability are mainly due to transport inefficiencies and freight costs. Improving healthy food affordability in communities where high unemployment and low household income abound is fundamental to improving food security, yet presents a significant challenge.

Key words: community stores, food access, food security, health policy, Indigenous, remoteness.

Introduction

Indigenous people throughout the world experience higher morbidity rates and lower life expectancy than non-Indigenous people.[1] Although wealthier nations generally have better health outcomes than poorer countries for both Indigenous and non-Indigenous people, Australia seems to be an exception to this rule.[2] Among the Indigenous people of richer nations, Australian Aboriginals and Torres Strait Islander people experience social disadvantage, and are recognised as having an unacceptable gap in life expectancy compared with non-Indigenous people.[2,3] The World Health Organization states, 'The diets people eat, in all their cultural variety, define to a large extent people's health, growth and development'.[2,4] The burden of diet-related diseases, including obesity, hypertension, high cholesterol, cardiovascular disease, diabetes and renal failure, is higher in Indigenous Australians. Indigenous Australians experience a higher prevalence of mortality and morbidity from these diseases than non-Indigenous Australians.[5,6] Australian Indigenous infants are more likely to be still-born, have low birthweight and suffer from anaemia and malnutrition than non-Indigenous children.[7,8] A poor diet, including low fruit and vegetable intake, has been estimated to contribute to ~19% of the Indigenous health gap in Australia.[9]

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Around 25% of Australia's Indigenous people live in remote communities,[10] and improving the supply, access to and consumption of nutritious food in remote areas is an important strategy for improving the health of Indigenous people.[11–13] Food insecurity has been associated with negative health outcomes[14] and therefore is an important public health food policy priority.

Food security is defined by the Council of Australian Governments as 'the ability of individuals, households and communities to acquire appropriate and nutritious food on a regular and reliable basis using socially acceptable means'.[15]

The problem of food affordability and accessibility in remote communities

Geographical location influences the supply and affordability of nutritious foods. Pricing surveys have demonstrated that food can cost ~20–30% more in rural and remote Australian communities.[16–19] This disparity in cost between urban and remote settings has remained relatively unchanged for many years, and the more remote the greater the disadvantage.[20] In Western Australia (WA) in 2010, the fortnightly mean cost of a healthy food basket was 23.5% more in very remote areas compared with the cost in Perth, the capital city.[19] Many remote communities experience food insecurity because the delivery of food is irregular, the nutritious choices are limited and often of low quality, food prices are high, and the ability to store and prepare food is inadequate.[15] The factors that affect food security are complex and need to be explored at all levels.

Community stores in remote parts of Australia play a critical role in the nutritional health of their communities. They are often the only source of food, drinks and household hardware for most of the Indigenous community members. It is estimated that Indigenous people can purchase up to around 80–95% of their food at the local remote community store and takeaway store.[21]

Government interventions addressing food security in remote communities

Government interventions to improve the supply and demand for food in community stores vary according to state or territory. Intervention options depend on many factors, including the local conditions, available regulatory options, store ownership arrangements, community size and geographical location and political amenability. The Australian Government's Northern Territory Emergency Response Intervention (NTER) was established to enable vulnerable groups to lead safe and healthy lives.[22] The NTER introduced income management strategies, including a food basics card to assist people to buy essential everyday items, including nutritious food. Community store licensing improved the range and the quality of groceries available by ensuring stores were well managed and able to participate effectively in income management arrangements. Income management quarantines money for food. Electronic point-of-sale systems support effective retail management practices and transparency, and are a requirement for income management systems. The NTER improved

the choice and quality of goods available, however food costs are still high and the demand for healthy food low.[2]

A review of the NTER found that, as well as electronic point of sale systems, access to a public health nutritionist was necessary to strengthen the community store's ability to improve the supply and demand for healthy food.[22] The work of public health nutritionists is to facilitate an organised community effort to improve food and nutrition to promote and protect population health.[23] An effective workforce to improve public health nutrition requires a team working across the continuum of care, from clinical dietitians to public health nutritionists. There is poor public heath nutritionist workforce capacity in Australia,[24] and it is likely that there is a lack of understanding of the potential contribution of this workforce to address food security issues.

Public health nutritionist competencies have recently been defined and include: an understanding of the factors that contribute to the health of a population, specialist skills in applying nutrition science to public health practice, analytical skills, an understanding of public health systems and the socio-political context, and skills in management, leadership and professional communication.[23] This skill set is valuable when working with community stores, as highlighted by what was learnt from the NTER. Public health nutritionists can assist store managers to improve the food supply by ensuring that preference is given to foods available for sale that are consistent with dietary recommendations, and also by helping to develop in-store nutrition promotions and community interventions to increase the demand for healthy food (e.g. social marketing, education and food preparation skills development). Table 1 describes the role of the nutrition workforce and specific public health nutrition practitioners.[25]

The NTER intervention is unlikely to be duplicated or replicated in other jurisdictions due to its resource intensiveness and regulatory

Table 1.   Specialist Australian nutrition workforce competencies
Source: adapted from (24, 25)

Specialist nutrition workforce

Public Health Nutritionists
Implement a set of comprehensive and collaborative activities that promote improvements in the health status of the population.
Community Nutritionists
Plan, implement and evaluate a mix of nutrition services and activities for local communities based on needs, public health indicators and policy. They address local population health issues through food- and nutrition-related health promotion strategies.
Community Dietitians
Apply dietetics in community settings, including continuity of care for discharged patient populations.
Clinical Dietitians
Apply dietetics in hospitals and clinical care settings.
    Generalist nutrition workforce
Health Promotion Officers and Aboriginal Health Workers
Support preventive service delivery of community nutrition and public health nutrition programs.

differences. Although Australian Government consultations have shed some light on the issues faced regarding food security in remote areas,[26] little has been done to quantify the problem in WA, or to determine local community perceptions of potential interventions.

Food stores in remote communities in WA are generally owned and run by Indigenous community organisations without direct government funding or subsidy and rely on the patronage of residents to trade. Most WA remote Indigenous communities consist of between 100 and 200 people – not sufficient to support a profitable business operation. Stores appear to primarily operate to provide food to remote populations rather than as a business enterprise. As such, for many of these remote communities the store is an essential service, albeit one that is typically poorly resourced.

As the main or only source of food for some communities in remote parts of Australia, their store plays a critical role in the community's food security. Store managers have everyday contact with community members and consequently can provide insights into community life.

Interventions are more effective when there is local support. There is a dearth of evidence about the views of remote store owners regarding their main concerns about the supply and demand for healthy food, or the factors that would support them to address food security. This research aimed to collect census information to inform the development of intervention strategies to address food security in WA. It aimed to determine store managers' perceptions of the extent of food insecurity in their communities, key concerns relating to food in remote stores, store operations, infrastructure and resource needs (particularly whether they had electronic point-of-sale systems and direct access to a nutritionist, as these were identified by the NTER as key to improving food security).

Methods

Sampling

The study sample was all WA remote community stores, all of which had an Accessibility/Remoteness Index of Australia (ARIA) score of greater than 9.8 (indicating poor accessibility by road to services). The contact details for the stores were obtained from the Department of Health, and ethics approval was granted by Curtin University Human Research Ethics Committee. The map of grocery store locations in WA shows the remoteness of the community stores (Fig. 1).

Telephone survey instrument

A short telephone survey was designed by the researchers in conjunction with the Food Unit of the Environmental Health Directorate at the Department of Health in WA. One researcher conducted all the telephone interviews after piloting and modifying the questionnaire. The survey began with an open-ended question

asking managers to identify the main problems or issues they faced with their stores. All other questions were closed, with opportunity for further comment. A brief description of point-of-sale systems, nutritionists and food security were given if requested. Table 2 lists the survey questions.

Data analysis

Data were entered into SPSS for Windows version 17.0 (SPSS Inc., Chicago, IL, USA). Multiple responses for the open-ended question were grouped and coded. Descriptive analyses were conducted for the other questions. As the survey was a census sample, the sample size was relatively small and the results homogenous, so further statistical analysis was not conducted.

Results

Survey sample characteristics

There were 51 stores on the original Department list; however, nine had closed down and three were not contactable. Of the remaining 39 remote community store managers contacted, six refused to participate, resulting in an overall response rate of 84.6% ($n = 33$). Those refusing to participate said it was because they had been involved in research before that had not resulted in any positive action. The survey took 8 min on average to complete.

Main problems with their store

Managers were asked what, if any, problems or concerns they had about their stores and were given the opportunity for multiple responses by prompting with 'anything else?' Managers who identified problems tended to describe them, thus allowing the interviewer to collect some quotes regarding their concerns. Most managers (23; 76%) said there were major problems, and 10 (24%) reported no problems. From the 41 different responses obtained, six main areas of concern were identified. Transportation issues were the most commonly reported problem cited (46%). Transport-related issues were wide ranging and included: high transport costs, problems with refrigeration during the long journey, the distance food travelled to the remote location, and variable road conditions (e.g. seasonal flooding making access to the community difficult or impossible). Managers said that the limited variety of food available was due to high transport costs, summed up by one store manager '... an order of A$2500 worth of food costs A$2000 to transport, which is a ridiculous price'.

Specific problems relating to fruits and vegetables were identified by 20% of the store managers. Infrequent delivery, coupled with lack of storage and the impact of the freight cost on retail price reduced fruit and vegetable affordability. One store manager said that delivery of fresh food was sometimes delayed for 3–5 weeks due to poor road conditions and the road being washed away during the wet season.

Poor store condition, the high cost of maintenance, and lack of capacity to undertake repairs were concerns for two stores; one
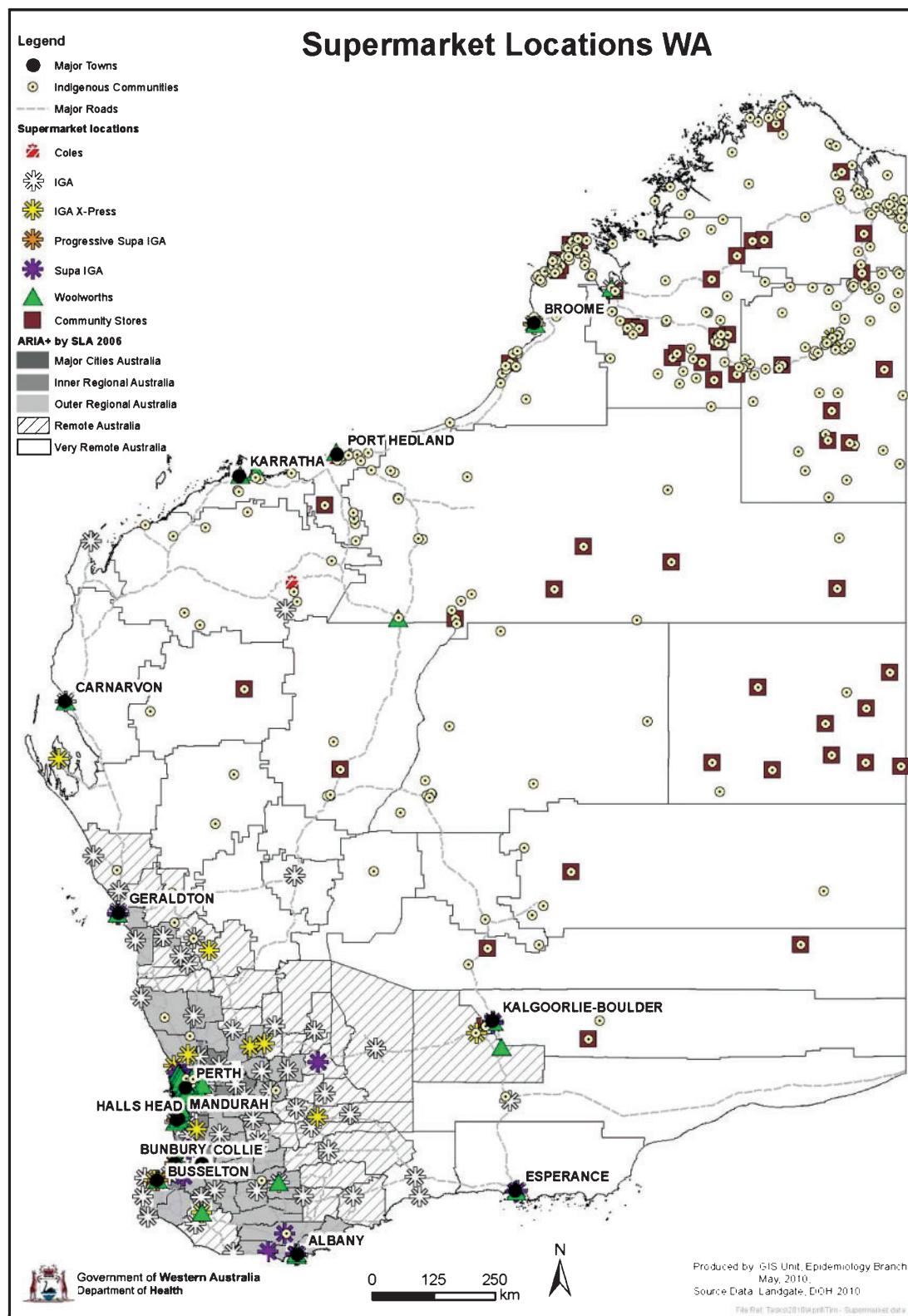
Fig. 1.   Grocery store locations in Western Australia.

Table 2. Remote Western Australian community store managers' survey questions

1. In your opinion, what do you think are the major problems or issues with your store?
2. Do you use an electronic point-of-sale system? If yes, what is the name of the system? If no, is that something you would like to install?
3. Do you have a nutritionist that works directly with your store? If yes, how many hours per month do they work with you? If no, is that something you would like to have access to?
4. Do you think that there is an issue of food security in your community?
5. Do you think that there are some people in your community who go without food because they do not have enough money? If yes, what proportion of the community is in this situation?
6. Does your store offer 'Book Up' or credit? If yes, who do you offer it to?

Table 3. Community store managers' responses to issues related to food security in Western Australia (*n* = 33)

	Yes (%)	No (%)	Don't know (%)
Major problems or issues with store	23 (76)	10 (24)	–
Use of electronic point-of-sale system	26 (81)	6 (19)	–
If no, would like to install a point-of-sale system?	2 (6)	4 (12)	
Have a nutritionist working directly with the store	7 (22)	25 (78)	
If no, would like access to a nutritionist?	5 (17)	17 (59)	
Food security issues in the community	12 (36)	21 (64)	–
Hunger in community because not enough money to buy food	17 (52)	16 (48)	–
'Book up' or credit offered by store	11 (34)	19 (59)	2 (6)

store reported that there was a lack of running water, while another said that communication problems within the community were of major concern. Table 3 provides a summary of store manager responses to the survey.

Electronic point-of-sale system

Most stores (81%) had an electronic point-of-sale system: 35% had the MYOB Retail Manager system; 31% had an alternative program, and 16% did not know the name of their current program. Of the 18% who did not have an electronic point-of-sale system, a third said they would like to install one, and two-thirds saw no need because their stores were small or they were happy with their current practice.

Nutritionist working directly with the store

Only 22% of store managers said a nutritionist worked directly with them at the store; however, although they had access to a nutritionist, most could not recall the duration or frequency of their involvement. Some said they did not need access to a nutritionist as they thought that the nutritionist currently working with the community (in a clinical role) or with the school was enough. A lack of money to employ staff and the feeling that customers would not be interested in speaking to nutritionists at point-of-sale were other reasons given for not needing access to a nutritionist. There was also complacency about the value of healthy eating; one manager said people in his community already knew the health risks of a poor diet, but still '…they only want to buy pies, sausages and coke and they do not want to change their diet'.

Frequency and extent of food insecurity

Most store managers (63%) said there was no food insecurity in their community, although about half (52%) reported that there was hunger in their community because people did not have enough money to buy food. When asked about the extent, 10 respondents estimated that less than 50% went without food due to lack of money, while three said that more than half of the people in their community were affected. Two of those three managers estimated that the proportion of people left without food could be as high as 90% by the end of pay week. When probed further, many

managers said that it was the children, the elderly and the unemployed who were most likely to go hungry.

Community food security issues – reasons

Lack of employment and inadequate income were reasons given for not having enough money to buy food. One manager reported that low Community Development Employment Project (CDEP) wages meant people could not afford food '…wages are as low as $5 per hour, with only four hours a day, resulting in A$100 per week. With A$80 for rent, leaves only A$20 disposable weekly income…'. Other managers pointed to money management issues, stating that money spent on gambling, tobacco, alcohol and marijuana resulted in little or no money left to buy food. A general inability to budget or manage their money was also identified as a reason people went without food. Several of the respondents who said no one in their community went without food admitted that community members often shared their food or borrowed money from relatives, friends or neighbours.

Managers expressed concern about the new CDEP policy involving electronically transferring money instead of issuing cheques. Until recently, cheques were cashed at the community store where food is purchased. Managers explained that community members would now need to travel to a nearby town to access their money, and that while in town they would spend most of their funds on alcohol rather than on food at the community store. The managers felt this policy would cause a '…huge social problem' in that '…the money will go out of the community'. Further, they felt it had the potential to '…ruin the community stores and the community's health situation'.

The majority of stores (60%) did not offer credit or 'book-up', as people did not have the money to pay it back. Even those who did offer it only gave it to pensioners, their own staff, or to vulnerable people (as determined by the community). As an alternative to giving credit, many store managers described a 'book down' practice, where people give an amount of money to the store manager when they cash their cheques so they are able to buy goods to that value at a later date, ensuring food is consistently available.

Discussion

This survey of managers of remote indigenous community stores confirms previous findings of irregular and infrequent food deliveries and the impact of high freight costs, resulting in high food prices, poor quality and limited food choice in remote Indigenous communities.[15,18,26–28] Transport issues, including distance, road conditions, and transportation logistics (such as cold chain refrigeration and cost) were commonly reported by these store managers. Transport issues cannot be separated from the availability, cost and quality of the food supply in these communities.

In addition, basic infrastructural problems (such as lack of running water, intermittent power outages, failed refrigeration, poor store condition and a lack of any planned maintenance) were also highlighted. These are significant issues for grocery and fresh food businesses as they affect food safety and pose a public health risk.[27] Some store managers said they were trying to find ways to get help through subsidies from mining companies or supermarket chains as they were sceptical of government assistance '. . .we do not trust that governments will help anymore'.

Most stores already use electronic point-of-sale systems, which are important for efficient financial and retail management, as seen in the NTER.[29] There is, however, great variation in the type of system used. It is possible that upgrading these systems across the board would improve retail management practices and support strategies such as income management and the evaluation of store interventions.

Managers believe that the CDEP policy of electronically transferring money instead of issuing cheques poses an additional threat to the viability of their stores as residents go outside their local community to access their money, potentially taking money out of the community. There is a case for the government to support the operation of these stores to improve the range, quality and price of healthy food. Public health nutritionists could assist with this process.

This study confirms that remote Indigenous communities are experiencing food insecurity, i.e. hunger and going without food due to lack of money. Managers estimated that, in some communities, 90% of people went hungry by the end of the pay period, meaning that almost every person suffered food insecurity at some point in time. The unemployed, children and the elderly appear to be the most disadvantaged and at greatest risk of food insecurity. There do not appear to be any formal emergency food relief systems in place enabling redistribution of food for the vulnerable in remote communities; however, there does seem to be some community commitment to help vulnerable members though *ad hoc* methods.

Store managers' unwillingness to offer credit is consistent with the 2009 report where excessive use of 'book-up' led to insolvency in the Western Australian Burringurrah Community store, resulting in government delivery of emergency food to the community.[30,31]

These findings are consistent with previous research, which has revealed that infrequent food deliveries and poor variety, quality and high prices make it impossible for people on a low income to regularly access a healthy diet. The low income is attributable to unemployment compounded by poor money management due to inappropriate expenditure on alcohol, tobacco, drugs and gambling.[15,16,18,21,32]

A nutritionist working with stores and the community accounted for part of the success of the NTER intervention. This survey found most stores did not have a nutritionist working directly with them, nor did they want to employ one. It also revealed a lack of understanding of the skill set of and benefits of working with an effective public health nutrition workforce. Store managers tended to see the role of a nutritionist as limited to '. . .talking to customers in the store', rather than considering that they could work with the store manager and the community to develop and lead the implementation of interventions to improve both food supply and demand issues.

There are very few public health nutritionists working in WA remote communities.[33] To be effective, a specialist public health nutrition workforce would need to work directly with remote stores and their communities to identify ways of addressing the issues of supply, promotion and consumption of a healthy diet.[24]

Increasing the public health nutrition workforce capacity would provide the infrastructure needed to implement interventions to address both the 'demand' and 'supply' sides of food insecurity, consistent with the requirement for workforce development planning for Council of Australian Government interventions.[32]

In this study, the findings are specific to WA, but they appear to be consistent with those in other remote areas of Australia.[15] However, as the geographic situation and store management structures vary, results may not be representative.

It is of concern that those managers who refused to participate in the current study said they did not because there had been no government action resulting from previous consultations. Some managers had expected that government would be more responsive to the issues and expressed a sense of futility that this was not the case.

This study has contributed to understanding the complexities of food security in remote WA. Further research is warranted to determine community members' food accessibility, and in particular their actual financial and physical resources, including disposable income. The focus should be on those most at risk: the elderly, unemployed and children. It is important that the circumstances in which these the groups are likely to go hungry are investigated with a view to addressing these issues. An exploration of government options for reducing income disparity is also recommended, as is monitoring of the extent of food insecurity in remote communities in WA, particularly in the groups vulnerable to poor nutrition. These survey results highlight the need to address

basic infrastructure needs, including: maintenance and structural resources; a skilled workforce; food supply chain efficiencies; income management; and regular monitoring and surveillance of the nutritional status of remote Indigenous community members. A nutrition workforce audit is recommended to assess the capacity to implement change. Well-resourced, action-based partnerships across various sectors will be required to achieve this comprehensive range of strategies. Research is also required to measure the effectiveness of interventions selected to address food security, including cost effectiveness and community amenability.

Conclusions

A survey of WA remote store managers has supported other findings that high food prices, poor quality and limited availability is mainly due to transport inefficiencies and freight costs. High food costs, coupled with low household incomes and high unemployment, means many people are regularly experiencing food insecurity. A comprehensive range of strategies, including initiatives for improving food supply, must work alongside initiatives for influencing the demand for healthy foods. Public Health Nutritionists can undertake a significant role in addressing the issues contributing to food insecurity in remote communities.

Acknowledgements

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